CASE RECORDS AND COMMEN

FOR THE

EXAMINATION OF MASTERSHIP IN MEDICINE

IN

OBSTETRICS AND GYNAECOLOGY

OF THE

UNIVERSITY OF NAIROBI

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SUBMITTED BY

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1979

This is to certify that the Obstetrical cases 2, 3, 5, 6, 7, 9, 14 & 15 and gynaecological cases 1, 2, 4, 8, 10 & 13 were managed by Dr. Githiari under my guidance and supervision at the Kenyatta National Hospital, Nairobi, Kenya.

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This is to certify that the Obstetrical cases 4, 12 & 13 and gynaecological cases 3, 9 & 11 were managed by Dr. Githiari under my guidance and supervision at the Kenyatta National Hospital, Nairobi, Kenya.

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LONG COMMENTARY

THE OBSTETRIC UNIT OF THE KENYATTA NATIONAL HOSPITAL

The following obstetric cases were managed at the Obstetric Unit of the Kenyatta National Hospital, which is a teaching hospital for the Faculty of Medicine of the University of Nairobi. The unit was opened in 1965, and was designed to deal with about 1,500 deliveries a year. However, at present over 4,000 deliveries are recorded each year. The obstetric unit comprises of a maternity wing and an ante-natal clinic.

The ante-natal clinic has room for about ten doctors at a time. It has a small laboratory where some investigations are carried out. The ante-natal clinic also houses a section for post-natal clinic and family planning.

The maternity wing consists of three lying-wards, labour ward, a fully equipped operating theatre, and a neonatal unit. There are 80 beds in the wards. The labour ward has a further 12 beds, 2 of which are in a separate side room used for eclamptic and severe pre-eclamptic patients.

The neonatal unit is close to the Labour Ward and is entirely under the care of the Department of Paediatrics. A consultant and two senior registrars run this unit with the help of three senior house officers. It has eleven cots and seven incubators. All high risk babies are admitted here for intensive care and observations. These will include all babies with low birth weight (below 2100gm), babies delivered operatively, babies born before arrival, and all those depressed at birth as a result of a difficult labour.

ANTENATAL CARE

This unit deals with 90% high risk patients selected on every Monday at the booking. The booking clinic is run by a

senior registrar who selects about fifty patients every week for delivery in this referral hospital. The major criteria for booking are:

1)Short stature, especially in primigravidae.
2) Grande Multiparity.
3) Previous operative or difficult delivery.
4) Bad obstetric history.
5) Any history or presence of complications.

At the booking clinic a thorough medical, gynaecological and obstetrical history is recorded. A full medical examination is carried out, which will include the patient's height. Blood specimen is taken for a full haemoglobin, ABO and Rhesus typing, and Kahn test. At every subsequent visit the following data is recorded:

a) The presence of albuminuria, acetonuria or glycosuria.
b) weight gain or overt oedema.
c) Blood pressure.
d) Any complaints that the patient may present.

The aim of the antenatal clinic is to identify and treat any problems that may arise during pregnancy, and to evaluate with the help of senior members of the department, the obstetrical or medical problems of each patient so that when she is admitted to the labour ward a definite plan of management has already been formulated. Specialist out-patient services are available on consultation at the cardiac, haematological, diabetic, thyroid and surgical clinics. During all antenatal clinics, the patients have sessions in general health education from the midwives with emphasis on nutrition, regular attendance and early reporting of complications that may occur during pregnancy.

Patients are seen monthly till 28 weeks, fortnightly till 34-36 weeks and thence weekly until delivery. Where necessary a patient may be seen more frequently, or admitted according to

the need. Pelvic assessment is done at 36 weeks in all primigravidae and any patient with a history of difficult delivery. If there are doubts about the normality of the pelvis or if there has been a previous caesarean section, an erect left lateral radiological pelvimetry is done at 36 weeks. For prophylaxis of anemia all patients receive 200mg of ferrous sulphate thrice daily throughout the pregnancy, but folic acid 5mg once daily is added whenever there is evidence of anemia.

THE MANAGEMENT OF LABOUR

Admission . Patients are admitted when they report in labour as advised at the antenatal clinic. About 90% are the booked high risk patients but a smaller number is admitted as emergencies through the casualty or on referral.

The house surgeon takes full history and performs the initial examination. The patien's pubic hair is shaved, observations taken and the urine tested. Those that are in early labour receive a warm bath and enema and admitted into the labour ward. Severe pre-eclamptic and eclamptic patients are admitted into the side room of the labour ward while cold cases are admitted into the lying-in wards for further investigations and management.

THE CONDUCT OF THE FIRST STAGE OF LABOUR

If the diagnosis of labour has been made and pelvic abnormalities excluded the patient remains in the first stage room, where she is encouraged to be mobile and put on a light diet and oral fluids. A patogram is filled in for each patient which is designed to give the following details in graphic presentation, at any time during labour:

1. Time and date of onset of labour.
2. The time the membranes ruptured, and the colour of liquor.

3. The fetal heart rate every half hour (or quarter-hourly in special cases such as fetal distress, haemorrhage).
4. The descent of the fetal head into the pelvis. For this purpose the fetal head is divided into five imaginary equal parts and the fraction above the pelvic brim is recorded, for example $^{2}/_{5}$ for an engaged head.
5. The presence of caput or moulding of the fetal head.
6. The cervical dilation.
7. The number of contractions in every 10 minutes, their frequency and duration.
8. Dosage and rate of medical drugs including oxytocics.
9. Maternal blood pressure, pulse and temperature.
10. Input and output charting with specifications for proteinuria, acetonuria and glycosuria.

In normal and uncomplicated spontaneous vaginal deliveries general anaesthesia is hardly employed, but analgesia is widely given using 100-150 mg of pethidine intramuscularly or if a quick response is required 50mg pethidine intravenous and 50mg promazine either intramuscular or intravenous. Intravenous injections are done particularly slowly over 4-5 minutes. 15mg morphine intramuscular is preferred for patients in danger of shock, for example antepartum haemorrhage, postpartum haemorrhage or cardiac diseas.

Unless indicated, vaginal examination and review of patients in labour are done 3-4 hours. Vaginal examinations are done using aseptic techniques.

THE CONDUCT OF SECOND STAGE OF LABOUR

Normal vertex deliveries are conducted by midwives once full dilatation has been achieved. Delivery couches are mainly used for operative vaginal deliveries and for repair of episiotomies, otherwise the majority of the other patients are delivered on their beds in the first stage room. The midwife

scrubs and puts on a sterile gown and gloves. Delivery is conducted in the dorsal position. The vulva and perineum are cleaned with hibitane solution and then draped in with sterile towels. Full cervical dilatation and presentation are confirmed. The perineum is infiltrated with 1-2% procaine hydrochloride.

With each contraction the patient is encouraged to bear down until the fetal head crowns when a medio-lateral episiotomy is performed using Mayo's scissors. As the head descends, its flexion is maintained with the left hand while the right hand is placed on the perineum, guarding it against tear. As soon as the head is delivered, mucus and blood or liquor is wiped from the mouth with sterile gauze. The presence of a cord round the neck is checked. If a tight cord is present this is divided between two clamps.

The anterior shoulder is then delivered first then the posterior shoulder and finally the trunk and legs. The baby is received by a second midwife who transfers it to the rescucitation trolley and sucks out mucus from the throat.

The babies are given an Apgar score at one minute and then after five minutes by the midwife who receives the baby for rescucitation.

CONDUCT OF THE THIRD STAGE

At present active management of the third stage is being widely practised which now has decreased the frequency of post-partum haemorrhage and the duration of third stage has been reduced to about 5 minutes. As the head of the baby is being born an intramuscular injection of 0.5ml of syntometrine is given. The remainder of the delivery is slow and deliberate, 1 minute being taken. The cord is divided between clamps a minute after birth. The oxytocic effect of the drug occurs 2½ minutes from the time of injection, and this contraction is awaited. As it occurs, the ulnar border of the left hand is placed on the

uterus suprapubically and used to push the uterus upwards towards the umbilicus. At the same time the right hand, using the cord, pulls the placenta out of the vagina in a controlled manner. The membranes are stripped intact by drawing them out with forceps or by twisting them into a rope by rotating the placenta. If the placental is not delivered in 20 minutes, it is considered retained, and preparations made for removing it manually in theatre under anaesthesia. The placenta is examined before disposal for completeness. The midwife inspects the vulva and perineum for any injuries. The episiotomy is sutured by the house surgeon.

REPAIR OF EPISIOTOMY

Episiotomies are repaired in three layers using fine absorbable suture. The vaginal mucosa is sutured continuously. The muscle layer is repaired with interrupted sutures. The skin is then approximated by interrupted sutures, care being taken to bury the knots. The vaginal wall is then inspected to ascertain satisfactory repair, especially at the apex of the wound and that no suture has penetrated the rectal mucosa.

OPERATIVE DELIVERY

The vacuum extractor is more commonly used to assist or expedite delivery in the second stage than forceps in our unit. The patient is placed in lithotomy position and the vulva and perineum cleansed with cetrimide solution. The area is draped and bladder aseptically emptied. Vacuum extraction is usually done under local anaesthesia. General anaesthesia can be available in the delivery rooms but the practice is to perform such deliveries in the operating theatre.

LOWER UTERINE SEGMENT CAESAREAN SECTION

This department favours the lower uterine section rather than the classical section, except in few instances. The operation in cases of emergency can be performed almost as soon as the diagnosis

has been made. But in other cases the operations are elective and planned for on the previous day. On the eve of the operation the patient is starved from midnight. The abdomen and pubes are shaved and cleansed with 1% cetrimide solution. The next morning, the patient receives 0.6mg atropine sulphate intramuscular as a premedication.

In theatre the patient is catheterised aseptically. Induction is achieved with 250mg intravenous sodium thiopentone and 50-100 mg scoline gives muscle relaxation. Anaesthesia is maintained with nitrous oxide with oxygen through an endotracheal tube. Occasionally it may be necessary to use currare once the baby is delivered - the dosage is about 20-30mg.

The abdominal skin is cleansed with 0.5% hibitane solution in spirit and then draped. The surgeons in this unit prefer opening the abdomen through the lower midline incision. It is made between the umbilicus and about 1cm above the pubic bone. With a clean knife, the incision is deepened through the subcutaneous fat until the rectus sheath is visible. This is incised with a knife and then the incision is extended using a pair of scissors. The rectus abdomini muscles are bluntly separated to expose the parietal peritoneum. The peritoneum is held up between two Spencer-Wells long straight artery forceps, and by palpation it is ensured that no viscera is included. A nick is then made in the peritoneum. Under direct vision the incision is now extended using scissors.

The presence of abnormal collection of fluid is noted. Marked dextro-rotation of the uterus is corrected. A Doyen's retractor is inserted to pull down the bladder. Two abdominal parks are used to prevent the blood from contaminating the rest of the abdominal cavity and to keep the bowel away.

The loose visceral peritoneum covering the lower uterine segment is identified and incised about 2cm above the superior margin of the bladder. The incision is extended laterally using scissors. The lower flap of the peritoneum with the bladder is bluntly stripped down. Similarly, the upper peritoneal flap is mobilised.

With a knife a small transverse incision is made in the lower segment thus exposed. The incision is gradually deepened until the membranes are exposed, and then extended laterally to both sides either using fingers or a pair of curved scissors. The membranes are ruptured.

The baby's head is delivered by introducing the right hand below it and using the pubic bone as a fulcrum of a lever, the head is extracted out of the pelvis through the uterine incision. The baby's mouth and eyes are cleaned with a gauze swab. With a chin-occiput grip the shoulders and the rest of the baby is delivered. The assistant performs a quick suction of the oropharynx. The cord is divided between two clamps, and the baby handed to the attending paediatrician. With the birth of the baby the anaesthetist gives 0.5mg ergometrine. The placenta and the membranes are then removed manually.

The Doyen's retractor is used again for a better view. Two Green-Armatage clamps are used to stop bleeding at the angles of the incision. The blood is then removed from uterine cavity which is then inspected. If the cervix was not dilated before operation this is now digitally opened from above to promote drainage.

Starting at the angles the first layer of the uterine muscle is repaired with No. 2 chromic catgut in a continuous stitch. The second layer is also continuous but is done in such a manner as to bury the first layer and to ensure adequate haemostasis. The visceral peritoneum is now repaired with No. 1 catgut, care being taken not to injure the bladder.

Once haemostasis has been established the packs are removed, the abdomen cleansed of blood and instruments and swabs counted. The parietal peritoneum is now repaired in a continuous stitch with catgut No. 1, taking care not to injure the viscera and the bladder. The rectal sheath is repaired with No. 2 continuous catgut stitch on a cutting needle. The skin is then closed with

interrupted silk sutures. The wound is cleansed with hibitane solution, dried and covered with a dry dressing. The general anaesthesia is reversed with 1.2mg atropine intravenously and 2.5mg prostigmine. The endotracheal tube is removed when the patient regains consciousness using a sucker to keep the airway clear.

POST OPERATIVE CARE

Until the patient is fully recovered, a nurse remains with her, who monitors blood pressure, pulse and respiration rate every 10 minutes. Intravenous fluids are given as 5% dextrose with normal saline for the first 24 hours or until bowel activity is normalised. Analgesia is achieved by giving 100mg pethidine intramuscularly 6 hourly for the first 24 hours. Antibiotics are not used routinely, but early ambulation is a routine.

BLOOD LOSS AND REPLACEMENT

The blood loss is estimated by the amount of blood in the suction bottle and by counting the saturated swabs and gauze. A gauze swab is estimated to contain about 20ml of blood, while a big abdominal pack about 150ml. If the loss seems to exceed 1000ml, replacement is given. Haemoglobin is checked routinely on the third post operative day.

PUERPERIUM

The management of the patient in the postnatal period depends on the mode of delivery.

VAGINAL DELIVERY

The patients are kept in the labour ward for 1-2 hours after delivery. If the general condition is satisfactory and there is no vaginal bleeding, and the perineum has been repaired, they are transferred to the lying-in wards. Ambulation is encouraged about 8-10 hours after delivery. Frequent perineal lavage is

advised. All patients receive iron. Because of inadequate bed space, most normal deliveries are discharged about 24 hours after delivery. Operative vaginal deliveries are retained for 72 hours. Post-natal exercises are encouraged.

CAESAREAN SECTION

Early ambulation is particularly essential for these patients to combat postpartum complications such as chest infection and thromboembolism. There are physiotherapists attached to this unit to care for these patients. If no post-operative complications are present haemoglobin is checked on the third day. The skin stitches are removed on the seventh day and patients are discharged on the eighth day. They are given a summary letter which details the reason for operation, the operative procedure and post operative period, with the recommendation for management of next pregnancy where necessary. All patients are fully examined before discharge.

TUBAL LIGATION

Puerperal sterilisation is popular in our unit and there are about 15 patients every week. The procedure is carried out on multiparous patients who request it, or on those patients where medical indications are present. It is usually an elective procedure and carried out any time postpartum depending on the condition of the patient.

PROCEDURE

Because the puerperal uterus is high, a small incision about 3 to 5cm below the umbilicus is preferred. The abdomen is opened in layers. The Fallopian tubes are identified and drawn up with dissecting forceps. With the help of Spencer-Wells forceps a loop of the tube is crushed, clamped, ligated and excised. Both the distal and the proximal ends are tied separately using catgut No. 2. Haemostasis is enhanced by tying both ends together.

The procedure is repeated on the other side. The haemostasis is checked, instruments and swabs counted, and the abdomen closed in layers. The sections of Fallopian tubes are sent for histological examinations. The post-operative period is managed as for caesarean section.

THE BABIES

Normal babies stay with mothers and breast feeding is encouraged. Usually they are discharged after 24 hours, but not until they have been seen by a paediatrician. All other babies especially those with low birth weight or any other reason for special care are admitted into the intensive care neonatal unit. Tube feeding is preferred until the weight is about 1600gm, and then they are changed to bottle or breast feeding. Expressed breast milk is widely used.

POST NATAL VISIT

At the post natal visit on the sixth Friday after delivery family planning consultation is offered. The patient's urinalysis is done. Blood pressure and pulse are recorded. Then a brief enquiry of her progress since delivery is made. The patient is examined for anemia or any systemic illness. The pelvic organs are examined and a Papanicolaou smear taken. The babies are seen at the adjacent child welfare clinic.

I. MEDICAL DISEASES IN PREGNANCY

CARDIAC DISEASE IN PREGNANCY:

MITRAL INCOMPETENCE

MITRAL STENOSIS AND AORTIC INCOMPETENCE

NORMAL DELIVERY

NAME: ROSE MBALUTO

NO. OBS 43/76

AGE: 30 years

TRIBE: KAMBA

PARITY: 1 + 0

ADMITTED: 5.1.76

DELIVERED: 14.4.76

DISCHARGED: 21.4.76

PAST MEDICAL HISTORY

Has been a known case of cardiac disease since 1965. Regularly attending Special Cardiac Clinic at Kenyatta National Hospital. Had been hospitalised several times before in medical wards of this hospital with heart problem, and attended as out-patient on maintainance doses of digoxin, lasix and potassium supplement.

SOCIAL HISTORY

Educated up to Form IV. A typist employed by the Ministry of Labour. Married to a Legal adviser. Lives in Nairobi with her husband.

PAST GYNAECOLOGICAL/OBSTETRICAL HISTORY

She had her first period at the age of 14 years. For the first 3 years they were irregular, but once monthly lasting 3-6 days. Later a regular cycle of 4 days of bleeding every 28 days established itself. Her periods were not painful, of moderate flow.

In 1971 at Aga Khan Hospital she delivered a full-term baby after prolonged labour. This baby was not weighed and died a few hours later of an unspecified cause. For a long time she did not get pregnant, and for this reason she had a Diagnostic curettage done at Mater Hospital in April 1975. Her periods continued monthly but she does not remember if they were regular or not.

HISTORY OF PRESENT PREGNANCY

She did not remember the date of her last period, but it was in July after the diagnostic curettage. Hence the expected month of delivery was April 1976. She was first seen at our ante-natal clinic on 19.12.75 when the uterine size was about 24 weeks. She was well and could walk, and do some work without apparent cardiac decompensation. But on her next visit at about 28 weeks of gestation, she had tachycardia of 100 beats/minute, dyspnoe on minimal effort and marked pitting ankle oedema, and was therefore admitted for bed rest and furthe r investigations.

PHYSICAL EXAMINATION

She was a middle-aged woman of good build. She was not anemic but was dyspnoeic at rest, with marked pitting oedema of both feet. She was a febrile and her upper respiratory tract was clear. She had no jaundice, no tremor and no finger clubbing. She was 5 feet tall, and weighed 61 kilograms. Her breasts were healthy and active. No lymphodenopathy observed. She was not cyanotic.

CARDIOVASCULAR SYSTEM

Pulse: 100 beats/minute, regular, of moderate volume.

Blood pressure: 100/60 mm. Hg.

Jugular Venous Pressure: not raised.

Apex Beat: Sixth Intercostal space about 2 cm lateral to the mid clavicular line.

Heart sounds: A loud first Heart sound at the Apex.
Loud Second Heart sound at Pulmonary Artery area.

Murmurs: Pansystolic murmur at the Apex radiating to the Axillar.
Presystolic murmur at the Pulmonary artery area, and a diastolic murmur at the II Intercostal space.

RESPIRATORY SYSTEM

At rest patient was not dyspnoeic and respiratory rate was 18 excursions per minute. But after minimal exertion she experienced apparent, though mild dyspnoea, respiratory rate increased to 24 excursions every minute. There were neither chest wall deformities, nor enlarged veins on chest. Chest was symmetrical, air entry satisfactory, and trachea central. The lung fields were clear.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. Uterine size was 28–30 weeks. The lie was longitudinal, presenting by the head. There were no contractions recorded. The Foetal Heart sounds were heard clearly, 144 beats/minute. Neither the liver nor the spleen were palpable. No other masses nor fluid were found in the abdomen.

DIAGNOSIS

A diagnosis of Mitral Incompetence, Mitral Stenosis and Aortic Incompetence in pregnancy due to Rheumatic Heart Disease with Grade III disability was made.

FURTHER INVESTIGATIONS

Haemoglobin:		11.0 g%
PCV	:	29.9%
M.C.H.C.	:	36.8%
Blood film:		Slight anysocytosis, slight microcytosis, slightly hypochromic. No malaria parasites found.
W.B.C.	:	6000/cu.mm. Normal Differential count.
Kahn Test	:	Negative
Blood urea	:	16 mg %
Na^+	:	138 mEq./Litre
K^+	:	4.6 mEq./Litre
Cl^-	:	110 mEq./litre
HCO_3^-	:	23 mEq./Litre

Urine : No abnormal deposits found on microscopy; no growth obtained on culture.

E.C.G. : Sinus Rythm, with tachycardia 110 beats/minute. PR = 0.18; QRS = 0.10; QT = 0.28. Axis 75°. Left Ventricular Hypertrophy and strain. Probable Right Ventricular Hypertrophy.

X-ray Pelvimetry:
Average gynaecoid pelvis with a True Conjugate of 10.5 cm, roomy mid-pelvis and outlet, but with slightly straightened-out sacrum. The head not engaged but at the brim.

MANAGEMENT

This consisted of immediate arrest of the encroaching cardiac decompensation and correction of the mild hypochromic anemia. Bed rest in hospital was therefore recommended for the larger part of the remaining duration of pregnancy. As she had already been on digitalis before admission, a maintainance dose of digoxin 0.25 mg daily with Lasix 40 mg. twice daily and Potassium supplements in the form of slow-release potassium 600 mg once daily was instituted. This regimen was drawn up in conjunction with the opinion of a cardiologist, who reviewed the patient from time to time. She also received oral ferrous sulphate 200 mg thrice daily.

The patient improved on this regime so that after three weeks in the hospital she could climb the stairs to the 1st floor of the building without discomfort. The heart rate was usually 80 beats/minute, the oedema had subsided. The haemoglobin was 12.1 g% with the film showing normocytic and normochromic cells. Her condition remained stable so that she was twice allowed to visit her family at home. The pregnancy progressed satisfactorily. Decision was taken to allow vaginal delivery but assisted in the Second Stage with vacuum extraction so that she may not be subjected to much physical exertion, which might easily precipitate cardiac failure. Bed rest continued till 12.4.76 when she went into spontaneous labour.

SPONTANEOUS VERTEX DELIVERY

The patient was admitted to the Labour Ward at 7.15 a.m. on 12.4.76. She was neigher bleeding nor draining liquor. Parameters

indicating her cardiac status were satisfactory and she was not in cardiac failure. The uterine size was about 38 weeks, the baby lying longitudinally with cephalic presentation, and 4/5 of the head being palpable above the brim. There were mild uterine contractions:about 3–4 contractions every 10 minutes, each lasting about 30 seconds. The foetal heart rate was 136/Minute, regular. On vaginal examination no blood or liquor was found. The cervix was fully taken up and 3 cm. dilated, with the membranes intact. There was no cord presenting. The pelvis was gynaecoid, of average size and, hence, labour was allowed to continue. Spontaneous rupture of membranes occurred at 9.00 a.m. The head was at the brim but not engaged. Vaginal examination showed slightly yellowish liquor with occassional specks of mecomium. The certix was 4 cm. dilated, no cord was presenting. The foetal heart rate was still 136/minute, regular. Blood was taken for grouping and cross-matching at this stage. The patient progressed rapidly to full dilation at 10.55 a.m. Preparations were made to assist the Second Stage by vacuum extraction, but before this could be done, the patient had an easy spontaenous vertex delivery after a left medio-lateral episiotomy.was performed. The baby was a female which cried immediately, Apgar score was 10 at one minute, and 10 at 10 minutes. Birth weight was 2270 gm. 5 minutes later the placenta separated, and it was delivered by controlled cord traction; it weighed 460 gm, was complete with complete membranes. Total blood loss was about 100 cc. No routine ergometrine was given in this case. The episiotomy was immediately repaired with three layers of catgut.

Duration of First Stage : 4 hrs 45 minutes
Duration of Second Stage: 10 minutes
Duration of Third Stage : 5 minutes

PUERPERIUM

The patient was propped up in bed after delivery. The pulse, respiratory rate and blood pressure remained stable. There was no evidence of pulmonary oedema, but she was slightly restless and anxious. Morphine 15 mg intramascular was prescribed. Close

observations continued in the Labour Ward for the first 24 hours, after which period, the patient was transferred to her ward. She received digoxin 0.25 mg, Lasix 40 mg and slow K 600 mg once daily. She was well without complications and remained in the ward for one week post-partum. On 21.4.77 she demanded to go home. She was therefore, released on the above treatment. The policy would have been to continue bed rest for 3-4 weeks after delivery. She was asked to return to the post-natal clinic in 6 weeks, and to the Cardiac Clinic in the following week. Unfortunately she did not return to either clinic. The question of family planning had been discussed with her but she did not show any interest.

COMMENTARY

The slowly progressive nature of most forms of cardiac disease reduces the life expectancy of the patient and each pregnancy places an additional strain on the heart. It is the duty of the obstetrical care to minimise the effects of this strain and to prevent any reduction of cardiac reserve due to pregnancy. In the Western countries between 1 and 3% of pregnant women have heart disease, whilst the incident in Africa, Australia and South Asia is lower ranging from 0.5 to 1% (Derek Llewellyn-Jones, 1969). In this hospital the incidence is 0.5% (Prof. J.K. Mati, personal communication).

In most of our pregnant cardiac patients the aetiological factor is rheumatic heart disease, other causes being congenital heart disease, hypertension, severe anemia, ischaemia or cardiomyopathy and thyrotoxicosis (Ojiambo, 1969).

The assessment of the dangers of childbearing in the individual cases is based on the evaluation of two basic entities, namely the total physiological load of the pregnancy and the cardiac reserve. Owing to the hormonal alteration of pregnancy, there is a peripheral resistance, fall, an increase of blood volume and of cardiac output. The total blood volume rises until about 35 weeks by 40% due mainly to an increase of plasma volume and in lesser proportions to the increase in red cells. This results in haemodilution. The result of this is to increase the workload of the heart both by a rise in pulse rate and in stroke-volume - the parameters that measure the cardiac output. Lees et al.(1967) showed that the maximum cardiac output was attained at the first trimester, with only slight and variable changes thereafter. The maximum output was an increase of between 30 and 40% over non-pregnant levels. The authors suggested that the early dramatic increase in cardiac output might be due to the increased production of ovarian and placental steroids. The pulse rate goes up by about 10 beats per minute at rest (Rovinsky and Javin, 1966). The oxygen consumption is increased during pregnancy but respiratory excursion is impaired in the later weeks of pregnancy. The

respiratory rate increases and dyspnoea, even on mild exertion, is a normal finding in pregnancy.

For the purpose of grading the severity of heart disease in pregnancy, in other words, the cardiac reserve, this hospital uses the classification of the New York Heart Association (1964), and our patient had grade III disability, that is, the group of patients with marked limitation of activity, symptoms arising with minimal exertion. Irrespective of the anatomical lesion, the efficiency of the heart as a pump will depend on the ability of the myocardium to force oxygenated blood through the arterial tree. The functional capability of the heart is most important in determining how the patient will fare in pregnancy. Most patients are in grades I and II and although the burden of pregnancy may place the patient in a higher class, in general this can be avoided by careful attention from early pregnancy. Certain additional factors predispose to deterioration in cardiac function, for instance, increasing age of the patient, the presence of cardiac arrythmias, marked left ventricular hypertrophy, a history of previous heart failure and anemia.Careful supervision throughout pregnancy is necessary to detect early any deterioration in the symptoms or grading of the patient.

Our patient would have been admitted at 28 weeks for bed rest and investigations but as she developed symptoms early at 25–26 weeks she was admitted. It was necessary to see that our patient did not develop anemia. Intercurrent infection was detected early, and treated. Bed rest and digitalisation were necessary.

During labour the cardiac output rises by 40% due to an increase in the stroke volume by the end of the second stage of labour (Kerr, 1968). Therefore, it was intended to shorten the second/with vacuum extraction. A further rise in cardiac output occurs after delivery, associated with an increase in the stroke volume (Kerr, 1968) and an increase in blood volume after the closure of the uteroplacental shunt. Posture and administration

of ergometrine may aggravate the haemodynamic changes at this stage and therefore the patient was propped up and ergometrine was withheld. If profuse haemorrhage had necessited the use of oxytocics, syntocinon by intramuscular route would have been contemplated. After delivery careful observation continued for congestive cardiac, failure, and pulmonary oedema as this is thought to be the most critical time of the pregnancy.

The question of prophylactic antibiotics postpartum seems still unresolved and the policy in this hospital is to give antibiotics only when infection has been detected. Therefore, our patient did not receive any postpartum.

The patients are usually kept for 2-3 weeks postpartum in order to observe the development of the cardiac status, monitor any infection, and check for anemia. Our patient however had social problem at home and demanded to be released before the end of this period. Pregnancy has no permanently damaging effect upon the cardiac function provided it is properly supervised and the hazard of cardiac failure avoided (Derek Llewellyn-Jones, 1969). However, each new pregnancy requires attention and since cardiac disease is progressive, a big family may impose an additional strain on the heart and shorten the patient's life. Our patient was therefore requested to either limit her family to 2 children, or if she wanted a further pregnancy to space them. Unfortunately she did not show any interest in this.

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A N E M I A I N P R E G N A N C Y: PREMATURE LABOUR

NAME: LUCIA KILONZI

OBS NO.: 1295/78

AGE: 20 years

PARITY: 1 + 0

LMP: 10.9.77

EDD: 17.6.78

PAST MEDICAL AND OBSTETRIC HISTORY

She was married to a labourer at the age of 17 years. The same year she delivered stillbirth at home at 8 months gestation. After the delivery she became so weak and ill that she was taken to Kitui district Hospital. At home the placenta had been delivered normally after the delivery of the baby and the blood loss was not excessive. At the hospital she received tablets, and one pint of blood. After this she was well and discharged home on further treatment.

PRESENT PREGNANCY

LMP 10.9.77

EDD 17.6.78

She said she had attended antenatal clinic at Kitui for 3 occasions from about 20 weeks. No abnormality had been detected according to her. She had come to visit her husband who works in Nairobi and then fell ill. She was then admitted to this hospital through the casualty on 4.4.78 at the gestation of 29-30 weeks at 6.00 p.m.

PRESENT COMPLAINTS

On admission she complained of a dry cough with headaches for four days, swelling of legs and dyspnoea on exertion of one week duration, general malaise. She was neither bleeding nor draining liquor and was not in labour.

PHYSICAL EXAMINATION

This was a young lady of 4 feet 11 inches. She was markedly pale, no obvious jaundice but with marked pitting ankle oedema. Body temperature was 37.5°C.

CARDIOVASCULAR SYSTEM

Jugular vein pressure was not raised. The pulse was 120 per minute, reduced volume but regular. Blood pressure was 120/80 mm Hg. Cardiac enlargement could not be ascertained clinically but there was an injection systolic murmur at the apex radiating to the left and to the neck. The first and second sounds were normal at the other areas.

RESPIRATORY SYSTEM

The chest was clear on both sides. Air entry good. But the patient was slightly dyspnoic at rest with a respiration rate of 22 per minute.

ABDOMINAL EXAMINATION

The spleen was palpable about 3 cm below the subcostal margin. The liver was not palpable, and there was no free fluid in the abdominal cavity. The uterine size was 28-30 weeks. Fetal movements were felt. The fetus was in longitudinal lie, cephalic presentation and free above the pelvic.brim. The fetal heart was heard clearly near the umbilicus, 144 per minute. There were no contractions.

DIAGNOSIS

A diagnosis of severe anemia with early congestive cardiac failure in pregnancy was made. Malaria was suspected. It was planned to give her diuretics, and transfusion of packed cells. Blood films were to be examined for malaria parasites before she received antimalarial treatment. The relevant specimen were immediately taken and blood was crossmatched.

MANAGEMENT

On the next morning laboratory report was received. The haemoglobin was 4.1% with a haematocrit of 12.5%, the blood

Hb g%	Hct %	RBCx10^6	WBCx10^3	82-92 MCV μm^3	27-31 MCH mmg	32-36 MCHC %	Retics
4.1	12.5	1.09	9.7	120	38.0	31.3	14%

film showed megaloblastic erythrocytes and plenty of plasmodium falciparum. By this time the patient had received 600 mg of base of chloroquine phosphate, 40 mg intravenous injection of frusemide and had become less dyspnoic while her body temperature has returned to 36.8°C. There was a plan to transfuse 500 ml of packed cells over a period of not less than 12 hours but blood was not readily available from the blood bank. Blood was taken for haemoglobin electrophoresis, sickling test, serum bilirubin and for urea and electrolytes. Stools were sent for ova and cysts. Blood for transfusion was obtained on 5.4.78 and 30 minutes prior to transfusion she received 40 mg frusemide intravenously. She received 500 cc of packed cells over a period of 12 hours. During the period of transfusion the pulse remained at 90 per minute, the temperature was 36.4°C with a respiration rate of 20 per minute and blood pressure of 110/70. Her general condition remained satisfactory.

Soon after blood transfusion she went into spontaneous labour which lasted for about 3 hours. She delivered a live male infant weighing 1650 gm. She received 1 ml of syntometrine intramuscularly, and the placenta was delivered by controlled cord traction. Blood loss was negligible.

Duration of first stage of labour 3 hours
Duration of second stage of labour 10 minutes
Duration of third stage of labour 5 minutes
Blood loss - Negligible
Post-delivery observations:
Blood pressure 110/70 mm Hg.
Pulse 90 per minute
Respiratory rate 20 per minute
Body temperature 37°C.

THE BABY

This was a male baby delivered in satisfactory condition. The Apgar score at 1 minute was 7 and at 5 minutes was 10. It was taken to the intensive care nursery for observations and management. By clinical assessment it was found to be of the gestation age 30-32 weeks and appropriate for the

gestation age. Vitamin K was given parentrally, warmth was provided in the incubator and tube feeding was started in the second hour of life with 15 ml of full-strength lactogen. The baby had no problems until day 4 when it developed jaundice (total bilirubin 5 mg %), laboured breath with grunting, abdominal distension. Neonatal sepsis was suspected and the baby was started on 50,000 units of crystalline penicillin 8 hourly and 2.5 mg gentanycin 12 hourly both parentrally. Tube feeding was stopped and nasogastric suction started and normal saline with dextrose given intravenously. In spite of the measures, the condition deteriorated and the baby died at 10.30 p.m. on Day 4. The parents did not allow postmortem examination of the body.

THE PLACENTA

The placenta with the membranes was complete. There were no macroscopic infarcts or any other abnormalities. There was no rhetroplacentral clot. Unfortunately the histological examination was not carried out. The placenta weighed 370 gm.

PUERPERIUM

The general condition of the mother did not change after delivery. She remained in the delivery room for 4 hours while she was carefully observed. When ascertained that she was well she returned to the ward. The next morning another 500 ml of packed cells was transfused under cover of 40 mg. frusemide, the chloroquine therapy was continued. By the fourth day after delivery the haemoglobin was 8.6 mg % and the haematocrit was 26%. She was discharged on folic acid and ferrous sulphate. She did not come to our post-natal clinic.

INVESTIGATIONS

Blood slides	:	Scanty Plasimodium falciparum
Haemoglobin	:	8.6 g %
PCV	:	26%
Peripheral film	:	Megaloblastic erythrocytes present. Anisocytosis and poikilocytosis present. Normochromic

Reticulocytes	:	14%
Sickling test	:	Negative
Hb electrophoresis	:	AA
Blood group .	:	O Rh Positive
Total Bilirubin	:	2.8 mg % (Normal 0.1 - 1.0)
Conjugated bilirubin	:	1.8 mg %
Blood urea	:	14 mg %
Electrolytes	:	No abnormalities
MSSU	:	No culture. Albumin trace.

2

COMMENTARY

In the tropics generally anemia is one of the commonest disorders (Woodruff, 1962), and anemia in pregnancy is the second greatest single problem met with in obstetrics in Kenya (Gebbie, D.A.M.). In a study of patients admitted to the maternity unit of the Kenyatta National Hospital, Mati et al. (1971) found that one out of every 23 patients had anemia. By itself it is a cause of maternal death. Equally important is its role as a contributory factor to maternal mortality and morbidity. In Kenya three basic factors contribute either by themselves or in combination in most cases of anemia. The commonest is probably Iron Imbalance. As estimated in 1952 80% of the population of Kenya is iron deficient (Foy, Kondi and Hargreaves). But the most important, because it causes most of the fatalities, is the haemolytic anemia of malaria, and the third is folic acid imbalance.

The patient presented here is a young Kamba woman born, brought up and living in a holoendemic area (Mati et al.1971) where according to Lawson, stable malaria through repeated antigenic stimulation by constant infection sustains considerable immunity from the age of 7 years and epidemics are rare. Immunity to malaria is produced in human body by a complex interplay of both cellular activity and humoral factors. The fixed reticulo-endothelial macrophages, and those that develop from lymphocytes and are free in circulation destroy the parasites by phagocytosis. Parasitaemia provokes the production of specific antibodies in the lgG and lgM group that account for the humoral immunity to the erythrocytic phase.

But acquired immunity to malaria is precarious and may break down under conditions of stress, particularly the stress of pregnancy. The case presented here illustrates this view as there were experiences of malarial attacks during the two pregnancies while a fair state of health existed in between them. Clinical manifestations of malaria in immune communities become important in pregnancy when the ability to control parasitaemia is

reduced. Consequently, dormant exo-erythrocytic infections may relapse during pregnancy and those who may hardly notice the effects of their intermittent parasitaemia when not pregnant may again experience febrile attacks with constitutional disturbances. This patient lives in Kitui most of the times and only briefly in occasions visits her husband in Nairobi. The reason why immunity in a patient living with constant antigenic stimulation should wane is not clear,but Lawson postulates that the unusually greater demands for proteins in pregnancy may alter metabolic channels so that, if the dietary intake is inadequate, protein is withdrawn from the immunity system.

A bone marrow investigation was not done in this patient but the presence of parasites and reticulocytosis in the peripheral blood film, the raised bilirubin level and enlarged spleen indicate that there was a haemolytic process. But the absence of clinical jaundice shows that the haemolysis was not as such severe as to cause anemia of this magnitude (Hb.4.1 g%, PCV 12.5%). The explanation may be that parasites produce antigen substances which coat parasitised as well as unparasitised cells. Host produces antimalarial antibodies and when these unite with antigens on the red cells, the latter are destroyed through lysis or erthrophagocytosis. In other words, anemia in malaria is due to auto-immune process, and is severe especially in young patients with low parity (Mati et al. 1971).

The severity in this case called for urgent management of impeding cardiac failure and improvement of anemia. In this unit, if overt congestive cardiac failure presents, digitalisation in combination with diuretics is instituted. Bed rest with diuretics seem to have improved the condition of our patient.

Analysis of severe pregnancy anemias in Ibadan in 1955-7 showed that all maternal deaths occurred if the haematocrit was below 14%,. The aim in these cases, therefore, is to raise the PCV above 17% (Fullerton and Turner, 1962). To prevent cardiac failure the circulating red cells mass should be increased while at the same time reducing the circulating blood volume. When these

precautions were not taken the maternal mortality in Ibadan was 20%. In this unit the preference is to transfuse packed cells over a long period under the cover of diuretics, so long as the patient's condition remains satisfactory as was done in this patient.

The megaloblastosis in this patient was not incidental.. As Mati et al found out (1971) 42.8% of their patients had megaloblastic erythropoiesis. The explanation is that since folic acid is necessary for the formation of purines from amino acids for the desoxyribonucleic acid, fetal growth causes an increased folic acid demand for the rapidly dividing cells on the one hand, while on the other, haemolytic processes cause increased demand in the consequently hyperactive bone marrow. Folic acid inadequacy so caused is the reason for dimorphism in malarial haemolytic anemia. Therefore, besides transfusion, our patient required ferrous sulphate with folic acid and antimalarial treatment for at least 6 weeks postpartum and during subsequent pregnancies.

The outcome of pregnancy in malaria is unfavourable as in our patient. Maternal pyrexia may activate the uterus and cause abortion or premature labour, or inrauterine death. Gurnharm (1949) working among Luos found that malaria was the causative factor in 13% of abortions and 1.8% of stillbirths.

McLaren and Ward (1962) examined 400 smears from the maternal side of the placenta and 21.5% of them had malarial parasites of which 82.6% was plasimodium falciparum. The placenta frequently contained many schizonts even if none were found in maternal circulation. Placental infection causes a cellular reaction which is proportional to the degree of parasitasion. The effect of this is to interfere with the circulation of maternal blood through the intervillous spaces, which impairs the fetal growth (Lawson), and probably oxygenation also, thus contributing to perinatal loss from antepartum and intrapartum asphyxia.

The baby in this case died neonatally probably from septicaemia. Unfortunately it was not secreened for malaria. Covell (1950) comprehensively summarised evidence in support of the idea that

congenital malaria occurs though the mechanism is unknown. However, after careful studies on Nigerian Women Madecki and Kretschmar (1966) concluded that in most cases of apparently congenital malaria, the babies are infected during parturition, and thus the infection is connatal rather than congenital. Edington (1967) states that congenital malaria does not occur, and that the neonate in Nigeria does not contract malaria. Passive immunity can be passed through breast milk of immune mothers, or may be a consequence of the deficiency in para-aminobenzoic acid which is a known feature of milk. Para-aminobenzoic acid is necessary for the full metabolism of the parasites (probably of the erythrocytic stages), and deficiency therefore inhibits them. Perhaps both factors are involved (Manson-Bahr, P.E.C.).

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DIABETES IN PREGNANCY

INDUCTION OF LABOUR

NAME: EUNICE KURIA

OBS NO: 775/77

AGE: 23 YEARS

PARITY: 2 + 0

ADMITTED: 15.3.77

DISCHARGED: 28.4.77

PRESENT PREGNANCY

L.M.P. 29.7.76

E.D.D. 5.5.77

She was not seen at the antenatal clinic until 26 weeks. Her urine showed glycosuri (++) but no albuminuria. Blood pressure was 110/60 mm Hg. She had no oedema. The uterine size corresponded to the duration of the pregnancy. At this first visit blood was taken for haemoglobin estimation, Kahn test and random blood sugar. The insulin was increased to 25 units of Insulin Lente. She was seen again at 33 weeks. Her urine contained sugar (+++) and ketones (++). She was then admitted into the ward for a better control. She was admitted on 15.3.77 at 33 weeks.

SOCIAL HISTORY

She is married to a superintendent of the police. She is educated to the secondary level and works as a typist. They live in Nairobi.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She could not remember when she had her first menstrual period, but said that they became regular during the first year. Prior to this pregnancy the cycle was 28 days and the bleeding lasting for 4 days. The flow was not heavy and she had no pains.

1970 she delivered a term baby in a Mombasa hospital. The baby was female weighing 6½lb. In 1973 she delivered in this hospital a female baby weighing 6½lb. This was by induction due to her diabetic condition at about 38 weeks. Following this delivery she used Lippes loop inserted in a private clinic until May 1976 when it was removed because she wanted to get another baby. During the time she was on contraception she had no problems at all.

PAST MEDICAL HISTORY

She was a known case of diabetes since 1973 and had initially attended the diabetic clinic in this hospital, but later preferred a private clinic. She had been on 20 units of Lente Insulin for some years and said that her urine had been negative until the middle of this pregnancy when she observed the presence of sugar in the urine. She was then advised at her clinic to attend antenatal clinic in this hospital. There was no history of other illness in herself or the immediate relatives.

ADMISSION

She complained of slight ankle oedema especially towards the end of each day.

PHYSICAL EXAMINATION

This was a young lady of 5 feet. She was not dehydrated nor pale. She was afebrile. Her urine showed glycosuria (+++) and ketonuria (++), but no albuminuria.

CARDIOVASCULAR SYSTEM

Pulse: 80 per minute, regular.

Blood pressure: 110/60 mm Hg.

Heart: Essentially normal.

RESPIRATORY SYSTEM

No obvious abnormalities detected.

ABDOMINAL EXAMINATION

The uterine size was about 32-34 weeks and corresponded with the duration of pregnancy. The fetus was longitudinal with cephalic presentation and the fetal heart was present at the rate of 138 per minute. There was no hydramnios.

DIAGNOSIS

This was a poorly controlled diabetes at 33 weeks of gestation. She was admitted for investigations and stabilisation. Serial blood specimen were collected on this day for a period of 24 hours and when the results were available the insulin lente was changed to 20 units of soluble insulin at 6 p.m. and at 6 a.m.

SERIAL BLOOD SUGAR LEVELS 15.3.77

(MEDICATION: LENTE INSULIN 20 UNITS)

TIME	BLOOD GLUCOSE	GLYCOSURIA	KETONURIA
6 AM	127 mg%	++	+++
MIDDAY	195 mg%	+++	+++
9 PM	127 mg%	+++	++
MIDNIGHT	100 mg%	+	+

SERIAL BLOOD SUGAR LEVELS 30.3.77

(MEDICATION: 20 UNITS SOL. INSULIN 12 HOURLY)

TIME	BLOOD GLUCOSE	GLYCOSURIA	KETONURIA
6 AM	100 mg %	NIL	NIL
MIDDAY	65 mg%	NIL	NIL
6 PM	110 mg%	+	NIL
MIDNIGHT	95 mg%	NIL	NIL

Insulin dosage after these results were obtained was deemed satisfactory and the patient was maintained on this dosage until 36 weeks. At the time she was having dizziness, headaches and sweating. The insuline dosage was not altered but she was advised to have early lunch. After this she did not have any more problems. The haemoglobin was found to be 9.7g% with a haemotocrit of 30.2%. The blood slides for malaria were negative. She was treated with ferrous sulphate 200mg thrice daily and folic acid 5mg once daily. This improved her haemoglobin to 10.8g% and Haematocrit to 32.9% at 36 weeks gestation. This treatment was continued until the end of the pregnancy. Repeated midstream urine specimen was collected but there was no bacteriuria. The plan was to deliver her about the thirty-seventh week by surgical induction of labour but not until the surfactant test was positive. Amniocentesis was performed on 12.4.77 at 37 weeks but this was negative in 1:1 and 1:2 dilutions. Delivery was delayed for a week and amniocentesis was repeated on 19.4.77. The liquor was clear and the shake test as described elsewhere was positive in 1:1 dilution and showed ½ ring in 1:2 dilution. Induction of labour was undertaken the same day.

THE SURFACTANT TEST

DATE	SHAKE TEST	L/S RATIO
12.4.77	1:1 - NEG 1:2 - NEG	1.732
19.4.77	1:1 - POSIT. 1:2 - ½ RING	2.184

INDUCTION OF LABOUR

On 19.4.77 the patient had a soap enema and then she was transferred to the labour ward. The pelvis was assessed both for inducability rating in Bishop's method, and for the size. The diagonal conjugate was estimated at over 12cm with a well

curved sacral arch. The ischial spines were not prominent and the outlet was satisfactory. This was considered a favourable gynaecoid pelvis. The presenting head was above the pelvic brim in a flexed occipito-anterior position. The cervix was soft, about 30-40% effaced and 3cm dilated. Using Kocher's forceps a low amniotomy was performed and about 150ml of clear liquor was drained. This was done at 11 a.m. and one hour later 5 units of syntocinon in 1000ml of 5% dextrose was started at 10 drops per minute to escalate by 10 drops per minute every 15 minutes. As is usual with all cases of induction in our unit, blood was cross-matched for her and observations were to be carried out every 15 minutes especially when the contractions have started. The level of glucose in her venous blood was

PELVIC SCORE BY BISHOP'S METHOD

FACTOR	OBSERVATION	SCORE
DILATATION	3cm	2
EFFACEMENT	40%	1
STATION	ABOVE BRIM	0
CONSISTENCY	SOFT	2
POSITION	ANTERIOR	2

TOTAL SCORE = 7

FAVOURABLE FOR INDUCTION

tested every hour by the "Dextrostix" method. During induction she did not require any extra insulin and received only her morning and evening dose as prescribed.

At one o'clock that afternoon she was having only mild contractions but by 3 p.m. (4 hours after amniotomy) there were 3 contractions every 10 minutes each lasting 30 seconds. The fetal heart rate was 150 beats per minute and regular. The head was 4/5 above the pelvic brim. Vaginal examination showed a thin fully effaced cervix about 4cm dilated. The liquor was

clear. The maternal condition was satisfactory with a pulse rate of 80 per minute, blood pressure of 110/60 mm Hg. At 6 p.m. the syntocinon was running at 50 drops per minute (no further escalation was necessary). The contractions were fairly strong now, 3-4 in 10 minutes and each lasting for 45 seconds. The head was now engaged and only about 1/5 remained above the pelvic brim. The cervix was 8cm dilated, thin and well applied to the head. There was no caput nor excessive moulding of the fetal head and the liquor remained clear. The patient received her evening dose of 20 units soluble insulin.

Labour progressed rapidly so that at 8 p.m. she had an easy spontaneous vertex delivery of a female infant in satisfactory condition. The placenta was delivered by maternal effort. 1ml of syntometrine was given at the end of the second stage.

Duration of the first stage of labour 6 hours
Duration of the second stage of labour 5 minutes
Duration of the third stage of labour 5 minutes
Total blood loss 400ml.

The placenta weighed 750gm and was complete. The membranes were ragged. There were no macroscopic abnormalities detected.

THE BABY

This was a female infant delivered in fair condition. The Apgar score was 8 at 1 minute and 10 at 5 minutes. Only suction of mucus from the oropharynx was done and no further resuscitation measures were necessary. The birth weight was 3640gm. By clinical assessment the gestation was estimated as 37 weeks. It was mildly plethoric and no congenital abnormalities were detected. The blood sugar by Dextrostix was 25mg% at the age of one hour. Intravenous infusion of 10% dextrose was started so that the child received 65cc per kg body weight per day. The next morning at 7 a.m. the blood sugar by Dextrostix was 45-90 mg%. Feeds by full strength Lactogen had been started at 2 hours

age, starting with 65ml and increasing by 2-5cc every other feed at 3 hour's interval. The patenteral glucose infusion was necessary only for the first 24 hours and during this time the aim of maintaing the serum sugar at 45-90mg% was achieved. The baby was discharged to the mother after 3 days in the nursery. At discharge from nursery the blood sugar was 80mg%. The baby did not have any respiratory problems or high bilirubineamia.

PUERPERIUM

After delivery the mother did not have any problems. A 6-hourly urinalysis did not show glycosuria. After 24 hours she was put back on 20 units of Lente insulin once daily and she did not have any complaints. She was discharged through the diabetic clinic on this regimen on the fifth day post-partum.

POST NATAL CHECK UP

She was seen again after 6 weeks at the post natal clinic. She was on 25 units of Lente insulin, and was attending the diabetic clinic regularly. She had no complaints. She was still breastfeeding and her menstruation had not started. The pelvic organs were well involuted. The child was reported well and attending the child welfare clinic. An intrauterine contraceptive device was suggested to her but she declined at least until she discussed with her husband.

COMMENTARY

In general pregnancy has the effect of altering carbohydrate metabolism with the reduction of glucose tolerance. There is a delay in the exchange of glucose between the blood and the tissues, and high concentrations of glucose are found. This effect is due to the altered steroid secretion of pregnancy, particularly the increase in oestrogens, cortisone and other insulin antagonists like human placental lactogen. The net effect is that a standard dose of insulin especially in late pregnancy causes a smaller fall in blood glucose level.

The disease in our patient was made worse in pregnancy with insulin insensitivity increasing as pregnancy advanced. The earlier smaller dose of insulin required before and in early pregnancy had to be increased due to increased insensitivity to insulin. It is illustrated that soluble insulin is the treatment of choice in pregnancy.

Furthermore, quantitive estimations of glycosuria for this purpose is totally unreliable because it is a common occurrence in normal pregnancy (about 60%) especially in late pregnancy (Peel and Oakley, 1968). The mechanism of glycosuria in these cases is uncertain, as the lowered renal threshold for glucose found in pregnancy may be due either to defective tubular absorption of glucose, or to increased glomerular filtration (Brudenell). This would mean that dosage of insulin should be titrated against serial blood sugar levels, and not against the amount of glycosuria as our patient was doing before admission. And this is one of the reasons why admission becomes a necessity around 30-32 weeks if not earlier.

Keto-acidosis, pre-eclampsia, urinary tract infection, hydramnios are frequent complications of diabetes especially in those cases where control has been inadequate. Our patient did not have any of these complications, fortunately.

Oedema was already present in this patient which is common in late pregnancy and possibly is mainly a pressure effect, but chances of her developing pre-eclampsia could not be dismissed. Oakley reported an incidence of 8% of pre-eclampsia in diabetics. Admission at this time besides providing bed rest and opportunity to control the diabetes, early manifestations of other complications would have been detected in time.

Diabetes in pregnancy increases the incidence of perinatal mortality. It has been reduced from 50% in the pre-insulin day's to about 10%, but still about five times the perinatal loss in the non-diabetic (Brudenell). The rate of intra-uterine fetal death rises progressively in the late pregnancy and is most likely to occur in the last 4 weeks, resulting from an episode of an acute keto-acidosis, or without such an episode. Nevertheless, poor control is associated with increased incidence of intra-uterine death (Peel 1963). The aim in this patient therefore was to maintain a blood glucose level about 100-120 mg%.

The increased risk of intra-uterine death during the last 4 weeks of pregnancy dictates earlier timing of delivery, usually around 37 weeks. The commonest cause of early neonatal death in babies born to diabetic mothers is the respiratory distress syndrome, which occurs in up to one-quarter of such babies (Grellis and Hsia, 1959, Farquhar, 1959). Inadequacy of pulmonary surfactant has been accepted as the cause of respiratory distress syndrome. In this patient tests for the presence of adequate surfactant in the amniotic fluid were done from 37 weeks. Unless there are other pressing complications (hypertension, pre-eclampsia, uncontrollable diabetes, fetal abnormalities inconsistent with life) delivery is effected only when the shake test is positive or the Lecithin/Sphyngomyelin ratio exceeds 2 as in the case described.

Glucose levels in the cord blood of babies at birth vary widely, but in general are slightly lower than the maternal level.

Consequently the initial glucose levels in babies born to diabetic mothers may be higher than in those born to non-diabetic mothers (McCann et al. 1966). However, the glucose levels in the diabetic group drop more quickly, and to a lower level, than in the non-diabetic group due to the islet B-cell hyperactivity. As a result hypoglycaemia is common in the neonate of a diabetic mother. Treatment is required if the blood sugar remains at or below 25 mg% (Cross 1978). The infant in this case had a blood sugar of 25mg% one hour after birth. This required intravenous treatment with 10% dextrose and early feeds.

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II. COMPLICATIONS OF PREGNANCY

regularly fortnightly until 34 weeks, and thereafter weekly until

A N T E P A R T U M H A E M O R R H A G E

P L A C E N T A P R A E V I A T Y P E III

LOWER UTERINE SEGMENT CAESAREAN SECTION

NAME: SOPHIA ARUKO
OBS NO. 2826/77
AGE: 24 YEARS
PARITY: 3 + 0
L.M.P. 18.12.76
E.D.D. 25.9.77

PAST MEDICAL AND SOCIAL HISTORY

She had no significant medical history of major illness or surgical operations. No history of diabetes mellitus, or tuberculosis in herself or relatives. She is married and lives with her husband in Nairobi. She is a nurse in this hospital.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

1969 she delivered at term a male baby at Eldavale Home. Labour lasted 12 hours, the baby weighed 8½lb and is alive and well. There were no complications to mother or baby.
1971 at the same Home she had normal delivery of a female baby weighing 7½lb. The labour lasted about 14 hours.
1976 she had a normal delivery in this hospital of a term male baby weighing 3500gm. The labour lasted 14 hours and there were no maternal or fetal complications. This baby, however, died at the age of 5 months due to respiratory infection.

Her menstrual periods were regular, lasting 4 days after every 28 days. They were painless and of normal flow.

PRESENT PREGNANCY

She was booked at the antenatal clinic at the gestational age of 26 weeks. The uterine size was corresponding with the dates. She weighed 67kg, blood pressure was 90/60 mm Hg, urine showed no abnormalities and she had no oedema. She attended regularly fortnightly until 34 weeks, and thereafter weekly until

term. The urine occasionally showed trace of proteinuria. Blood pressure remained about 110/70 mm Hg, and her weight increase averaged about 500gm a week. The Kahn test was negative, and her haemoglobin was 10.2g% with a haematocrit of 35%. Blood group A, Rhesus Positive.

PRESENT COMPLAINTS

She was admitted at term complaining of lower abdominal pains and backache for 2 hours. She said that about an hour after the onset of pains she saw a clot of blood. Since then she had not bled again, but the pad was slightly blood-stained.

PHYSICAL EXAMINATION

This was an average built lady who was 5 feet tall. General condition was satisfactory, no apparent anemia, jaundice nor peripheral oedema. She was afebrile.

CARDIOVASCULAR SYSTEM

She was not in cardiac failure.
Pulse: 90/minute, regular, good volume.
Blood pressure: 100/70 mm Hg.
Heart: Normal heart sounds. No murmurs.

RESPIRATORY SYSTEM

No apparent dyspnoea. Respiratory rate 18/minute. Air entry good, and both lung fields were clear.

ABDOMINAL EXAMINATION

Abdomen was uniformly distended with the gravid uterus. There were no other masses nor free fluid detected. Both liver and spleen were not palpable. Abdomen was soft. The uterine size was term, the lie was longitudinal with cephalic presentation. The head was 5/5 above the pelvic brim. There were mild contractions, one in every ten minutes, lasting less than 20 seconds. Fetal heart rate was regular, 140/minute.

SPECULUM EXAMINATION

External genitalia were normal, well developed, without any local bleeding lesion nor oedema. The pad had bloodstained mucoid discharge. Speculum examination revealed normal vaginal mucosa, normal cervix with patulous external os. There was bloodstained mucoid discharge from the external os, but no active bleeding. Vaginal examination was not done.

DIAGNOSIS

A diagnosis of antepartum haemorrhage at term and in early labour was made. Three units of fresh blood, each 500ml, were requested for her. Using a gauge 16 intravenous branule-intravenous infusion was started using normal saline to alternate with 5% dextrose giving about one litre in 8 hours. Preparations were made for examination in theatre under general anaesthesia.

EXAMINATION UNDER ANAESTHESIA

Premedication: Atropine sulphate 0.6mg intramuscularly 30 minutes before general anaesthesia.

General Anaesthesia: Induction with intravenous injection of 0.5mg of sodium thiopentone, and maintained by nitrous oxide and oxygen through an endotracheal tube.

Procedure and findings:

The patient was put up in lithotomy position. The surgeon and the assistant were scrubbed up and dressed in theatre sterile gowns ready for caesarean section. The scrub nurse and the assistant surgeon remained sterile in readiness, while the surgeon performed the examination. The patient's lower abdomen, the thighs and the vulvo-perineal area were cleaned with 0.1% aquous solution of chlorhexidine and then draped. The bladder was emptied. Inspection of external genitalia now revealed slight fresh blood from the vaginal cavity. Using Sim's speculum the bleeding was traced to the external cervical os. There was no local lesion to account for the bleeding. The

cervix was healthy, patulous, The speculum was withdrawn and after lubrication with chlorhexidine cream the index and middle fingers of the right hand were gently introduced into the vaginal cavity. All the fornices were felt and no fetal parts were discernible, instead there was a soft boggy mass in all fornices. No bleeding was provoked during this examination. A diagnosis of placenta praevia, of a major degree, was made and while the surgeon changed gowns the assistant surgeon proceeded to perform a caesarean section.

LOWER SEGMENT CAESAREAN SECTION

The patient was placed in a supine position. The abdomen was cleaned with 0.1% chlorhexidine solution and then with methylated spirit solution and draped. A lower uterine segment caesarean section was performed as detailed earlier. The lower segment was unusually vascular with large, tortous and congested veins. The placenta was found to occupy the lower uterine segment especially posteriorly. A male infant was delivered in satisfactory condition. Despite the vascularity of the lower segment, the placental site did not bleed excessively and the total blood loss was estimated at 600ml.

THE BABY

This was a male infant weighing 4200gm. After wiping off the mucous and amniotic fluid from the nostrils and the mouth, a brief suction of the oropharynx was done. The baby cried immediately after delivery, it was pink and had good muscular tone with a heartbeat over 120 per minute. The Apgar score was 10 at 1 minute and 10 at 5 minutes. It was handed to the waiting paediatrician. A further suction of the respiratory tract of the forming secretions and of the gastric suction was done in the nursery. 12 hours later the baby was assessed clinically and graded as term.

POST OPERATIVE MANAGEMENT AND PUERPERIUM

The patient recovered from the general anaesthesia soon. At this time her respiration was 18 per minute, blood pressure 100/60 mm Hg and pulse was 80 per minute, regular and of good volume. These observations were taken every 15 minutes and remained stable. The lochial loss was bloody but not excessive. During the second hour post operatively the patient complained of pain and she was sedate with 100mg of pethidine hydrochloride intramuscularly, which was repeated every 6 hours for the next 24 hours. During the next 24 hours the patient received intravenously 500ml of fluids composed of normal saline alternating with 5% dextrose every 6 hours. The patient remained afebrile, and did not have any complications in her post operative period. On the third day her haemoglobin was 10.4g% and a haematocrit of 36%. The blood film revealed slight microcytosis with slight hypochromia of the erythrocytes. The patient was put on oral ferrous sulphate 200mg once daily for the next four weeks.

The patient resumed oral feeding from the end of the second day when the bowerl sounds returned to normal. Mobilisation and postural drainage of the patient were started on the next day after the operation. On the third day the patient was already up and about in the ward.

The wound healed by primary intention. The stitches were removed on the seventh day. Both mother and child were discharged on the eighth day and requested to return to the post-natal clinic after six weeks. She did not return.

COMMENTARY

Antepartum haemorrhage is considered one of the gravest obstetric emergencies, being associated with about 7% of maternal deaths as seen in the Report on Confidential Enquiries in Maternal Deaths in England and Wales (1969), and a perinatal fetal loss of 17.6% in the British Perinatal Mortality Survey (1963). In this survey the incidence of antepartum harmorrhage was 3%.

Antepartum haemorrhage due to placenta praevia is seen in 0.5 - 1% of all pregnancies. It is commoner in multiparae and the incidence increases over the age of 35 years.

The symptoms of this condition is painless, causeless and reccurent vaginal bleeding. But this patient illustrates a common and often dangerous feature that was pointed by Grant (1955) namely, that a placenta may be praevia, even of a major degree without giving rise to bleeding during pregnancy until the onset of labour, or until a vaginal examination has been done.

In this hospital a high degree of suspicion is maintained throughout the antenatal care so that patients with unstable lie, malpresentation or vaginal bleeding are admitted for investigations. This enables some cases of antepartum haemorrhage to be dealt with as an elective procedure.

For patients admitted with vaginal bleeding conservative management is carried on until 38 weeks of gestation when fetal lung maturity is assessed by the estimation of Lecithin/ sphyngomyelin ratio and the delivery effected.

During the period of waiting in the ward the patient is grouped, cross-matched and the blood preserved in the blood bank. Patients are fully investigated for systemic diseases especially anemia.

During this time, no vaginal examinations are done, but when bleeding has subsided a careful speculum examination is performed to exclude local causes of bleeding. As a preliminary investigation of placenta praevia soft tissue or displacement placentography is done at 34 weeks. But this method is used only as a guideline and all patients with a history of ante-partum haemorrhage must be examined in theatre at 38 weeks. This is because experience in this hospital has shown too many false negative results (Ojwang, 1975).

If episodes of severe bleeding threaten the life of the mother or the fetus, examination under anaesthesia and delivery is occasionally done before 38 weeks. But even then proper preparations of the patient are done as dangers of operating on an anemic and shocked patient are great (Stallworthy, 1950). Pre-existing anemia, post-partum haemorrhage of an already anemic patient and puerperal sepsis have formerly been the main causes of maternal deaths.

In 1977 there were 3860 registered births in Kenyatta National Hospital. Out of these 64 patients were treated for placenta praevia of various degrees, giving an incidence of 1.66%. Of the 64 infants 16 died from various reasons, giving a perinatal mortality of 25%. There were no maternal deaths connected with placenta praevia.

CASES OF PLACENTA PRAEVIA TREATED IN K.N.H. 1977

TOTAL BIRTHS	NO. OF CASES TREATED	PERINATAL DEATHS	MATERNAL DEATHS
3860	64	16	0
INCIDENCE	1.66%	25%	0

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E C L A M P S I A. S U R G I C A L I N D U C T I O N O F L A B O U R. C A E S A R E A N S E C T I O N

NAME: MARGARET BENJAMIN
AGE: 24 YEARS
PARITY: O + O
DELIVERED: 9.12.76
DISCHARGED: 17.12.76
ADMITTED: 8.12.76
OBS NO. 3700/76

PAST MEDICAL AND SOCIAL HISTORY

This was a housewife of primary education married by a bus conductor of the Kenya Bus Service who works in Nairobi but the wife lives at Mbukoni in Kitui District. She gave no history of major illness either in her or her husband. There was no history of hypertensive disease in her immediate relatives.

PAST OBSTETRICAL AND GYAECOLOGICAL HISTORY

She could not remember when she first had her menstrual periods but she could remember that prior to this pregnancy she had been having regular painless periods of normal flow every month and the bleeding lasting 4–5 days. She had no major gynaecological illness and this was her first pregnancy. She had not been on contraception.

PRESENT PREGNANCY

L.M.P. 23.3.76
E.D.D. 30.12.76

She first attended ante–natal clinic at Muthale Hospital, Kitui on 19.8.76 at the gestation of 21 weeks. At this visit her blood pressure was 100/60 mm Hg, the urine contained no albumin and her body weight was 123lb. The haemoglobin was estimated as 64%. In September 1976 she attended two more times

at this clinic and her blood pressure remained 100/60 mm Hg. There was no albuminuria and her weight increase averaged at 1lb per week. In October 1976 she attended twice at Kariobangi Health Centre, Nairobi at the gestation of 28 weeks and 31 weeks. At 28 weeks the blood pressure was recorded as 130/80 mm Hg, but at 31 weeks it was 100/70 mm Hg. On both occasions there was no oedema, no albuminuria and the weight was recorded as 126.6lb on both occasions, that is there was no significant weight increase, The uterine size was observed to be growing and corresponded to the duration of pregnancy. All this time she was on ferrous sulphate and when she returned to Muthale Hospital on 18.11.76 at the gestation of 34 weeks her haemoglobin was 85%, the blood pressure was 100/70 mm Hg, no albuminuria was found nor oedema, but she now weighed 134lb. Next week at 35 weeks there was ankle oedema (+) with a blood pressure of 110/80 mm Hg, but no albuminuria.

She was next seen at the casulty of this hospital the following week on 8.12.76 where she reported because of headaches and increased swelling of legs. She was then admitted immediately after receiving 10mg of diazepan intramuscularly.

ADMISSION

She was admitted at 7.20 a.m. with severe frontal headaches for 12 hours, and swelling of legs for about 10 days which to her seemed to be increasing. She said that at 6 a.m. when she woke up that morning she though she felt dizzy and then immediately sat down and briefly lost consciousness. The husband explained that he thought she had a fit.

PHYSICAL EXAMINATION

This was a young lady of good built with a height of 154cm. She had a marked oedema (++) of both legs. There was no oedema of the face or abdominal wall. The lips looked normal but the tongue seemed bitten on the left side where it was slightly swollen. Clinically she was not anemic and she was afebrile, 36°C. She was not jaundiced.

CENTRAL NERVOUS SYSTEM

She was conscious, walking and answering all questions although slightly drowsy from the effects of diazepam which she had just received at the casualty. There was no neck stiffness and all reflexes seemed normal. The optic fundi were normal.

CARDIOVASCULAR SYSTEM

The heart sounds were normal and there were no murmurs. There was no cardiomegally. The pulse was 80 per minute and regular. The blood pressure was 120/80 mm Hg.

RESPIRATORY SYSTEM

She was not dyspnoic and her respiratory rate was 20 per minute. The lung fields were clear.

UROGENITAL SYSTEM

She had no dysuria. She passed about 100cc of clear urine which contained albuminuria (+++) but no glucose nor ketones.

ABDOMINAL EXAMINATION

The uterine size was about 34 weeks (estimated duration of pregnancy 37 weeks). The fetus was lying longitudinally with cephalic presentation but not engaged. There were no uterine contractions. The fetal heart rate was 140 per minute and regular. There was no bleeding nor draining of liquor.

DIAGNOSIS

Taking into account the slight but steady blood pressure rise during the ante-natal period, the increasing oedema, the persistent headaches, increasing albuminuria and the loss of consciousness that morning and unexplained tongue injury it was decided to treat her as a case of eclampsia. The line of Management:

This consisted of:

1) Isolation into a quiet room.
2) Sedation with Heminevrin (Clomethiazole) intravenously, the rate of infusion being titrated against the level of consciousness.
3) Antihypertensive treatment with Hydralazine intravenously if blood pressure rose above the present recording of 120/80 mm Hg.
4) Induction of labour after sedation had been achieved. This was to be done in the maternal interest.
5) Monitoring of blood pressure, pulse, temperature every 15 minutes and any occurrence of fitting, and also the fetal heart rate.
6) Monitoring of fluid balance. A self-retaining Foley's catheter was inserted.
7) Prophylactic ampicillin 500mg intramuscularly 6 hourly for one week.

In the eclamptic room 0.8% Heminevrin solution was started at the rate of 40 drops per minute. This solution was obtained by dissolving 4gm of Heminevrin powder in 500ml of 5% dextrose and adding a buffer solution provided by the manufacturers to change the pH from 2.5 to 4.5. This immediately made the patient drowsy and now the pelvic assessment and artificial rupture of membranes were to be performed. The bladder was aseptically emptied and the Foley's catheter retained. The external genitalia were normal. There was no vulval oedema. The vagina was normal. The sacral promontory was not reached. The sacral curve was good, ischial spines were not prominent and the outlet was wide. This pelvis was considered of average size. The cervix was long and closed withmmedium consistency. The presenting fetal head was above the pelvic brim. The cervix was digitally dilated. Using Kocher's forceps the forewaters were ruptured. The liquor was clear and about 100ml was drained. There was no umbilical cord felt. This was done at 8.30 a.m.

Intravenous syntocinon was started at 5 mille-units per minute using Palmer's pump. The rate of infusion was increased by 5 mille-

units per minute every 15 minutes. Fetal heart rate, maternal pulse, blood pressure and general condition were recorded regularly by a nurse stationed at the bedside of this patient. 2 pints of blood were cross-matched for her.

At midday (3½ hours after aminotomy) the patient was having 2-3 contractions every 10 minutes each lasting for 30 seconds. The fetal heart rate was regular at 140 per minute. The mother was well sedated. The blood pressure was 130/100 with a pulse of 100 per minute. The rate of Heminevrin infusion was adjusted to 30 drops per minute. At 6 p.m. the contractions were moderately strong lasting for 35 seconds. There were 3 contractions in 10 minutes. On vaginal examination the head was still above the brim, the cervix was fully effaced but only 2cm dilated. The maternal pulse rate was 100 per minute and the blood pressure had risen to 150/110 mm Hg. She had passed 300cc of clear urine. She received 10mg of hydralazine hydrochloride intravenously. The Heminevrin drip continued at 30 drops per minute. She received 10mg of inderal intramuscularly every 8 hours.

6 hours later at midnight the cervix was only 5cm dilated. It was decided that the progress was too slow and decision was taken to terminate labour by caesarean section. She was premedicated with 0.6mg of atropine sulphate intramuscularly.

DELIVERY BY CAESAREAN SECTION

The anaesthetist was informed of all drugs that the patient had received. 125mg of thiopentone was used to induce anaesthesia which was maintained with oxygen and nitrous oxide. Before the operation started the fetal heart rate was 150 per minute and regular. The abdomen was opened through the lower midline incision. A lower uterine segment caesarean section was performed. A male baby was delivered in a depressed condition and handed to the attending paediatrician. The abdomen was closed in the routine manner described in the introduction. The placenta and membranes were complete. The estimated blood loss was 500ml.

PUERPERIUM

Intensive care of the patient continued for the next 48 hours. During this time Heminevrin infusion was continued. The urine output exceeded 1500ml per 24 hours. The blood pressure normalised from 8 hours post operatively. The oedema subsided. From the third post operative day the patient received oral heminevrin. Ampicillin was continued for one week. The post operative haemoglobin was 10.2 g% with a haematocrit of 30.5%. Blood film did not show any abnormalities.

Blood urea:	15mg%
Uric acid :	5 mg%
proteinuria:	0.2g per 24 hours
M.S.S.U.:	Protein +. Glucose, Nil.
	No culture obtained.
BP :	110/60 mm Hg.

The patient's condition improved markedly in the post operative period. The wound healed by primary intention. The stitches were removed. She was discharged on the ninth day after operation with an appointment to return to the post-natal clinic. She, however, did not attend the clinic.

THE BABY

This was a male infant weighing 1750gm. The condition at birth was poor with Apgar score of 3 at one minute and 7 at 5 minutes. The suction of aropharynx was performed by the attending paediatrician and the baby was admitted to the intensive care nursery where it received Vitamin K 0.5mg intramuscularly, oxygen by mask and warmth in the incubator. It also received 3ml of 7% sodium bicarbonate in 3cc of distilled water intravenously. On the second day the baby started vomitting and developed tachypnoea. At the end of the day it developed congestive cardiac failure and died. Unfortunately postmortem examination was not carried out on the body as the parents did not given consent.

COMMENTARY

Although there are reports of eclampsia in older parous patients, this is mainly a disease of the young primigravida. 20% of eclamptic convulsions occur without previous warning but the remainder are preceeded by signs of pre-eclampsia for a variable period. Therefore, with conscientious ante-natal care eclampsia can be prevented in our society. The case described here need not have developed eclampsia. There was a rise of blood pressure in a previously normotensive patient, and oedema at 35 weeks. Admission then was necessary but owing probably to oversight, or either because she attended different clinics, she was not admitted. The presence of the classical signs and a history of loss of consciousness prompted the diagnosis of eclampsia at admission. There was no evidence of uremia, epilepsy, diabetes, or cerebro-vascular accident which could occasionally present difficulties in differential diagnosis.

In managing this patient it was aimed to achieve

1. prevention of fits by sedation and isolation in an eclamptic room.
2. Early delivery as soon as sedation has been achieved.
3. Prevention of cerebral haemorrhage by controlling raised blood pressure.
4. Careful monitoring of fluid and electrolyte balance.

For the purpose of anti-convulsion therapy many drugs and combinations have been used. Currently in this department clomithiazole (Heminevrin) is under clinical trial. It has effective sedative and anti-convulsant properties with the advantage that in a continuous intravenous drip the level of consciousness is easily controllable. It is early to comment on the results but the reduction of perinatal mortality from 30% to 13.5% in a series of 100 patients reported by MacGillivray et al is encouraging.

Speedy delivery as soon as good sedation has been achieved is necessary. Surgical induction of labour with syntocinon infusion

by Palmer's pump is preferred. Caesarean section is often resulted to as in this case if delivery has not occurred in 8–10 hours, or the progress seems slow.

The fluid and electrolyte monitoring is essential as most of our patients have been found to be dehydrated and in metabolic acidosis. Alternating normal saline with 10% dextrose in intravenous infusions is preferred.

Pulmonary oedema has been a common terminal manifestation of eclampsia in the past but Corkill (1957) in analysing cases occurring in New Zealand since 1950 found that the principal causes of death were massive cerebral haemorrhage, sudden cardiac failure and anuria following accidental haemorrhage. To minimise the dangers of acute hypertension in this patient hydralazine hydrochloride (Apressoline) was used.

By relaxing smooth muscle it dilates the arterioles thereby reducing the peripheral vascular resistance and giving a profound antihypertensive effect. It has the advantage of increasing cerebral, renal and uterine blood flows (Johnson and Clayton, 1957).

When analysing 4 cases of maternal death that occurred in this department in 1978, the circumstantial evidence suggested that sudden death had occurred due to acute cardiac failure following maternal tachycardia for a number of hours that had passed unnoticed. Whether the tachycardia was the result of increased sympathetic nervous activity from the carotid sinus reflex following activation by the decrease in blood pressure or the direct effect of hydralazine, it was not clear (Prof.J.K. Mati, personal communication). But to prevent the cardiac effects of hydralazine (tachycardia, heart consciousness, a rise in cardiac output) the sympathetic nervous system is blocked by treatment with propranolol.

A patient having had eclampsia once is more likely to have a raised blood pressure with oedema and albuminuria in a subsquent pregnancy than one who has never suffered from pre-eclampsia at all

(Dewhurst, C.J.). This patient, therefore, received advice to attend antenatal clinic early and regularly in a large hospital during the next pregnancy.

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PROLONGED PREGNANCY

INDUCTION OF LABOUR

FETAL DISTRESS

NAME: FELISTA WANJIRU

OBS NO: 2762/77

AGE: 24 years

PARITY: O + 3

ADMITTED: 21.9.77

DISCHARGED: 10.10.77

OPERATED: 28.9.77

PAST MEDICAL AND SOCIAL HISTORY

This was a housewife of primary education married to an electrician. They live in the eastern estates of Nairobi. She had no contributory medical or surgical history. No history of diabetes or tuberculosis in the families.

PAST OBSTETRICAL HISTORY

She started her periods at the age of 14 years. At first they were irregular and painful, occuring at intervals of 1 or 2 months for that year until she was 15 years when they became regular occuring every 28 days and lasting for 3-4 days. After her first pregnancy the periods were no longer painful and continued to be regular. The flow was not heavy.

In 1975 she had an abortion at 3 months gestation and evacuation of the uterus was done. 1976 she had another abortion at 3 months. Evacuation was not done. She was not ill after that. 1976 in early May she had another abortion at 3 months and evacuation was done at our hospital. She was discharged on tetracycline and analgesics. She resumed her periods in June 1976. They were regular, occuring every 28 days and lasting for 3-4 days. They were not painful and the flow was not heavy. She did not use contraceptives as she wanted a child.

PRESENT PREGNANCY

LMP 3.11.76

EDD 10.8.77

She was booked at our antenatal clinic because of these previous abortions. She was first seen at 26 weeks. The uterine size was also about 26 weeks. She weighed 64 kg. The blood pressure was 110/60 and no abnormalities detected in her urine. At her first visit she said she was feeling fetal movements for one week. Her attendances were regular at approximately 2-week intervals. The uterus continued to grow but from about 28 weeks the uterus was always smaller than the estimated period of gestation. Her weight gain was about 500-1000 gm per week and was continuous throughout the pregnancy so that she weighed 78 kg on 20.9.77 when the calculated period of gestation was 45 weeks. She was then admitted for investigations for prolonged pregnancy. She would have been admitted earlier about 42-43 weeks, but on close questioning she said that she had some bleeding for 5 days in mid December 1977. She said this bleeding was less than the usual menstrual bleeding. Because of this history admission was delayed as perhaps this had really been her last menstrual period. This would have reduced her gestational period by about 4-6 weeks. But when she got to 41 weeks by the last calculation, it was felt that admission was necessary.

ADMISSION

She was admitted on 21.9.77 when her gestational period was 45 weeks by the earlier date or 41 weeks by the later date. She had no complaints.

PHYSICAL EXAMINATION

This was a young woman of 5 feet and 2 inches. She was not in any distress. No palor nor jaundice nor oedema was found. Her body temperature was 37°C. Urinalysis was normal.

CARDIORESPIRATORY SYSTEM

Essentially normal.

Pulse: 86 per minute, regular, good volume.

Blood pressure: 110/60 mm Hg.

ABDOMINAL EXAMINATION

The uterine size was about term. The fetus was lying longitudinally with cephalic presentation. The head was high and free above the pelvic brim. The fetal heart was present 140 per minute. No contractions were present. The amount of amniotic fluid was thought to be normal.

INVESTIGATIONS

Haemoglobin : 12.6%

Haematocrit : 40%

Kahn test : Negative

Clinical Pelvic assessment: Sacral promontory could not be reached. She had a good sacral curve. The ischial spines were not prominent. The outlet admitted four knukles.

Conclusions: Normal gynaecoid pelvis.

Surfactant Test (22.9.77) clear amniotic fluid. Surfactant test positive in 1:1 dilution but [illegible] positive in 1:2 dilution.

Because of this last result it was thought she was not at term and probably it was a case of wrong dates. Delivery was therefore delayed until the surfactant test would be positive in both dilutions. One week later the amniocentesis was repeated. There was meconium in the liquor obtained and decision was therefore taken to deliver her. She received soap enema and was transferred to the delivery room. Before fore-water amniotomy was carried out pelvic assessment was done for scoring on Bishop's inducability rating. She scored 5. This was a low score but since she had a good pelvis it was decided to induce her by amniotomy and syntocinon infusion.

FACTOR	OBSERVATION	SCORE
DILATION	2cm	1
EFFACEMENT	L 30%	0
STATION	AT BRIM	0
CONSISTENCY	SOFT	2
POSITION	ANTERIOR	2

Total score = 5

(0–5 unfavourable pelvis

6–13 favourable pelvis)

INDUCTION

This was done at 1 p.m. on 28.9.77. The patient was put up in lithotomy position with legs in stirrups. The thighs, the lower abdomen and the vulvo-perineal areas were sponged with cetavlon solution and then covered with sterile drapes. The surgeon asptically emptied the bladder. The cephalic presentation was confirmed. The fore finger of the right hand was then introduced through the external cervical os to check for cord presentation. A low amniotomy was performed using Kocher's forceps. About 100 ml of liquor lightly stained with meconium was obtained. Simultaneously with the amniotomy 5 units of syntocinon in a litre of 5% dextrose was started at the rate of 10 drops per minute. This was to escalate by 10 drops per minute every 15 minutes until labour was well established or if tetanic uterine contractions or fetal distress was observed. Careful observations were to be taken every 5 minutes with particular attention to the frequency, duration and intensity of the contractions and whether the uterus was relaxing between contractions. Blood was cross-matched for her and kept ready.

PROGRESS

About 1½ hours after induction she was already having mild contractions 2 every 10 minutes and each lasting for 20 seconds.

The fetal head was still above the pelvic brim. The fetal heart rate was 150 per minute and regular. The syntocinon infusion was running at 40 drops per minute. She passed urine and on analysis this did not contain albumin or acetone.

At 6 p.m. that is 6 hours after aminotomy there were 4 contractions in every 10 minutes each lasting for 35 seconds. The fetal head was 5/5 above pelvic brim, the fetal heart rate was 150 per minute and regular. On vaginal examination the cervix was now 80% effaced and only 2 cm dilated. Maternal condition was satisfactory. The syntocinon was running at 60 drops per minute. The concentration of syntocinon in the drip was now doubled to 10 units in a litre but the infusion rate was reduced to 30 drops per minute. This was done so as to give less fluids while maintaining the same rate of syntocinon. At 9 p.m (8 hours after aminotomy) the fetal heart rose to 160-170 per minute, but was regular. The fetal head still remained high 5/5 despite good contractions 4-5 every 10 minutes and each lasting 45 seconds. The cervix was only 3 cm dilated. In view of the presence of meconium, fetal tachycardia and slow progress a decision was undertaken to terminate labour by abdominal delivery.

Lower uterine segment caesarean section was performed at 10 p.m. (9 hours after amniotomy). There was heavy meconium at the delivery but the baby was delivered in good condition. Blood loss at the operation was about 500 ml.

THE BABY

This was a male normal infant weighing 3270 gm. Condition at birth was satisfactory with the one-minute Apgar score of 6 and 10 at 5 minutes. On clinical assessment in the method described elsewhere this baby was rated at 41-42 weeks of gestation and appropriate for gestation age. It was taken to the intensive care nursery where nasogastric suction was performed and feeding was started at 3 hours of age. On the third day it developed cord sepsis which was controlled easily with parenteral

crystallin penicillin and local antiseptic dressing.

THE PLACENTA

This weighed 580 gm. It was complete with membranes. There were few infarctions. Histology was not performed. The induction/delivery interval was 9 hours.

POST-OPERATIVE PERIOD AND PUERPERIUM

The patient recovered from anaesthesia in about 40 minutes. When she complained of pain she was sedated with 100 mg of pethidine intramuscularly which was repeated 6 hourly for the next 24 hours. Immediate post-operative blood pressure was 100/60 with a pulse of 90 per minute, and the temperature was 35.5°C. She did not require blood but intravenous drip of normal saline alternating with 5% dextrose was given for the first 24 hours at the rate of 500 ml per six hours until the bowel activity returned to normal. By the second day she was already mobilised and taking orally.

On the third day her haemoglobin was 10.6 gm % with a haematocrit of 31%. There were no abnormalities on the film. On the fourth post-operative day she complained of headaches, joint pains, shivering and general malaise. Her body temperature had remained between 35°C and 36.8°C but now it was 37.5°C. The wound was clean, lochia normal and not offensive and she had no pains or swelling of legs. Blood slides showed the presence of plasimodium falciparum. 600 mg base of chloroquine phosphate was given orally followed by 200 mg once daily for the next three days. The patient improved.

The surgical wound healed with primary intention and the stitches were removed on the eighth day. The mother and the child went home on the twelfth day.

POST-NATAL VISIT

After 6 weeks she returned to the postnatal clinic. She had no complaints. She was still breast feeding and her menses had not re-appeared. Clinically she was not pale, the breasts were

healthy and lactiting. The surgical wound was healed. No tenderness or defect of the abdominal wall was detected on palpation. The uterus was involuted to the normal size and the cervix was healthy. She did not appreciate the suggestion of spacing pregnancies.

COMMENTARY

The accepted duration of pregnancy as calculated from the first day of the last menstrual period is about 280 days. But as Wriggley (1958) pointed out there is no exact duration of pregnancy and variations are to be expected on either side of the dividing line of 40 weeks. The method used to estimate the expected date of delivery assumes fertilisation occurs 14 days after the last menstrual period, which will not be always the case, and that all pregnancies last the same length of time, which is unlikely to be so. Postmaturity could be said to be present when the pregnancy has continued so long beyond term that an extra risk to the fetus exists, usually arising from the ageing placenta and its consequent inability to support the fetus. Less commonly the danger may be associated with an increase in fetal size and increasing ossification of the fetal skull bone, and thus with greater difficulty during passage of the head through the pelvis. The clinical problem is to determine the appropriate time to intervene if labour has not begun.

The British Perinatal Mortality Survey of 1958 showed that in equal circumstances the perinatal mortality was lowest if deliveries occurred between 38 and 42 weeks and that this more than doubled at 44 weeks,observations that have been confirmed by other workers (Walker, 1965 and Beischer et al. 1969). Consequently most obstetrical units are reluctant to allow pregnancy to continue beyond this date. Our unit regards up to 2 weeks after the expected date of delivery as within the limits of the variations of the normal and in the absence of other complications (pre-eclampsia, essential hypertension) usually no action is taken.

It has always been difficult to ascertain the duration of pregnancy. The dates given by our patient seemed to disagree with the uterine size from the second visit at 28 weeks. Her weight gain seemed normal. If this was trully a case of prolonged pregnancy her weight was to start falling gradually after term (Browne, 1962) and the amount of liquor to decrease (Elliot and Luman, 1961). This was not the case, however, and doubts were raised about the accuracy of her dates. Further

close questioning at this time showed that there was some bleeding about 6 weeks after her last menstruation, and it was wondered whether this should not be taken as the time of menstrual period.

Quickening was present at the booking visit for one week which would indicate her pregnancy to be about 20-22 weeks which would be nearer to the later date. Radiological investigations have been employed elsewhere but the ossification of the epiphysis of the lower end of femur and upper end of tibia is visible from 36 weeks, and the ossification centre in the cuboid appearing at about term, but errors of up to 4 weeks are possible (Cope and Murdoch, 1958). But on the whole x-ray of the abdomen would not altogether have been out of place as a definite association of fetal abnormalities has been observed in prolonged pregnancies.

Beischer et al. (1969) have shown that serial estimations of urinary oestriol shows a rise from 36 weeks and then a sharp decrease after 40 weeks especially where feto-placental unit is endangered. This investigation is not customarily done in this unit.

The presence of meconium in liquor is accepted as an indication of intrauterine hypoxia (Leslie, 1959) and amnioscopy would have helped in this case. In the absence of this investigation in our department amniocentesis seemed reasonable so as to know the colour of the liquor and to assess the fetal lung maturity.

Action seemed justified at this time as a combination of prolonged pregnancy in this pregnancy associated with 3 previous abortions, no living child and a history of bleeding earlier in the pregnancy (threatened abortion) carried risks of intra-uterine fetal anoxia and possibly death, which far exceed those of failed induction. The first aminocentesis was done on 22.9.77 showing clear liquor and an intermediate shake test for surfactant. It was more of a case of wrong dates. But the following week on 29.9.77 the liquor was meconium stained and since no other explanation was available, probably the fetus was outliving the placental efficiency and little would be gained by

by continued intra-uterine existence. In the absence of other complications, a favourable pelvis and normal fetal heart rate influenced the case for surgical induction rather than caesarean section in spite of a low Bishop's score for inducability. But labour was to be carefully supervised and to be terminated by abdominal delivery if there was delay or any other complication. There was slow progress in spite of good contractions and fetal tachycardia occurred 8 hours after amniotomy. Immediate delivery at this time seemed justified. After delivery the baby did not look postmature.

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GRANDE MULTIPARA
RHESUS ISO-IMMUNISATION
ELECTIVE CAESAREAN SECTION

NAME: LUCY MUMBI NGATIA
OBS NO. 5460/78
AGE: 35 YEARS
PARITY: 6 + I
L.M.P. 23.4.78
E.D.D. 30.1.79
ADMITTED: 5.12.78
DELIVERED: 18.1.79

PAST MEDICAL AND SOCIAL HISTORY

This patient had never been admitted to any hospital for any other reason except deliveries. She had not been treated as an out-patient either. She is not married and as such the permanency of her consortium cannot be ascertained. She has a farm in Meru where she works. There are cows and goats, coffee and other subsistence crops on her farm. She was educated to the primary level.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

The patient could not remember the date of her menarche. Between 1967 and 1970 she delivered three normal female babies at term. The third delivery was at home. The three children are alive and well. Then in 1972 she had a male baby at term in Meru District Hospital. This baby died on the second day with neonatal jaundice. In 1973 she had another male baby at term in the same hospital that died on the third day with neonatal jaundice. The following year she had a miscarriage at about 2 months gestation. She did not go to any hospital. When she got pregnant in 1975 she then decided to deliver at Kenyatta National Hospital. She unfortunately booked at the antenatal clinic at about 36 weeks. Investigations into her bad obstetric history were started, but since she was an out-patient her problem was not known until she was 38 weeks. She

was then induced because of rhesus isoimmunisation. She reacted to syntocinon with macular rash and fever. However, after syntocinon was discontinued and had been treated with hydrocortisone the labour continued and she had a female child weighing 8lb. The condition at birth was satisfactory but the baby developed deep neonatal jaundice that required exchange transfusion. The baby survived after treatment and is reported to be well at home. This baby's blood group was O Positive while the mother is B Negative.

PRESENT PREGNANCY

L.M.P. 23.4.78

E.D.D. 30.1.79

The patient first reported at the antenatal clinic of the Consolata Hospital, Nkubu, at Meru on 18.10.78 at the gestation of 26 weeks. She was then referred to this hospital for booking at the antenatal clinic. She was booked at the antenatal clinic at the gestation of 30 weeks, but since she had not brought the documents relevant to her previous delivery, the investigations had to be done all over and was not admitted until 5.12.78 at the gestation of 32 weeks.

COMPLAINTS

She did not present any complaints at the admission but she requested permanent sterilisation after delivery. The consent was signed.

PHYSICAL EXAMINATION

This was a middle aged patient 5 ft tall. She weighed 91.5kg. There was no oedema, no jaundince nor paleness. Urinalysis showed trace of albuminuria. She was afebrile.

CARDIOVASCULAR SYSTEM

Pulse: 84 per minute, normal volume, and regular.

Blood pressure: 120/70 mm Hg.

Heart: I and II sounds normal. No murmurs,

RESPIRATORY

There was no apparent dyspnoea.

The chest was clear on both sides.

CENTRAL NERVOUS SYSTEM

No obvious abnormality detected.

ABDOMINAL EXAMINATION

The uterine size was 30-32 weeks which corresponded with the estimated duration of pregnancy. The lie was longitudinal with cephalic presentation. The fetal movements were present and the fetal heart was heard clearly 140 beats per minute. The patient was not in labour and was not draining liquor nor bleeding. A diagnosis of rhesus negative mother with isoimmunisation was made and the patient was admitted for further investigations and management.

RESULTS OF INVESTIGATIONS

Haemoglobin : 11.0 g%

PCV : 32.1%

Peripheral smear: Normal

Kahn test : Negative

M.S.S.U. : No growth obtained.

Blood group : "B" Negative

Indirect Coomb's test: Positive

Antibody "D" titre: 1.8 (18.12.78 at 34 weeks)

Antibody "D" titre: 1.16 (3.1.79 at 36^{+} weeks).

MANAGEMENT

The history of deep jaundice followed by neonatal death in previous pregnancies showed that our patient was already sensitised. This was confirmed by the demonstration of anti-D antibodies in her serum. The risk of the presented baby being affected was therefore great. The aim of management was to deliver the patient of a living infant without hydrops fetalis and with a reasonable chance of survival. A compromise date of delivery depending on the predicted severity of the haemolytic disease was necessary. For evaluation of the condition of the fetus serial examinations of the amniotic fluid for bilirubin by spectro-photometry and the presence of pulmonary surfactant by the "Shake Test" were done on various dates. The amniotic fluid was obtained by transabdominal amniocentesis aseptically performed in the ward. The site of amniocentesis was the supra-pubic area. Local anaesthetic was not considered necessary, but on one occasion the patient was apprehensive and a premedication with 100mg pethidine was necessary.

RESULTS OF AMNIOTIC FLUID INVESTIGATIONS

DATE	GESTATION (WKS)	SPECTROPHOTOMETRY OPTICAL DENSITY DIFFERENCE	SHAKE TEST
6.12.78	32^{+}	0	
20.12.78	34^{+}	-	
27.12.78	35^{+}	0	
3.1.79	36^{+}	-	
10.1.79	37^{+}	0.08 (2 A)	
17.1.79	38^{+}	TURBID FLUID	

On all occasions amniotic fluid was delivered to the laboratory in a dark bottle to minimise the effect of ultra-violet rays on bilirubin. The specimen taken on 17.1.79 was turbid and even after centrifugation scanning for bilirubin in the spectrophotometer was not possible. Because the fluid obtained in each occasion had to be scanned for bilirubin as well as the pulmonary surfactant by the shake test, it was not enough to perform the Lecithin/Sphyngomyelin ratio.

The specimen at 37 weeks showed an optical density difference of 0.08 at 450 nm. This was grouped as 2A on Liley's graph meaning the fetal haemoglobin was 80-100 g. per litre. But because the surfactant test was still negative delivery was delayed. The next week surfactant test was now positive, but the amniotic fluid was turbid to allow spectrophotometry even after centrifugation. Once fetal lung maturity was assured decision was taken to deliver her on 18.1.79.

PREPARATION FOR DELIVERY

The delivery of this patient was an elective procedure to be undertaken during the day when all necessary facilities were easily available. 1000ml of "B" negative blood for the mother was obtained. 500ml of fresh "O" negative blood was also preserved in case the baby required exchange transfusion in the neonatal period. The paediatrician was summoned.

Since this patient had had no difficult deliveries before, surgical induction of labour was preferred. However, at the attempt on amniotomy the fetal head was high above the pelvic brim, the cervix was very tightly closed, firm and not effaced. The Bishop's pelvic scoring for inducability was very low. In view of the reported reaction to syntocinon the previous year, high parity and the possible danger of amniotic fluid embolism, the use of oxytocics to ripen the cervix before amniotomy was considered unsafe. Abdominal delivery was considered justified. Her haemoglobin now was 10.8g% with PCV of 33.2%.

LOWER UTERINE SEGMENT CAESAREAN SECTION

She received premedication of 0.6mg intramuscular atropine sulphate. Induction was achieved with sodium thiopentone 250mg intravenously while 100mg scoline provided the necessary muscle relaxation. After intubation, the anaesthesia was maintained with nitrous oxide and oxygen.

After abdominal toilet a lower uterine segment caesarean section was performed in the manner described in the introduction. A live female infant weighing 3910gm was delivered in good condition with Apgar score of 9 at one minute and 10 at 5 minutes. There were no macroscopic abnormalities of the placenta which unfortunately was not weighed. The pelvic organs were normal. Bilateral tubal ligation was done in Pomeroy's method. Blood loss was estimated as 1000ml.

POST OPERATIVE MANAGEMENT

The general condition of the patient remained satisfactory after the operation. She received 1000ml of blood, and after this intravenous fluids were maintained with normal saline alternating with 5% dextrose until the bowel activity was normalised. Analgesia was provided by the liberal use of pethidine.

SUMMARY OF THE BABY

Except for the mucus extraction at birth no further rescucitation was necessary. The baby was female weighing 3910gm, slightly larger for the gestational age. There was no clinical evidence of either jaundice or anemia. There was no oedema and no enlargement of either spleen or liver was detected. The baby cried at birth and did not have respiratory problems neonatally. Cord blood was taken at birth for haemoglobin concentration, ABO and rhesus grouping and serum bilirubin estimation. The baby's blood group was "O" Negative and therefore haemolytic disease was not anticipated. However, serum bilirubin was monitored for 48 hours. The child did not develop clinical

jaundice and joined the mother on 22.1.79

SERUM BILIRUBIN IN THE FIRST 48 HOURS

DATE	AGE IN HRS	BILIRUBIN	PCV	Hb
18.1.79	0.5	2 mg%	45%	15g%
19.1.79	17	7.5	-	-
	24	5.5	-	-
20.1.79	48	7.5	48%	15g%

PUERPERIUM

The puerperium was uneventful. The caesarean section wound healed well. The post operative haemoglobin was 10.6g% with a PCV of 30.9%. Mother and baby were discharged in good condition on 24.1.79 to attend the post natal clinic at Meru because of the distance.

COMMENTARY

Erythroblastosis fetalis, now commonly referred to as the haemolytic disease of the newborn was long known but its scientific explanation was possible only after Levine and Stetson discovered an atypical immune agglutinin in a woman who had delivered a stillborn fetus in 1939. Landsteiner and Wiener established in1940 that 95% of human population has an antigen on the red blood cells common to the rhesus monkey. In 1941 Levine observed that there was a relationship between the presence of an Rh antibody in Rh-negative women whose pregnancy resulted in haemolytic disease of the baby or in certain cases of stillbirth.

In the classification of Fischer (1944) the rhesus factor is a complex antigen consisting of three pairs of alleles (Cc, Dd, Ee) occupying a specific locus on a chromosome, but only D is likely to cause iso-immunisation. If a rhesus negative mother has a rhesus positive baby, and if sufficient fetal cells from that baby enter the maternal circulation, antibody production is stimulated. The anti-D antibodies include both the IgM and IgG immunoglobulins and the latter are sufficiently small to pass through the placenta and enter the fetal circulation, where they immediately fix onto the antigen sites on the surface of the fetal erythrocytes. In the presence of complement the antigen-antibody complex causes lysis of the erythrocyte.

Since iso-immunisation can occur if unsuitable blood has been transfused or as a result of feto-maternal transfusion and our patient did not give a history of previous blood transfusion sensitisation during earlier pregnancies is the possible explanation. Feto-maternal transfusion may occur in normal pregnancy especially during labour, but such obstetrical situations as external cephalic version, caesarean section, pre-eclampsia, antepartum haemorrhage, abortion and manual removal of placenta

are associated with increased risk of feto-maternal transfusion (Donald).

The chance of a rhesus negative mother bearing a rhesus positive child is 75% but even so she has only a 15% chance of being sensitized at the time of delivery of the first child (Derek Llewellyn-Jones). This would explain why the first three babies were not affected. And of course there is the possibility that some of these children are rhesus negative as in the present pregnancy. The loss of the following children neonatally is definitely attributed to haemolytic disease. In such cases the chances of a stillbirth at term if spontaneous labour is awaited are so high (90%) that Walker et al. (1957) recommended induction at 35 weeks. Since the aim was to deliver a viable baby it was necessary to assess continually the fetal well being as well as its lung maturity. The determination of lecithin/sphyngomyelin ratio has simplified the latter problem. In this unit the method preferred for assessing in utero the severity of the haemolysis is bilirubin estimation by spectrophotometry. Other methods have been described, for example, amniography and radiology (inverted Buddha position and a halo round the scalp), oestriol estimation in the amniotic fluid (Schindler et al. 1967) and urine, but these tend to indicate only the severely affected foetuses.

Once a mother has been sensitised she will remain so and any other subsequent pregnancies with rhesus positive fetus will be complicated with fetal haemolysis in increasing degree of severity and hence it is better to prevent iso-immunisation in the first place. The work of Finn et al (1961) at Liverpool started the experimental studies directed towards this end. After experimental stages it is now possible to protect a large majority of cases at risk of sensitisation to the antigen-D by a timely injection of anti-D gamma globulin which, if it is to be effective, must be given within the first 36 hours postpartum when there is the greatest risk of feto-maternal transfusion. This is the standard practice in this department.

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III. COMPLICATIONS OF LABOUR

Her urine was negative. Her blood pressure was 120/80 mm Hg. The x-ray confirmed that pregnancy was the cause of her presenting with breech. She was given Ferrous sulphate tablets and folic acid tablets to take daily and requested to visit the following week. The lab. test was negative.

She was seen again at 37 weeks and did not have any complaints. Her weight was the same this week. There was no abnormalities on examination. Her blood pressure was 120/80 mm Hg and her urine was negative. The fetal heart was present during the last visit. She could always feel the fetal movements. Four days after this visit, the patient went into labour and was admitted to the labour ward.

MULTIPLE PREGNANCY. ASSISTED BREECH DELIVERY OF THE SECOND TWIN

NAME: ROXANE MKENDA
OBS NO: 1277/76
AGE: 28 YEARS
PARITY: 3 + 0
L.M.P. 7.8.75
E.D.D.: 15.5.76
ADMITTED: 4.5.76

PRESENT PREGNANCY

This patient was booked at Kenyatta National Hospital ante-natal clinic because she gave a history of a stillbirth, and was first seen at 37 weeks of gestation. At the booking clinic she had no complaints. Her weight was 80.5 kg and did not have oedema. She had no systemic illness. The blood pressure was 110/70, and there was no proteinuria. The uterine size corresponded to term with plenty of liquor. Twin pregnancy was suspected and was therefore sent for x-ray of the abdomen. Meanwhile blood was taken for grouping, Kahn test and also for haemoglobin estimation. She was requested to return the following week.

At the next visit she had no complaints, blood pressure was 110/70 mm Hg, she had no proteinuria nor oedema. The weight had increased to 82.5kg. The x-ray confirmed twin pregnancy with the first baby presenting with the vertex and the second twin presenting with breech. There was no skeletal abnormality detected on the x-ray. Her blood group was O Positive, the haemoglobin was 12.5g% with a haematocrit of 37.5%, and the blood film did not show any abnormalities. She was given ferrous sulphate 200mg thrice daily and folic acid 5mg once daily and requested to return the following week. The Kahn test was negative.

She was seen again at 39 weeks and did not have any complaints. Her weight gain was 2kg during this week. There were no abnormalities in her urine, her blood pressure was 120/80 mm Hg and did not have oedema. The fetal heart was present during the last three visits and mother could always feel the fetal movements. Four days after this visit the patient went into labour and was admitted to the labour ward.

PAST MEDICAL AND SOCIAL HISTORY

She did not give any significant history of past illness or major operations. No history of diabetes mellitus or tuberculosis in her immediate relatives. There was no history of twinning in her or her immediate relatives. She is a bank clerk married to a radio technician.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She could not remember the date of her menarch. She had had no major gynaecological illness. In 1972 she delivered a term baby 3600gm in a hospital. This was a fresh still-birth, the cause of which was not known to her and had been in labour for about 10 hours. She could not remember when the fetal movements ceased. In 1973 she had a normal term delivery in a hospital of 8½lb baby that is alive and well. In 1974 she delivered a 7lb male baby at term in a hospital. This baby died at 6 months of age due to diarrhea and vomiting.

Prior to this pregnancy her periods had been regular, and without pains and were not excessive. The bleeding lasted 3-4 days and occurred every 28 days. She had not been on contraceptives.

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PRESENT COMPLAINTS

At the admission she complained of lower abdominal pains for the last 6 hours and had vomitted once. She had no vaginal bleeding, there was no draining of liquor.

PHYSICAL EXAMINATION

This was a thickly built patient, 5½ feet tall. She weighed 85 kg. Her general condition was satisfactory. She was not dehydrated nor jaundiced. She was not pale and leg oedema was not detected. Her temperature was 35.7°C. Urinalysis showed neither proteinuria nor glucosuria.

CARDIOVASCULAR SYSTEM

She was not in cardiac failure. Pulse was 84 per minute and of good volume. Blood pressure was 120/70 mm Hg.
Heart: The heart sounds were normal, no murmurs detected.

RESPIRATORY SYSTEM

There was no apparent dyspnoea. Respiration rate was 20 per minute. The air entry to both lungs was satisfactory and both lung fields were clear.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended with the uterine contents. The liver and spleen were not palpable. The uterine size was term, there was moderate hydramnios. Both fetus were lying longitudinally , the first presenting with the vertex with 4/5 above the pelvic brim. The fetal heart was heard 6cm below the umbilicus, was regular with a rate of 140 per minute. The second fetal heart rate could not be heard clearly. She was having 2-3 contractions every 10 minutes each lasting for 25 seconds.

VAGINAL EXAMINATION

Inspection of the external genitalia did not reveal any abnormality. The pad showed slight show. No liquor was seen. The vaginal cavity was normal. The cervix was fully effaced, 3cm dilated and the membranes intact. The presenting part was the vertex, and was not engaged. The sacral promontory could not be reached, and the sacrum was well curved. The ischial spines were not prominent and the outlet of the pelvis was wide.

DIAGNOSIS

A diagnosis of twin pregnancy at term and in early labour was established. A soap enema was administered. She was sedated with 100mg of pethidine hydrochloride intramuscularly, and was allowed to lie on her left side on a bed in the labour

room. Two pints of blood were cross-matched for her and an intravenous drip with 5% dextrose was started.

CONDUCT OF LABOUR AND DELIVERY

She continued to have increased contractions so that at 4 hours since admission there were 5 contractions every 10 minutes each lasting 45 seconds. Observations of her vital signs were recorded every 15 minutes together with the fetal heart rate. These remained unchanged for these 4 hours. She had not ruptured membranes and her general condition was still satisfactory. At the end of this time the head of the first baby was now engaged. On vaginal examination it was found that the membranes were now bulging through a cervix which was 6cm dilated. There was no cord presentation. The membranes were artificially ruptured and clear liquor drained about 20-30ml.

The observations were continued every 15 minutes and no abnormalities were recorded. The contractions continued to increase in frequency and duration. After 2 hours she was found to be in the second stage of labour and was changed on to a delivery bed. The perineum was cleaned with cetavlon solution after the patient was put in lithotomy position. The paediatrician and the anaesthetist were sent for.

After cleaning of the perineum, the legs and lower abdomen were draped in sterile linen. The perineum was infiltrated with 5cc of 1% procaine hydrochloride and the patient was encouraged to bear down during contractions. When the head crowned, and at the height of one of the contractions, a left medio-lateral episiotomy was performed. A spontaneous vertex delivery of the first baby followed. The baby was in good condition and cried immediately.

Immediate abdominal palpation revealed that the second twin was lying longitudinally and was presenting by the breech. The fetal heart was loud and regular with a rate of 132 beats per minute. The breech presentation was now confirmed by vaginal

examination. There was no cord felt. The membranes of the second gestational sac were bulging. These were artificially ruptured using Kocher's forceps. The liquor was clear and this was drained slowly using the hand to control the flow. There was no cord prolapse, but there was footling. With the next contraction the breech descended to the pelvic floor. Soon the breech was spontaneously born to the shoulder girdle, and the trunk had rotated so that its back was in the left oblique anterior position. The inferior angle of the anterior shoulder became visible. The shoulders were then delivered by a Lovset's manouvre.

LOVSET'S MANOUVRE

The hips were held gently but firmly using a sterile towel wrapped around the baby's hip. The operator's thumbs lay on the back of the baby which was then slowly rotated in an anti-clockwise direction, the occiput passing under the symphis pubis so that the posterior shoulder became the anterior maintaining at the same time a gentle downward traction. The corresponding arm was gently hooked out from the vulva by an index finger. The baby was then rotated in the opposite direction back to its former position again maintaining a downward traction. The other arm was easily delivered in the same manner as the first. The patient at this time had a good contraction as a result of which the occiput appeared. The head was then delivered by the Mauricean-Smellie-Viet method.

MAURICEAN-SMELLIE-VEIT METHOD

The surgeon's left middle finger was placed into the baby's mouth while the index and ring finger of the same hand were applied onto the malar eminences. The thumb and the little finger rested on the baby's shoulders. The baby's legs lay stride the left fore arm. The middle finger of the right hand was put on the occiput. The index and ring fingers lay on the baby's shoulders. A gentle traction was now applied downwards

and backwards while maintaining the flexion of the baby's head. As the head descended the direction of the traction was changed to horizontal and then upwards towards the mother's abdomen, thus allowing the face to slip out gently over the perineum. The mouth and nostrils of the baby were cleaned by the assistant. The delivery was slow and deliberate lasting 6 minutes.

Intravenous 0.5mg ergometrine was given immediately. The placenta was then delivered by controlled cord traction. Examination of the birth canal was then conducted but no tears were detected. The episiotomy was repaired in 3 layers of 2/0 catgut, care being taken to bury the knots.
Estimated blood loss was about 150ml.
Duration of the first stage of labour 12 hours.
Duration of the second stage of labour for first twin 25 minutes.
Duration of the second stage of labour for second twin 7 minutes.
Duration of the third stage of labour 2 minutes.

THE PLACENTAE

There were two placentae joined at the edge. Both had clear demarcation and there were no vessels running between them. They both were found to be complete with membranes. There were chorion and amnion for each placenta. The total weight of both placentae was 1300gm.

THE BABIES

The first twin was female weighing 2900gm. It was born in fair condition and except for cleaning of the oropharynx after birth no active resuscitation was required. The Apgar score was 8 at 1 minute and 10 at 5 minutes. The baby cried in the first minute after birth. The baby was neither pale nor plethoric. She had a packed cells volume of 45% which was estimated in the first hour of birth.

The second twin was female too and weighed 3000gm. Apgar

score was 9 at 1 minute and 10 at 5 minutes..No active resuscitation was required for this baby also. The general examination did not reveal any abnormalities and the haematocrit of peripheral blood determined in the first hour of life was 41%. The babies were taken to the nursery for further observations and were fed after 3 hours.

THE PUERPERIUM AND POST NATAL VISIT

Immediately after the third stage the post delivery observations were taken. The patient's general condition was satisfactory.

Pulse 96 per minute.
Blood pressure 120/80 mm Hg.
Respiration 20 per minute
Body temperature 37°C.
Lochial loss red, slight.
The uterus was well contracted.

The intravenous infusion was kept running for the next two hours and when there was no evidence of primary postpartum haemorrhage, or uterine relaxation, it was discontinued. Four hours after delivery the patient was transferred in good condition to the general ward where she remained for the next three days. Lactation was established after 48 hours. The uterine involution was satisfactory, and the lochia was normal at the time of discharge. Both babies were well and feeding well at discharge.

The babies were seen at the child welfare clinic after two weeks and had increased weight satisfactorily. They had not been ill. The mother was seen at the postnatal clinic after 6 weeks. She had no complaints. She was still breast-feeding. The uterus had involuted to almost the normal size and both adnexae were clear. The episiotomy had healed by primary intention and the scar was satisfactory. An intra-uterine Lippes loop was inserted and the patient requested to return if she had undue pains, or if she had no problems to return to the family clinic after 6 months.

At this postnatal visit the children were reported to be well.

COMMENTARY

Multiple pregnancy can occur from the simultaneous release and fertilisation of two or more ova (dizygotic twins as in our patient) or from complete and equal division of a fertilised single ovum at the inner call mass stage or earlier (monozygotic twins). The incidence of twin pregnancy is 1 in 90 pregnancies or 1.1% (S.J. Berhman, 1965) but is thought to be higher in Asia and Aftica probably due to a higher dizygotic population among women, as the incidence of monozygotic twins is not influenced by heredity, race or age. But dizygotic twins may be proportionally more amongst families with a history of twins, in older women and women of high gravidity (Derek Llewellyn-Jones, 1969). In 1977 at Kenyatta National Hospital there were 3860 deliveries in which there were 60 sets of twins and 2 sets of triplets giving an incidence of 1.55% for twins and 0.05% for triplets.

Suspicion of twin pregnancy is aroused by finding the girth of the abdomen and uterine size greater than the estimated period of gestation. Palpation may reveal excess of fetal parts with more than two poles. Two fetal hearts may be heard distinctly at two different points and confirmation of the diagnosis may be helped by radiological investigations as was done for this patient.

During the antenatal period many signs and symptoms of pregnancy may be more pronounced such as neausea, vomiting, leg oedema, varicose veins and haemorrhoids. Anemia especially the megaloblastic type is more common because of the requirement of the two babies for folic acid. There is an increase of the incidence of such complications of pregnancy as toxaemia, prematurity, hydrammios and fetal abnormalities (S.J. Berhman, 1969). Fortunately our patient did not have any of these problems.

Prematurity is the greatest hazard of twin pregnancy with an incidence of between 39% and 47%. Guttmarcher estimated

the average duration of twin pregnancy to be 257.8 days or 2 weeks earlier than in singleton pregnancy. For this reason authors have advised prolonged bed rest especially from 32 weeks and have claimed significant reduction in prematurity. The exact mechanism of this management is not clear but there are postulations that there is a reduction of pressure on lower uterine segment which probably removes the stimulus to cervical effacement, which leads to onset of labour or rupture of membranes. Whatever the mechanism is, hospital admission at 32 weeks provides relief of fatigue, and an opportunity to look for and correct anemia and any other complications. We could not admit this patient at this time as she was booked very late.

In twin pregnancy the fetal mortality is as high as four times as in singleton pregnancy and this could be attributed to increased incidence of complex fetal presentations, complications of pregnancy and instrumental deliveries, and also due to the special danger to monozygotic twins due to the pathological nature involving interplacental communications of circulatory system (Spurway, 1962) which leads to fetal transfusion syndrome whereby one baby is plethoric and may die from polycythemia, while the other is pale and may die from hypovolaemia. With this in mind a careful examination of the babies as well as the placentae was conducted.

The risk to the survival of the second twin is double, and largely depends on the interval between delivery of both babies. This itself may depend on the presentation of the second twin. In a series of 248 sets of twins the best results were obtained if the interval between delivery of both babies was between 5 and 10 minutes (Berhman 1965). After the birth of the first twin an abdominal examination was, therefore, performed immediately to establish the lie of the second twin. The lie was established to be longitudinal and the membranes were then ruptured to avoid delay.

The survival of the second twin may be jeorpadised further by earlysseparation of placenta (Hubbard et al. 1964). This is another reason why delay of delivery of the second twin should be avoided. Unjustified and hurried internal manipulations are another source of hazard (Berhman 1965) and these are avoided as they may cause birth trauma to either the mother or the baby. Therefore the delivery of the second twin must be slow, gentle and deliberate. The time taken to deliver this patient was 7 minutes.

The mortality in twin pregnancy may also be influenced by such rare conditions as collision, interlocking, and conjoined twins which may cause overcrowding of the pelvis. These conditions were excluded by ante-natal radiological investigation.

Twin pregnancy predisposes to post-partum haemorrhage. This risk was anticipated and, therefore, blood was cross-matched for her in advance, intravenous fluid were running during delivery, the anesthetist was in attendance and the delivery was completed with active management of the third stage of labour.

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FACE PRESENTATION

CAESAREAN SECTION

NAME: MARY NJENGA

OBS: 1681/76

AGE: 30 YEARS

PARITY: 3+0

ADMITTED: 10.6.76

DISCHARGED: 2.6.76

PRESENT PREGNANCY

L.M.P. 1.9.75

E.D.D. 8.6.76

The patient said she attended antenatal clinic at Rongai for 3 times in April 1976 (probably between 30 and 34 weeks) but she did not bring her antenatal record card. She had not been ill during this pregnancy. She was admitted as an unbooked case on 10.6.76 at 10 p.m. at term.

PAST MEDICAL HISTORY

She did not give any history of medical disease or major operation. There was no history of diabetes, hypertension or tuberculosis in herself or immediate relatives. No history of blood transfusion.

SOCIAL HISTORY

This was a housewife of primary education, married to a casual labourer. She married at the age of 23 years. They live at Ongata Rongai where the husband works.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

At the age of 25 years she delivered at term a female baby at home. This baby died a week later possibly from respiratory tract infection. In 1972 she delivered again at home a term male baby that was not weighed. This child too died a month later from an unspecified cause. In both occasions there was no maternal illness after delivery. In 1973 she delivered at Kenyatta National Hospital a term female baby weighing 6 lbs after a 10-hour labour. Both mother and

child were discharged in good condition. The child is still alive. After this delivery she did not attend any family planning clinic. Her periods were re-established as soon as she weaned the child from breast-feeding at 9 months. The periods were regular every 28 days and lasting 3-4 days. The flow is not heavy. She gets backache on the eve of every menstruation.

PRESENT COMPLAINTS

On admission she complained of draining liquor for one hour and lower abdominal pains with low backache for 6 hours. She did not complain of bleeding. The fetal movements were present.

PHYSICAL EXAMINATION

This was a young patient whose height was 5 feet. She was not anemic. She was not jaundiced and had no oedema. Her temperature was 36.9°C. She was not dehydrated. Her urine showed a trace of albumin.

CARDIOVASCULAR SYSTEM

Jugular vein pressure: not raised.

Pulse: 96 per minute, good volume, regular.

Blood pressure: 130/90 mm Hg.

Heart: Heart sounds were normal. No murmurs were detected.

RESPIRATORY SYSTEM

She was not dyspnoic. Her respiratory rate was 18 per minute. The chest was clear with good air entry on both sides.

ABDOMINAL EXAMINATION

The abdomen was uniformly enlarged with the gravid uterus. No mass could be felt. There was no free fluid. The liver and the spleen were not palpable. The uterine size was term. The fetus was lying longitudinally with a cephalic presentation high above the pelvic brim. The amount of amniotic fluid was not excessive. The fetal parts were felt on the right side of

the abdomen. The fetal heart sounds were detected clear on the midline near the umbilicus. The rate was 144 per minute, regular. There was no undue tenderness of the abdomen. She was having 2 contractions in 10 minutes, each lasting 20 seconds.

VAGINAL EXAMINATION

Because she complained of draining liquor, a speculum examination was first performed. There was clear liquor draining from the cervical os. The vagina and the cervix were healthy.

Bimanual examination: The cervix was admitting one finger. It was slightly effaced. The membranes were ruptured. The head was presenting and high above the brim. The sacral promontory could not be reached. The ischial spines were not prominent and the outlet was wide.

DIAGNOSIS

This was a parous patient at term in the first stage of labour.

MANAGEMENT

The patient was admitted for delivery. Fetal heart rate, contactions and maternal pulse were recorded every 15 minutes. Her blood pressure and body temperature were recorded every 2 hours. The doctor was to review the patient's progress after 3 hours.

PROGRESS OF LABOUR

Three hours after admission, she was having 3 contractions every 10 minutes, each lasting for 30 seconds. The head was still high above the pelvic brim. The fetal heart rate was 150 per minute and regular. The maternal pulse was 92 per minute. The blood pressure was 120/70 mm Hg and the temperature was 36.5°C. The cervix was thin and 3cm dilated. She was sedated with 100mg of pethidine intramuscularly.

She was re-examined after 3 hours. The maternal condition remained satisfactory. There were 5 contractions in every 10 minutes each lasting 45 seconds. The fetal heart rate was 152 per minute and regular. On vaginal examination the head was not engaged and 3/5 remained above the pelvic brim. The cervix was 6cm dilated, loosely applied to the presenting part and thick. The mouth, jaws and orbital ridges of the fetal face were palpated easily. The liquor was still clear.

A senior colleague reviewed the patient. The findings were confirmed. A diagnosis of failure to progress due to mento-posterior position of face presentation was made.

Decision was taken to terminate labour by caesarean section. Two units of blood were cross-matched for her. She was put on 5% dextrose intravenous drip. The anaesthetist and the paediatrician were summoned. Written consent was received.

She had been in labour for 9 hours. For premedication she received 0.6mg atropine sulphate intramuscularly.

LOWER UTERINE SEGMENT CAESAREAN SECTION

In theatre the patient was catheterised and 100cc of clear urine was obtained which did not contain albumin or acetone. The fetal heart rate was rechecked and found to be 150 per minute and regular. The lower segment caesarean section was performed in the usual manner. A live male infant was delivered in satisfactory condition. The one-minute Apgar score was 6, and at 5 minutes it was 10. The placenta was complete with membranes and weighed 520 gm. The abdomen was closed routinely. The blood loss was about 500ml.

THE BABY

The baby's face was cleaned to remove blood and liquor from the bouth and nostrils at delivery. The face was oedematous. After suction of the oropharynx oxygen was given by mask. The colour of the baby improved. It cried after 2 minutes and was taken for observations in the nursery where

nasogastric suction was performed. On examination the baby was term. There were no congenital abnormalities. The birth weight was 3150gm. The facial oedema subsided within 24 hours and there was no difficulties in feeding, which was started 4 hours after birth.

PUERPERIUM

The patient recovered from general anaesthesia within 30 minutes. She did not receive blood, but was on 5% dextrose with normal saline intravenously for 24 hours until the bowel activity was normalised. Post operative recovery was uneventful. The wound healed by primary intention.

The haemoglobin was 9gm% with a haematocrit of 28.3%. The peripheral blood film showed normocytic and normochromic erythrocytes. She was discharged on the tenth post-operative day. 200mg of ferrous sulphate thrice daily was prescribed for one month. She was requested to attend post-natal clinic after 6 weeks but she did not return.

COMMENTARY

Face presentation occurred in about 1 in 600 births (Rudolph 1947 and Kenwick 1953), but recent workers calculate the incidence as 1:300 (Posner et a. 1963, Mostar et al. 1966). This condition occurs by chance, the head undergoing a change of attitude from incomplete flexion to extension at the moment of engagement in the maternal pelvis (Dewhurst).

In 60% of cases there is a definite cause. However, 40% of cases occurred in women with clinically normal pelvis who delivered normal average or smaller than average infants and with no complications of etiological valve (Rudolph).

Etiological factors may be maternal, for example, faulty axis of the uterus (lateral version or pendulous abdomen). Disproportion with a contracted pelvis account for 39% of cases at John Hopkin's Hospital (Hellman et al. 1950). Pelvic tumours and high parity may also be responsible in some cases.

Portrusion of the anterior part of the fetal neck (coils of cord around the neck, enlarged thyroid, primary extensor tone) may cause face presentation. Fetal abnormalities like anencephaly accounted for 10% of cases (Kenwick, 1953). Prematurity and low birth weight was found in 25% (Friedman, 1967).

The patient presented here had an average pelvis and delivered an average baby with no fetal abnormalities.

In 50% of cases, this condition may not be recognised until the second stage of labour (Cucco 1966). Even then the diagnosis may be difficult especially if the facial features are already oedematous and distorted. Dede and Friedman recommended radiological examination if doubts exist about the presentation.

This patient presented minimal diagnostic difficulties as the facial parts were not oedematous. This could be attributed to

the routine of examining our patients as frequently as every 3 to 4 hours or when the membranes have spontaenously ruptured. However, an x-ray of the abdomen would have been appropriate to rule out an abnormal fetus.

With satisfactory uterine action in a mento-anterior position, spontaneous or assisted delivery is possible in 80% of cases (Dede and Friedman, 1963). But the mento-posterior position is considered the most unfavourable and if it persists vaginal delivery is impossible unless the fetus is small or macerated (Cucco 1966). Version of forceps delivery is associated with serious trauma either to the mother or the fetus (Rudolph, 1947, Cucco 1966). Abdominal delivery seems the safest route for both mother and child. In 1953 Kenwick reported a trend from version to increased caesarean section and in 1966 Cucco reported that they had already abandoned the method of version. This increases the rate of caesarean section by about 13%, but has reduced perinatal mortality from 6.5% to about 1.5% (Dewhurst).

In our patient uterine action was satisfactory, but at the last examination there was no progress of cervical dilatation or the descent of the head. The cervix was becoming thick. Obstructed labour was considered imminent and, therefore, decision was taken to deliver her by caesarean section.

If this condition is not relieved soon the complications will be as those found in obstructed labour (fetal anoxia or fatal brain injuries, uterine inertia or rupture, post-partum haemorrhage, puerperal sepsis), Hellman et al. Patients delivering in a maternity unit should not reach this stage.

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PROLAPSE OF THE UMBILICAL CORD

ABDOMINAL DELIVERY

NAME: SOPHIA NJOGA
OBS NO. 3823/76
AGE: 20 YEARS
PARITY: 2 + I
L.M.P. : 18.3.76
E.D.D. : 25.12.76
ADMITTED: 22.12.76
DISCHARGED: 31.12.76

PRESENT PREGNANCY

She was admitted as an emergency to the labour ward at term having been in labour at home for five hours previously. She complained of mucoid discharge which was not blood-stained. She said she had been attended to antenatally at a private clinic but did not bring the record card with her.

PAST MEDICAL HISTORY

She had no significant medical history of major illness or surgical operations. No history of major systemic diseases in her close relatives was given. She is married and lives with her husband in Nairobi. She is a housewife.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She had her menarche at the age of 12 years, which were regular at the age of 13 years. The menstrual bleeding occurs every 28 days regular, is not heavy and lasts for 3 to 4 days. Her periods are not painful. She has never attended family planning clinics. She had her first pregnancy at 17 years and had a normal delivery of a live male baby in a local maternity. She had a second pregnancy at 18 years which also ended in delivery of a normal female child at term. Both children are well. The puerperium in both cases was uneventful. Then at 19 years of age she had a miscarriage at

2 months gestation which started with lower abdominal pains followed by fresh bleeding and explusion of most of the products of conception. Complete evacuation of the uterus was done at a district hospital. She was given some capsules for one week, and then there was no further bleeding nor pains.

PHYSICAL EXAMINATION

This was a well built young patient of 4 feet and 8 inches. Her general condition was good. Clinically she was not anemic nor jaundiced, and did not have peripheral oedema. She was afebrile, and was not dehydrated.

CARDIOVASCULAR SYSTEM

She was not in cardiac failure. The pulse was 84 per minute, regular and of good volume. Blood pressure was 120/70 mm Hg. Heart sounds were normal and there was no murmur detected.

RESPIRATORY SYSTEM

No apparent dyspnoe was detected. Her respiratory rate was 20 per minute. The air entry was good in both sides of the lungs, and both lungs were clear.

ABDOMINAL EXAMINATION

Abdomen was uniformly distended with the gravid uterus. No masses nor fluid were detected. The liver and the spleen were not palpable. The uterine size was term, the lie of the fetus was longitudinal with cephalic presentation. The head was high above the pelvic brim, and the amount of liquor did not feel excessive. She was having one contraction every 10 minutes lasting only 15 seconds. The fetal heart sounds were clearly heard below the umbilicus and to the left of the midline. The sounds were loud, clear and regular at 140 per minute.

VAGINAL EXAMINATION

External genitalia were normal. She was not draining liquor. The vaginal cavity had no abnormalities. The sacral promontory was not reached. The mid cavity of the pelvis was roomy with a good outlet. The cervix was fully effaced, thin and was 3cm dilated. A sac of forewaters was felt with membranes bulging with contractions. The head was high above the pelvic brim. No cord was detected at this time.

DIAGNOSIS

A diagnosis of first stage of labour at term was made and the patient was admitted for vaginal bleeding. Maternal and fetal observations were recorded every 15 minutes. She was to be reviewed by the doctor after about 4 hours or when there was a spontaneous rupture of membranes. Sedation was withheld as she did not complain of much pain.

CONDUCT OF LABOUR

The patient was given soap enema, and was then put on a delivery bed. She was given a light diet and oral fluids. The uterine contractions increased in frequency and duration so that after 4 hours she was having 4 contractions every 10 minutes, each lasting for 45 seconds. The fetal heart rate remained stable at 140 per minute. The maternal pulse was 90 per minute and the blood pressure 100/80 mm Hg.

4 hours after admission the patient had spontaneous rupture of membranes, and she was examined vaginally immediately. The head was still high above the pelvic brim. The cervix was thin and fully effaced. It was about 4cm dilated. The membranes were ruptured. Clear liquor was draining and fetal cord was now clearly felt between the presenting part and the cervical os. It was pulsating at 140 per minute.

DIAGNOSIS

A diagnosis of cord prolapse at 4cm dilatation with a high

presenting part and a live fetus was made. Emergency preparations were made for abdominal delivery. The patient was put in knee-chest position.

CAESAREAN SECTION

The patient received a premedication of 0.6 mg of atropine sulphate. She was changed into a clean theatre gown and was wheeled into theatre. The patient was put in supine position. The abdomen was cleaned with a 0.1% chlorhexidine aquous solution and then a methylated spirit solution. At the end of the induction of general anaesthesia the patient was draped and the operation was started. A lower uterine segment caesarean section was quickly performed and a live male infant was delivered with Apgar score of 3 at 1 minute, 5 at 5 minutes and 10 at 10 minutes. The baby was handed to the attending paeditrician. At the operation plenty of liquor was found which was clear. The pelvic organs were examined and found to be normal. Total blood loss was about 500cc. The placenta was normal and weighed 780 gm. The membranes were complete. The cord was about 30cm. The diagnosis/ delivery interval was 25 minutes.

THE INFANT

This baby was born in fair condition, but did not cry immediately. The heart rate was 100 per minute, it was limp and slightly cyanotic on the periphery. It was a male weighing 3070gm. The mouth and nostrils were wiped and a quick suction of oropharynx was done, oxygen was given by Ambu bag, and 1.5ml of 7% sodium bicarbonate was given intravenously. Spontaneous respiration was established in the second minute after birth. The baby was fed after 3 hours.

POST OPERATIVE MANAGEMENT AND PUERPERIUM

The patient's vital signs were observed every 10 minutes. They remained stable while she was still under the effects of general anaesthesia. She recovered fully in one hour. When

she complained of pain she was sedated with a 100mg of pethidine hydrochloride intramuscularly. This was continued for the next 24 hours.

The lochial loss was bloody but not excessive. For the next 24 hours the patient received 2 litres of fluids intravenously consisting of 5% dextrose and normal saline. After this period her bower activity had returned to normal. She was then started on oral fluids and on the third post-operative day she was already on a light diet. The uterus was checked daily for involution and was satisfactory. The wound healed with primary tension. The stitches were removed on the seventh day. The haemoglobin on the third day was 11.5g% with a haematocrit of 35% and the blood film did not show any abnormality. The patient was discharged on the eighth day after the operation and requested to attend post-natal clinic in 6 weeks.

POST-NATAL CLINIC

She did not have any complaints. She had had no illness since her discharge. She had not had her periods and was breast feeding. On examination all systems were normal. Her scar had healed well and the uterus was involuted. She declined suggestions on family planning. The baby was neurologically fit.

COMMENTARY

The prolapse of the umbilical cord before delivery endangers the fetal survival. There are many factors that may cause this condition. It is generally accepted that interference with the snug application of the presenting part in the lower uterine segment or its engagement in the pelvis predisposes to cord prolapse.

Malpresentation which is sometimes associated with contracted pelvis is the most common cause accounting for over 50% of cases (Clark et al. 1968; Daly and Gibbs, 1968).

Abnormalities of the cord such as a long cord or low placental insertion are associated with cord prolapse. A cord of 70-75cm is associated with six times high risk of prolapse (Pathak, 1968)

In patients of high parity the fetal head remains high and free until labour is advanced. The lower uterine segment is weak and the strength of the uterine and abdominal wall muscles is diminished. This may account for the fact that four fifths of cases have occurred in multiparous patients (Dewhurst, 1972).

Pelvic tumours and prematurity have also been associated with increased incidence of cord prolapse. In prematurity the liquor is relatively copious while the fetus is small and there is high incidence of malpresentation.

The patient presented here was of low parity, there was no apparent malpresentation. The cord was not unduly long. The fetal head remained high during labour although disproportion was not apparent. This could partly explain the prolapse of the cord.

However, normal cords have intra-arterial pressure of 60mm Hg. They are semierectile, tense, coiled and would not usually prolapse. Prolapsed cord is flaccid and with minimal arterial pressure. Prolapse may therefore, be a symptom of lowered intra-arterial pressure of the umbilical arteries due to hypoxia from various causes (Miller, 1968, Seligman 1961). Cord compression is not

only the cause of fetal death. Cooling and manipulation of the cord causes enough spasm of the umbilical arteries to be fatal (Miller). Early diagnosis is therefore essential. In this case vaginal examination was performed immediately the membranes were ruptured.

Once the diagnosis has been made delivery must be effected as soon as possible. In 50% of patients the fetal heart disappeared in 30 minutes (Pathak). A short diagnosis/ delivery interval results in low mortality. Clark et al. (1968) reported a mortality of 3.5% if delivery was effected within 10 minutes. The diagnosis/delivery interval in our patient was 25 minutes.

Since the work of Seligman which showed that pulsation may cease in the absence of cord compression, caesarean section has been employed widely disregarding the degree of cervical dilatation (Miller). The cervical dilatation in our patient was 4cm and caesarean section seemed the method of choice.

The presentation and prolapse of the cord occurs once in 200 deliveries or 0.5% (Goldthrop, 1967; Pathak, 1968). In 1977 in Kenyatta National Hospital 16 cases of cord prolapse were recorded amongst 3860 deliveries (0.4%). Three babies died (18.7%). One baby was dead on arrival. In another case the prolapsed cord was not recognised in time. The third case occurred while the surgeon was in theatre with another patient.

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PROLONGED SECOND STAGE OF LABOUR

VACUUM EXTRACTION

NAME: IRENE MACHARIA

OBS. NO: 2086/77

AGE: 18 YEARS

PARITY: PRIMIGRAVIDA

L.M.P.: 28.12.76

E.D.D.: 4.10.77

GESTATION: TERM

ADMITTED: 28.9.77

DELIVERED: 28.9.77

DISCHARGED: 30.9.77

PRESENT PREGNANCY

The patient was booked in antenatal clinic of this hospital at the gestational age of 30 weeks because she complained of bloodstained discharges. A speculum examination at the clinic revealed a foamy whitish discharge from the cervical os with slight bloodstaining from the cervical erosion. A diagnosis of trichomonal cervicitis was made and she was treated with metronidazole 200 mg thrice daily for 10 days. She improved and continued to attend antenatal clinic regularly until the gestational age of 38 weeks. During the antenatal period her weight gain was satisfactory and averaged about 1Kg every 2 weeks. The blood pressure remained stable at 110/80 mm Hg, and there was no proteinuria nor glycosuria recorded. The Kahn test was negative. She was blood group A Rh Positive. Haemoglobin 12.6mg% with a haematocrit of 36.8%.

PAST MEDICAL HISTORY

The patient had never been ill before and had no history of major operations. No history of hypertension, diabetes, mellitus nor tuberculosis in her relatives. Had been married for about two years to a clerical officer. She was educated to secondary school and was not employed.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

This primigravida had her menarch at 15 years of age. She had normal periods since then, regular lasting 3 to 4 days every month. The periods were not painful and were of moderate flow.

PRESENT COMPLAINTS

She was admitted at 39 weeks complaining of lower abdominal pains and backache for 4 hours. She complained of mucoid vaginal discharges for 2 hours, but no vaginal bleeding.

PHYSICAL EXAMINATION

Her general condition was satisfactory. She was neither pale nor jaundiced. There was no oedema. She was 5 feet 2 inches tall and normal constitutional development. She had a good nutritional status and there was no evidence of dehydration.

Central Nervous System: No neurological defects were detected.

Cardiovascular System: Pulse 98/minute, regular, good volume.
Blood pressure 130/80 mm Hg.
Heart not enlarged, heart sounds normal, no murmurs were detected.

RESPIRATORY SYSTEM

The patient was not dyspnoic. Respiration rate 22/minute, regular. The chest was clear with good air entry on both sides.

ABDOMINAL EXAMINATION

Abdomen uniformly distended with the gravid uterus. No extra masses nor fluid were detected. Uterine size was about term. The lie of the fetus was longitudinal, with cephalic presentation. The foetal head was 3/5 above the pelvic brim. One contraction was recorded in every ten minutes lasting for 20 sec. only. The fetal heart Rate was regular at 140/minute

VAGINAL EXAMINATION

External genitalia had normal development. No varicose veins nor oedema were detected.

Speculum: Vaginal cavity was normal. The cervix was 3cm dilated, dilated with intact membranes bulging through the external os. No liquor nor blood seen.

Bimanual examination: The cervix was fully effaced, and well applied to the presenting head. The head was not engaged, 3/5 were palpable above the pelvic brim. There was no excessive moulding nor caput. The membranes were intact. The sacral promontory was not reached. There was a good sacral curve and the ischial spines were not prominent. The pelvic outlet was wide.

DIAGNOSIS

The patient was in the first stage of labour.

MANAGEMENT

She received soap enema and then was sedated with 100 mg of Pethidine intramuscularly. She was allowed oral fluids and normal diet. The fetal heart rate, the maternal pulse, blood pressure and contractions were to be recorded regularly. She was reviewed after 4 hours.

PROGRESS OF LABOUR

The patient was calm after the sedation. Fetal heart rate and maternal pulse were monitored every 15 minutes, and no marked changes were detected. Blood pressure and maternal body temperature were recorded every hour and they too remained stable. The contractions were recorded every 15 minutes and these increased in frequency and duration so that after 3½ hours after admission she had 4 contractions in every 10 minutes each lasting 40 seconds. Meanwhile the fetal heart rate remained regular at 140/minute, BP 130/80, Pulse 90/minute, and body temperature 36.7°C. At this time she had spontaneous rupture of membranes and a vaginal examination was immediately performed.

FINDINGS

She was draining clear liquor. Membranes were ruptured. The

cervix was fully effaced, well applied to the fetal head, and 7 cm dilated. The fetal head was engaged with only 2/5 now palpable above the pelvic brim. She was advised to lie on her left lateral side. One hour later she was found to be fully dilated. She was placed in lithotomy position and encouraged to bear down with every contraction. Meanwhile the fetal heart rate was monitored between contactions and remained at 140/minute and regular. There was poor maternal effort to bear down and after 30 minutes preparations were made for vacuum extraction. Duration of first stage of labour was 9 hours.

VACUUM EXTRACTION

The patient was transferred to the second stage room and put up in lithotomy position with her feet supported in stirrups. Her buttocks overhung the edge of the table. The perineum and lower abdomen were thoroughly cleaned with warm cetavlon solution and then draped with sterile towels. The perineum was infiltrated with 10 ml of 1% procaine hydrocholoride solution. Bladder catheterisation was performed using a sterile No. 6 Jacques catheter. 100 ml of clear urine was obtained which on testing showed no sugar, protein or acetone. The fetal head was found to be in the pelvic cavity. There was only a small caput and mild moulding. During a contraction the head was seen to crown, but returning into the pelvic cavity at the end of the contraction. The perineum was infiltrated with 7 ml of 0.1% Procaine hydrochloride. At the height of one of the contractions a left mediolateral episiotom was performed. Suction Cup No. 5 was applied to the fetal head and vacuum pressure was slowly built up to about 0.8 kg/cm^2 in about 15 minutes. Precautions were taken to ensure that maternal tissues from either the vaginal wall or cervix were not included in the suction cup. Synchronous with the next contraction and maternal effort, traction was applied at right-angles to the transverse axis of the cup. With this first attempt the fetal head was easily delivered. Suction pressure was released, and the baby delivered in good condition. The baby's mouth was mopped dry with sterile cotton. The cord was divided between two clamps, and

further suction of the baby's oropharynx was done at the resuscitation table. Apgar score was 8 at 1 minute and 10 at 5 minutes. Duration of the second stage of labour was 1 hour.

Immediately after the delivery of the baby, the mother received 0.5mg Ergometrine intravenously. The placenta was delivered 4 minutes after the birth of the baby by controlled cord traction. Total blood loss was 150 ml. Immediate examination of the birth canal revealed no trauma either of the cervix or of the vaginal mucosa. The episiotomy was repaired in 3 layers using chromic catgut. General condition of the mother after delivery was satisfactory with BP 120/80, pulse 100/minute,,regular and of good volume.

THE BABY

The baby was a healthy looking male of 2950 gm. It cried immediately after birth. There was moderate moulding and caput succedaneum. No other trauma was found. The baby started breast feeding 3 hours after birth.

THE PLACENTA

This was found to be complete with both membranes. There were few small infarctions but no other abnormality was noted. It weighed 620 gm.

PUERPERIUM

Postpartum the patient was observed in the delivery room for the next 3 hours. The uterus was well contracted, the lochial loss was normal, and was encouraged to pass urine. Body temperature was 37^{o}C, pulse 92/minute with good volume, BP 120/60 and respiration rate 22/minute. She was then transferred to the ward. In the ward the observations were normal and she had no complaints. She and her baby were discharged 2 days later in good condition and without any complaints.

POST-NATAL

She was requested to present her baby at the child welfare clinic in 2 weeks time and herself at the post-natal clinic but unfortunately both did not return.

COMMENTARY

If the duration of the second stage of labour continues for more than one hour in a primigravida or for more than 30 minutes in a parous patient, it is considered delayed. Prolonged second state should be treated urgently to avoid pressure and ischaemia of pelvic organs of the mother and fetal brain damage due to anoxia or injury. Brim disproportion or malposition were not apparent in this patient. But she was a primigravida unfamiliar with labour. Apprehension of such a patient and the resistance of the soft tissues of the pelvic floor could result in delay of the second stage of labour. (Donald).

The fetal head was in the pelvic floor. This is one of the indications that J. Willocks (1962) listed for vacuum extraction, namely "to replace low cavity or outlet forceps". If patients to be delivered by vacuum extraction are carefully selected according to indications the instrument can be very helpful and the failure rate minimal. In a series of 100 patients delivered by vacuum extraction Willocks had only 29 failure cases and these were mainly due to either faulty technique of the operator or mechanical difficulties due to unrecognised cephalopelvic disproportion. The head having descended to the pelvic floor the brim disproportion in this patient was already eliminated.

However, for most of our patients vacuum extraction will be performed for minor degrees of cephalopelvic disproportion. This is because pelves of most women in this country, although are normally shaped, are small in size. The average pelvis has been described as a minor gynaecoid pelvis. The average true conjugate of a Kikuyu woman is just over 10.0cm in length (Gebbie, 1969).

Other indications for vacuum extraction may be the same as those used for forceps delivery, namely:

1) Transverse arrest of the head in the midcavity of the pelvis
2) Prolonged second stage due to persistent occipito-posterior postion of the fetal head.
3) Maternal distress or other conditions like pre-eclampsia or cardiac disease which may deteriorate in an energetic seoond stage.
4) Fetal distress in seoond stage of labour.
5) Vacuum has been used to secure full dilatation in cases where there was cessation of cervical dilatation at 7cm or more, where no obvious disproportion was present.

The conditions for application of the vacuum are similar to those of forceps delivery. Major degree of disproportion must be excluded. The bladder and rectum must be empty to avoid injury.

Patients delivered by vacuum may have been in prolonged labour and must be observed postpartum for bleeding. This is because prolonged labour causes dehydration and keto-acidosis which in turn causes alterations in the cellular chemistry. Potassium is mobilised leaving the cell relatively depleted. In muscle cells this leads to hypotonia and the potential occurrence of postpartum haemorrhage (Lawson). Our patient was not in prolonged labour and postpartum haemorrhage was not observed. However the third stage was conducted actively.

In vacuum extraction traction should not exceed 20 minutes, and if this occurs, the case should be reviewed for a major degree of disproportion, hitherto unrecognised. Prolonged traction is not without hazards (Willocks). A. Huja (1969) reported cases of subaponeurotic haemorrhage with diffuse swelling of the scalp after vacuum delivery.

Vacuum extraction is more often employed than forceps in this department. In 1977 amongst 3860 deliveries there were 93 vacuum extractions, (2.4%) as against 7 forceps deliveries (0.18%). No perinatal deaths or serious injuries were associated with vacuum delivery.

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G R A N D E M U L T I P A R A

PRECIPITATE LABOUR WITH UTERINE RUPTURE

NAME: ELIZABETH M.

OBS NO.: 2009/78

AGE: 41 years

PARITY: 13 + 0

ADMITTED: 20.5.78

DIED: 21.5.78

PAST MEDICAL AND SOCIAL HISTORY

This was a housewife of primary education married to a supervisor of a bus transport company. She had had no previous illness before and did not give a history of previous hospitalisation for either medical or surgical illness. There was no history of diabetes or tuberculosis in her family.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She had married at an early age of 16 and since marriage she had 13 deliveries at home or in different hospitals. All deliveries had been normal. All the children were alive and well. The last delivery was in 1973 in a hospital in Nairobi and after this delivery she was advised to attend family planning clinic. For protection against pregnancy she chose the injectable hormonal contraceptive, Depo provera. Since the time she was on Depo provera her periods became scanty and irregular so that she could not predict the next menstruation or occasionally missed them. She however had no other problems and therefore continued on this method. She had been advised on permanent sterilisation and had complied with the idea but her husband had strongly objected.

PRESENT PREGNANCY

Her last injection of Depo provera was early June 1977. She had her last period 12.6.77 which was scanty and lasted for 2 days. She had booked at the antenatal clinic of Kenyatta National Hospital because of high parity and because this time she had convinced her

husband on permanent sterilisation. She was first seen on 15.5.78 at a gestation age of about 36 weeks by clinical estimation. On this first visit her blood pressure was 110/70, mm Hg, her body weight was 70 kg and her urine did not show any abnormalities. The fetus was longitudinal with cephalic presentation and the uterine size was about 36 weeks. The fetal heart was present. Blood specimen was taken for Kahn test, for grouping and for haemoglobin estimation. She was asked to return to the antenatal clinic the following week. She was however admitted to the labour ward 5 days later.

PRESENT COMPLAINTS

She was admitted on 20.5.78 in the evening at 7 p.m. having ruptured membranes on the previous day at home. On admission she complained of slight lower abdominal pains for one hour, slightly blood-stained mucoid discharge.

PHYSICAL EXAMINATION

This was a middle aged woman of good build. Her height was 5 feet and 2 inches. Her general condition was satisfactory. She was not dyspnoic nor in any distr ... She was neither shocked nor pale. There was no oedema, nor jaundice. Her temperature was 36°C and an examination of her urine did not reveal any abnormalities.

CARDIOVASCULAR SYSTEM

Pulse: 84 per minute, regular, of good volume
Blood pressure: 120/70 mm Hg.
Heart: Clinically no cardiomegally. Normal heart sounds. No murmur was detected.

RESPIRATORY SYSTEM

Essentially normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended with the gravid uterus. There was no marked tenderness. The bladder was not distended. The liver and the spleen could not be palpated, and there was no free fluid in the abdominal cavity. The uterine size was about term. The fetus was lying longitudinally with cephalic presentation. The head was high and free. The amount of liquor was normal. No contractions were observed at the admission. The fetal heart was loud and clear at the rate of 144 per minute.

VAGINAL EXAMINATION

On inspection the external genitalia looked normal. No discharges were seen exteriorly. On speculum examination the vaginal cavity was normal, the cervix was healthy and the external os was closed. Liquor was seen draining from the cervical os. It was slightly blood-stained. There was no evidence of active bleeding.

DIAGNOSIS

A diagnosis of grand multipara with ruptured membranes for over 24 hours at term was made. Blood was cross-matched for her and she was started on parenteral crystalline penicillin one mega units every six hours. She was expected to go into spontaneous labour and therefore close observations were requested.

PROGRESS AND DELIVERY

Throughout the night she did not have any more complaints. Her pulse, temperature and blood pressure remained as at admission. There were no contractions through most of the night but towards morning few slight and rare contractions were observed, one in 10 minutes and lasting 10 seconds only. During the morning round the consultant re-examined her and thought she probably was going into labour. There was a slight show now on her pad. She did not go into established labour until 5 p.m. on 21.5.78. At this time she was found to be having 2 contractions in 10 minutes each lasting for 30 seconds. There was no undue tenderness of the abdomen which was soft between contractions. The bladder was not

distended. The fetal head was still high above the pelvic brim, and the fetal heart was regular 140 per minute. On vaginal examination there was no bleeding. The cervix was thick, only slightly effected, 2-3 cm dilated. The membranes were ruptured and clear liquor was draining. The head was well flexed and in the left occipital anterior position. The sacral promontory was not reached and the pelvis was normal. A diagnosis of early labour was made.

At 6 p.m. the contractions were 3 in 10 minutes and now lasting for 40 seconds. The fetal heart was regular at 140 per minute. The head had only slightly descended but was not engaged. But suddenly at 6.04 p.m. she had a precipitate delivery of a live female infant in fair condition. She was immediately given 0.5 mg ergometrine intravenously and the placenta was delivered by maternal effort 3 minutes after the delivery of the baby. There was heavy bleeding of about 1000 ml of blood after the third stage. Ergometrine 0.5 mg intravenously was repeated, the uterine fundus was rubbed to enhance the contraction although the uterus was well contracted, but the bleeding did not cease. Intravenous drip with normal saline was put up and the blood was sent for from the blood bank in the same hospital. By this time the pulse had become feeble at the rate of 90 per minute and the blood pressure had dropped to 90/60 mm Hg. The patient was rushed towards theatre for an urgent exploration of the genital tract. Because of the torrential bleeding that continued, the patient collapsed at the entrance to theatre. The anaesthetist gave 50 mg scoline intravenously and intubated at the entrance. On the operating table she received 1 gm hydrocortisone, 10 ml of 7% calcium gluconate and rapid intravenous infusion, and intermittent positive pressure with external cardiac massage. However, the patient died from exsanguination at 6.35 p.m.

POSTMORTEM RESULTS

There was a rupture of lower segment of the uterus running transversly and involving the left uterine artery. The cervix, the bladder and the anterior wall of the vagina were also torn. No products of conception in the uterine cavity.

CAUSE OF DEATH

Acute hyporolaemic shock from bleeding of the uterine vessels.

THE PLACENTA

This was complete, and weighed 465 gm. A few macroscopic infarcts. Membranes were present. Normal cord insertion.

THE BABY

This was a female infant weighing 3090 gm. On clinical examination it was term. The Apgar score at 1 minute was 10, cried immediately. There was no moulding of the fetal head, nor caput. No birth trauma was found. The baby remained in the hospital for 3 weeks and was then discharged to the relatives in satisfactory condition.

COMMENTARY

Grande multiparity is on the decrease in the American and European societies (J. O'Sullivan). However, this is not so in our environment where opposition to the ideas of family limitations or at least spacing of children arises partly from custom and partly from politico-economic tensions. For example some peasant societies have a long tradition of the importance and prestige value of large families to help work the land. Misunderstandings may arise where there are politico-economical tensions as was evident when the slogan "Birth control a Plan to Kill Negro" was frequently seen on the walls of Kingston, Jamaica during a conférence of the Planned Parenthood Federation D.B. Stewart). For these and other reasons grand multiparity with the inherent hazards is not likely to be a rarity in our maternity units for sometime.

The definition of "grande multipara" is lax but George and Power (1949) used it to denote all gravidae - 6 and above, a definition that)'Sullivan (1963) has upheld. The Report on Confidential Enquiries into Maternal Deaths in England and Wales (1960) emphasized the dangers to the mother in all pregnancies after the fifth. The inherent hazards have long been emphasized. Solomons (1934) referred to these patients as the "dangerous multipara" and pointedly observed that child-bearing is the only instance where practice does not make perfect. These patients are liable to a series of dramatic complications, all the more dangerous because they are unsuspected, and it is foolhardy to expect a woman with a long series of previous uneventful deliveries to maintain her unblemished record indefinitely (Donald, I). For these reasons Feeney (1953) referred to them as the "unpredictable multipara", and our patient is an illustration of this attitude. In the Report on Confidential Enquiries into Maternal Deaths in England and Wales (1960) amongst other complications influencing maternal mortality and morbidity prominently featured anemia especially the iron-deficiency type, antepartum haemorrhage, postpartum haemorrhage, oblique or unstable lie. But uterine rupture was the commonest cause of maternal deaths in the series reported by Eastman (1940). Trivedi et al (1968) while reviewing 181 cases of uterine rupture had 7 patients whose rupture could be attributed only to high

parity, and 5 of these died. Failure to recognise disproportion, which may be of minor degree, may lead to rupture after only a short duration of labour, and may occur when the contractions are only moderately strong. The duration of labour is usually short averaging about 7 hours (J.F. O'Sullivan 1963). The patient presented here had a very short labour followed by a precipitate delivery, about 2 hours. The rupture involved the lower uterine segment and the reason may be as that observed by Farid Akashesh in Amman, Jordan (1968) when analysing 104 cases 51% of which were spontaneous rupture. Rupture of unscarred uterus seemed always to occur in the lower segment of the uterus, this localisation being obviously due to mechanical causes of obstruction and overstretching of the thin and weak lower segment. Grande multiparity predisposes to the accident through the following mechanisms:

1. Lax abdominal wall with anteflexion of the uterus leading to malpresentation and malposition of the fetus resulting in mechanical obstruction.

2. The greater frequency of large fetus which predisposes to caphalopelvic disproportion.

3. The fibrous tissue infiltration of the uterine wall with grande multiparity.

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POST-PARTUM HAEMORRHAGE

EXAMINATION UNDER ANAESTHESIA AND EVACUATION OF THE UTERUS

NAME: PAULINE KARANI

NO: OBS 2948/76

AGE: 30 YEARS

TRIBE: TAITA

PARITY: 7 + 0 GRAVIDA 8

ADMITTED: 27.9.76

DELIVERED: 27.9.76

DISCHARGED: 30.9.76

PRESENT PREGNANCY AND ANTENATAL CARE

L.M.P.: 13.12.75

E.D.D.: 20.9.76

This patient was booked in our natal clinic because of high parity. She was first seen at 19 weeks of gestation and continued to attend regularly until term. She was seen about twelve times, where her weight gain, blood pressure (110/60 mm HG) remained stable. Urinalysis was normal on all occasions.
She was admitted with labour pains on 27.9.76 at 2.45 a.m., having laboured at home for about 2 hours.

SOCIAL AND PAST MEDICAL HISTORY

Educated up to standard seven, married since 1963, and lives with her husband, who is a prison warden at Nairobi Prisons. She works as a tailor.

Tonsillectomy was performed on her in 1972 in this Hospital. She had appendicectomy done in 1974 in Aga Khan Hospital. She had no other major illness.

PAST GYNAECOLOGICAL AND OBSTETRICAL HISTORY

The date of menarche was unknown but menstrual periods had been regular, of normal flow and lasting for 4 days every 28 days. She had never attended the family planning clinic. Between 1964 and 1974, this patient had had seven full term deliveries. All deliveries had been in different hospitals with labour lasting between seven and nine hours. It is noted that the 3rd, 4th, 5th and 7th deliveries were breech. All babies were weighed and their respective weights ranged between 6 and 8 lb. All of them are alive and well. Puerperium in each case was uneventful.

PHYSICAL EXAMINATION

General condition was satisfactory. She was neither febrile nor dehydrated, and did not show any evidence of varicose veins or oedema of the feet. She was 5 ft. tall. The urine contained no protein, sugar or acetone.

CARDIOVASCULAR SYSTEM

Pulse: 88/minute, regular of good volume.
Blood pressure: 120/70 mm Hg.
Heart: Not enlarged. No murmurs, normal heart sounds.

RESPIRATORY AND NERVOUS SYSTEM

Essentially normal.

ABDOMINAL EXAMINATION

The abdomen was symmetrically distended. The liver and spleen were not palpable. The fundal height was at term, which corresponded with her dates. The lie of the foetus was longitudinal, cephalic presentation, with the whole foetal head palpable above the pelvic brim. The foetal heart sounds were loud, regular and at the rate of 136 beats/per minute. There were mild contractions, one or two every ten minutes.

VAGINAL EXAMINATION

To establish a diagnosis of labour and its extent, a vaginal examination was performed, observing the rules of aseptic procedures. The external genitalia and vagina were found to be healthy. The cervix was fully effaced, thin and 3 cm dilated. Membranes were intact. The foetal head was balloting above the pelvic brim. Sacral promontory was not reached, and the pelvis was roomy with normal sacral curvature. The Ischial spines were not prominent, the subpubic angle easily admitted two fingers, and the pelvic outlet was within normal limits.

LABORATORY INVESTIGATIONS

Haemogram	:	14.9 gm%
Haematocrit	:	43.3%
Kahn test	:	Negative
Urinalysis	:	No abnormalities detected.
Blood group	:	A Rhesus positive

PROGRESS OF LABOUR AND DELIVERY

Observations of the mother and the foetal heart monitoring were done every 15 minutes as is routine with normal deliveries. The parameters remained fairly stable.

The patient was re-assessed after 6 hours of labour. The contractions were now fairly strong, with a frequency of 8 in every 10 minutes. The foetal head remained above the pelvic brim and the foetal heart rate was 132 beats per minute and regular. On vaginal examination, the cervix was thin and 5cm dilated with bulging membranes. Artificial rupture of membranes was done. The amniotic fluid was clear, and the cord was not felt. She was allowed to continue in labour. One hour later the patient was found to be in the second stage of labour, which lasted for 5 minutes only. Ergometrine 0.5 mg was given intravenously with the birth of the anterior shoulder. With the first contraction, the placenta was delivered by controlled cord traction. The placenta appeared normal but the membranes looked ragged. The 3rd stage of labour lasted 3 minutes. There was no obvious trauma to the birth canal. Total blood loss at delivery was about 150 c.c. Because of the ragged status of the membranes, the patient was to be closely observed for post-partum haemorrhage, or relaxation of the uterus which had contracted well after the 3rd stage. She was cross-matched for 2 pints of blood in case she bled.

PUERPERIUM

Two hours later the lochial loss was found to be heavier than normal, the uterus was relaxed. General condition remained satisfactory without obvious palor. Pulse was 80 beats per minute and blood pressure 110/70mm Hg. A decision was taken to examine the patient under general anaesthesia in theatre, consent for which had been previously obtained from the patient. A premedication of 0.6 mg atropine, sulphate was given intramuscularly, and a drip of 5% dextrose containing 20 units of syntocinon was started.

EXAMINATION IN THEATRE

The patient was anaesthetised while lying supine on the operating table. She was then put in lithotomy position. Perineal toilet was done and the patient draped. The bladder was emptied. There was a superficial laceration of the vaginal mucosa 2cm long, with slight bleeding. The surgeons right hand was inserted through the cervix into the uterus and exploration of the uterine cavity done using the ulnar aspect of the hand. The uterus was intact. There were some pieces of placental tissue in the uterine cavity, which were digitally evacuated. The cervix was intact. After evacuation and massage the uterus was now well contracted. The vaginal tear was now repaired using interrupted catgut stitches. No more bleeding was observed. The blood loss during this procedure was negligible.

POST-OPERATIVE MANAGEMENT

The patient recovered from the effects of anaesthesia soon. She had no complaints. No active bleeding was detected. Her pulse and blood pressure remained stable at 80 beats per minute and 110/70 mm Hg respectively. She did not require blood transfusion but continued on the syntochon drip for the next 4 hours.

She remained in the hospital for 2 more days. Her urinary output was adequate. She remained afebrile. Both mother and child were discharged in good condition to return to the post-natal and child welfare clinic but they did not return.

Duration of the first stage : 7 hours
Duration of the second stage: 5 minutes
Duration of the third stage : 5 minutes

COMMENTARY

Postpartum haemorrhage may divided into primary, where bleeding occurs within the first 24 hours after delivery and secondary, where bleeding occurs more than 24 hours after delivery, usually between the 5th and 15th day postpartum. Primary postpartum haemorrhage is defined as blood loss per vaginam in excess of 600 ml. This may be divided into third stage haemorrhage, which occurs before the expulsion of the placenta, and true postpartum haemorrhage which occurs after placental expulsion.

Primary postpartum haemorrhage may be due to

1. Bleeding from the placental site (inadequacy of uterine activity or retention of products of conception).
2. Bleeding from trauma of the genital tract.

Inadequacy of uterine activity may be due to many factors:

1. Retained products of conception which prevent efficient contraction of the uterine muscle.
2. Prolonged labour with inertia of the uterine muscle.
3. General anaesthesia.
4. Overdistention of the uterus as in hydramnios and multiple pregnancy.
5. A large placental sight.
6. Multiple fibromyomata.
7. Low lying placenta.
8. Abruptio placentae, and
9. Grand multiparity, where fibrous tissue is progressively replacing the muscular tissue of the uterine wall.

In high parity cases, full retraction of the uterus may be hampered by this increased quantities of elastic tissue in the myometrium. Furthermore, labour in these patients is usually rapid and the process will have occurred too fast for retraction to catch up with contraction in the uterine muscle (Donald). Bleeding may occur very early in the third stage. For this reason multiparous patients form a high risk group and in our patient this mechanism may have played an important part. The third stage of her labour was, therefore, conducted actively.

But the few pieces of products of conception that were retained in conjunction with the above factor made the uterus relax. Uterine relaxation or heavy lochial loss should be treated with oxytocic intravenous drip followed by examination under anaesthesia as was done in our patient. Examination in theatre is necessary as in these patients uterine rupture is a real possibility.

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V. INFECTIONS DURING PREGNANCY

S Y P H I L I S I N P R E G N A N C Y. STILLBIRTH

NAME: LUCY WANJIRU
OBS NO: 2446/77
AGE: 33 years
PARITY: 6 + 3

PAST MEDICAL AND SOCIAL HISTORY

This was a middle aged woman. She was married to a labourer and both live at Muguga. She is a housewife of primary education. She did not give any history of major medical or surgical illness. No history of blood transfusion, and no history of recent drug ingestion.

PAST OBSTETRICAL HISTORY

In 1961 at the age of 17 years she delivered a live male baby at term. This child is still alive. 1963 she delivered again at home a term female baby that died 2 weeks later from respiratory tract infection. 1964 she delivered at home a term male baby that died at the age of 4 years. 1966 at Thogoto Local hospital she had a male term baby that died at the age of one month. The reasons of these deaths are unspecified. In 1967, 1970 and 1973 she had midtrimester abortions that started with bleeding and pains. Curettage of the uterus was done only in 1967. Then in 1972 and 1975 she delivered in local hospitals term babies weighing 6 lb. and 9 lbs. respectively. Both these children are alive and well. There were no complications after these deliveries.

PRESENT PREGNANCY AND COMPLAINTS ON ADMISSION

L.M.P. 16.2.77
E.D.C. 23.11.77

She had not attended any antenatal clinic. She was admitted to this hospital as an emergency on 25.8.77 at the calculated gestation age of 28 weeks because she had lower abdominal pains and bloody discharge per vaginam and pruritus vulvae. She did not complain of dysuria.

PHYSICAL EXAMINATION

This was a middle aged woman of thin build. She was not dehydrated, not pale and was not jaundiced. She was not febrile. There was no lymphadenopathy. Her body temperature was $37^{0}C$. Urinalysis done in the ward showed a trace of albumin.

CENTRAL NERVOUS SYSTEM

No neurological defects were found.

CARDIORESPIRATORY SYSTEM

Essentially normal.

Pulse: 98 per minute, with good volume, regular.

Blood pressure: 100/60 mm Hg.

ABDOMINAL EXAMINATION

The uterine size was 28-30 weeks. Fetal parts were easily felt through the thin abdominal wall. It was difficult to determine the presentation of the fetus but it was lying longitudinally. No fetal movements were felt. On auscultation fetal heart could not be heard. No contractions were observed.

VAGINAL EXAMINATION

On inspection the external genitalia looked normal. No local lesions were seen. No inguinal lymphadenopathy. No blood seen on the pad. Speculum examination showed inflammed vaginal wall but no localised lesion. There was frothy slightly blood-stained, otherwise yellowish discharge from the external cervical os. There was no active bleeding. The cervix did not have any lesion or erosion. It was closed. No liquor was seen.

DIAGNOSIS

A diagnosis of intrauterine fetal death at 28-30 weeks and trichomonal vaginitis was made. This was confirmed later with sonicaid.

MANAGEMENT AND PROGRESS

Since she was admitted in the evening, most investigations could not be done until the next morning. On the following day

blood was sent for fasting blood sugar, Haemoglobin, Kahn test, for grouping and blood slides were sent for malaria parasites. A high vaginal swab was also sent together with a specimen of midstream urine.

Towards the evening of the same day she went into premature labour and after 2 hours she delivered a macerated stillborn weighing 1200 gm. The blood loss was negligible.

THE PLACENTA

This weighed 500 gm., had macroscopic infarcts and fatty degeneration in some areas. Unfortunately histology on this placenta was not performed.

On the following day some results were obtained from the laboratory:

Kahn test - Positive ++

FTA - ABS Test - Reactive +++

Haemoglobin: 10.2 g %

Haematocrit: 34%

MCHCH : 29.9 % (normal 32 - 36%)

Blood film : No malaria parasites present
Normocytic, normchromic erythrocytes.
Leucocytosis 18900 with a shift to the left.

Fasting blood sugar: 65 mg %

Blood group: A Rh positive

Vaginal swab: Trichomonas vaginalis present

Urine: Sterile. A few pus cells present.

The patient was retained in the ward until she completed her treatment which consisted of 1 mega units of penicillin daily and 200 mg metronidazole thrice daily, both continued for 10 days. The husband was referred to the City Council Special Treatment Clinic for investigations and follow up.

Our patient was requested to return to the postnatal clinic but she did not return.

POSTMORTEM

This examination had been requested for but the fetus decomposed before it could be carried out. The delay was due to the pressure of work at the laboratory.
At birth the fetus had the liver about 4 cm below the costal

COMMENTARY

Syphilis among other infections (Rubella, Toxoplasmosis) is an example of maternal infection which may spread across the placenta to the fetus and cause intra-uterine death. The formerly respected "barrier" function of the placenta has no protective mechanism for the fetus against this infection. In most cases the fetus will become affected by the disease, and this affect will vary with the stage of the infection in the mother. In a recently acquired infection the fetus will be so markedly involved that the fetal death in utero is almost certain. Since there were no visible signs of the disease in our patient, and because there was active trichomonal vaginitis, probably the disease was recent. The infection is thought to reach the fetus during the second trimester or later, so that syphilis is rarely a cause of early abortion.

The diagnosis of syphilis in the mother will be made in the same way as in the non-pregnant patient. At our antenatal clinic a physical examination is done on all patients for any illnesses including syphilis, but as the effects of this disease in the female are less marked than in the male, and the primary and secondary phases may pass unnoticed, routine serological investigation becomes indespensable. This patient had not booked at any antenatal clinic and therefore early treatment had not been possible.

Kahn test is mainly the secreening test in our hospital but Treponema Immobilisation is occasionally done. These tests are common for both syphilis and yaws (Framboesia, caused by the genially related Treponema pertenue) but since the treatment is the same for both, immediate treatment seemed reasonable.

In 1977 amongst 3860 deliveries 6 patients showed positive Kahn test (0.15%). Two babies were stillborn and no other cause could be found. These included the case described, and both were not booked but were admitted as emergencies. The other 4 cases were booked and treated antenatally. The infants did not show evidence of congenital syphilis (desquamation of soles and palms, macular skin rash, hepatosplenomegally, or lymphadenopathy). None of these infants underwent readiological examination for periostial or metaphyseal changes. Since a false positive reaction may be carried over from the mother, and a true positive may take

sometime to develop, serological tests may not be necessary, but if the mother is Kahn positive the infant is always treated in our unit with parenteral penicillin for 10 days.

In this case histology examination of the fetus or placenta was not done and probably we would have found the basic tissue reactions as described by Turner (1959), namely:

1) An exudate with infiltration of lymphocytes, plasma cells and macrophages.
2) Proliferation of fibroblasts.
3) Endarteritis.

The case stresses the need for antenatal care from early pregnancy as opposed to the trend in our community for booking after 28–30 weeks.

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KALA AZAR IN PREGNANCY

INTRA-UTERINE FETAL DEATH

NAME: KALEKYE MUTUA
OBS NO: 5467/78
UNTI NO: 2919 - 43
AGE: 26 YEARS
PARITY: 2 + 1
L.M.P. 23.6.78

SOCIAL HISTORY

This was a housewife of primary education married to a mechanic. The husband works in Nairobi while she lives in Yatta Division of Machakos District and visits her husband only on occasions. She married in 1972 at the age of 22 years. The husband has no other wife.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

Our patient could not remember the date of her menarche. After marriage she got pregnant the following year and delivered a live female baby at term at home in 1974. There were no postpartum complications and this child is alive and well. In 1975 she had a miscarriage at home at about 5 months. She did not have any problem, the bleeding was not excessive and she did not attend any hospital. Then in 1976 she delivered at term at home a live male baby that is still well at home. There were no complications postpartum. She had not attended any family planning clinic. Her periods prior to this pregnancy had been regular, once a month and lasting 4-5 days. No dysmenorrhea during periods. The flow was usually not heavy.

PAST MEDICAL HISTORY

She was admitted to the medical wards of this hospital on 7.10.78 complaining of headaches with dizziness and general body weakness for four weeks and exertional dyspnoea. She was found to be febrile 38.8°C, and very pale. The pulse was 120 per minute, regular but of low volume. The heart was slightly

enlarged to the left, and a haemic murmur was found at the apex. The chest was clear. The liver was 2cm below the costal margin and the spleen about 8cm below the costal margin. There was no oedema. A diagnosis of severe anemia due to visceral leischmaniasis (Kala-azar) was made. The following investigations were done:

Haemoglobin	:	4.2g%
PCV	:	12.4%
MCV	:	85
Prothrombin time index	:	88%
RBC	:	3.15×10^6 per mm^3
WBC	:	3.0×10^3 per mm^3
Polymorph	:	55%
Lymphocytes	:	27%
Monocytes	:	5%
Eosinoph	:	13%
ESR	:	85
Platelets	:	slightly reduced.
Film	:	Slight polychromasia. Slight poikitocytosis and anisocytosis. No parasites were seen.
M.S.S.U.	:	ph 5. No protinuria. No glycosuria. No growth obtained.
Blood culture	:	No growth obtained.
Bone marrow	:	Hypercellular activity. Megaloblastic erythropoiesis. Increased plasma and reticulum cells. Numerous free and intracellular Leishmania. Donovani bodies.
Splenic puncture	:	L.D. bodies present.
Widal Test	:	Negative.
Eletrolytes	:	Within normal limits.
Urea	:	54mg%
SGPT and SGOT	:	Within normal limits.
Total Bilirubin	:	1.3 mg%
Direct	:	0.6 mg%
Indirect	:	0.7 mg%

Management in the medical wards consisted of blood transfusion 1000ml over 48 hours, folic acid 5mg once daily and injection pentostan 4.5cc once daily for 30 days. Under this treatment her general condition improved and the haemoglobin rose to 8.6g% with PCV 27.6% in 3 weeks. The liver and the spleen reduced in size. She was then discovered to be pregnant and was referred to the ante-natal clinic for booking.

PRESENT PREGNANCY

L.M.P. 23.6.78

E.D.D. 30.3.79

She was booked on 28.11.78 at the gestation of 23 weeks. The uterine size was 22 - 24 weeks. There was no fetal heart hear. She said she had not felt fetal movements for the last week. She weighed 53 kg. Her blood pressure was 100/60 mm Hg and her urine did not show any abnormalities. Blood was taken for haemoglobin, Kahn test and was given ferrous sulphate and folic acid and asked to return the next week. The following week the uterus was the same size and the blood pressure had not changed. Her body weight however had dropped by 500gm. She was admitted for investigations.

COMPLAINTS

At admission she complained of no fetal movements for the last two weeks. She had no other problem.

PHYSICAL EXAMINATION

This was a slender young woman weighing 52.7kg and 5 feet tall. She was slightly pale but had no jaundice nor oedema. She was afebrile.

CARDIORESPIRATORY SYSTEM

Heart: Essentially normal.

Pulse: 80 per minute, regular.

Blood pressure: 100/60 mm Hg.

Chest: Clear on both sides.

PER ABDOMEN

The uterine size was about 22/52. No fetal movements were felt. There was no fetal heart heard by fetoscope auscultation and this was confirmed by sonicaid. The spleen was 4cm below the costal margin, slightly tender and soft. The liver was not palpable. A diagnosis of visceral leishmaniasis with intrauterine death at 22 - 24 weeks was made and she was admitted for further investigations.

LABORATORY INVESTIGATIONS

Haemoglobin	:	9.4g%
PCV	:	31.1%
MCV	:	88 (N 77 - 91)
MCHC	:	30.1 (N 32 - 36)
Polymorphs	:	53%
Lymphocytes	:	30%
Monocytes	:	1%
Eosinophils	:	16%
Reticulocytes	:	8%
RBC	:	3.49 X 10^6, film normal. No parasites seen.
WBC	:	6.5 X 10^3
Kahn test	:	Negative
Coagulation screening	:	Parameters within normal limits.
Blood group	:	A Rh - positive
Electrolytes	:	Within normal limits.
Blood urea	:	21 mg%.
MSSU	:	No abnormalities.
Abdominal x-ray	:	Spalding's sign positive.

MANAGEMENT

Since the fetal death had been confirmed there would be nothing to gain by leaving the fetus in the uterus for long. However, before delivery could be undertaken it was necessary to correct her slightly anemic condition and meanwhile hoping that she might go into spontaneous labour. She was put on ferrous sulphate 200mg thrice daily and folic acid 5gm once a day. Ten days later her haemoglobin had risen to 11.4g%, PCV 33.2% and MCHC 34.2. It was decided to induce her with extra-amniotic prostaglandin.

INDUCTION OF LABOUR

On the morning of 24.1.79 she had a soap enema. She was later transferred to labour ward where she was put in lithotomy position. The lower abdomen, perineum and the vulva were cleaned with cetrimide solution. A Foley's catheter was introduced into the uterus through the cervical os. The balloon was filled with 20ml of normal saline. The catheter also was filled with normal saline and closed with a long artery forceps. The patient was then put in a bed in the labour room. A solution of prostaglandin F_2 alpha was prepared in normal saline to contain 375 microgrammes per millilitre. This was injected extra-amniotically at the rate of 1ml per hour. The infusion was repeated 15 times. By this time she had two contractions every 10 minutes each lasting for 25 seconds. When the cervix became dilated the catheter fell off and an intravenous solution of 5 units syntocinon in 500 ml of 5% dextrose was started at the rate of 30 drops per minute to escalate by 10 drops per minute every 15 minutes. Two hours later she delivered a small macerated fetus weighing 500gm. The placenta was complete with membranes and weighed 290gm. The blood loss was negligible.

PUERPERIUM

Post delivery observations were satisfactory. She had no complications and she was discharged on 28.1.79 to attend the parasitology clinic of this hospital.

HISTOLOGICAL EXAMINATION

It was unfortunate that the placenta was not received at the laboratory. However, repeated sections of formalin preserved fetal organs such as skin, spleen, liver, marrow, brain and various muscles did not reveal any L.D bodies. There was no enlargement of the internal organs.

COMMENTARY

Leishmaniasis is an infectious disease caused by parasites of the genus Leishmania. These were originally parasites of the rodents but they have become adopted to canines and man in whom they cause three main clinical types of the disease, namely:

1. Cutaneous leishmaniasis (L. tropica).
2. Mucocutaneous leishmaniasis or espundia (L. braziliensis).
3. Visceral leishmaniasis or kala-azar (L. donovani).

The three causative agents which affect man cannot be distinguished morphologically culturally or by animal inoculation but can be distinguished serologically (P.E.C. Manson-Bahr).

Kala-azar is the commonest type of leishmaniasis in Kenya (Fendall 1953). In East Africa it is found from Kapoeta in South-eastern Sudan eastwards through northern Kenya to Somalia along the Juba river and southwards in Kenya along the Tana river. In parts of Kenya it is sporadic except along the Tana river and in Kitui and Machakos districts, where a large epidemic started in 1953 and has continued since, the areas becoming endemic (Fendall 1953, and J. Carswell 1953). In these areas Kala-azar was found in association with eroded termite hills in microfoci (Wijers and Mwangi 1966).

The disease clinically resembles malaria in many respects. As can be seen from the clinical findings of our patient, it is characteristically associated with an irregular, reccurring fever over a period of weeks, occasionally having a double daily rise, progressive enlargement of the spleen, followed by hepatomegally. Usually later in the course of the disease anemia, leucopenia and progressive wasting worsen the patient's condition.

The aetiological agent was Leishmania donovani, a protozoan organism which occurs in the leptomonas form (flagellate) in

the bodies of various insects. The vector of the Kenya Kala-azar is a blood sucking sandfly Phlebotomus martini (Manson-Bahr et al. 1963, and Heish et al. 1962).

In visceral leishmaniasis infective promastigotes enter the body at the site of inoculation, causing a primary lesion, leishmanioma, which may be small and inapparent. The cellular reaction at the site of invasion is a proliferation of the amastigote-filled histiocytes in the dermis and infiltration of plasma cells and lymphocytes. The amastigotes escape into the bloodstream in macrophages and leucocytes to colonize the endothelial cells of the spleen, liver, bone marrow, lymphatic glands and other organs. The hypertrophy of these organs is mainly due to the reticulo-endothelial proliferation and masses of amastigote parasites. Infarcts are common due to pressure atrophy which may lead to cirrhosis.

As clinically Kala-azar resembles malaria it may alter the course of pregnancy by affecting either the maternal health or the fetus directly and that way influence maternal morbidity and mortality and fetal loss. High and periodic pyrexia as in malaria may cause maternal morbidity, may activate the uterus and cause abortion or premature labour.

As in malaria placental as well as transplacental infection is possible. Malarial parasitisation of the placenta causes a marked cellular reaction which interferes with the circulation of maternal blood through the intervillous spaces. This impairs fetal growth resulting in babies of low birth weight (Cannon, 1958). It may be reasonable to assume that the same mechanisms may interplay in Kala-azar.

Transplacental infection with malaria has been argued for (Covell 1950) and against (Madecki and Kretscher 1966, Edington 1967), but in Kala-azar the cases reported in China by Chung, Chow and Lu, 1948 (quoted by A.W. Woodruff) and elsewhere by Lowe and Cooke, 1926 (quoted by Manson-Bahr) would suggest that congenital Kala-azar is possible. However, at the parasitological

clinic of this hospital three women were treated for Kala-azar during pregnancy with pentostam in the last three years. There were no adverse effects of either the disease or the drug on the pregnancy or outcome. One had twins which were reported well at the time of writing. The other two children were normal and are well. None of these children showed evidence of congenital Kala-azar (Dr. P.A. Kager, Personal communication). Postmortem examination of the fetus of the patient under discussion did not reveal congenital Kala-azar.

Anemia in Kala-azar is invariable in advanced cases and was formerly thought to be due to bone marrow hyperplasia (Sweeney et al. 1945) but it was demonstrated by Knight et al. (1967) to be due to hypersplenism. They demonstrated that there were no gross abnormalities in the forrokinetic studies of Kala-azar patients, and that there was a significant sequestration and haemolysis of the red cells with a half normal lifespan by an enlarged spleen. It was suggested that the anemia in Kala-azar is an antoimmune process just as in malaria. The leucocytes are reduced (and may advance into agranulocytosis) with a relative lymphocytosis, mononucleacytosis and diminished neutrophils. This was supported by derangement of plasma proteins 60-70% of which are globulins (which fall with treatment) and the presence of specific antibodies found with immuno fluorescent methods (Bray 1969). Unfortunately, the last two investigations were not carried out in our patient.

Thus, any or all of the above reasons (maternal pyrexia, placental parasitisation with resultant impaired maternal circulation, severe maternal anemia and wasting) may directly or indirectly have been responsible for the intra-uterine fetal death in this case. The prognosis of antimony sensitive cases is good and our patient has a chance of future successful pregnancies.

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L O N G C O M M E N T A R Y

THE RELATIONSHIP OF THE SHAKE TEST TO THE LECITHIN/SPHINGOMYELIN RATIO IN KENYATTA NATIONAL HOSPITAL.

An enigma in modern obstetrics management is the proper timing of delivery in complications that threaten the life of the fetus. The dilemma is to choose between prematurity and the high fetal risk of the continued intrauterine existence. Diabetes mellitus, toxaemia, Rh incompatibility, bad obstetric history and postmaturity are such notable situations where a reasonable index of fetal maturity is needed.

Determination of gestational age by menstrual history alone seems so disastrously unreliable that R.D. Bryant (1955) reported a 4.8% incidence of premature birth in 878 Caesarean deliveries in which gestational age was based on menstrual history and clinical assessment. Benson et al. (1969) reported an incidence of 8.4% in 405 elective caesarean sections which were primarily timed according to the patient's history and clinical assessment.

If the babies are delivered prematurely Respiratory Distress Syndrome is the major problem as 14% of preterm babies develop this condition. The incidence is higher the shorter the gestational age and is about 50% in the group 1000 - 1500gm, falling to 5% in the 2000-2500gm group. 50% of the newborns with Respiratory Distress Syndrome die, and RDS causes more than a half of premature newborn deaths during the first three days of life (Robert Usher, 1961).

Bound et al. (1956) found that pulmonary syndrome of the newborn, intraventricular haemorrhage, pneumonia and birth trauma accounted for $2/3$ of all neonatal deaths in their survey of neonatal deaths. Bound then coined the term "Pulmonary Syndrome of the newborn" to describe cases of secondary resorption atelectasis together with one of the following: hyaline membrane, intra-alveolar haemorrhage or pulmonary oedema. This condition is now usually referred to as Respiratory Distress Syndrome and almost invariably associated

with the preterm babies. The hyaline membrane consists of an eosinophilic membrane of patchy distribution plastered against the walls of the air passages, especially the alveolar ducts (A.E. Claireaux, 1954). Distal to these points of obstruction the alveoli collapse and become filled with fluid. The membrane is thought to be due to particulate matter occurring in liquor amnii and possibly the inflammatory reaction so caused within the lungs. The sequence of events is thought firstly to be the development of fetal anoxia before or at birth resulting in the deep inspiration of liquor which is not itself, sufficient to obstruct subsequent breathing, but the solid matter, so deposited sets up aseptic irritative changes resulting in production of the hyaline membrane. It is also possible, on the other hand, that this membrane is a result of exudative phenomenon from the bronchiolar and alveolar duct epithelium (I. Donald, 1969).

In 1959 Avery and Mead described a lipoprotein, named surfactant which may prevent pulmonary collapse. Pattle et al. showed in 1962 that this surfactant is not found in infants dying of the RDS. The current view is that the surfactant is produced in the fetal lungs and deposited in the amniotic fluid. Gudson and Waite (1972) measured total phospholipids in amniotic fluid and noted a mean rise of concentration from 20 mmol/l in early pregnancy to 30–50 mmol/l in late pregnancy. These authors assumed 70% of the hydrolysable phospholipids to be phosphatidylcholine, i.e. Lecithin. Other investigators have separated the lipid fractions of the amniotic fluid by thin layer chromatography, and among them Lecithin and sphyngomyelin have been found useful in predicting fetal lung maturity. Measurements of absolute values of these fractions for this purpose have been considered less reliable (Nelson, 1972) but the Lecithin/sphingomyelin ratio was introduced by Gluck et al (1971) as a diagnostic tool for assessing fetal lung maturity and the expected risk of RDS in newborns. This is because lecithin was

found to rise sharply at the gestational age of 36 weeks towards term, while the concentration of sphingomyelin increased only insignificantly. Using this method Lecithin/ sphingomyelin ratio above 2 was associated with negligible risk of RDS in the newborn.

The Lecithin/sphingomyelin ratio determination on thin paper chromatography requires expensive equipment and considerable technical knowledge for reliable results, which almost precludes its use in most hospitals. But the "Shake Test" as described by Clements et al. in 1972 has been found to be extremely useful as well as equally accurate in assessing fetal lung maturity. This has been more widely used as it can be done as a side room procedure and is relatively quicker and easier to perform. The accrued simplicity has not sacrificed accuracy.

Birth weight has been used as criterion for prematurity and in the international definition, a premature baby has been arbitrarily accepted as that with a birth weight below 2500g. But this has not found universal acceptance as the proportion of babies weighing less than 2500g is higher in tropical areas, and may be about one third of the total babies born (D.B. Jelliffe). The low birth-weight tropical neonate is not a single entity, but probably the end result of various factors, many of which overlap and are a combination of inherited and acquired characteristics such as maternal stature, ethnic groups, malnutrition, pre-existing maternal sub health, socioeconomical groupings and climatic factors. It is also obvious that babies which are underweight due to true "Prematurity" (an abnormally short period of gestation) functionally differ from those that are underweight at full term. Different clinical problems develop in babies of the same birth weight but different gestational ages. Furthermore, the identification of a high-risk group is facilitated by the use of gestational age information, as well as birth weight information. In this connection the classification of newborns proposed by Battaglia and Lubchenko in 1967 has found more acceptance as it incorporates both these aspects so that

newborns are divided as Preterm, Term, Posterm; and subdivided as small for gestational age (SGA), appropriate for gestational age (AGA), or large for gestational age (LGA).

In order to facilitate the medical care in the nursery, and to anticipate the problems a newborn is likely to develop, and thus make an effort to prevent them, it is necessary to estimate the gestational age by a clinical examination of the newborn. This will help to correlate the gestational age as determined by history and clinical assessment during antenatal period, with birth weight information. For the purpose of this study a scoring system has been used that is based on that proposed by L.M.S. Dubowitz in 1970, and uses neurological as well as the external characteristics. This scoring system is the one routinely used in this hospital (The table is attached).

A prospective study was undertaken to correlate information obtained by history and clinical assessment at the antenatal clinic, data on Lecithin/sphingomyelin ratio, the results of Shake test with the results of clinical examination of the newborn, the performance of the newborn at birth and also birth weight information.

MATERIAL AND METHOD

Seventy eight patients were studied. These were mainly our booked patients who attended our antenatal clinic and were subsequently delivered in our maternity unit for the period 1-3-77 to 30-6-77. During this period our unit catered for about 1500 patients but those studied represented the high-risk group only.(TABLE I)

Repeat Casarean Section	Hyper tensive Disease	APH	P.O.H.	Malpre-sentation	Post Dates	Diabet.	[redacted]
38	12	5	7	3	3	2	

TABLE I. REASONS FOR AMNIOCENTESIS

The history relating to the duration of pregnancy as calculated from the first day of last menstrual period and the time of quickening and clinical assessment of the uterine size were obtained by different members of this unit at the visits to the antenatal clinic. Care was taken to ascertain if the periods had been regular and of normal duration, and whether the patient had been on hormonal contraceptives before embarking on the present pregnancy. In no case was it necessary to adjust the duration of pregnancy in this connection.

In all patients amniotic fluid was obtained by amniocentesis which was performed in the ward using aseptic procedure. Large bore intravenous needles were used. Amniotic fluid was obtained from the suprapubic area of a patient lying in a semi-recumbent position. Patients were asked to empty the bladder prior to the procedure. Local anaesthetic was considered unnecessary, and only a few patients were apprehensive as to require a sedative premedication. Amniotic fluid was obtained in all patients, although in a few patients more than one attempt was necessary.

The amniotic fluid so obtained was analysed within the hour as the laboratory is situated within the hospital compound. The shake test was performed as described by Clements in 1972 in all specimen with clear amniotic fluid. In those that meconium was present the shake test was not done as this would give false positive results. If a specimen was bloodstained it was centrifuged at 3000 revolutions per minute for 5 minutes and if the haematocrit was found to be over 3% it was considered unsuitable for the test.

LECITHIN/SPHYNGOMYELIN RATIO

Lecithin/sphyngomyelin ratio was calculated from the areas of the respective spots of these compounds on plates and thin layer chromatography as used by Gluck et al. (1971) and Whitfield et al. (1972). The babies were weighed immediately after birth or after completion of rescucitation if this had been necessary. Immediate performance of babies was graded by the

Apgar score system. This is a routine in this hospital so that all members of the nursing staff are familiar with it.

The clinical gestational age evaluation of the newborns was performed between 12 hours and 24 hours of birth, but not later. This was done in all cases by the author who had taken a month practising this procedure under the guidance of a paediatric consultant, before undertaking the present study. During this familiarisation period the author evaluated about 300 babies that are not included in this study. The estimated gestational age was found by aggregating the sum of all scores on the neurological as well as external characteristics scales in the table.

RESULTS

The Shake Test performed as described above yielded the following results as compared to the results of thin layer chromatography:

4 specimen showed only a ¼ ring in dilutions of 1:1 and these had a mean L/S ratio of 1.3.

5 specimen had a half ring in dilutions of 1:1 with a mean L/S ratio of 1.52

13 specimen had a three-quarter ring in dilutions of 1:1 with a mean L/S ratio of 1.78. This group was considered as Negative Shake Test and the mean L/S ratio for all 22 specimen was 1.60.

There were 25 specimen in the intermediate group which had a full ring in the 1:1 dilutions but a three-quarter ring in the 1:2 dilutions, showing a mean L/S ratio of 2.24. Finally there were 41 specimen that gave a full ring in both dilutions. This group was considered positive Shake Test, and the mean L/S ratio was 2.41 (TABLE II).

TABLE II

THE SHAKE TEST RESULTS

DILUTIONS	SIZE OF STABLE RING				
1:1	¼	½	¾	1	1
1:2	-	-	-	¼	1
NO. OF SPECIMEN	4	5	13	25	41
MEAN L/S RATIO	1.13	1.52	1.78	2.24	2.41
RANGE	1.0 - 1.36	1.18 - 1.87	1.65-2.11	2.0-2.81	2.0-3.43
STANDARD DEVIATION	0.171	0.263	0.129	0.182	0.358

When the Shake Test gave a stable ring in both dilutions this was considered as positive and there were 41 newborns delivered in this group. On the other hand, if the ring was not stable in both dilutions this was negative and in this group 9 newborns were delivered. In between these extremes the shake test gave a stable ring in the 1:1 dilution but not in the 1:2 dilution. In this intermediate group 27 newborns were delivered. Of the 41 newborns in the first group one was a stillbirth due to ruptured uterus, and 2 babies delivered by caesarean section had Apgar score below 8 at one minute. This was attributed to the operation and general anaesthesia. They were later discharged in good condition.

In the intermediate group 7 babies had Apgar score below 8 at one minute.. In all of them the reasons could be found in the perinatal conditions surrounding each case: 4 were delivered by caesarean section each due to maternal diabetes, prolonged rupture of membranes, placenta praevia, and the fourth due to bad obstetric history. 2 were anoxic at delivery due to prolonge labour in elderly primigravidae. The last baby was delivered vaginally after induction due to abruptio placentae. There was no stillbirth in-this group. (TABLE III).

In the group delivered with negative shake test there was one stillbirth due to neurotubal defects. 3 babies had low Apgar score at 1 minute. All 3 were delivered by caesarean section one after prolonged labour, the second because the mother had a previous caesarean section scar and in labour, and the third because of premature rupture of membranes in a previous scar at 38 weeks.

In all groups no baby developed Respiratory Distress Syndrome.

PERFORMANCE OF NEWBORNS

6

SHAKE TEST	NEGATIVE	INTERMEDIATE	POSITIVE
NUMBER OF NEWBORNS	9	27	41
APGAR SCORE BELOW 8 AT 1 MINUTE	3	7	2
STILLBIRTHS	1 F.A.	0	1 RUP.UT.
R D S	-	-	-

After assessing the newborns 12 to 24 hours postnatally as described above, 65 of them were found to be about term, that is between 38 completed weeks and just below 42 weeks. Only 6 newborns were assessed as below 38 weeks, and only 5 were assessed as postmature, that is above 42 weeks. The mean L/S ratio in the group below 38 weeks was 2.2417, whereas, in the term group the mean L/S ratio was 2.2851, and in the postmature group it was 2.352. It would seem that at about 36 weeks the surfactant in the amniotic fluid had reached already the level that T.I. Wagstaff and D.R. Bromham (1973) described as high in their laboratory, that is L/S ratio above 2.

MEAN L/S RATIO OF DIFFERENT GESTATIONAL AGES

POSTNATAL CLINICAL ASSESSMENT	NUMBER OF NEWBORNS	MEAN L/S RATIO
BELOW 36 WKS	0	-
36^{+} - 38 WKS	6	2.2417
38^{+} - 42 WKS	65	2.2851
OVER 42 WKS	5	2.352

CONCLUSIONS

Most of our patients remembered the first day of their menstrual period. They repeated the same date if asked several occasions during their pregnancy. This correlated well with clinical evaluation of the uterine growth and in most cases corresponded well with postnatal clinical assessment of the newborns. This would indicate that the majority of patients attended to in this hospital do give reliable dates of their menstrual periods. However, it would be dangerous to use this information alone for the purpose of timing deliveries, but it would be a reliable guide in timing amniocentesis for the shake test.

It seems possible to conclude from the above data that the L/S ratio correlates with the results of the shake test in the prenatal assessment of the fetal pulmonary maturity in this community, and the relation is linear as shown in the graph. If the shake test shows a full stable ring in the 1:1 dilution, but a ½ ring in the 1:2 dilution the L/S ratio is above 2 and babies born at this time of their gestation have not had respiratory difficulties associated with inadequacy of pulmonary surfactant. This is in agreement with the findings of Wagstaff and Bromham (1973) that if babies are delivered while L/S ratio is above 2 the risk of RDS is negligible.

The value of the shake test cannot be overstressed in our community where the necessary technology for the more cumbersome L/S ratio determination cannot be available for most of the hospitals.

In this study of a high risk group the pregnancies were carried as near term as possible in the prevailing circumstances in each case. Nevertheless, 9 patients had to be delivered while the shake test was still negative, 27 while it was intermediate. In general, the respiratory performance of the newborns was satisfactory and none of them developed RDS. The intermediate group had a mean L/S ratio above 2 as compared to Wagstaff and Bromham's intermediate group with L/S ratio 1.5 - 2. This would seem to indicate that

perhaps in this community fetus achieve pulmonary maturity earlier than elsewhere with a significant rise of the ratio at about 36 weeks.

The 9 babies what were delivered while surfactant test was negative require a special comment. One baby was a stillbirth due to abruptio placentae and had multiple neurotubal deformities. 2 babies were born 14 days after the amniocentesis had been done. 2 babies were born 5and 6 days respectively after the amniocentesis, and another baby was delivered 2 days after the amniocentesis. The remaining 3 babies were delivered within 24 hours after amniocentesis. The shake test results do not, therefore, reflect the status of lung maturity at delivery of 5 infants. This would not, therefore, indicate that if babies are delivered while surfactant test is negative in this hospital they run a reduced risk of respiratory distress syndrome. In fact, during the same period under review there were 1134 live births of which 75 died in the neonatal period 6.61%. 18 of these deaths were associated with respiratory distress syndrome (24%).

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TECHNIQUES OF NEUROLOGICAL ASSESSMENT

OSTURE

With the infant on his back and quiet, score as follows:

arms and legs extended	= 0
slight or moderate flexion of hips and knees	= 1
moderate to strong flexion of hips and knees	= 2
legs flexed and abducted, arms slightly flexed	= 3
full flexion of arms and legs	= 4

SQUARE WINDOW

Flex the hand at the wrist. Exert pressure sufficient to get as much flexion as possible. The angle between the base of the thumb and the front of the forearm is measured and scored according to diagram.

ARM RECOIL

With the infant on his back, fully flex the elbow for five seconds, then fully extend by pulling the hands and release. Score the reaction as follows:

remain extended or random movements	= 0
incomplete or partial flexion	= 1
brisk return to full flexion	= 2

POPLITEAL ANGLE

With the infant on his back and the pelvis flat on the examining surface, the leg is flexed on the thigh and the thigh fully flexed with the use of one hand, with the other hand the leg is then extended and the angle attained is scored as in the diagram.

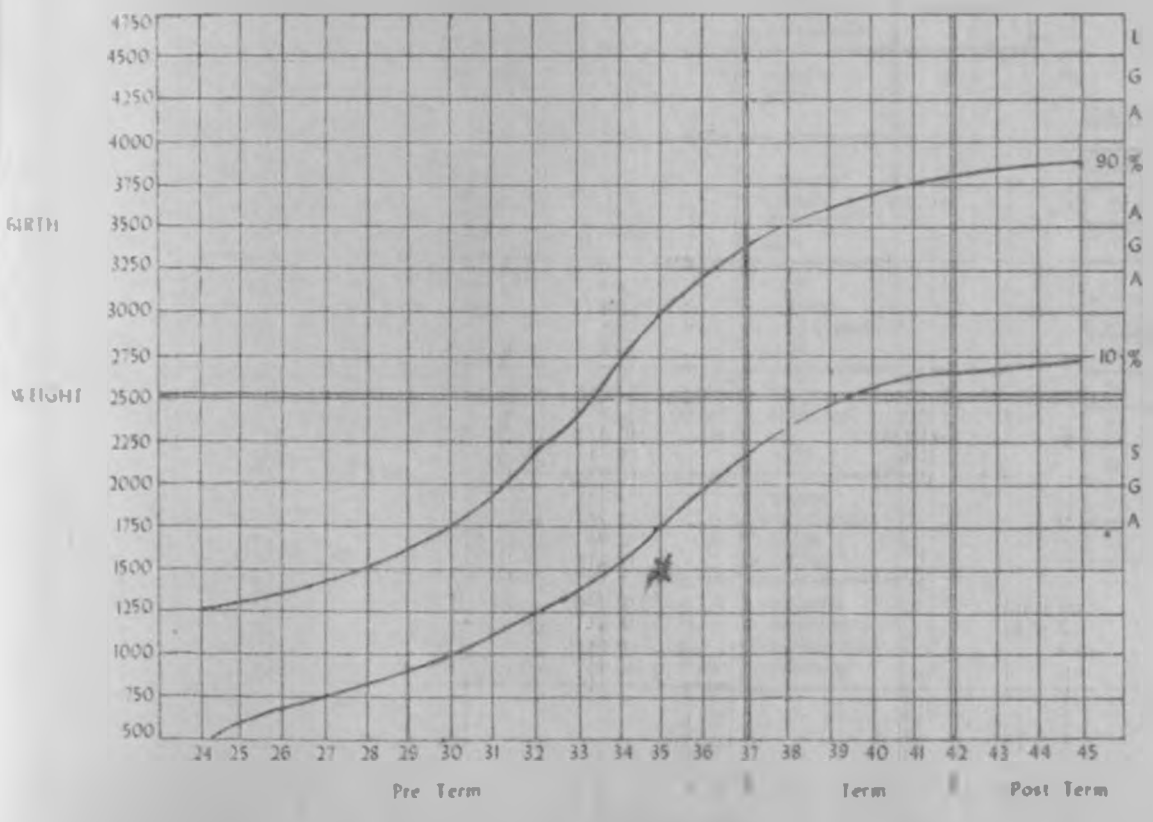
SCARF SIGN

With the infant on his back, take the infant's hand and pull it across the neck and as far across the opposite shoulder as possible. The elbow may be lifted across the body. Score according to the location of the elbow:

elbow crosses the chest completely	= 0
elbow crosses the midline but does not cross the chest completely	= 1
elbow reaches but does not cross the midline	= 2
elbow does not reach the midline	= 3

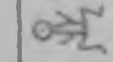
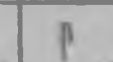
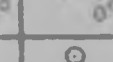
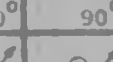
HEEL TO EAR

With the infant on his back, hold the infant's foot with one hand and move it as near to the head as possible without forcing it. Keep the pelvis flat on the examining surface. Score as in the diagram.



ESTIMATION OF GESTATIONAL AGE

Neuromuscular Maturity

	0	1	2	3	4	5
Posture						
Square Window (wrist)	 90°	 60°	 45°	 30°	 0°	
Arm Angle	 180°		 100°-180°	 90°-100°	 < 90°	
Popliteal Angle	 180°	 160°	 130°	 110°	 90°	 <90°
Scarf Sign						
Heel to Ear						

Name: Hosp. Number:

Date of Birth: Sex:

Birth Wt: Tribe

Gest. Age by dates:

Gest. Age by Exam:

SGA AGA LGA

Apgars: 1 min: 5 min:

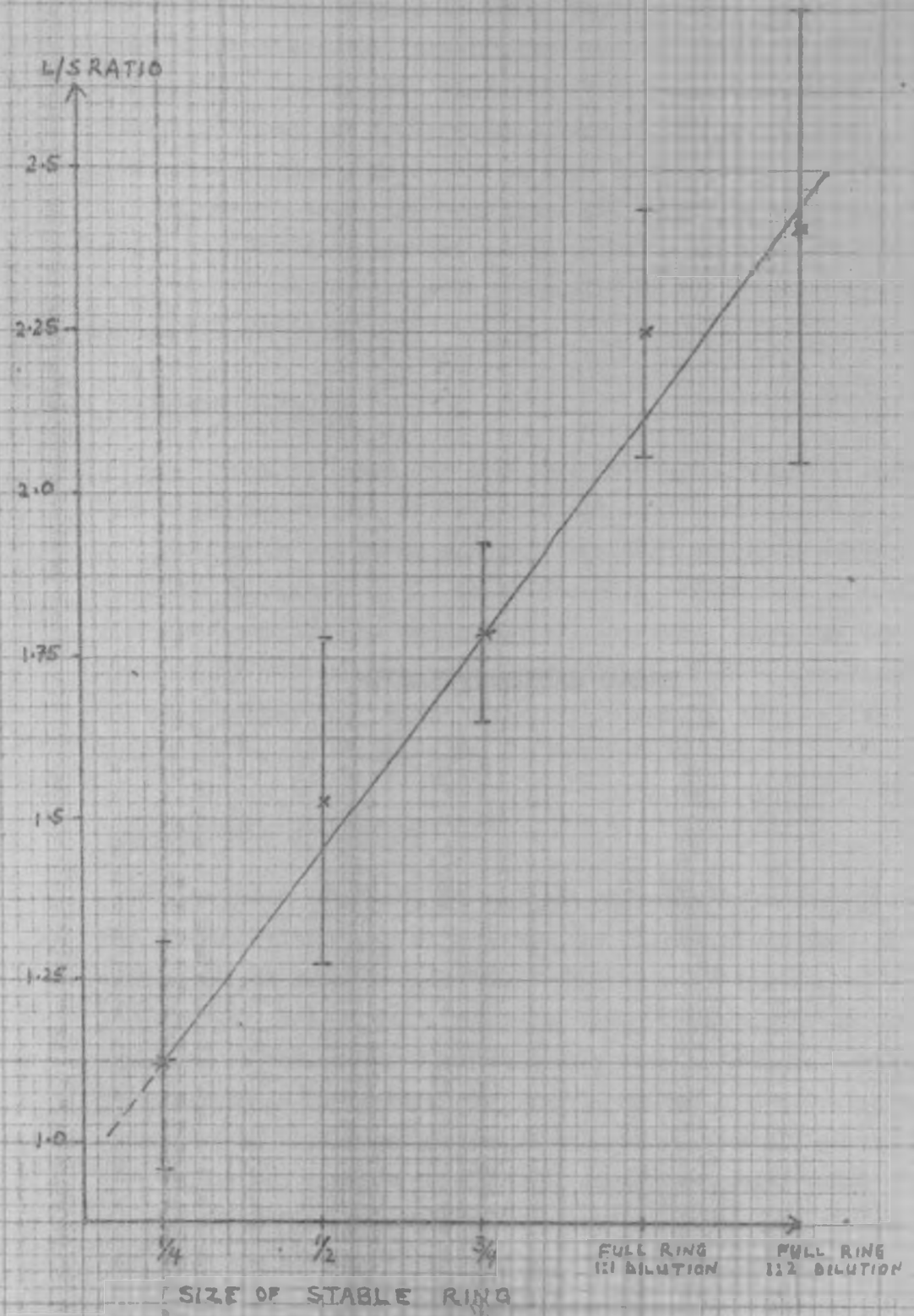
PHYSICAL MATURITY

	0	1	2	3	4	5
Skin	gelatinous red, transparent	smooth pink, visible veins	superficial peeling &/or rash few veins	cracking pale area rare veins	parchment deep cracking no vessels	leathery cracked wrinkled
Lanugo hair	none	abundant	thinning	bald areas	mostly bald	
Sole of Foot Creases	no crease	faint red marks	anterior transverse crease only	creases ant. 2/3	creases cover entire sole	
Breast	barely percept.	flat areola no bud	stippled areola 1–2 mm bud	raised areola 3—4 mm bud	full areola 5—10 mm bud	
Ear	pinna flat, stays folded	sl. curved pinna; soft with slow recoil	well-curv. pinna, soft but ready recoil	formed & firm with instant recoil	thick cartilage ear stiff	
Genitals ♂	scrotum empty no rugae		testes descending, few rugae	testes down good rugae	testes pendulous deep rugae	
Genitals ♀	prominent clitoris & labia minora		majora & minora equally prominent	majora large minora small	clitoris & minora completely covered	

MATURITY RATING

Score	Wks
5	26
10	28
15	30
20	32
25	34
30	36
35	38
40	40
45	42
50	44

THE LINEAR RELATIONSHIP OF L/S RATIO AND SHAKE TEST



GYNAECOLOGICAL CASES

THE GYNAECOLOGICAL UNIT OF THE KENYATTA NATIONAL HOSPITAL

This unit is run on similar lines as the maternity unit, also having been started in 1965. There are 26 non-emergency beds to which patients are admitted through a booking system for planned operations. There are 12 post-operative beds. Emergency cases are admitted to a ward of 25 beds but the number of emergency cases has so much increased, that in this ward there may be up to three times the number of patients. There is a Radiotherapy Unit which works in close conjunction with the gynaecological unit especially in the field of gynaecological oncology.

EMERGENCY ADMISSION

All emergency cases are fist seen by gynaecological registrar either at the casulty of this hospital or at any other out-patient section, or in any other ward and then the patient is admitted into the emergency ward. After admission the patient is seen by the house surgeon who undertakes all necessary investigations in conjunction with the registrar, senior registrar or consultant as the need may be. Where necessary because of urgency, an operation can be arranged for in about 15 minutes.

NON-EMERGENCY ADMISSIONS

These cases are first seen at the consultant gynaecological out patient clinic and then booked for planned operation. At admission the house surgeon takes their history again and re-examines them. Most of them are fully investigated at the out-patient clinic but where necessary some investigations may be repeated in the ward. Some investigations like urinalysis, haemoglobin, stools and pap smear are routine for all patients, but others may require chest X-ray, excretory pyelography, biospy result or pregnancy test. Fitness for anaesthesia is evaluated on the eve of the operation by the anaesthetist.

PRE-OPERATIVE PREPARATION

Once all investigations have been completed a date is fixed

for the operation. The afternoon before operation patients for major operations receive laxative. They get a light supper that evening and then are starved from midnight. For all major operations at least a litre of blood is cross-matched and preserved. The abdomen, pubis and perineum is shaved at night and the next morning premedication is given with intra-muscular injection of 50 mg pethidine and 0.6 mg atropine sulphate 30 minutes before theatre.

VAGINAL OPERATIONS

These are done usually in lithotomy position, but occasionally the knee chest position may be necessary as for repair of some vesico-vaginal fistulae. The vulva, vagina and perineum are cleansed with chlorhexidine solution. The patient is draped with sterile towels and the bladder is emptied by the surgeon.

DILATION AND CURRETAGE

The patient is examined under general anaesthesia after the vulvo-perineal toilet has been done and the bladder has been emptied. The status of the external genitalia is noted. The vagina is inspected. The cervix is then inspected for discharges, erosion, position, consistency and any site of bleeding. Both adnexae and the Pouch of Douglas are examined for masses or fluid collection. Uterus is then assessed.

The Auvard's speculum is inserted for better access to the cervix. The anterior lip is held with volsellum forceps. Gently the uterine sound is introduced through the external os to assess the direction of the cervical canal and the depth of the uterus. The cervical canal is then dilated with Hegar's dilators starting with a small size up to average size 8-10. A polyp holding forceps is then introduced to explore the uterine cavity. A suitable size sharp currete is introduced and beginning at the anterior wall the whole uterine cavity is curreted with long, firm strokes. The curretings obtained are sent for histological examination.

ABDOMINAL OPERATIONS

The abdominal skin is prepared as for caesarean section described at the beginning. This is done after the perineum and the vulva have been cleaned, the bladder emptied. Where hysterectomy is contemplated, the vagina is painted with Bonney's blue.

The abdomen may be exposed through a lower midline incision as is usual, or in some cases a paramedian or Pfannensteil incision.

POST OPERATIVE CARE

Patients who undergo minor operations like evacuation, diagnostic curettage or diagnostic laparascopy are encouraged early ambulation, and most of them are allowed to rest at their homes from the second day due to lack of bed space. Some stay longer depending on their condition and the type of operation.

Cases of major vaginal operations such as vesico-vaginal fistula repair are mobilised after 24 hours. If perineal sutures are present, they are removed on the sixth day and the patients are allowed home as soon as the condition allows. Continuous bladder drainage is essential in operations involving the bladder, and in cases of vesico-vaginal fistula, repair, this is necessary for the first fourteen days. These patients are examined under general anaesthesia to assess the soundness of the repair on the twenty first day post operative. If the suture line has broken down, or if there is a residual fistula second repair is not attempted at this time. Patients are discharged home and requested to come to the clinic after 3 months where they will be re-assessed and then booked for admission and second repair. During this period of waiting, however, small residual fistulae occasionally close spontaneously. At home patients are instructed to avoid sexual intercourse.

If the repair is intact patients are discharged home to return to the clinic after 6 weeks. They too must avoid sexual

intercourse for about three months to allow good healing, and are also instructed that their next delivery must be by caesarean section to avoid recurrence.

After abdominal operations physiotherapy is encouraged in the first 24 hours. Postural drainage, breathing and leg exercises are done under the instructions of the physiotherapist attached to the unit. Early mobilisation is the routine for most of the post-operative patients.

If healing of the wound is satisfactory, skin sutures are removed on the seventh day and the patients are usually discharged on the next day provided their haemoglobin is satisfactory.

I. COMPLICATIONS OF EARLY PREGNANCY

SEPTIC ABORTION

MATERNAL DEATH

NAME: REGINA NYAMBURA

UNIT NO: 1766-06

AGE: 29 years

PARITY: 2 + 1

TRIBE: KIKUYU

ADMITTED: 8.4.76

DIED: 3.5.76

HISTORY OF PRESENT ILLNESS

This patient was admitted through the casualty department of this hospital on 8.4.76 at 6.30 p.m. as an emergency. She was having vaginal bleeding and lower abdominal pains and rigors. She had aborted on 4.4.76 at home at the gestation of 14 weeks and had not sought medical treatment elsewhere. The bleeding had continued all these days having been heavy at first but now had become less. She thought of coming to the hospital when she had increasing pains, rigors and general weakness. She denied interference with her pregnancy.

PAST MEDICAL AND SURGICAL HISTORY

Non-contributory.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She had menarche at the age of 15 years. Periods had been normal since that time, lasting 3-4 days every 28 days. In 1972 she had a full term delivery at home of a male baby that is alive and well. In 1974 she had a complete abortion at home at 3 months gestation. The bleeding then was not excessive and she did not go to any hospital. In 1975 she delivered a term baby in a local hospital. She had no complications. The child is alive and well. Prior to this pregnancy the periods had been normal and regular. Her L.M.P. was on 28.12.75.

SOCIAL HISTORY

She was educated to the primary level and was not married. She lived with her mother who worked in a shop in the city.

PHYSICAL EXAMINATION

This was a well built young lady who looked ill and in poor general condition. She was markedly anemic and shocked, but was not jaundiced. Her body temperature was 38.4°C. Her urine was scanty, concentrated and containing albumin +.

CARDIOVASCULAR SYSTEM

The blood pressure was 95/50 mm Hg. The pulse was 120 per minute, regular but of low volume. The heart was not enlarged. The heart sounds were audible with a soft murmur at the apex.

RESPIRATORY SYSTEM

She was not dyspnoic and the lung fields were clear on both sides.

CENTRAL NERVOUS SYSTEM

The patient was conscious and well orientated. She looked anxious and worried. No other abnormalities were detected.

ABDOMINAL EXAMINATION

There were marked tenderness of the lower abdomen. The uterus was just palpable above the pubis. The liver, spleen and kidneys were not palpable. There were no masses or fluid detected in the abdominal cavity.

PELVIC EXAMINATION

The external genitalia appeared normal. There was offensive blood stained discharge per vaginam. The cervix was soft and shortened. The external os was 3 cm dilated. Products of conception could be felt in the cervical canal. The uterus was about 12 weeks size and mobile. Both adnexae were free but markedly tender.

DIAGNOSIS

A diagnosis of septic abortion with hypovolaemic shock was made.

IMMEDIATE MANAGEMENT

Blood was taken for cross-matching and haemoglobin estimation. A high vaginal swab as well as mistream specimen of urine was sent for culture. Intravenous tetracycline 500 mg 6 hourly was instituted. Later that evening blood transfusion was started and she received 1000 ml of blood in about 12 hours. Pain and anxiety were relieved with 100 mg of pethidine intramuscularly every 6 hours for the first 24 hours.

PROGRESS

On the next day the patient was less anxious but still pyrexial with a temperature of 38°C. She was now out of shock with a blood pressure of 100/60 mm Hg and pulse 96 per minute with a good volume. But she was still anemic with a haemoglobin of 4.3 g%, PCV 14.2%. The blood film did not show malaria parasites. There was slight anysocytosis with polychromasia. Intravenous tetracycline was continued and she received 1000 ml of blood in another 12 hours. On the third day the condition still remained the same with a temperature of 38°C. Her urine output was less than a litre per 24 hours. It was feared that she may be overloaded with fluids and, therefore, 40 mg lasix was given 8 hourly. It was also felt that since the condition was not quickly improving, evacuation of the uterus was now appropriate.

EVACUATION OF THE UTERUS

This was undertaken at 9.30 p.m. on 10.4.76 after 48 hours of intravenous therapy with tetracycline. She had received 2000 ml of blood. Her temperature remained 38°C. The diuresis was still under a litre per 24 hours.

The patient was premedicated and induced routinely, care being taken to -oxygenate her adequately.

The patient was put in lithotomy position and the perineum

cleansed with cetrimide solution. After draping, the bladder was catheterised. About 100 ml of clear urine was obtained. The external genitalia and the vaginal cavity were found to be normal. The cervix was 2 cm dilated, and effaced. There were no physical injuries found. The uterus was mobile, soft and flabby. It was approximately 10 weeks size. No abnormalities were detected in the appendages or in the pouch of Douglas. Prior to evacuation 0.5 mg ergometrine was given intravenously. With the left palm to steady the uterus abdnominally, the right index finger was used as a curette to remove as much of the products of conception as possible. A wide blade curette was then cautiously used to remove the remains of the products of conception. Bleeding was negligible and the uterus contracted well. At the end of the procedure, the uterus felt empty and no perforations were detected.

POST OPERATIVE MANAGEMENT

The patient recovered from anaesthesia in about one hour. Intravenous infusion of tetracycline was continued. The pulse, blood pressure, input and output charts were recorded carefully. The amount of fluids given was estimated by adding 1000 ml to the urinary output of the previous 24 hours.

The patient's general condition improved slightly from the next day. She started taking orally, and was mobilised in bed. Her diuresis improved to about 1500 ml per 24 hours. But her temperature remained 38°C. For this reason ampicillin 500 mg intramuscularly every 6 hours was substituted for tetracycline. By this time, some reports had already been received from the laboratory.

Haemoglobin: 9.8 g%

PCV: 29.5%

Blood film: marked leucocytosis. No malaria parasites were found.

High vaginal swab: Microscopy showed many red blood cells and pus cells. Heavy growth of E. Coli was obtained after 24 hours. It was sensitive to both tetracycline and ampicillin.

Urinalysis: Albumin, trace.
Sugar, nil
Pus cells many.
Culture, negative.

Electrolytes: Within normal limits.

Urea: 40 mg %.

For the next 2 weeks the general condition of the patient continued to improve so that she was mobile, was taking orally. But her temperature remained raised above 38°C and she complained of pain in the lower abdomen. Then from 19.4.76 her general condition worsened. She started vomiting, the temperature was raised to 40°C. The abdomen was tender and had palpable correction of fluids. The chest was clear. The pelvis was very tender, the pouch of Douglas was full and there was fluctuating mass of the left adnexae. A diagnosis of pelvic abscess was made and arrangements were made for drainage.

LAPARATOMY

This was done on 23.4.76 at 3.30 p.m. Premedication was done with 50 mg pethidine and 0.6 mg intramuscular. Before the laparatomy was undertaken, the bladder was catheterised and the pelvis was examined under anaesthesia. This confirmed a left tubo-ovarian mass which filled the pouch of Douglas. The mass was ill-defined and fluctuating . It was felt safer to drain the pelvis from above.

The abdomen was exposed in the routine manner through a lower midline incision. There was generalised peritonitis with free pus in the abdominal cavity. There were dense adhesions involving the small gut and pelvic organs with many pockets of pus. These were drained. The left tube was blocked at the fimbrial end. It was distended with pus and measured about 8 cm at the point of the greatest diameter. The left ovary was included in this mass and could not easily be separated. A left salpingo-oophorectomy was performed. The right tube was hyperaemic and thickened, but was patent and did not contain pus. The right ovary was also relatively healthy with hyperaemia only. These were preserved. The pus in the

pouch of Douglas was removed. The uterus which was bulky looked reasonably healthy and was preserved. Two corrugated drains were left in the cul-de-sac. The drains came out through a lateral stab wound in both iliac fossae. The abdominal wall and the skin were closed routinely as described in the introduction.

POST OPERATIVE PERIOD

Post-operatively the patient received three units of blood (about 1500 ml) and then she continued with 5% dextrose alternating with normal saline. Her general condition remained poor. The blood pressure was 110/60 mm Hg, pulse 100 per minute but the temperature fell to 36°C on the second day post operatively. The urine output remained below one litre per 24 hours. On the third day she developed a cough, which was dry. Both lung bases were dull on percussion and there were fine crepitations on both sides of the chest especially the base of the lungs. She had a mild jaundice on the sclera. The blood urea rose to 60 mg%, the electrolytes were within normal limits. The haemoglobin was 10 g% with PCV of 30.5%. The peripheral film showed leucocytosis of 9,000 per mm^3. The daily fluid intake was restricted to 1500 ml per 24 hours. She was given crystalline penicillin 1,000,000 units every 6 hours intramuscularly. She was pouring a lot of pus through the drains. On the tenth day post-operatively her general condition seemed better. The temperature was 37°C. The jaundice had subsided. Diuresis had improved to 1500 ml per 24 hours. The cough persisted but was not productive. A chest x-ray did not show any abnormalities. She was taking orally. But suddenly at 9.30 p.m. on 3.5.76 she suddenly collapsed. An immediate examination did not show any signs of life and resuscitation measures were unsuccessful.

A postmortem examination was requested, but unfortunately the relatives did not give consent.

COMMENTARY

The case presented here is typical on some aspects of the patients treated in our emergency ward. A young patient aborts at home and does not seek medical advice until days later when the disease is far advanced and general condition is already so bad that the patient's life is in peril. The denial of interference is common. The delay at home while the bleeding continues makes the patient markedly anemic as in this case. This, in turn, favours the infectious process which may also aggravate the anemia by haemolysis and bone marrow intoxication. This continues so that by the time the patient arrives at the hospital she is very ill.

The problem of management becomes a major and acute emergency when systemic shock develops. The shock in this patient was undoubtedly hypovolaemic due to prolonged bleeding at home. Retained products of conception cause poor uterine contraction which results in considerable haemorrhage.

Bacteremia is not a prerequisite for septic shock. Release of endotoxins and exotoxins from an intrauterine source occurs without significant bacteremia (Douglas et al. 1966). Therefore, it is also possible that endotoxic shock due to Gram-negative E. Coli also contributed to her shocked state. The collapse is due to diminished venous return to the heart following pooling of blood trapped in peripheral capillaries by generalised vasoconstriction as a consequence of the endotoxins' peripheral vascular effects (Douglas et al. 1966).

The endotoxic shock syndrome in septic abortion may also include intravascular coagulation due either to the endotoxin acting directly, or secondary following severe haemolysis (Phillips et al. 1967). According to McKay (1962) endotoxins precipitate a generalised Schwartzman reaction with disseminated intravascular coagulation which is followed by a haemorrhagic diathesis due to depletion of most of the components of the blood coagulation system.

The management of these patients is accepted as a matter of great urgency as the mortality is high, up to 3% (Douglas et al.1966).

In managing this patient traditional lines followed in this unit were followed, namely:

1) Correction of the shocked state.
2) Correction of anemia.
3) Control of the infection.
4) Removal of the focus of infection, and
5) Treating complications that may arise.

The shock that develops in septic abortion is a condition of diminished tissue perfusion. The cardiac output may be reduced either because of absolute decrease of blood volume (haemorrhage, as in this patient) or because of a relative hypovolaemia following peripheral blood pooling. Monitoring of central venous pressure may, therefore, be more important than absolute blood volume determinations. What matters is the amount of blood passing through the heart and thus reaching peripheral tissues, but not the pressure at which it goes.(Morris). Of course, the cardiac muscle also suffers from inadequate tissue perfusion as any other organ due to generalised vasoconstriction. But the reduction of the cardiac output due to this is relatively less and its effect will be pronounced in advanced situations. When the cardiac output falls below one-third of the normal, the cells revert to anaerobic metabolism leading to accummulation of lactic acid and consequent metabolic acidosis. Therefore, the primary goal in these patients is to maintain cardiac output and adequate tissue perfusion (Morris). For this reason vasopressor drugs (Aramine) used in these situations support the level of blood pressue by further vasoconstriction. According to Douglas et al (1966) they do not alter the outcome of shock. For this reason they are not used in this unit.

Certain authors (Nickerson and Lillehei) found that adrenergic blocking agents improved animal survival in experimental endotoxic shock, but Morris could not confirm this. They too have not found use in our unit. Similarly, altering the blood pH by administration of sodium bicarbonates does not improve the condition because lactacidemia reflects cellular anaerobic metabolism.

Our patient had considerably bled at homeand was very anemic. Blood transfusion therefore seemed reasonable. In absence of haemolysis urine output may be regarded as the best index of the status of tissue perfusion in endotoxic shock, and hence the degree of perfusion. A careful urine output charting was maintained for this patient and the amount of fluid given was related to the amount of urine passed the previous day.

To combat infection broadspectrum antibiotics are indicated without waiting for results on culture and sensitivity. In this case the bacteriostatic tetracycline was used as this is the commonly used antibiotic in this unit. Furthermore, bacteriostatic antibiotics have been preferred in order to avoid large doses of endotoxin being released at once with the action of bacteriocidal antibiotics (J.G. Moore, 1966).

The present day controversy concerns how long antibiotics should be given to act before surgical intervention (evacuation of the uterus or hysterectomy) is employed to remove the focus of infection. Ramirez-Soto et al. 1969 recorded a lower mortality if surgical intervention is carried early - 8 hours after initiation of treatment. Stallworthy also believes in early surgical intervention. But disturbance of the infected area may result in systemic spread. The experience in this unit suggests that evacuation is best delayed for at least 24 hours or until the temperature settles and patient's condition is considered a reasonable surgical risk. This patient was not, therefore, evacuated until the anemia and shock had been corrected.

She, however, developed pelvic abscess later which was drained when the condition allowed. But when it was thought that she was improving, she suddenly collapsed and died on the eighth post-operative day. The concept that endotoxic shock causes disseminated intravascular coagulation may explain this sudden death, and probably the use of anticoagulants as advocated by McKay could have had a place in the management of this patient.

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REPEAT TUBAL PREGNANCY

SALPINGECTOMY

NAME: DEBORAH OTIENDE

UNIT NO: 2065 - 76

AGE: 27 YEARS

PARITY: 3 + 1

L.M.P.: 26.12.76

AMENORRHEA: 8 WEEKS

ADMITTED: 23.2.77

OPERATED: 23.2.77

DISCHARGED: 2.3.77

PRESENT ILLNESS

This patient was admitted as an emergency via casulty on 23.2.77 at 9 p.m. with a days history of vaginal bleeding and abdominal pains. The pains started when she woke up that morning. She had a sharp pain in the lower abdomen which did not improve with time. Three to four hours later she started noticing vaginal bloody discharges. The pain increased in intensity so that by midday she could not move out of bed. Towards evening she breathless while lying on bed, experienced dizziness and had to hold her lower abdomen due to pain. She did not vomit. The whole day she had been unable to eat.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

This patient had delivered 3 normal babies at term and had had no complications. But on 29.11.76 she was admitted as an emergency to our ward with a history of vaginal bleeding and lower abdominal pains for some hours. She had amenorrhea of 8 weeks. She was shocked and pale. The abdominal cavity contained unclotting fresh blood and a diagnosis of ruptured ectopic pregnancy had been made. At laparatomy there was 700 ml of blood in the abdominal cavity. The left tube was distended, distorted and adherent. It contained products of conception. There was bleeding at the ampular region where a rupture could be identified. A left salpingo-oophorectomy was done as the tube

was adherent to the ovary. The right tube was normal and patent. The patient had uneventful recovery period. The histology showed products of conception and haemorrhage in the excised Fallopian tube.

PAST MEDICAL HISTORY

Non-contributory.

SOCIAL HISTORY

This was a housewife married to a casual labourer. They lived with their children in Nairobi. She was the only wife to her husband.

PHYSICAL EXAMINATION

This was a young woman, slender and 5 feet tall. She was in great pains with shallow breathing as she experienced pains on deep breathing. She was not shocked but was brought on a stretcher. She was slightly pale but not cyanotic. She had no oedema.

CARDIOVASCULAR SYSTEM

The heart was essentially normal. The blood pressure was 110/70 mm Hg. The pulse was 96 per minute, regular, but of low volume.

The respiratory gastro-intestinal and central nervous system appeared normal.

ABDOMINAL EXAMINATION

There was a scar of the midline in the lower abdomen. The abdomen was distended. There was marked tenderness all over and especially the lower abdomen. Dullness on percussion was present in both flanks. No organs could be specifically palpated due to the tenderness and guarding. A paracentesis on the right flank showed 100 cc of dark blood that did not clot in over 20 minutes.

VAGINAL EXAMINATION

There was slight vaginal bleeding. The external genitalia were normal. The vaginal cavity was normal. The cervix was long, firm and closed. There was marked pain on cervical excitation. The uterus and the fornices could not be assessed on account of the pain.

DIAGNOSIS

A diagnosis of ruptured ectopic pregnancy was made and the patient advised accordingly. After giving her consent in writing, preparations were made for an emergency laparatomy. 1.5 litres of blood were cross-matched immediately. The patient received 0.6 mg of atropine sulphate. After the pubic hair was shaved she was immediately delivered to theatre.

LAPARATOMY, RIGHT SALPINGECTOMY

The patient was anaesthetised in the usual manner. The bladder was aseptically catheterised. A gentle pelvic examination was done at which the uterus was only bulky. The right adnexae were enlarged.

The patient was then put in the supine position and after the skin had been prepared and drapped, the abdomen was opened through lower midline incision removing the old scar. There was more than 2 litres of haemoperitoneum. While the assistant was sucking out the blood, the uterus and adnexae were located and brought out through the incision. The uterus was bulky. The left tube and the left ovary were absent. The right tube and ovary were present. There were few adhesions between the uterus, the right parametrium and the rectum. The tube was distended with clots of blood and products of conception. A right salpingectomy was performed. Satisfactory haemostasis was achieved. The clots and blood were removed from the abdominal cavity. The intestines were inspected and no abnormalities were detected. The abdomen was routinely closed in layers after instruments and swabs had been counted and found correct.

POST OPERATIVE PERIOD

The patient received 1500 ml of blood. After this intravenous normal saline was continued to alternate with 5% dextrose, 500 ml every 6 hours. She was carefully monitored immediately after the operation and in the next 12 hours. The recovery was uneventful. On the third day the haemoglobin was 10g% with PCV of 32%. The stitches were removed on 1.3.77 and she went home on 2.3.77. She was requested to attend gynaecology clinic in 6 weeks but she did not return for follow up.

HISTOLOGY

This is a Haemorrhagic Fallopian tube 35 X 25 X 10mm. Histology shows a haematosalpinx in which there are chorionic villi confirming the diagnosis of tubal pregnancy.

COMMENTARY

This gynaecology unit deals with four or five cases of ectopic gestation per week. It is probably our most common of all acute emergency condition which requires immediate abdominal surgery (Gebbie, D.A.M.). Ectopic pregnancy which is generally in the Fallopian tube follows in the wake of pelvic inflammatory disease. Douglas reported in 1963 that 42% of his patients showed previous pelvic infection. Chronic follicular salpingitis is the most common single morphologic finding in Fallopian tube with ectopic gestation (Kleiner 1967). When it occurs the Fallopian tubes are only a shade less damaged than they are in patients who cannot conceive at all. There is strong evidence that the prime factor in the etiology of pelvic inflammatory disease is gonorrhoea (Carty et al. 1972). The tendency in this country is the increase of gonorrhoeal cases. In Kenya today greater doses of penicillin are required to combat the gonococcus and more and more N. Gonococci are becoming resistant to the common antibiotics (Verhagen and Gemert, 1972). Furthermore the treatment in this country is often inadequate for various reasons (Gebbie, D.A.M.).

In those patients where treatment is not prompt or adequate the result is blocked Fallopian tubes. But in others the tubes remain patent but narrowed and distorted in which ectopic gestation is possible (Krohn et al. 1952). In some cases histological changes may not be evident but, it may be that changes in the cell function may affect physiological or secretory mechanism in the tube resulting in decreased peristalsis, ciliary propulsion or secretion necessary for the capacitation (Lowi 1960) or might mechanically delay the onward passage of the fertilised ovum.

There have been many theories attempting to explain the etiology of ectopic pregnancy. Among them prominently feature:

1)Iffy's (1963) proposition of late fertilisation and the reflux of the ovum into the abdominal cavity.

2)Transperitoneal migration of the ovum to the opposite tube - Berlind, 1960.

3) The close proximation of the right Fallopian tube to the appendix with its local inflammation - Sandmire and Randall, 1959.

But the first tubal pregnancy in our patient was in the left tube. There must have been an inflammatory process which resulted in adhesions that necessitated the removal of the ovary during the procedure. A second pregnancy in the opposite tube shows that the etiological factor, at least in our patient, is a bilateral process. This was confirmed at the operation. The chance of a second ectopic pregnancy is very high, 5-10% (Grant 1962).

The diagnosis in this as in many of our patients presented no difficulties. The reason is perhaps because most of our patients turn up when anemia, shock and the presence of abdominal fluid collection are evident. In isolated cases of diagnostic problem laparascopy has been the investigation of choice.

The treatment in this unit is prompt surgical intervention without wasting valuable time on resuscitation. As Douglas (1963) showed the condition of the patient improves as soon as the bleeding tube is clamped even before transfusion has started. For this patient blood was available at the end of the operation.

Autotransfusion is not common in our unit because the work done in this department has shown that although the oxygen carrying capacity of the peritoneal blood is fair, the mean haemoglobin concentration is low, the coagulation factors are depleted, the fibrinolytic system is activated and the red cell survival time is reduced (Mati, 1974).

The general condition of our patient was not desperate and blood was available later. However, during operation intravenous Hartman's solution had been used. The recovery of patients operated for ruptured ectopic pregnancy is usually uneventful as in this patient.

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EXACERBATION OF CHRONIC PELVIC INFLAMMATORY DISEASE (OPERATED)

NAME: [illegible]

UNIT NO. 1450 - 83

AGE: 19 YEARS

PARITY: 0 + 1

LMP: 28.6.73

ADMITTED: 7.7.73

OPERATED: [illegible].7.73

DISCHARGED: [illegible].7.73

HISTORY OF PRESENT ILLNESS

The patient was admitted into the emergency ward from the casualty with a three-day history of severe lower abdominal pains, vomiting and offensive vaginal discharges. She had been experiencing abdominal pains with menstrual periods but they have never been as severe as now. The pains had increased in intensity during the last two years.

II. INFECTIONS IN GYNAECOLOGY

PAST MEDICAL AND SURGICAL HISTORY

Non-contributory.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She had her menarche at the age of 14 years. The periods had taken about 6 months to regularise. Menstrual bleeding lasts 5 - 6 days and occurs every 30 days. The flow is heavy so that she has to change her pads every 4 hours and occasionally has to use two. The periods are preceded by lower abdominal pains which [illegible] but are [illegible] by the third and fourth day. Her L.M.P. was on 2.7.73.

In 1972 she had amenorrhoea of 2 months and then she had heavy bleeding for one week. In her opinion this was a miscarriage, but she did not go to the hospital. She is married for 4 years, lives with her husband, but she has not conceived, although she has a desire for a child.

EXACERBATION OF CHRONIC PELVIC INFLAMMATORY DISEASE LAPARATOMY

NAME: ELIZABE ACHIENG
UNIT NO. 1458 - 83
AGE: 19 YEARS
PARITY: 0 + 1
LMP: 28.6.75
ADMITTED: 7.7.75
OPERATED: 10.7.75
DISCHARGED: 17.7.75

HISTORY OF PRESENT ILLNESS

The patient was admitted into the emergency ward from the casualty with a three-day history of severe lower abdominal pains, vomiting and offensive vaginal discharges. She had been experiencing abdominal pains with menstrual periods but they have never been as severe as now. The pains had increased in intensity during the last two years.

PAST MEDICAL AND SURGICAL HISTORY

Non-contributory.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She had her menarche at the age of 14 years. The periods had taken about 6 months to regularise. Menstrual bleeding lasts 5 - 6 days and occurs every 30 days. The flow is heavy so that she has to change her pads every 4 hours and occassionally has to use two. The periods are preceeded by lower abdominal pains which increase as menstruation continues but are less by the third and fourth day. Her L.M.P. was on 2.7.75.

In 1973 she had amenorrhea of 2 months and then she had heavy bleeding for one week. In her opinion this was a miscarriage, but she did not go to the hospital. She is married for 4 years, lives with her husband, but she has not conceived, although she has a desire for a child.

PHYSICAL EXAMINATION

This was a well built, well nourished young patient. Her general condition was poor, she was febrile with axillar temperature of 38.8°C. She was not anemic clinically. Her pulse was 140 per minute, regular. The blood pressure was 130/80 mm Hg. Her urine contained a trace of albumin and a little blood.

Examination of the rest of cardiovascular, respiratory and central nervous system did not reveal any abnormality.

ABDOMINAL EXAMINATION

The abdomen was of normal shape. There was no marked distension. On palpation there was marked guarding. Percussion was difficult due to marked tenderness. The bowel sounds were present and not increased. There was no demonstrable collection of fluid. The liver and the spleen were not palpable.

PELVIC EXAMINATION

First a high vaginal swab and midstream urine were taken. The external genitalia appeared normal. There was an offensive pink vaginal discharge. The cervix was closed, firm and healthy. Further bimanual examination of pelvic organs was difficult due to tenderness. But the uterus seemed normal size. No masses could be detected.

DIAGNOSIS

A diagnosis of acute exacerbation of chronic pelvic inflammatory disease was made.

MANAGEMENT

The patient was started on intravenons tetracycline 500 mg every 6 hours. Analgesia was provided with 100 mg of pethidine intramascularly for the first 24 hours. Input and output chart was kept. The patients pulse rate and blood pressure were recorded two hourly and they did not show deterioration. The temperature was recorded every 4 hours. Blood urea and electrolytes were checked daily. There were no marked changes.

The patients condition began to improve 24 hours after the antibiotic was started so that she was not vomiting nor sweating next morning. She was mobile in bed, was taking fluids orally and the pains had become less. But the temperature and pelvic tenderness did not improve for 48 hours. She was then examined and a definite mass could be detected in the cul - de - sac. It was tender,

ill-defined and slightly cystic. The uterus could now be detected separately, was normal size and mobile but also tender. It was decided that this required drainage.

INVESTIGATIONS

Haemoglobin	:	11.7 g%
PCV	:	35.8%
RBC	:	5.1 x 10^6 per mm^3
WBC	:	9 x 10^3 per mm^3
Film	:	Normal. No malaria parasites.
Blood group	:	A Rh positive
Uranalysis	:	Sugar NIL Albumin trace. Puscells few No growth obtained
Blood urea	:	24 mg%
Electrolytes	:	Within normal limits
High vaginal swab	:	Many pus cells present. No culture obtained.
M.S.S.U.	:	Many pus cells No growth obtained.

LAPARATOMY AND DRAINAGE

The patient was routinely prepared for theatre. When she arrived in theatre the anaesthetist was informed of her condition. When she had been anaesthetised as described before, the bladder was aseptically catheterised. Examination under anaesthesia revealed a mass occupying the pelvis and lower abdomen. It was ill defined. The uterus could be palpated separately and was slightly bulky. It was decided to drain the abscess per abdomen.

The patient was put in supine position and the abdomen routinely prepared. The abdomen was exposed through lower midline incision. The pelvis was sealed off by loops of bowel and greater omentum. These were dissected digitally. There was a collection of offensive white yellowish pus. About 150 cc of pus was sucked off. The uterine appendages were then digitally mobilised. The right tube was distended with pus and measured about 5 cm at the point of greatest diameter. It was retort-shaped, blocked at the fimbrial end and adherent to the gut. It was easily mobilised and separated from the right ovary which was inflamed but not included in the mass. Right salpingectomy was performed. On the left side the tube was hyperaemic distorted but did not contain pus. It was patent.

Because of the age and parity of this patient, this tube was preserved. The left ovary was normal. There were few adhesions in the pelvis. These were divided. The rectum and appendix appeared fairly healthy. A swab of the pus was taken for culture and sensitivity. A corrugated drain was left in the pouch of Douglas. The stab wound through which the drain left the abdomen was made as far laterally as possible in the right iliac fossa. Haemostasis was satisfactory. The abdomen was then closed with interrupted catgut stitches. The skin was repaired with silk.

POST OPERATIVE PERIOD

The blood pressure, pulse and respiration were carefully recorded every 15 minutes until the patient was fully conscious. Intravenous infusion of normal saline alternating with 5% dextrose was continued for 48 hours. Tetracycline 500 mg intravenously in the drip was continued until the patient could take orally. The bowel activity was restored in 48 hours. On the third day the patient was already mobilised. The temperature had normalised. Her haemoglobin was 9.1 g% with a PCV of 29.9%. The urine output was adequate - about 1.8 litres per 24 hours. The drain was wet until the third day and shortening was started on fourth day being finally removed on sixth day. The wound healed satisfactorily so that the stitches were removed on 16.7.75. She was discharged on 17.7.75. on ferrous sulphate 200 mg thrice daily for 4 weeks.

FOLLOW UP

When seen again on 17.8.75 she complained of lower abdominal pains. She had not had her period. On examination the wound had healed well. There was no localised tenderness per abdomen. Per vaginam the uterus was normal size, no pelvic mass was detected. She was discharged on analgesics.
The pus swab showed no culture.

COMMENTARY

Acute and chronic infection of the Fallopian tubes and surrounding structures is the commonest gynaecological problem met with in Kenya (Gebbie, D.A.M.; Verhagan and Gemert 1972). The majority of our patients will have had an abortion before like the patient presented here. The chronic form of the disease, which is a burnt out pelvic inflammation, is not a serious illness with regard to mortality, but acute exacerbation is a cause of serious morbidity and mortality. This occurs mainly after menstruation as in this patient, when the alkaline blood of menstrual period favours the growth of the causative gonococcus (Gebbie, D.A.M.). There can be little doubt that the prime factor in the etiology of the disease in our environment is gonorrhea (Cary et al. 1972). Soon after the establishment of the original infection with gonococcus, invasion by other organisms, the chief of which is E. Coli, rapidly follows. In this case the culture was negative. If the condition is not promptly and adequately treated it will progress with further destruction of the adnexae and pus formation. More serious is when the infection is so virulent and the resistance so low that a generalised peritonitis occurs. The illness then becomes desperate, endotoxic shock may follow and fatal prognosis is common. Sudden deterioration may occur if a pyosalpinx ruptures into the peritoneal cavity and the mortality is then very high. Our patient did not reach this stage as she came to hospital early.

The plan of management of this patient was first to improve her condition by:

a) Parenteral antibiotics until the temperature is lowered, or the general condition has improved.

b) The correction of anemia.

c) Rehydration and normalisation of electrolytes.

Her haemoglobin and electrolytes were within normal limits and no action was taken. Only when she was considered a reasonable surgical risk drainage was done.

Ocassionally exacerbation of chronic pelvic inflammatory disease results in abscess formation as in this patient. Pus may collect in the tube (pyosalpinx), in the ovary (ovarian abscess), in both tube and ovary (tubo-ovarian abscess), or in the Pouch of Douglas

(pelvic abscess). When there is such large collection of pus, or there is no response to appropriate therapy, or there are frequent exacerbations or chronic pains continue to cause incapacity surgery is indicated. Surgery should be radical in most cases as reccurrence after inadequately drained pus or inadequately excised inflammatory tissues is common (Gebbie). In the case presented here the left tube was patent and reasonably healthy. It was felt that if pus later formed in this tube it would easily drain. Furthermore, she had no child. The tube was, therefore, preserved together with both ovaries. The recovery was remarkably fast and the patient has not returned with such problems three years after treatment. It is not known if she has conceived.

Unfortunately, the modern trend in our community is an increase rather than a decrease in pelvic infection. The problem of gonorrhea has now become a vast one. In Kenya greater doses of penicillin are required to combat the gonococcus, and increasing Neisseria gonococci strains are becoming resistant to common antibiotics (Verhagen and Gemert 1972). As a disease, pelvic inflammation was once a problem of the cities and large towns but now it has spread into the rural areas and even into the remote regions of this country (Gebbie, D.A.M.). Prompt diagnosis, adequate treatment and rational use of antibiotics are called for.

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CHRONIC PELVIC INFLAMMATORY DISEASE
SALPINGOLYSIS SUCCESSFUL PREGNANCY

NAME: FIBI OGANDA
UNIT NO: 2220-75
OBS NO: 4849/78
AGE: 23 YEARS
PARITY: 0 + I

PRESENT ILLNESS

This patient was referred to the gynaecology clinic for investigations for secondary infertility as she had been married for 4 years and had no children.

COMPLAINTS

She was first seen at the gynaecology clinic on 6.4.77. She complained of childlessness and lower abdominal pains especially the right side on the eve of every menstrual period. The pain is dull and continues until the third day of her period, but occasionally it is so severe that she is unable to work.

PAST GYNAECOLOGICAL HISTORY

She could not remember the date of her menarche, but her periods had been regular since the age of 17 years. In 1975 she had amenorrhea of 3 months and she thought she was pregnant. Then she had vaginal bleeding for which she was admitted in Mombasa Provincial Hospital where a curettage was done. She was discharged on tablets after 2 days stay in the hospital. Her periods were regular, lasting 4 days every 28 days.

SOCIAL HISTORY

This was a housewife of primary education. She is married since December, 1974. She lives with the husband in Nairobi.

PHYSICAL EXAMINATION

This was 5 feet slender patient. Her general condition was

satisfactory. She was neither febrile nor anemic. Her urine was normal.

CARDIOVASCULAR SYSTEM

The heart was essentially normal. Her blood pressure was 120/60 mm Hg, and the pulse was 72 per minute and regular.

ABDOMINAL EXAMINATION

The abdomen was normal in shape and size. There were no masses palpable. The liver and the spleen were not palpable.

PELVIC EXAMINATION

The external genitalia was normal. The vaginal cavity was healthy. There was slight cervical discharge, but no erosion. The uterus was normal size, anteroverted and mobile. The adnexae were not enlarged but were tender on both sides. The pouch of Douglas was empty.

DIAGNOSIS

A diagnosis of chronic pelvic inflammatory disease with secondary infertility was made.

HYSTEROSALPINGOGRAM

The uterine cavity was normal. Both tubes were demonstrated. There were bilateral block of the Fallopian tubes at the fimbrial end. There was no peritoneal spill of the dye.

PAPANICOLAOU SMEAR

There were squamous as well as endocervical cells present. No malignant changes of the cells were noted. It was smear class I.

SEMINALYSIS

The husband was examined in the laboratory. A masturbation specimen of semen about 2ml was examined about 10 minutes after being obtained. The count of spermatozoa was 70 million per ml.

The normal forms of the spermatozoa was 95%. The morbility still present after one hour. The pH of the semen was 7.5.

LAPARASCOPY, HYDROTUBATION AND DIAGNOSTIC CURETTAGE

The patient was admitted for these investigations on the eve of the operation. Her haemoglobin was 14.2g% with PCV of 43.6%. The white blood cell count was 5.9×10^3 per mm^3 and the red blood cell count was 5.35×10^6 per mm^3. Her last menstrual period was on 1.9.77.

The patient was brought to theatre on 22.9.77 at 2 p.m. After she had been anaesthetised the abdomen and the perineum and thighs were cleaned with centrimide solution after the patient had been put in the lithotomy position. The bladder was aseptically catheterised by the assistant who now repeated a pelvic examination. This examination confirmed the earlier findings, but now thickening of both adnexae could be detected.

A subumbilical stab wound was made with a scapel. Through this incision a special large bore needle (Vere's needle) was introduced into the abdominal cavity in a slanted angle so that the sharp end is directed towards the sacral promontory. To minimise the danger of injuring the bowels or large blood vessels of the abdominal cavity, relaxation of muscles by muscle relaxants was necessary, and the patient was put in Tredelenburg position. Through the inserted needle carbon dioxide was introduced into the abdominal cavity. A pneumo-peritoneum of 2.5 litres was obtained and the needle was withdrawn.

Using the same incision a trocar of the laparascope was then introduced into the abdominal cavity in the same manner as the airway needle. The introducer was then removed, the laparascopic telescope with the light was introduced. A good view of the abdomen was obtained.

The anterior and posterior lips of the cervix were grasped with volsellum forceps. A hysterosalpingogram type canula was introduced into the cervical canal. 20ml of methylene blue

was prepared for hydrotubation.

FINDINGS

The uterus was healthy and of normal size. There were a few adhesions in the cul-de-sac. Both Fallopian tubes, and ovaries were visualised. The tubes looked normal and healthy along most of their lengths but both fimbrial ends were buried in adhesions. Both ovaries were free from adhesions, were normal and healthy. When hydrotubation was done both tubes were dilated at the fimbrial end. There was no peritoneal spill of the dye. The uterine cavity was then curetted after dilatation of the cervix as described earlier. Normal looking curettings were obtained and sent for histological examination. The skin was closed using skin clips.

LAPARASCOPIC DIAGNOSIS

Chronic pelvic inflammatory disease with bilateral tubal block at the fimbrial end. It was thought that the patient might benefit from salpingolysis with salpingostomy.

POST OPERATIVE CARE

The patient was discharged on 23.9.77 and asked to return after five days for the removal of the skin clips. She was asked to return to the gynaecology clinic after six weeks.

CLINIC VISIT

She was seen again on 2.11.77. Then she had no complaints. She had not had her periods. The wound had healed well. There were no new positive findings on pelvic examination. The endometrium was reported to be in the secretory phase which was appropriate for that period of her menstrual cycle.

She was booked for admission on 3.12.77

SECOND ADMISSION

At this second admission she had no complaints. Blood was taken for haemoglobin estimation and midstream specimen of urine was collected. Two pints of blood were cross-matched and preserved in the blood bank. The patient was routinely prepared for theatre. Her L.M.P. was on 7.11.77

Haemoglobin : 14.4g%

PCV : 46.1%

M.S.S.U. : No abnormal deposits. Sterile.

LAPARATOMY. SALPINGOLYSIS

The patient was brought to theatre on 5.12.77. After she had been anaesthetised the bladder was aseptically catheterised. A pelvic examination under anaesthesia did not reveal any new findings. The patient was then put in supine position and the skin was cleaned and draped.

The abdomen was opened in layers through the lower midline incision. The pelvic organs were slightly hyperemic. There were filmy adhesions in the cul-de-sac which involved both tubes. The ceacum, appendix and rectum were healthy and free of adhesions.

The left tube was tortous with the fimbrial end buried in adhesions. Using fine scissors these were divided and then the tube was bluntly mobilised easily. The fimbrial end looked healthy. A probe was carefully passed from the fimbria towards the uterus and the tube was found to be patent.

The right tube was healthy and normal only a few adhesions at the distal end were found and these were easily divided and the tube mobilised. It was also found to be patent.

The uterus was normal size and healthy. Both ovaries were healthy.

The bleeding was minimal. Haemostasis was checked. The instruments and swabs were counted. The abdomen was then closed in layers using silk stitches for the skin.

POST OPERATIVE PERIOD

The patient recovered from general anaesthesia in one hour. Intravenous 5% dextrose was given for 24 hours amounting to 2 litres. Sedation was provided with intramuscular injections of 100mg pethidine six-hourly for 24 hours. The patient was not febrile but tetracycline 500mg eight-hourly was prophyllatically given. The wound healed without infection and the stitches were removed on the seventh day. She was discharged on 14.12.77. Her haemoglobin was 13.5g% with a PCV of 41%.

FOLLOW-UP

When seen again on 25.1.78 she had no complaints. Her menstrual period had been on 3.1.78 which lasted for 4 days. She had pains with her periods as before and the flow had been slightly heavier than before. Pelvic examination revealed no positive findings. She was booked for a repeat hystero-sapingogram.

This was to be done on 14.4.78. But when she came she said her last menstrual period was on 30.1.78. On pelvic examination the cervix was softened and closed. The uterus was about 10-12 weeks size, A diagnosis of intra-uterine pregnancy was made and the radiological examination was not carried out. She was referred to the antenatal clinic. She was booked on 10.7.78 at the gestation of 23 weeks. The uterine size corresponded with the dates and she had already been feeling fetal movements for sometime. She attended the clinic regularly and the ante-natal period was uneventful.

On 1.11.78 she was admitted in labour. The uterine size was term, the lie was longitudinal with cephalic presentation and the membranes were intact. Pelvic assessment revealed a favourable pelvis for vaginal delivery. After about 6 hours of labour she had a spontaneous delivery of a male infant in good condition with Apgar score of 8 at 1 minute and 10 at 5 minutes. The birth weight was 2950 gm. The placenta weighed 450gm and had no abnormalities.

The puerperium was uneventful and both mother and child were discharged in satisfactory condition on 2.11.78. The mother did not return to the post-natal clinic.

COMMENTARY

The explosive growth of world population is the greatest single problem of the twentieth century and this is especially true in African countries where population growth is high and second only to East-Asian countries (J.B. Stewart). But it is always a tragedy when a woman cannot conceive or bear children which she greatly desires and would cherish. Infertility is thus one of the chief reasons for women to seek medical advice. About two-thirds of our gynaecological patients complain of infertility (Mati and Walton 1976). Obviously with such a large number of patients etiological factors will be diverse, but laparascopic investigations in young women in this hospital showed that 80% had evidence of previous well established chronic salpingitis (Mati et al. 1973). This supports the view that acute and chronic infection of the Fallopian tubes and surrounding structures is a very common gynaecological problem in Kenya (Gebbie, D.A.M.) and the prime factor has been suggested to be gonococcal infection (Carty et al, 1972).

In women the diagnosis of gonorrhea is more difficult as there may be no signs in early stages. Our patients may not have the chance of proper therapy before the disease is complicated. The tubal damage thus caused is frequently so extensive that little could be done. Thus in 104 cases of tubal occlusion only 12% were suitable for reconstructive surgery (Mati et al, 1973). In another series representing patients of a higher socio-economic group in Nairobi only 30% were suitable for reconstructive surgery (Waghmarae et al, 1976).

Careful selection of patients for tubal surgery is necessary and certain criteria must be fulfilled:

1) Minimal involvement of the tubes with no masses.
2) Few peritubal adhesions causing kinking of the tubes.
3) Fimbrial occlusion as demonstrated by hysterosalpingogram and hydrotubation at laparascopy.

The patient presented here fulfilled the above, and success in this case could be attributed to careful selection using the facilities available for secreening.

The laparascopy has been especially useful in our hospital, but it is not without possibilities of complications as blood vessel or bowel damage, cardiac arrest, diathermy burns, introduction of infection are possible. Waghmarae reported a complication rate of 1.6%.

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RIGHT-SIDED BARTHOLIN'S ABSCESS

TREATMENT BY MARSUPIALISATION

NAME: LUCY KAGWANJA

UNIT NO: 1463 - 99

AGE: 26 YEARS

PARITY: 2 + 0

L.M.P.: 1.7.75

ADMITTED: 25.7.75

OPERATED: 25.7.75

DISCHARGED: 26.7.75

PRESENT ILLNESS

The patient was admitted through the casualty on 25.7.75. She complained of a painful swelling on the right side of the vulva for one week, urinary frequency and dysuria. The swelling was so painful that she was walking with difficulties.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

Her menarche was at the age of 15 years. Periods became regular by the age of 16 years. Her menstruation lasts 4 days in a cycle of 28 days. She delivered a term baby in a private hospital in 1973. She did not protect herself against pregnancy and in the following year she had a successful pregnancy. She delivered a term baby in December 1974 and had no complications. She is now on eugynon, and her last menstrual period was on 1.7.75.

SOCIAL HISTORY

This was a housewife married to a clerk working in Nairobi. They live in Nairobi with their children.

PHYSICAL EXAMINATION

The patient was of normal build and looked generally healthy.

Clinically she was not febrile but her temperature was 37°C. There was no anemia clinically.

CARDIORESPIRATORY SYSTEM

The heart was essentially normal. Her pulse was 80 per minute and regular. The blood pressure was 110/60 mm Hg. The chest was clear.

ABDOMINAL EXAMINATION

The size and shape of abdomen was normal. No localised tenderness tender was found. No masses were felt. The liver and the spleen were not palpated.

PELVIC EXAMINATION

The external genitalia looked normal, but the right labium majus was distended with a hyperemic and oedematous round swelling, 4cm X 5 cm. On palpation it was markedly tender and felt warm. There was fluctuation. The opposite labium was healthy but pushed to the left side. There was pink offensive discharge from the vagina. Further examination was impossible due to extreme tenderness. A high vaginal swab was taken for culture. A midstream specimen of urine was collected. There was no inguinal lymphadenopathy.

DIAGNOSIS

A diagnosis of right-side Bartholin's abscess was made and surgical treatment was proposed to the patient. Written consent was received from her and she was prepared for theatre in the list of emergencies.

MARSUPIALISATION OF THE ABSCESS

Routine premedication with 0.6mg of atropine sulphate was received in the ward. In theatre the patient was anaesthetised and vulvo-perineal toilet was performed in the usual manner. The abscess was now palpated and felt to be of the same size as

described before. The urethral meatus was inflamed. The vaginal walls were hyperaemic. The Bartholin's gland on the left was not enlarged. Speculum examination showed pink discharge from the cervical os. There was no cervical erosion.

The uterus and the adnexae felt warm.

PROCEDURE

A 4cm vertical incision was made on the vaginal side of the abscess at its prominence. About 15 ml of offensive pus was drained. The pockets of the abscess were digitally broken to drain as much pus as possible. The abscess cavity was now curetted using Fogman's abscess spoon to remove the necrotic debris. These debris were washed away using normal saline. Bleeding was encountered at the upper end of the incision and this was easily ligated using No.0 catgut. The abscess margins were now held with Allis' tissue forceps and were marsupialised to the skin using the same catgut on atraumatic needle. Six interrupted sutures were necessary to evert the edges of the abscess. The haemostasis was satisfactory. The wound was covered with dry gauze.

POST OPERATIVE PERIOD

The patient soon recovered from the general anaesthesia. She received oral tetracycline 500 mg six-hourly for one week. The next morning the patient felt much more better and was discharged on 500 mg tetracycline 8 hourly for one week.

INVESTIGATIONS

Haemoglobin	11.4g%
PCV	35%
M.S.S.U.	Albumin (+)
	Sugar absent
	Culture - negative
	Many pus cells
	Few red cells

High vaginal swab: No culture obtained.

200

FOLLOW UP

The patient did not have a formal appointment at our clinic but when she was seen again by the author 3 months later she had no recurrence. She said the dysuria and frequency had disappeared in the same week that she had operation.

COMMENTARY

Infection of Bartholin's gland and duct is not uncommon, and is usually due to non-specific organisms such as Escheria Coli, streptococci and staphylococci. But occasionally gonococci will be infecting agent.

Isolated cases of tuberculous lesions of Bartholin's gland are occasionally found. These are usually associated with systennic disease and presumably result from haematogenous spread (Stewart, D.B.).

In the acute stage, both duct and gland are involved. If untreated, the infection may subside or an abscess may form as in the patient presented here. The extent of the abscess formation varies from case to case but sometimes it may involve the ischiorectal fossa. If the abscess subsides spontaneously, it may result in fibrosis and closure of the duct with subsequent cyst formation. This cyst may be secondarily infected leading to an abscess formation. Surgical treatment of cysts is, therefore, preferable.

Bartholin's abscess is very painful and makes the patient walk with great difficulties. Medical help is quickly sought. If the abscess is left untreated it may burst through the vaginal wall. Recurrent infections in Bartholin's glands following the bursting or an inadequate incision of an abscess is not uncommon, and unless definitive treatment is undertaken a patient may suffer several such episodes a year. When an abscess has formed surgery is necessary. Marsupialisation of the abscess as was done for this patient is preferable to simple incision. Our patients are treated under general anaesthesia and discharged the following day. Recurrences after marsupialisation are uncommon (Blakey et al. 1966).

With this treatment, the ostium of the gland is preserved, and its function also (Dewhurst, C.J.).

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T U B E R C U L O U S   E N D O M E T R I T I S

[illegible]

NAME: [illegible]

IP NO.: [illegible]

AGE: [illegible] years

PARITY: 2 + 0

ADMITTED: 16.5.77

CURETTAGE: 16.5.77

DISCHARGED: 17.3.77

L.M.P.: OCTOBER, 1976

PRESENT ILLNESS

The patient was first seen in our clinic on 12.4.77. She complained of lower abdominal pains and no menstrual periods for six months. The pains were of a dull nature and occurred occasionally. She said she had been having her periods regularly six months after her last delivery [illegible] she has not had menstruation for the last six months and she did not think she was pregnant.

III. MENSTRUAL DISORDERS

PAST MEDICAL HISTORY

She did not give history of any major illness in herself or anybody in her family.

OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She could not remember the date of her menarche. She had her first baby in 1971 after she was married. The second child was born in a district hospital at term. She did not bleed excessively postpartum, nor was she febrile during the puerperium. She did not attend family planning clinic. Her periods returned six months after delivery and they were regular, lasting 4-5 days every 28 days. She could not remember the date of her last period but it was in [illegible].

TUBERCULOUS ENDOMETRITIS WITH SECONDARY AMENORRHEA CHEMOTHERAPY

NAME: ANNAH WANJIRU

UNIT NO: 1438 - 13

AGE: 28 years

PARITY: 2 + 0

ADMITTED: 16.5.77

CURETTAGE: 16.5.77

DISCHARGED: 17.5.77

L.M.P.: OCTOBER, 1976

PRESENT ILLNESS

The patient was first seen in our clinic on 12.4.77. She complained of lower abdominal pains and no menstrual periods for six months. The pains were of a dull nature and occurred occasionally. She said she had been having her periods regularly six months after her last delivery in 1973, but she has not had menstruation for the last six months and she did not think she was pregnant.

PAST MEDICAL HISTORY

She did not give history of any major illness in herself or anybody in her family.

OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She could not remember the date of her menarche. She had her first baby in 1971 after she was married. The second child was born in a district hospital at term. She did not bleed excessively postpartum, nor was she febrile during the puerperium. She did not attend family planning clinic. Her periods returned six months after delivery and they were regular, lasting 4-5 days every 28 days. She could not remember the date of her last period but it was in October 1976.

SOCIAL AND FAMILY HISTORY

She was married since 1970 and they lived in the eastern part of Nairobi in a two-roomed flat. She works as a shop-attendant in Nairobi and the husband is a driver for a transport company.

PHYSICAL EXAMINATION

Her general condition was satisfactory. She was not anemic nor jaundiced. There was no oedema nor lymphadenopathy. She was slender and tall but not wasted. She weighed 70 kg. Her body temperature was 36.8°C and her urine did not contain abnormal deposits.

CARDIORESPIRATORY SYSTEM

The heart was essentially normal. Her pulse was 80 per minute and regular. The blood pressure was 120/70 mm Hg.

The trachea was centrally situated. Both lung fields were clear.

ABDOMINAL EXAMINATION

The abdomen was of normal shape. The liver and the spleen were not palpable. There were no masses nor fluid detected in the abdominal cavity.

VAGINAL EXAMINATION

The external genitalia were normal. The vagina and the cervix looked healthy. The uterus was normal size, anteroverted, mobile and non-tender. There were no adnexal masses felt.

The cul-de-sac was empty.

BREASTS

These were normally developed. No masses were felt. They were not active.

Midstream specimen of urine, blood for haemoglobin, and a cervical smear were taken. The patient was sent for chest X-ray and asked to return in 3 weeks.

RESULTS

Haemoglobin : 12.5 mg %
PCV : 37.2%
White cell count: 5.1 x 10^3 per mm^3
E.S.R. : 18 at 1 hour
M.S.S.U : No deposits. Sterile.
Chest x-ray : Normal.
Papanicolaou smear: Class II. Inflammatory changes.
Chest x-ray : Normal.

DIAGNOSIS

A diagnosis of secondary amenorrhea was made. The patient was booked for an initial diagnostic curettage. She was admitted into the ward on 16.5.77.

DIAGNOSTIC CURETTAGE

The patient was prepared for a vaginal operation as detailed in the introduction. In theatre she was put in lithotomy position and the bladder was aseptically catheterised when she was already under general anaesthesia. Examination at this time did not show any positive findings. The dilatation of the cervix and uterine curettage were performed as described earlier. Scanty pale curettings were obtained. There was no significant bleeding. The curettings obtained were divided into two. One part was fixed in formalin and sent for histological examination. The other part was preserved in normal saline and sent for culture and microscopy for mycobacterium tuberculosis.

POST OPERATIVE PERIOD

There were no complications in this period. On the next day there was no vaginal bleeding and the patient was discharged home to return to the clinic in 6 weeks.

THE FOLLOW UP

When seen at the clinic she had no complaints. She had not had menstruation. Vaginal examination was not performed. The results of the specimen sent had been received.

HISTOLOGY

There are features consistent with tuberculous endometritis.

MICROSCOPY

Negative for acid-fast bacilli.

CULTURE

M. tuberculosis obtained. Number of colonies 16.

DIAGNOSIS

A diagnosis of tuberculous endometritis was established.

FURTHER MANAGEMENT

The patient was informed of her illness. Antituberculous therapy was recommended with the advice that the treatment should be carried out for not less than 18 months and under the supervision of the Infectious Diseases Hospital. The patient was referred to this hospital and asked to return to our clinic in 6 months so that the curettage could be repeated. However, the patient has not returned to our clinic so far.

COMMENTARY

In our country tuberculosis is common in many parts and is often seen in acute or far advanced forms especially in the rural areas. But in patients of higher socio-economical group it may be a quiescent disease of various organs of the body. Tuberculosis of the genital tract is usually secondary to a primary focus elsewhere in the body, particularly the urinary tract, and in such patients it may cause low-grade chronic salpingitis and endometritis. The spread to the pelvic organs is by haematogenous way. The Fallopian tubes are particularly susceptible to tuberculosis and may be the first part of the genital tract to become involved in a haematogenous infection. The condition is usually bilateral and if the resistance of the patient is strong the disease may remain localised. The affected tubes may be blocked at the fimbrial end becoming swollen and distorted.

The infection of the uterine cavity, as in the patient presented here, is usually by organisms which reach it from the lumen of diseased tubes, but haematogenous spread may occur.

In many cases, there are no symptoms and the disease is discovered during the investigation of an infertility problem. Tuberculous endometritis is sometimes discovered almost by chance in women who are apparently in normal health. Most patients with pelvic tuberculosis present with primary infertility but this would depend on the time of infection. Our patient had 2 children already. In such women the presenting complaint could be secondary amenorrhea as in our patient.

In about 50% of patients the menstruation is unchanged, but the rest will complain of amenorrhea, or irregular excessive bleeding (Stewart, D.B.).

The diagnosis is made by careful histological examination of uterine curettings. The optimum time for diagnostic curettage is the week preceding menstruation. This is because the tubercles are found mostly in the functional layer which is shed during menstruation.

Even with the best facilities for histological examination the diagnosis may be missed in up to 50% of bacteriologically proven cases (Halbrecht, 1958). The specimen received at curettage should be remitted for culture also as was done for this patient.

Hysterosalpingogram has been suggested as a corraborative diagnostic investigation but in our situation where tubal damage may be due to non-specific infections it may not be very helpful (Rozin, 1952).

The incidence of tuberculosis of the genital tract varies very considerably with the social status of the patient and her environment. Where the incidence of pulmonary tuberculosis is high, and where the initial infection is acquired in adolescence, tuberculosis of the genital tract occurs in 5-10%. About 2-5% of all cases of pelvic infection is due to tuberculosis (Derek Llewellyn-Jones).

The treatment of choice for pelvic tuberculosis irrespective of the organ involved is by chemotherapy. The standard treatment in this country comprises of the three basic anti-tuberculous drugs. Streptomycin is given 1gm intramuscularly daily for six weeks. Isonicotinic acid hydrazide (isoniazid) and para-aminosalicylic acid (PAS) are combined and given as Thiazina 3 tablets daily (200 mg isoniazid and 20 mg PAS) for eighteen months.

Endometrial curettage every six months is the standard follow-up until the histology and culture are negative.

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D Y S F U N C T I O N U T E R I N E B L E E D I N G

T R E A T M E N T B Y C U R E T T A G E

NAME: JESCAH AKELLO

UNIT NO: 1377-07

AGE: 22 years

PARITY: 4+0

ADMITTED: 15.5.75

CURETTAGE: 16.5.75

DISCHARGED: 16.5.75

PRESENT ILLNESS

The patient was admitted from the casualty as an emergency case where she presented with severe vaginal bleeding, headaches, backache and general weakness for 2 days. She had been bleeding on and off irregularly since March, 1975. She had not missed a period prior to this. Her periods had been regular before, lasting 4-5 days every 28 days. Her last normal period had been at the end of February 1975 and two weeks later this bleeding had started.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

Her menarche was at the age of 13 years, and at 14 years her periods had already been regular. She had her first baby at the age of 16 years in 1969. This was a normal delivery at term in a hospital. Between 1969 and 1974 she had had 3 other normal deliveries at term. The last delivery was in February 1974. She was not attending the family planning clinic.

PAST MEDICAL HISTORY

Non-contributory.

SOCIAL HISTORY

This was a married housewife of primary education. Her

husband works in Nairobi where they live with their four children.

There was no history of major illness in the family.

PHYSICAL EXAMINATION

This was a well built young woman. She was not anemic or febrile. There were no palpable lymph nodes or oedema of her feet. The breasts were normal and not active.

CARDIOVASCULAR SYSTEM

The heart was essentially normal. The pulse was 80 per minute and regular. The blood pressure was 120/70 mm Hg. Examination of respiratory and nervous system did not reveal any abnormalities.

ABDOMINAL EXAMINATION

The uterus, liver, spleen and kidneys were not palpable.

PELVIC EXAMINATION

The external genitalia were normal. The vagina and the cervix were healthy. There was slight bleeding from the uterus. The uterus was normal size and anterverted. It was mobile non-tender. There were no palpable adnexal masses.

DIAGNOSIS

A diagnosis of dysfunctional uterine bleeding was made as there was no evidence of recent pregnancy.

A diagnostic curettage was planned for on the same evening.

The haemoglobin was 10.5g% with a haematocrit of 31%.

DIAGNOSTIC CURETTAGE

Routine premedication was given in the ward. The patient was brought to theatre on 16.5.75 at 9 p.m. General anaesthesia was

was induced by intravenous injection of 250mg of thiopentone and maintained with oxygen and nitrous oxide by mask.

The patient was placed in lithotomy position. Vulvo-perineal toilet was done with cetrimide solution. After draping with sterile towels, the bladder was aseptically catheterised. A pelvic examination was again performed, but there were no positive findings.

Dilation and curettage of the uterus was now performed as described in the introduction. There were scanting curettings which were obtained and were sent for histological examination. The blood loss was negligible.

POST OPERATIVE PERIOD

The patient recovered soon from general anaesthesia. There was no bleeding after the operation. She did not complain of any pains. She was discharged from the ward on the afternoon of the same day and asked to return to the clinic after six weeks.

FOLLOW UP CLINIC

The patient returned to the clinic on 23.6.75. She had no complaints. She had had her period on 15.6.75 for 4 days. The bleeding was not heavy and she had only slight back-ache.

On examination her general condition was satisfactory. She was not anaemic.

The uterus was normal size, anteroverted, mobile and non-tender. There was no bleeding.

HISTOLOGICAL REPORT

"This endometrium shows a mixed proliferative and secretory pattern. There is amorphous debris but no products of conception are seen."

The patient was asked to return to the clinic in eight weeks but unfortunately she had not returned.

COMMENTARY

The most widely accepted definition of dysfunctional uterine bleeding is the modified form of that proposed by Novak et al. (1965): dysfunction uterine bleeding may be defined as abnormal bleeding from the uterus unassociated with tumour, inflammation or pregnancy or any other organic disease of the genital tract. In our patient no obvious organic lesion was evident.

To make a diagnosis of dysfunctional uterine bleeding it is essential to exclude all organic gynaecological diseases. This condition embraces a whole group of functional disorders rather than a specific diagnosis. The diagnosis thus depends on the definition of organic lesions to be excluded and on the care and trouble taken to exclude such lesions (Jeffcoase 1967). Consequently some cases may be classified as dysfunctional bleeding where organic disease has been overlooked.

Because of this setback the incidence of dysfunctional bleeding may not be correctly reflected. Nevertheless, it is one of the most frequently encountered conditions in gynaecology accounting for at least 10% of all patients (Taylor 1965). The condition accounts for about 5% of all the emergency gynaecological admissions of Kenyatta National Hospital (Gathinji, I.E. 1977).

The histological examination of the endometrium in this case showed a mixture of both proliferative and secretory phases. The condition was first described by Traut and Kuder (1935) and is termed irregular ripening of the endometrium. 21 cases in a series of 100 patients with dysfunctional uterine bleeding showed this type of endometrium. All of them responded to curettage without recurrence. The patient presented here too responded to curettage and has not returned with complaints.

It is suggested that there is either a functional defect of the corpus luteum or an irregular response of the endometrium to the normal hormonal influence.

REFERENCES

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[illegible] MULTIPAROUS PATIENT WITH FIBROIDS AND DIABETES

NAME: ANNIE NYAMOYA
UNIT NO: 1134 - 38
AGE: 54 YEARS
PARITY: 6 + 1
ADMITTED: 22.10.77
OPERATED: 27.10.77
DISCHARGED: 3.11.77

PRESENT ILLNESS

This patient was first seen at our clinic on 3.10.74, with complaints of pains all over the body, dull abdominal pains, constipation and itching all over her body.

Her general condition was satisfactory. She was moderately obese. Her BP was 130/80. There was a mass in the right iliac fossa 6 x 7cm. The bladder was then catheterised and 200 ml of [illegible] urine was obtained. The urine contained no abnormalities. Vaginal examination showed that the mass was uterine, which was of normal configuration and normal. The adnexae were normal. There was no [illegible] of the spine or vertebral column. The [illegible] under our care. She was advised that removal of the uterus was not necessary at this time and she was discharged on analgesics.

But on 24.11.74 she returned with inability to completely empty her bladder. However no abnormalities were discovered on examination and she was sent to the urologist, urinalysis was normal and cystogram was also normal. She complained of the itching all over the body and constipation. She was discharged on laxatives and tranquilizers.

Through 1975 and 1976 she was seen in the out-patient clinics with anorexia, itching, generalised body pains. She was variously treated but did not improve. Finally she was observed to increase to about 16 weeks pregnancy and she was admitted for laparotomy on 22.10.77.

IV. TUMOURS OF THE UTERUS

GRANDE MULTIPAROUS PATIENT WITH FIBROIDS AND DIABETES

NAME: ANNAH NYANDIA
UNIT NO: 1134 - 38
AGE: 65 YEARS
PARITY: 6 + 1
ADMITTED: 22.10.77
OPERATED: 27.10.77
DISCHARGED: 1.11.77

PRESENT ILLNESS

This patient was first seen at our clinic on 3.10.74, with complaints of pains all over the body, dull abdominal pains, constipations and itching all over her body.

Her general condition was satisfactory. She was moderately obese. Her BP was 130/80. There was a mass in the right iliac fossa 6 X 7cm. The bladder was then catheterised and 200 ml of clear urine was obtained. The urine contained no abnormalities. Vaginal examination showed that the mass was uterine, which was of round configuration and smooth. The adnexae were normal. There was no fibrosis of the vulva or urethral meatus. The papanicolaou smear was class II. She was advised that removal of the uterus was not necessary at this time and she was discharged on analgesics.

But on 26.11.74 she returned with inability to completely empty her bladder. However no abnormalities were discovered on examination and she was sent to the urologist, urinalysis was normal and cystogram was also normal. She complained of the itching all over the body and constipations. She was discharged on laxatives and tranquilisers.

Through 1975 and 1976 she was seen in the out-patient clinics with dyspepsia, itching, generalised body pains. She was variously treated but did not improve. Finally the mass was observed to increase to about 10 weeks pregnancy and she was admitted for laparatomy on 22.10.77.

PAST MEDICAL HISTORY

Not contributory.

SOCIAL HISTORY

This was a widow of advanced age. She could not remember details of her obstetrical history, but she remembered she had delivered 6 times and had a miscarriage. All children are alive. She had stopped menstruating many years before, probably 10 years.

PHYSICAL EXAMINATION

This was a slightly obese lady of advanced age. Her general condition was satisfactory. She was not pale, nor jaundiced. She did not have any lymphadenopathy or oedema. Her temperature was 36°C and her urine was normal.

The blood pressure was 140/90 mm Hg. and the pulse 72 per minute, regular and of good volume.

ABDOMINAL EXAMINATION

The uterine mass was about 12 -14 weeks size and was smooth, firm, mobile and non-tender. The liver and spleen were not palpable. There was no free fluid in the abdominal cavity.

PELVIC EXAMINATION

The external genitalia appeared normal but atrophic. The vagina mucosa was also atrophic. The cervix looked healthy and was closed. The uterus was enlarged uniformly to about 12 - 14 weeks size. It was smooth non-tender and somewhat cystic. It was easily mobile and taken up into the abdominal cavity in the right iliac fossa. There were no obvious palpable adnexal mass or tenderness. The pouch of Douglas was empty.

Examination of skin, central nervous system and respiratory system did not reveal any abnormalities.

DIAGNOSIS

A diagnosis of uterine fibroid was made and arrangements made to perform a total hysterectomy. The blood was cross-matched and preserved in the blood bank. On the eve of operation the routine preparation of the patient was carried out.

LABORATORY INVESTIGATIONS

Haemoglobin	: 14.9g%
PCV	: 46.1%
MCHC	: 31.6%
RBC	: 5.03 X 10^6 per mm^3. Normocytic. Normochromic.
WBC	: 8.4 X 10^3 per mm^3.
Blood urea	: 36 mg%.
Electrolytes	: Within normal limits.
Stools	: No ova or cysts found.
M.S.S.U.	: Moderate growth of E. Coli sensitive to ampicillin and septrin. No glucose, no albumin. No pus cells.

Prior to the operation the patient was treated with septrin for 5 days and the urine became sterile.

TOTAL ABDOMINAL HYSTERECTOMY

The patient was brought to theatre on 27.10.77 at midday. She was anaesthetised in the routine manner. The bladder was aseptically catheterised and then she was examined under anaesthesia. This confirmed the earlier findings. The abdomen was prepared in the routine fashion. The abdominal cavity was exposed through a lower midline incision. The whole uterus was uniformly enlarged, firm and fairly mobile with a long cervix. There were no masses either of the bowels or other pelvic organs. Both ovaries looked normal but atrophic. The Fallopian tubes were healthy. There were no pelvic adhesions. A routine total hysterectomy was performed in the manner described earlier. Both tubes and ovaries were removed. The vaginal vault was closed and peritonised. The instruments and swabs were counted and found correct. Haemostasis was satisfactory. The total blood loss was about 500ml.

POST OPERATIVE MANAGEMENT

The patient did not require blood. Intravenous fluid infusion was done for 24 hours. She was provided with pethidine for pains for about 24 hours. She made uneventful recovery post operatively and she was fit for discharge on 1.11.77 after the haemoglobin was checked. It was found to be 16.2g% with PCV of 46.4%. She was discharged earlier than usual due to over-crowding in the ward. As one of her daughters is a nurse in this hospital and lives not far, discharge at this time was felt not dangerous. She returned on the 4.11.77 for the removal of stitches. The wound had healed well. She was asked to return to the gynaecology clinic in 6 weeks for follow-up.

FOLLOW UP

However, she returned earlier on 15.11.77 complaining of itching all over the body and constipations. The wound had healed well. The vaginal vault was well healed. No abdominal masses were found. She was given piriton (chlorpherniramine) and dulcolax laxative. She was sent for glucose tolerance test and asked to return in 3 weeks' time.

At the next visit on 8.12.77 the histology report and the glucose tolerance test were ready.

HISTOLOGY REPORT

Uterus: The cavity contains a large submucous fibroid.
Histology - leiomyoma.
Endometrium: Atrophic.
Fallopian tubes: Normal.
Ovaries: Normal.

GLUCOSE TOLERANCE TEST

TIME HR.	F	0.5	1	1.5	2	2.5
BLOOD SUGAR mg %	170	175	245	243	165	140
URINE SUGAR	-	-	-	-	-	-

In spite of the negative results of urinalysis for glycosuria, the glucose tolerance curve was strongly suggestive of diabetes. As there was no gynaecological or urological problem, the patient was finally discharged to the diabetic clinic which she is still

COMMENTARY

Most of the symptoms presented by this patient are common in cases of uterine fibroids. Discomfort or even severe aching pain in the lower abdomen and over the sacrum is common. The pain is probably caused by pelvic vascular congestion and is more sever if there is associated pelvic inflammatory disease. Many patients seek help because of a mass in the abdomen. Constipations are usually coincidental (Dewhurst), but urinary symptoms are frequent, retention being due to distortion of urethra and frequency by infection (Pinkerton and Stewart). This patient's urinary symptoms could be explained mainly by the infection.

This case illustrates, however, that whilst it is accepted that fibroids are commonest in women who have not had children, this is not always the case. There is an obvious racial factor in women of negro origin, many of whom develop myomata when young despite having children (Dewhurst).

Fibroids are thought to grow until the menopause when they undergo atrophy along with the uterus. Jeffcoate (1962), however, reported that they do sometimes grow after the menopause as in our patient.

It has been noted that myomata in women receiving hormone treatment (usually oral contraceptive) have in some cases enlarged quite rapidly (Dewhurst). This may suggest that fibroids may co-exist with other hormonal dependent or related systemic diseases. Way (1954) suggested that over-activity of the anterior pituitary could account for the presence of hypertension, fibroids, obesity and diabetes mellitus in the same patient. Our patient had all these conditions except the first. Glucose tolerance test should have been done in the initial investigations.

Occasionally endometrial carcinoma may co-exist with fibroids. An endometrial biopsy before hysterectomy would have been appropriate in our patient. Fortunately the endometrium in this case was reported normal.

Total hysterectomy in this patient appeared the most appropriate method of treatment as she was already post-menopausal. The ovaries had to be removed for the same reason.

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ADENOMYOSIS. TOTAL HYSTERECTOMY

NAME: JOSEPHINE WANJIRU MUGI

UNIT NO. 1433 - 99

AGE: 45 YEARS

PARITY 1 + 0

ADMITTED: 17.7.75

OPERATED: 18.7.75

DISCHARGED: 25.7.75

PRESENT ILLNESS

The patient was first seen at the gynaecological clinic on 23.6.75 where she complained of continuous lower abdominal pains and amenorrhea for 13 years. This followed a prolonged and difficult delivery at home which resulted in a stillbirth in 1953. After delivery she was ill with fever and rigors but after treatment in a nearby dispensary she improved. But ever since she had never had her periods again although they were regular before pregnance. She had not been treated elsewhere.

She also complained of a swelling in the lower abdomen for about 6 years, and chronic vaginal discharge for many years. The discharge was particularly perturbing as it caused itching and irritation of the vulva. She complained neither of polyuria, polydysia nor noticeable weight loss.

PAST MEDICAL HISTORY

Except for the related occasion she attended a dispensary she had never been treated for other conditions. But she occasionally had either colds or flu that were treated with home remedies.

SOCIAL HISTORY

She was a housewife married 20 years ago. She lived in Muranga District on their small farm, but her husband worked in Thika town. Because she had not had a child 10 years ago, he married a second wife who has children.

PHYSICAL EXAMINATION

This was a middle aged patient of stout stature. Her general condition was good. Clinically she was not anemic nor febrile. Her urine contained neither albumin nor sugar.

CARDIORESPIRATORY SYSTEM

The heart was essentially normal. Her pulse was 72 per minute, regular and of good volume. The blood pressure was 110/70 mm Hg.

The chest was clear on both sides.

ABDOMINAL EXAMINATION

There was obesity of the abdominal wall. The abdomen was of normal shape. There was a regular mass arising from the pelvis about 12 - 14 weeks pregnancy. No other masses nor free fluid could be detected in the abdomen. The liver and the spleen were not palpable.

VAGINAL EXAMINATION

The external genitalia were normal. There was a slight whitish vaginal discharge but it did not look infective. The vulva and vagina were only slightly hyperaemic. The cervix was healthy with a small lateral tear on the left. The vault and fornices were healthy. The adnexae were not palpable on either side. The uterus was uniformly enlarged to about 12-14 weeks pregnancy, was hard but not fixed. It felt smooth and no separate growths could be identified.

BREASTS

These were atrophic and non-active. No lumps were palpated.

LYMPHATIC GLANDS

No enlargement of lymph nodes were found.

DIAGNOSIS

A diagnosis of uterine fibroids was provisionally made and

hysterectomy was advised. The patient was agreeable. Blood was taken for urea and electrolytes, haemoglobin. Urine was sent for microscopy and culture. Papnicolaou smear was taken and the patient was given an appointment to return the following week when these results would be ready.

LABORATORY INVESTIGATIONS

Papanicolaou smear	: Class I. No evidence of infection or malignancy.
Midstream specimen of urine	: pH 6, Culture - No growth obtained. Proetin - Nil. Glucose - Nil. Trichomonads - Nil.
Blood urea	: 25mg%
Na^+	: 131 mEq./l
K^+	: 5.3
Cl^-	: 99
HCO_3^-	: 25
Haemoglobin	: 11.5g% .
PCV	: 33.7%
MCHC	: 33.5%
RBC	: 4.08 X 10^6 mm^3. Normochromic, Normocytic.
WBC	: 5.8 X 10^3 mm^3. Normal morphology.
Platelets	: Adequate.

At the next visit these results were available and the patient was asked to come to the ward in the morning of 17.7.75 for operation on 18.7.75.

ADMISSION

She reported to the ward on the morning of 17.7.75. She did not have any new complaints. Her blood pressure was checked again and found to be 110/70 mm Hg. Urinalysis did not reveal any abnormalities. Blood specimen was sent for cross-matching 1 litre of blood which was preserved in the blood bank. On this day the patient was acquainted with the ward routine by the sister. A discussion with the house surgeon

explained the nature, aim and aftermath of the operation she had to undergo. A consent was signed.

On the eve of the operation preparations were done as detailed in the introduction. In the morning premedication was routinely given with pethidine and atropine as described earlier and the patient was taken to theatre at 8.30 a.m.

TOTAL ABDOMINAL HYSTERECTOMY

The patient was anaesthetised in the routine manner. The bladder was aseptically catheterised and 50ml of clear urine was obtained which did not contain either albumin or glucose. The pelvis was now examined and the earlier findings were confirmed. The vagina and the cervix were painted with a solution of Bonney's blue. The patient was put in supine position. The skin was prepared and then draped. After this the abdomen was opened as described earlier through the lower midline incision. The uterus was uniformly enlarged, but no fibroids were visible. On palpation it was hard. There was adequate mobility of the uterus and the adnexae. Both ovaries were normal in size and shape. The tubes seemed healthy. No abnormalities were found either in the appendix or the caecum. The kidneys and liver and spleen were next palpated and were not unhealthy. The stomach and the rest of gastro-intestine tract were inspected but no obvious abnormalities were detected. There was no ascites.

The patient was then put in a slight Trendelenburg position. The bowel was packed out of the way. A self retaining retractor was then introduced. The uterus was removed from the abdominal cavity through the wound. The round ligament on one side was clamped using two Spencer-Wells long artery forceps. It was divided between these clamps. This was repeated on the opposite side. Both round ligaments were now transfixed with No. 2 chromic catgut. The leaves of the broad ligament

were opened and after a transverse incision was done on visceral peritoneum of the utero-vesical pouch the lower flap was bluntly mobilised downwards, care being taken not to open venous sinus that were present. The infundibulopelvic ligament was then clamped and divided between two Spencer-Wells forceps and transfixed using No. 2 chromic catgut. This was repeated on the opposite side. The visceral peritoneum on the posterior uterine wall was then transversely incised and the lower flap bluntly mobilised downwards. The mobilisation of both peritoneal flaps together with the bladder on the anterior aspect of the uterus was continued downwards gently until the cervix was palpated. Both ureters were then located far from the line of dissection. They were palpated, and peristaltic movements could be observed. Both uterine arteries were easily visible in spite of some heavy oozing that was encountered. All active bleeding was checked by ligation with No. 1 catgut.

The uterine artery was then clamped and divided between two straight Kocher's clamps. Care was taken to include all the blood vessels by making the clamp slide into position from the cervix onto the parametrial tissue. The incision was directed in such manner as to form a rough triangle with the lower clamp the apex of which was formed by the medial end of the incision and the tip of the lower clamp. The lower pedicle was thus freely mobile. This pedicle was then ligated with extra-chromic No. 2 catgut. This was repeated on the opposite side. Further down dissection of the bladder was necessary in order to expose the vaginal angles. These were now clamped with an angled Kocher uterine clamp on each side. The vagina was now opened in the middle between two Little-Wood tissue forceps. The vaginal vault was held with Spencer-Wells forceps as circumcision of the upper vagina was done, to remove the uterus. The uterosacral ligaments were not clearly identified as they were very thin.

The vaginal vault was now closed with interrupted No. 2 catgut. Haemostasis was thus achieved except for few areas with considerable oozing. These were ligated with No. 1 chromic catgut. The raw area was now peritonised with a No. 1 chromic

catgut, with due care to bury all pedicles.

At this stage the uterus was opened by an attendant in order to inspect the inside. No fibroids were found in the uterine wall. The wall was thickened so that the uterine cavity was almost obliterated and what remained of it did not contain fluid or polyps. The thickened uterine muscle had 3 cystic spaces of about 0.5cm that oontained old blood. There were a number of small pale areas. A clinical impression of adenomyosis was made and the whole uterus sent for histological examination.

The abdominal packs and the self retaining retractor were now removed. The instruments and swabs were next counted and found correct. The abdomen was then closed in layers routinely as described earlier, using interrupted black silk stitches for the skin. The total blood loss was estimated about 800ml. During operation the patient received 500 ml of blood and a further 500ml was given post operatively.

POST OPERATIVE PERIOD

The patient's vital signs were observed closely until she was fully awake. She recovered from anaesthesia in about 2 hours. When she complained of pain analgesia was provided with intramuscular 100mg of pethidine hydrochloride every 6 hours for the first 24 hours. During this time she did not take orally but intravenously she received normal saline alternating with 5% dextrose 500ml every six hours. By the end of this period her bowel activity had returned to almost normal and she was introduced to taking orally first with sips of water which increased in amounts with time and then soup first and then solid food on the fourth day.

During this time her general condition remained satisfactory. She did not develop pyrexia so antibiotics were not offered. On the third day her haemoglobin was 16g%, PCV 47.5% and RBC 5.6 X 10^6per mm^3 and WBC 6.4 X 10^3per mm^3. The erythrocytes were normocytic and normochromic, the leucocytes were normal with adequate platelets. Urine output was satisfactory throughout.

The wound healed by primary intention and the stitches were removed on 24.7.75. The next day she was discharged with an appointment at the gynaecology clinic after 6 weeks.

FOLLOW-UP

She was seen again on 8.9.75. The scar had healed well. The vaginal vault had healed well. The histology showed normal ovaries, normal Fallopian tubes and adenomyosis of the uterus.

The patient was discharged from the clinic.

COMMENTARY

Progressive severe menstrual bleeding, painful dysmenorrhea accompanied by gradual uterine enlargement in a parous patient especially at the age of 40 years and above is suggestive of adenomyosis (Benson and Sneeden, 1958). Cullen thought that dysfunctional uterine bleeding and increasingly severe dysmenorrhea accompanying enlarging, firm and tender uterus should arouse the suspicions of adenomyosis. Nevertheless preoperative diagnosis of adenomyosis is not easy and is largely guesswork because the clinical findings are altered by frequent association of other pelvic abnormalities (Benson and Sneeden) and adenomyosis is considered preoperatively only in few cases, less than 10%. The symptoms and signs presented by our patient would not have easily suggested the presence of adenomyosis.

Instead of the frequent menorrhagia with progressive dysmenorrhea our patient presented with amenorrhea for 13 years. The basis for hypermenorrhea is thought to be increased vascular supply to the uterus and faulty vascular control due to interferance with myometrial contactility. But the amenorrhea in our patient may be difficult to explain. The histology showed normal ovaries. The status of the endometrium unfortunately was not reported on. Cystic glandular hyperplasia of the endometrium in patients with adenomyosis suggests hormonal imbalance, particularly oestrogen excess and may be a contributory aetiological factor (Emge 1958). It is doubtful if the opposite was possible in our patient who had ovaries reported as normal. Probably it would have been worthwhile to estimate the daily urinary output of gonadotrophins and oestrogens.

Distension of the uterine wall by increased vascularity during menses would explain dysmenorrhea (Benson and Sneeden). Continuous lower abdominal pains in this patient could perhaps best be explained on the same basis of continuous distension of the uterine wall by the growing mass.

The condition is usually found in multiparous women in whom damage to the uterine wall by repeated pregnancies or vigorous curettage allows endometrium to extend into the myometrium (Ringrose 1962). This patient although of low parity had a difficult labour which resulted in a stillborn at home. Mechanical factors may have been at play.

Submucous fibroid may present with classical symptoms and signs of adenomyosis. But according to Benson and Sneeden pain is not the main problem in fibroids unless the fibroid is pedunculated or is infarcted. Metrorrhagia is more common than menorrhagia with submucous fibroids. Hysterosalpingogram and a diagnostic curettage may help to establish the diagnosis of a submucous fibroid. But as in our case differentiation could be difficult.

The pelvic congestion sydrome as described by Tailor is characterised by chronic, continuous pelvic discomfort with menometrorrhagia and slightly enlarged uterus. The cervix in these cases is described as cyanotic and soft.

Idiopathic hypertrophy of the uterus (Fibrosis uteri) could obscure the diagnosis, but this entity is not uniquely symptomatic.

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ADENOCARDINOMA OF THE UTERINE CERVIX TREATMENT BY WERTHEIM'S HYSTERECTOMY FOLLOWED BY RADIOTHERAPY

NAME: ACHIENG SULMENA

UNIT NO: 150156

RADIOTHERAPHY NO.: 4803 - 2852

AGE: 50 YEARS

PARITY 9 + 0

L.M.P. POSTMENOPAUSAL FOR 14 YEARS.

ADMITTED: 15.8.75.

OPERATED: 1.10.75.

DISCHARGED: 5.12.75

PRESENT ILLNESS

This patient was admitted from the filter clinic of this hospital where she presented with intermittent vaginal bleeding and discharges for one year. She also complained of lower abdominal pains and backache of the same duration. The bleeding was scanty lasting a day or two then be followed by a blood-stained vaginal discharge for several days. The pains are experienced during the bleeding.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She had had 9 deliveries details of which she could not remember. The last delivery was about 16 years ago. There had been no difficult deliveries.

Her periods had been regular occuring once monthly and lasting about 5 days. Her last period was when her last child attained the age of 2 years, which was about 14 years before admission.

She had not been on oral or any other contraception.

PAST MEDICAL HISTORY

Non-contributory.

SOCIAL HISTORY

This was a housewife of no education. She could not remember when she married. They were a peasant family who lived on their small farm in Siaya District of the Nyanza Province. She was the only wife. Her husband had died about 5 years before.

PHYSICAL EXAMINATION

This was a slightly wasted elderly patient. She looked slightly pale, but was not febrile. She had no lymphadenopathy or oedema. The breasts were atrophic,, non-active and no masses were palpated in them.

CARDIORESPIRATORY SYSTEM

The heart was essentially normal. The pulse was 80 per minute and regular. Her blood pressure was 120/80 mm Hg.

The trachea was central. Air entry was satisfactory in both lungs and the lung fields were clear.

ABDOMINAL EXAMINATION

The abdomen was normal in shape and size. No fluid collection or masses could be demonstrated in the abdominal cavity.

The liver and the spleen were not palpable.

PELVIC EXAMINATION

The external genitalia were atrophic but otherwise normal. The vagina was normal. The cervix had a fungating cauliflower-type mass which bled easily on touch. In areas there were some ulcers which were bleeding.

A gentle digital examination was performed. The base of the cervical lesion was indurated, but the rest of the mass was friable. The mobility of the cervix could not be determined due to tenderness. The fornices were free of the lesion. The uterus was bulky anteverted and mobile. The adnexae were tender but no masses were detected. A small piece of tissue fell at examination and was sent for histology.

DIAGNOSIS

A clinical diagnosis of carcinoma of the cervix was made and the patient was booked for examination under anaesthesia for the purpose of clinical staging and biopsy of the tumor for a histological diagnosis.

RESULTS OF LABORATORY INVESTIGATIONS

Haemoglobin : 9.7 g%
Haematocrit : 29.6%
WBC : 5.3×10^3 per mm^3
RBC : 3.68×10^6 per mm^3
Peripheral film: Microcytosis. Moderate anisocytosis and slight poikilocytosis.
Blood urea : 27 mg%
Electrolytes : Within normal limits.
MSSU : Bilirubin, albumin and glucose absent.
Many red blood cells.
No culture obtained.
Histology of the tissue obtained at examination:
This is a granular tissue 0.5cm diameter, showing moderately differentiated columnar-celled adenocarcinoma. The site of origin cannot be ascertained, but most probably is from the endocervix or endometrium.

The patient was put on ferrous sulphate 200mg thrice daily. She was prepared for examination under anaesthesia.

EXAMINATION UNDER ANAESTHESIA, CLINICAL STAGING AND BIOPSY

This was performed in theatre on 21.8.75. Clinically she had no lymphadenopathy. The liver and the spleen were not palpable.

BIMANUAL EXAMINATION

There was a friable tumour arising from the uterine cervix. The tumor involved both fornices. The uterus was bulky, cystic and mobile. There was discharge from the cervical canal.

CYSTOSCOPY

The bladder mucosa was not involved.

PER RECTUM

The tumour extended along the right parametrium, but the pelvic walls were free.

Biopsy was taken from several areas of the cervical tumour.

CLINICAL STAGING

Stage II B.

HISTOLOGICAL REPORT

Several friable fragments received. These fragments show features of papillary adenoacanthoma in which the prominent element is the adenocarcinoma. It is more likely that this is an endometrial rather than an endocervical adenocarcinoma.

FURTHER MANAGEMENT

At the examination under anaesthesia the uterus was felt to be bulky and cystic. The biopsies showed adenocarcinoma but it was not histologically clear if the tumour was of cervical or endometrial origin. The consesus of opinions favoured the latter diagnosis in spite of the high parity. Her age group also favours the latter diagnosis.

It was felt that a Wertheim's hysterectomy followed by external irradiation post operatively would be more appropriate. The operation was planned for the 1.10.75. The patient was kept on haematinics so that by the time of operation her haemoglobin was 15g% with PCV of 48.6%. The urine was sterile and contained no abnormal deposits. The urea was 20mg% and the electrolytes were within normal limits. Intravenous pyelography was normal.

PREPARATIONS FOR HYSTERECTOMY

On the eve of the operation the lower abdomen and the perineum

were shaven clean. The patient received a light diet. She had Dulcolax suppositories that night. She was starved from midnight. 1.5 litres of blood was cross-matched and preserved in the blood bank. For premedication she received 50gm pethidine and 0.6mg atropine intramuscularly 30 minutes before theatre.

THE OPERATION OF WERTHEIM'S HYSTERECTOMY

The patient arrived in theatre at 8.30 a.m. on 1.10.75. After induction of general anaesthesia the bladder was aseptically catheterised. The vaginal cavity was packed with a long gauze tape after it had been painted with Bonney's Blue. The patient was then put in supine position and skin preparation done in the routine manner. The abdomen was opened in layers through the lower midline incision.

There was no free blood or fluid found in the abdominal cavity. The liver and the spleen were normal. The caecum, appendix, rectum and the greater omentum were normal. The uterus was slightly enlarged and had no abnormalities on the surface. Both ovaries were normal size and macroscopically looked healthy. Both tubes had no tumour. Both infundibulo-pelvic ligaments and the round ligaments looked healthy. The lymph nodes lying along the external iliac vessels, the bifurcation of the common iliac vessels, the obturator vessels and the internal iliac vessels were palpated but they were not found to be enlarged.

THE PROCEDURE

The intestines were now packed out of the pelvis and the patient was placed in Trendelenburg position. The utero-vesical space was opened by incising the loose peritoneum above the utero-vesical pouch. The bladder was separated from the cervix as far as possible. The round ligaments on both sides were divided and ligated using catgut No. 2. The infundibulo-pelvic ligaments were now divided and ligated on both sides using the same catgut. The broad ligament was then opened and the ureter dissected from the parametrium, especially the last 3-4cm before

it entered the bladder. This was repeated on the opposite side. The uterine arteries were now clamped, divided and ligated on both sides. The bladder was dissected further down from the vagina. The visceral peritoneum on the posterior uterine wall was opened and the bowel digitally dissected. The posterior layers of the broad ligaments were incised after the ureters were retracted laterally. The cardinal and utero-sacral ligaments were divided as far laterally as possible care being taken not to injure the ureters. The vaginal pack was now removed from below and the vagina was divided between curved artery forceps so that the vaginal cavity was kept sealed. Most lymph nodes at the bifurcation of the common iliac artery, along the internal and external iliac vessels were removed. The vaginal vault was left open to facilitate drainage but interrupted catgut stitches were necessary on the edges to stop bleeding. Satisfactory haemostasis was achieved by ligating oozing areas. The raw area was now peritonised. The abdominal packs were removed, the swabs and instruments were counted and found correct. Then the abdomen was repaired in layers using silk stitches for the skin. The estimated blood loss was about 800ml. During the operation she received 500ml of blood and a further one litre was transfused post-operatively.

POST OPERATIVE PERIOD

The patient recovered in one hour from general anaesthesia. The blood transfusion which was started during the operation was continued post-operatively. She received a total of 1.5 litres. Then intravenous normal saline alternating with 5% dextrose was given for the first 30 hours until bowel activity returned to normal and she was able to take orally. Analgesia in the first 24 hours was provided by injections 100ml pethidine intramuscularly. Continuous bladder drainage was maintained for 5 days. She was put on 500mg of tetracycline six hourly for one week. The post-operative period was uneventful. The wound healed well and the stitches were removed on the tenth post operative day. The post operative haemoglobin was 11.4g% with a PCV of 35.0%.

HISTOLOGY REPORT

A hysterectomy specimen 9 X 6 X 3cm received. The cervix is infiltrated by tumour and shows ragged ulceration. The

itself is not involved by the tumour.

Histology: This is a moderately differentiated adenocarcinoma. In place it shows squamous differentiation. Histologically it is difficult to ascertain whether this is an endometrial or endocervical adenocarcinoma. Judging from the gross features this appears to be an endocervical adenocarcinoma.

RADIOTHERAPY

Before this was commenced the haemoglobin and blood cells counts were checked. The urea and electrolytes were checked.

Haemoglobin: 10.9g%
PCV : 37.7%
WBC : 4.6 X 10^3 per mm^3
RBC : 4.36 X 10^6 per mm^3
Platelets : 227,000 per mm^3
Film : Normal.
Blood urea : 20mg%
Electrolytes: Within normal limits.

The patient was commenced on external deep x-ray irradiation on 3.11.75. The irradiation was performed from an anterior as well as a posterior field each of 18cm X 14cm. From 3.11.75 to 20.11.75 she received 339 rads daily on the tumour area and from 21.11.75 to 3.12.75 she received 425 rads daily so that in a period of 30 days she had accummulated dose of about 4400 rads.

At the end of the treatment her general condition was satisfactory. Her appetite was good. She had no complaints, and she had increased her body weight.

Haemoglobin : 13.2 g%
PCV : 39.2%
WBC : 5.0 X 10^3 per mm^3
RBC : 5.0 X 10^6 per mm^3
Platelets : 229,000 per mm^3

She was discharged home on the 5.12.75 with an appointment to come again after about 6 weeks. A letter was written to the Provincial Medical Officer at Kisumu where it was expected she would report if she had any problem before the date of appointment.

FOLLOW UP

She was again seen on 4.2.76. She had dull pains in the legs and in the lower abdomen. Her general condition was satisfactory. She had no urinary problems. She was not anemic. There was no oedema of the legs. There was no tumour nor fluid palpable per abdomen. A speculum examination showed a well-healed vault without any visible tumour. When vaginal examination was done no induration of tumour was felt in the pelvis. A digital examination per rectum showed a free rectovaginal septum. She was discharged on analgesics and asked to return in 6 months.

Probably due to difficulties in arranging her own transport to Nairobi and her accommodation in this town, the patient has decided to be reporting at the Provincial Hospital which is near her home.

COMMENTARY

The type of woman who is likely to develop endometrial carcinoma of the uterus is said to be different from the woman who develops carcinoma of the cervix. Endometrial carcinoma is associated with lower parity or infertility, menopausal period in life, with the maximum incidence being around 60 years (Dewhurst, C.J.). Three quarters of the patients are over 50 years old. The patient presented here was post-menopausal and about 50 years. To make the case even more obscure the first histological report showed adenocarcinoma whose origin could not be determined histologically.

Cervical adenocarcinoma is relatively uncommon (Lewis et al. 1970). The generally accepted opinion is that most carcinomata of the cervix are of the squamous-cell type and only 5% are adenocarcinomatous.

In this patient decision as to whether one was dealing with adenocarcinoma of the cervix or of the corpus uteri was not easy. On examination under anaesthesia on 21.8.75 the uterus was found to be bulky and cystic. Multiple biopsy at this examination showed adenocarcinoma, whose origin could not be determined. There was a general agreement of opinion that this was adenocarcinoma of the corpus uteri. This, of course, influenced further decisions on management.

If endometrial biopsy had been obtained by fractional curettage the diagnosis would have been clear at this time. The final diagnosis of adenocarcinoma of the cervix uteri is in agreement with the notion that cervical cancer is a disease of parous patients mainly, but can occur at any age (Dalley et al.1971).

To date the cure for all cancers, including the cervical, cannot be said to be perfect especially in this environment where most patients turn up only too late for radical surgery

and possible cure. Over 55% of our patients were found to be stage III and above, and having other complications especially urinary incontinence at the time of diagnosis (Mati and Ojwang 1975). But the patient presented here had stage II B and would probably have not turned up at this stage of the disease were it not for disabling symptoms. The screening cervical smear facility that is a routine in our hospital may not be readily available in the rural areas.

The accepted forms of treatment of carcinoma of the cervix are radiation therapy, surgery and a combination of the two. The results of surgery alone for the patients with cervical carcinoma have been reported recently as far from satisfactory with reccurrence in 18 out of 20 patients in less than 2 years (Gebbie, 1974). The physician's Judgement on whether the case is operable or not was based on clinical staging of the tumour, and the fact that most of our patients turn up with advanced disease. This may have influenced the rsults.

At this time the hospital offers external irridiation therapy as well as local application of radioactive sources like radioactive caesium. The results of combined radical surgery with radiotherapy give a better 5 year survival rate (Currie 1971) and preliminary reports in this hospital seem promising. As most of the tumour was removed in this patient and the pelvic lymph nodes were not enlarged, the results of the external radiation she received may be encouraging.

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V. TUMOURS OF THE OVARY

DERMOID CYST OF THE OVARY CYSTECTOMY

NAME: ZAHARA ALI
UNIT NO: 1537 - 06
AGE: 20 YEARS
PARITY: 4 + 1
ADMITTED: 19.9.75
OPERATED: 24.9.75
DISCHARGED: 1.10.75

HISTORY OF PRESENT ILLNESS

This patient was admitted through the female filter clinic of this hospital into the emergency ward. She complained of intermittent lower abdominal pains for one year. She had no abnormal vaginal bleeding or discharge. There was no history of dysuria, vomiting or loss of appetite. Her L.M.P. was on 29.8.75.

PAST MEDICAL AND SURGICAL HISTORY

Non - contributory.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

The patient had had 4 normal deliveries at term in different hospitals between 1969 and 1973. All these children were alive and well. Puerperium in all cases had been uneventful. Early in 1974 she had an abortion at home at about 4 months gestation. Since then there had been lower abdominal pains intermittently. The pains were marked during menstruation. Her menstrual cycle was regular every 30 days lasting for 5 to 6 days. She was not attending family planning clinic.

SOCIAL HISTORY

This was a housewife of primary education married to a labourer of Nairobi City Council. They live in the city.

PHYSICAL EXAMINATION

This was a healthy slender patient who was not anemic. There was no oedema, no jaundice nor palpable lymph nodes. She was not febrile. Her urine did not contain albumin or glucose.

CARDIORESPIRATORY SYSTEM

The blood pressure was 120/80 mm Hg. The pulse was 80 per minute, regular and of good volume. The heart was essentially normal. Lung fields were clear on both sides.

ABDOMINAL EXAMINATION

The abdomen was of normal shape. There were no visible veins of the abdominal wall. There was a well defined abdominal swelling in the left iliac fossa about 8 cm in diameter. It was slightly tender. There was no free fluid in the abdominal cavity. The liver and spleen were not palpable.

PELVIC EXAMINATION

The external genitalia were normal and healthy. The vagina was healthy. On speculum examination the cervix was noted to be parous, closed and normal. There was no bleeding nor abnormal discharges. A papanicolaou smear was taken before bimanul examination. The uterus was normal size and anteverted. There was a left adnexal mass about 8 cm diameter. The mass was well defined, cystic, mobile and only slightly tender. The right adnexae were normal.

DIAGNOSIS

A diagnosis of an ovarian cyst was provisionally made. A laparatomy was recommended and the patient gave consent.

LABORATORY INVESTIGATIONS

Haemoglobin	:	15.4 g%
PCV	:	46.7%
MCHC	:	32.9%
WBC	:	8.23 x 10^3 per mm^3
RBC	:	[illegible] x 10^6 per mm^3
Peripheral film	:	Normal. No parasites seen.
Urea and electrolytes	:	Within normal limits.

M.S.S.U. : No culture obtained. Normal microscopy.
Stools : No ova or cysts found.
Kahn test : Negative.
Blood group : "O" Rh Positive
Pap Smear : Pap class 1. No evidence of malignancy.

PREPARATION FOR THE OPERATION

The operation was set for 24.9.75 and the patient was informed in advance. On the eve of the operation two units of blood (1000 ml) were cross-matched and preserved in the blood bank. The lower abdomen and the perineum were shaved. The patient received a light diet. On the morning of operation premedication was given as described in the introduction.

In theatre the general anaesthesia was induced as for caesarean section. While under anaesthesia she was examined, and this confirmed the earlier findings. The patient was put in supine position. The abdomen was prepared as described earlier.

LAPARATOMY

The abdomen was opened in layers through a lower midline incision exposing the parietal peritoneum. The peritoneum was then opened and the incision extended to both sides longitudinally. The uterus was of normal size. The right tube and ovary were normal and healthy. The left ovary had a smooth, semi-cystic mass 6 cm in diameter. There was no perforation of the capsule. There was no ascites in the peritoneal cavity and the cyst was not adherent. The left tube was easily separated from the tumour and preserved. A superficial incision was made through the ovarian capsule taking care not to open the cyst. With a toothed dissecting forceps, a plane of clearage was made and from here the cyst was separated from the surrounding ovarian tissue by blunt finger dissection. The cyst was finally removed leaving a thin capsule. The edges of the capsule were united with No. 1 chromic catgut interrupted sutures on an atraumatic needle. Haemostasis was satisfactory. The blood loss was negligible.

An exploration of the abdominal visceral was now carried out. The liver and the spleen were healthy. The caecum and appendix were healthy. No obvious abnormalities of both kidneys could be detected. After counting instruments and swabs the abdomen was now closed in layers.

The cyst was partially opened and found to contain fluid and hair. It was sent for histological examination.

POST OPERATIVE PERIOD

The patient did not required blood transfusion. For the first 24 hours she was on intravenous normal saline alternating with 5% dextrose. Analgesia was provided by giving pethidine. On the third day she was already mobile and taking orally. The post operative haemoglobin was 15.3 g% with a PVC of 46.2%. The wound healed by primary intention and the stitches were removed on the seventh day. She was discharged on 1.10.75 with an appointment to attend the gynaecology clinic in six weeks.

FOLLOW UP

She was seen again on 11.11.75. She had no complaints. She was eating normally. Had no constipations nor pains. She had her period on 3.10.75 and 2.11.75 they were normal periods and she had no pains. The scar had healed well. There were no abdominal masses. The cervix was closed and looked healthy. The uterus was normal. Both adnexae were not palpable.

HISTOLOGY REPORT

This is a 40 x 30 x 20 mm open cyst containing sebaceous material and hair.

Histology: shows features consistent with a simple cystic teratoma.

The patient was discharged from the clinic.

COMMENTARY

Since no other organ in the body produces such a diversity of tumours as the ovary tumours of this origin present problems with regard to etiology, classification, diagnosis and treatment. In clinical practice one seldom knows the nature of an ovarian tumour until the abdomen is opened and then not always. These ovarian tumours may be found accidentally at a routine examination or they may present as a result of accidents occuring to the cysts. These accidents which include torsion, rupture, haemorrhage, infection or malignant change, may give rise to acute or subacute abdominal symptoms. It is this pain that brought this patient to the hospital although, as it was found later, none of these complications were present. Pain is fairly common in cases of dermoid cysts and may range from a dull pain to a sharp pain. As was the case in this patient abdominal enlargement is unusual and menses are seldom affected. The symptoms are not related to the size of the dermoid cyst (Blackwell et al. 1946).

Because of the pain lasting for one year and the presence of a tubo-ovarian mass a laparatomy was undertaken. In differential diagnosis inflammatory tubo-ovarian mass or ectopic pregnancy after chronic pelvic inflammatory disease were considered, but these would have required laparatomy anyway. At the operation the cyst appeared simple and since this was a young patient, and no signs of malignancy (infiltration of the capsule, haemorrhagic invasion of the capsule, bilateral tumour or ascites) were present, cystectomy rather than ovariectomy was considered appropriate.

Dermoid cysts form 10% of all ovarian tumours occurring in all ages (Blackwell et al 1946) and are mainly unilateral (Jeffcoate 1975). The incidence is much the same in East Africa (Grech and Lewis 1967).

The etiology is obscure but Cohnheim postulated that dermoid cysts arise from numerous embryonal tissues not utilised during development which give rise to all types of neoplastic formations. The structures in cystic teratoma, as Novak (1948) would have them referred to in differentiation from the malignant solid teratoma, are mainly ectodermal although elements of mosederm and endoderm may be present. They contain well differentiated

organ tissue elements in contrast to the solid teratomata which contain differentiated fetal elements but in bizzare manner and without organ formation. The two differ also in that the latter are highly invasive. All organs especially of the ectodermal origin may be presented in cystic teratomata, but occassionally one type of tissue may predominate as in the case of struma ovarii when features of hyperthyroidism predominate the clinical picture.

Malignant transformation of dermoid cysts though rare is a possibility. If it occurs, it is usually squamous cell carcinoma or possibly melanoma. Primary malignant teratomata are even rarer and usually destroy the patient in childhood or adolescence. There were no malignant changes of the tumour in this patient. But dermoid cysts should always be removed and histologically examined.

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VI. TRAUMA IN GYNAECOLOGY

UTERINE PERFORATION WITH LIPPES LOOP. LAPARATOMY

NAME: JANE MUTHONI
UNIT NO: 1629 -03
AGE: 26 YEARS
PARITY: 4 + 1
ADMITTED: 2.11.76
OPERATED: 2.11.76
DISCHARGED: 9.11.76

HISTORY OF PRESENT ILLNESS

This patient was admitted from the gynaecological clinic, to where she had been referred by the family Welfare Centre. At the Family Welfare Centre she had an intrauterine device (Lippes Loop) inserted on 27.8.76. She returned to the centre on 31.8.76, complaining that she could not feel the threads of the coil. On examination the threads were not visible. Another Lippes Loop was inserted and the patient had a pelvic radiological examination which showed the presence of two loops. She was then referred to the gynaecology clinic and admitted into the ward on 2.11.76.

COMPLAINTS

At the admission she complained of a dull pain in the lower abdomen. She had no vaginal bleeding nor discharges.

PAST MEDICAL AND SURGICAL HISTORY

Non-contributory.

SOCIAL HISTORY

She was not married, works at a tailoring shop and lives in the city with her children. She has a permanent consort.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She could not remember the date of her menarche. She had had two normal deliveries in different hospitals in 1970 and 1972.

In 1973 she had an abortion at the gestation of 3 months. Evacuation was done in this hospital and she was discharged on antibiotics. There were no complications. Then in 1976 she had another successful pregnancy and delivered a full term baby at Pumwani Maternity Hospital in July. The following month when she went for post-natal clinic she was advised to attend family planning clinic. She attended Family Welfare Centre where a Lippes loop was inserted on 27.8.76. She had had no periods since delivery.

PHYSICAL EXAMINATION

This was a young patient in good general condition. She was neither pale nor febrile. Her blood pressure was 120/60 mm Hg and her pulse 72 per minute. Her urine did not contain abnormalities. Examination of the rest of the cardiovascular, respiratory and central nervous system revealed no obvious abnormality.

ABDOMINAL EXAMINATION

There was no distension. The abdomen was soft. There was mild tenderness in the suprapublic area. The liver and the spleen were not palpable. There was no free fluid in the abdomen.

PELVIC EXAMINATION

The external genitalia were normal and healthy. Using Cusco's speculum the vaginal cavity was visualised. The vagina was healthy. The cervix was parous, closed. There was no cervical erosion. There were threads coming through the external os. A papanicolaou smear was taken. The threads were then pulled using a sponge holding forceps. A size C Lippes loop was easily removed and there was no bleeding. On bimanual examination, the uterus was normal size, anteverted and mobile. It was tender. Both adnexae were normal and slightly tender. No masses could be palpated.

DIAGNOSIS

A diagnosis of misplaced intra-uterine contraceptive device was made. Perforation of the uterine wall by the loop was suspected.

INVESTIGATION

Plain pelvic x-ray mentioned above had shown the presence of 2 loops. One was possibly outside the uterus as it was in the right iliac fossa, far from the midline and outside the true pelvis.

Hysterosalpingogram: Uterine cavity well outlined. Both Fallopian tubes were well outlined and looked healthy. There was a peritoneal spill of the radio-opique dye on both sides. There was a Lippes loop in the right iliac fossa.

Papanicolaou Smear: Class II. Inflammatory changes. No evidence of malignancy.

Haemoglobin: 14g%

PCV : 42.2%

RBC : Normal.

WBC : Normal.

A final diagnosis of uterine perforation with Lippes loop was made and the patient advised on laparatomy. She gave her consent and preparations were made for laparatomy ontthe same day.

LAPARATOMY

The patient was premedicated as described earlier. Two pints of blood were cross-matched and preserved in the blood bank. On arrival in theatre she was routinely anaesthetised. The bladder was aseptically emptied. Examination under anaesthesia confirmed the earlier findings. The patient was then put in supine position and the skin prepared as described earlier.

The abdomen was opened through the right paramedian incision.

A free lippes loop was found in the pelvic cavity. The loop was not adherent to any organs. The threads were followed and they led to an area in the uterine fundus that was covered with omentum and loops of gut. The gut was removed carefully. It was not adherent. But the omentum was somewhat adherent covering an apparent perforation. It was mobilised and a perforation 3 X 2 cm was uncovered in the uterine fundus. It did not look fresh, and the edges were irregular. There was no bleeding. On further examination there was no other defect found. The perforation was repaired with No. 1 chromic catgut after freshening the edges. Haemostasis was satisfactory and the blood loss was negligible. The ovaries and tubes were normal and healthy. The appendix was healthy. The loops of gut were inspected and no defect was detected. The abdomen was then closed routinely in layers after count of instruments and swabs. The skin was repaired with interrupted silk sutures.

POST OPERATIVE PERIOD

The patient did not require any blood transfusion or antibiotics. For the first 24 hours she was on intravenous normal saline alternating with 5% dextrose 500 ml per 6 hours. Analgesia was provided with injections of pethidine. The post operative haemoglobin was 13.2g%. The wound healed by primary intention and the stitches were removed on 8.11.76, and the patient was discharged the following day.

FOLLOW UP

When seen again on 16.12.76 she had no complaints. The scar had healed well. There was no tenderness on abdominal palpation. No mass could be palpated. She had had her menstrual period on 8.12.76, which was not painful. She was advised to use oral contraceptive pills instead of the coil. She was asked to be delivered in a major hospital if she got pregnant as her uterus had already sustained an injury.

COMMENTARY

In this country intra-uterine contraceptive device (IUCD) is a popular means of contraception second only to the injectable Depo-Provera (depot medrosyprogesterone acetate) (Hornsby 1972). The most important advantage of IUCD is that the couple need make only the decision to have it inserted. Thereafter, so long as the IUCD remains in place, no further contraceptive action is necessary. Other advantages include high level of protection (the failure rate is only 2.5 per hundred woman years), easy insertion and removal, and a minimum of medical supervision. The pressing need for a simple but effective method of population control has, therefore, popularised IUCD and of all varieties that are available, the Lippes loop is widely used in this hospital. The retention rate of the IUCD after one year is 36% in this hospital (Hornsby 1972). Expulsion is lower (7%) than the rate reported by Tietze of 10.4% (1966).

The complications of IUCD are many and varied, but uterine perforation is the most serious of all, not only because undetected perforations lead to almost immediate pregnancies as once outside the uterus the IUCD is ineffective (Tietze 1966) but more important because the intestinal tract and other organs may suffer serious damage as a result of the perforation (Burnhill and Birnberg 1967).

The incidence of perforation with IUCD is not very high (0.2% Tietze 1966; 0.17% Burnhill and Birnberg 1967). This presents only half the risk of perforation at curettage. Since most of perforations remain entirely asymptomatic and are discovered at routine check-up, after removal is attempted, or after delivery, it cannot be determined exactly how many of them occur at insertion or on another occasion. It is believed, however that most occur at insertion. The earlier the insertion since last confinement the greater the risk of perforation (Tietze 1966). It seems likely that perforation in this patient occurred at insertion which was done in the puerperium. The high

perforation rate for the early postpartum insertions indicate that softness and friability of the uterus is a factor in the etiology of the perforations. To reduce incidence of uterine perforation one should exercise care in examining the patient, judicious timing of insertion, use of tentaculum with traction to straighten flexion deformities of the uterus, sounding the uterus and gentleness during introduction and ejection of the device into the uterus. This does not mean that the IUCD should not be inserted at the post natal visit but rather that extreme care is necessary at the time of insertion.

Our patient presented herself early for investigations which could have influenced the presenting symptoms and the outcome. The insertion of the second IUCD may be used to mark the position of the first, but at this insertion the first IUCD could be pushed further into the defect of the uterine wall. The procedure of investigating a displaced IUCD should include careful palpation of the fornices, plain x-ray of the pelvis and hysterosalpingogram as was done in this patient.

Although all perforations with IUCD should be considered as gynaecological emergencies requiring urgent solution, our patient was not operated on for 2 months. The reason is that instead of being referred as an emergency case to the emergency ward she was referred to the out-patient clinic where booking for appointments is usually in 3 to 5 or more months due to increased work load. On admission, however, arrangements were immediately made to operate on her the same day.

At operation the defect was 3X2 cm and this increased when removing the devitalised debris of the edges, and it was at the fundus. It was felt that this made the uterus weak at this spot.She was advised, therefore, that the preference would be to deliver her by operation before labour starts in her next pregnancy. For contraception she was changed to the pill as she had declined an offer of surgical sterilisation.

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ACCIDENTAL VAGINA TRAUMA

REPAIR

NAME: ANNAH WANGUI

UNIT NO: 1831 - 13

AGE: 45 YEARS

PARITY: 9 + 1

ADMITTED: 29.5.76

DISCHARGED: 5.6.76

COMPLAINTS

This patient was admitted at 8 a.m. as an emergency referred from Kiambu District Hospital. She complained of pain in the lower abdomen and general weakness due to vaginal bleeding for one night.

HISTORY OF PRESENT ILLNESS

She had been well until 28.5.76 when she fell on her abdomen while carrying heavy load on her back. When she got home about 5 p.m. the same day she found that the vaginal bleeding had not ceased but was increasing. She was then taken to Kiambu Hospital where medical officer attended her at 1 a.m. He found heavy vaginal bleeding from a wound in the posterior fornix of the vagina. No bleeding was seen from the cervical os. The patient was not shocked but looked pale. The medical officer thought it appropriate to refer the patient.

PAST OBSTETRICAL HISTORY

She could not remember the details of all deliveries but she had delivered nine times. All children were alive and the oldest was already married with a child. The last delivery had been 3 years before. She remembered she had miscarriage at the gestation of 3 months. She did not go to the hospital. Since then she had been having regular monthly periods and her L.M.P. was on 20.5.76. She was not attending family planning clinic.

PAST MEDICAL HISTORY

Non-contributory.

SOCIAL HISTORY

This was a housewife of no education. She was married to a peasant and they lived on their land in Kiambu District.

PHYSICAL EXAMINATION

This was a well built middle-aged woman whose height was 5 feet. She looked weak and pale. But not dyspnoic. She was a febrile. She was well orientated. No jaundice nor oedema was detected.

CARDIOVASCULAR SYSTEM

She was not in cardiac failure, and was not in shock. Her pulse was 100 beats per minute, regular but of low volume. The blood pressure was 95/50 mm Hg. The heart was essentially normal.

ABDOMINAL EXAMINATION

The abdomen was soft except for slight guarding and tenderness in the lower abdomen. The bladder was full. There was no detectable free fluid nor masses in the abdominal cavity.

SPECULUM EXAMINATION

The external genitalia looked normal and healthy. There was heavy vaginal bleeding. It was seen to issue from a wound in the posterior fornix. The cervix looked healthy and closed.

BIMANUAL EXAMINATION

This was difficult due to tenderness and apprehension. The bladder was catheterised and 300 cc of clear urine was released. It contained no abnormalities.

DIAGNOSIS

A diagnosis of vaginal injury with severe bleeding was made. Preparations were made to take the patient to theatre were made. The possibility of malignancy was also thought of. Her haemoglobin was found to be 7.6g% with a PCV of 26.3%. MCV 84m^3 and MCHC 29.0%. Peripheral film showed hypochromic microcytes.

EXAMINATION UNDER ANAESTHESIA, BIOPSY AND REPAIR

This was done at 6 p.m. on 29.5.76 after blood had been crossmatched for her. She received 50 mg of pethidine and 0.6 mg of atropine sulphate both intramuscularly. When she arrived in theatre induction was done routinely and then only light general anaesthesia was maintained.

She was put in lithotomy position and the perineum and lower abdomen were cleaned with cetrimide solution. The patient was then draped.

The external genitalia was normal and looked healthy. The cervix was healthy and closed. No bleeding from the os was noted. There was a transverse 3 cm long transverse tear with fairly clean edges on the posterior fornix. On the right corner of the tear there was arterial bleeding. On the left end of the tear there was necrotic tissue. No significant granulation was noted. The parietal peritoneum could be seen through the wound but was intact. The arterial bleeding was arrested using 2/0 catgut. A biopsy of the edges was taken to include the necrotic as well as healthy parts. The defect was repaired in interrupted mattress stitches of 2/0 catgut. The patient received 1.5 litres of blood.

POST OPERATIVE PERIOD

After blood transfusion the patient recovered fairly well. She was given tetracycline orally before the histology report as this seemed to be non-specific infection.

FURTHER INVESTIGATIONS

Pregnancy Test	:	Negative
Chest x-ray	:	Normal.
Kahn Test	:	Negative
Histology	:	Acute inflammatory disease process. No evidence of tumor.

DISCHARGE

The patient was fully recovered and was discharged on 5.6.76 with an appointment at the gynaecology clinic on 21.6.76. She was given ferrous sulphate 200 mg thrice daily and folic acid 5 mg once daily until she would return for follow-up. Unfortunately she was not seen again.

COMMENTARY

Trauma to the vulvo-vaginal area may follow accidents, coitus or child birth. Accidental injury is rare and pyogenic infection of the vagina is uncommon during the childbearing age, because of the protection afforded by the acid vaginal reaction (pH 4-5). But in peri- and postmenopausal periods the vaginal epithelium becomes thin and fragile, and could easily be injured, or infected with non-specific organisms of low virulence.

The cause of injury in this patient was trauma after falling, although the mechanism is not clear as she did not fall astride any object. An examination under anaesthesia was indicated not only to rule out urinary tract injuries, but also in order to establish an exact diagnosis as at her age malignancy was a possibility. Vaginal carcinoma is relatively rare, about 1-2% of all genital tract malignancies (Way 1951) which may be primary or secondary, but women of 40 and over years are at greater risk. Severe bleeding from chorionic carcinoma lesion in the vagina is usual. It was well that a pregnancy test and chest x-ray ruled out this condition. A haemangioma could also cause profuse bleeding.

The anemia found in this patient could not fully be explained. by a sudden blood loss. The erythrocytes were macrocytic and hypochromic. The haemorrhage probably occurred on a background of chronic irion deficiency. Patients already anemic from chronic causes will poorly withstand a sudden blood loss. This was a grande multiparous patient who probably had not replenished fully her iron stores since last delivery. The iron requirement of a non-pregnant woman to replenish the loss through normal menstruation and normal skin loss has been calculated to be about 40 mg per month (Lawson). Unless, therefore, the dietary intake of iron is sufficient to provide above 40 mg of absorbed iron per month, she may remain iron deficient for some time. Apart from the deficient iron-content of many tropical diets, particularly where meat and vegetables are scarce or expensive, an unbalanced diet may inhibit absorption of iron from the gut.

If the woman is also infested with hookworm, there will have been a need for extra iron over a long period to compensate for the chronic loss caused by the parasites. If she has a heavy infection, the blood loss may be sufficient to deplete her iron stores and even produce anemia, as each worm extracts up to 0.05 ml of blood per day. It would have been worthwhile to investigate her stools.

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RUPTURED UTERUS AT 20 WEEKS GESTATION

HYSTERECTOMY

NAME: SERAH NJOKI
UNIT NO: 2712 - 88
AGE: 40 YEARS
PARITY: 8 + 0
ADMITTED: 10.5.78
OPERATED: 10.5.78
DISCHARGED: 8.6.78
L.M.P.: 22.12.77

PRESENT ILLNESS

This patient was admitted at 12.40 a.m. on 10.5.78 from the casualty with complaints of lower abdominal pains and vaginal bleeding for about 6 hours. The pain had been slight initially and then increased in intensity. It was a continuous pain. After about 2 hours then vaginal bleeding started. She had observed some clots. She denied trauma.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She could not remember the date of menarche. Soon after marriage in 1956 she delivered her first baby normally. After this she has been having a delivery at intervals of about 2 years. She now has 8 children all by normal deliveries in hospitals or at home. All children are alive. The youngest is 3 years old. She has never been to a family planning clinic. Her last menstrual period was on the twenty-second of December, 1977. Her periods are normally regular lasting 4 days every 28 days.

PAST MEDICAL HISTORY

She gave no history of major illness.

SOCIAL HISTORY

This was an uneducated housewife married to a peasant. They lived at their small farm at Kikuyu in Kiambu district.

PHYSICAL EXAMINATION

This was a 5 feet tall, poorly nourished patient in her middle age. She looked weak and markedly pale. She was not jaundiced. Her temperature was 36.2°C.

CARDIOVASCULAR SYSTEM

She was not in cardiac failure. The pulse was 88 beats per minute, regular and of normal volume. The blood pressure was 110/70 mm Hg. The heart was essentially normal.

ABDOMINAL EXAMIANTION

The abdomen was of normal size. Uterine size was about 20 weeks. It was tender on palpation. Fetal parts could not be identified. There were no fetal heart sounds. The flanks were not dull on percussion and no fluid thrill could be demonstrated.

SPECULUM EXAMINATION

There was fresh vaginal bleeding. The external genitalia looked normal. The vagina was healthy. The cervix was fully effaced, thin and about 2cm dilated. Products of conception could be visualised in the cervix. There was bleeding from the internal cervical os.

VAGINAL EXAMINATION

The cervix was fully effaced. It was 2cm dilated. Membranes were ruptured and products of conception could be felt through the cervix.

PROVISIONAL DIAGNOSIS

Provisionally this was thought to be a case of inevitable abortion.

MANAGEMENT AND PROGRESS

The decision was taken to allow spontaneous abortion. Meanwhile

oral tetracycline 500mg 6 hourly was prescribed. Blood was taken for haemoglobin estimation and cross-matching. Blood pressure and pulse was to be recorded every hour.

Eight hours later she had not aborted in spite of continuous lower abdominal pains. Her condition suddenly changed. She became more pale, the extremitis were clamy. The pulse rose to 120 per minute, and of very low volume. The blood pressure was unrecordable. The abdomen contained fluid and a paracentesis showed blood in the abdominal cavity. Tenderness was increased especially in the left flank. Ruptured uterus was suspected and urgent preparations were made for laparatomy.

LAPARATOMY AND TOTAL HYSTERECTOMY

She received premedication with 0.6mg atropine sulphate and 15mg morphine in the ward and intravenous Hartman's solution was already running. She arrived in theatre at 11.30a.m.

After induction of anaesthesia the bladder was aseptically catheterised. Vaginal examination showed presence of fluid in the pouch of Douglas and both flanks. The uterus could be palpated but it was of an irregular shape.

The patient was put in supine position and the skin prepared as described before. The abdomen was exposed through the lower midline incision. There was haemoperitoneum about 300 ml with clots. The uterus was 14 weeks size. There was a huge haematoma of the left broad ligament extending rhetroperitoneally. The right tube and ovary were normal.

PROCEDURE

The left broad ligament was opened and the haematoma of about 1000ml volume evacuated together with an intact gestation sac of about 20 weeks size. The uterus was found to have a rupture 7cm X 7cm on the lateral side near insertion of uterine artery. There were two large arterial bleeders. These were clamped and ligated with No. 2 chromic catgut. The haematoma

cavity was packed. A total hysterectomy was then accomplished in the normal manner described earlier, sacrificing the left ovary. Stitches were put around the vaginal vault for haemostasis leaving the vault open for drainage. A tube drain was left in the haematoma area of the left broad ligament and ran out per vaginam. The bladder was examined and found intact. The raw areas were then peritonised after haemostasis had been acheived. The ureters were palpated and found intact. The rectum caecum, appendix were inspected and found normal. There were no abnormalities of the kidneys, the liver or spleen were detected. Instruments and swabs were then counted. The abdomen was closed in layers in the routine manner using silk interrupted stitches for the skin. The estimated blood loss was about 1500ml.

POST OPERATIVE PERIOD

During operation she received 1000ml of blood. Further 500ml was transfused post operatively after which she continued on intravenous normal saline alternating with 5% dextrose in quantities of 500ml per six hours. A combination of penicillin and streptomycin parenterally was prescribed prophyllactically. She recovered from general anaesthesia in about 2 hours and her pulse remained between 90 - 100 per minute. Her blood pressure improved to 110/60 mm Hg. She remained afebrile.

On the second day post operatively she had a slight abdominal distention, but bowel sounds were present. Towards the evening she was already passing flatus. On the third day she was already taking oral fluids. Her haemoglobin was 11.5g% with a PCV of 33.9%. Her temperature remained between 37 and 38°C. On examination the wound was found to be infected near the pubis. Three stitches were removed from this area and a pus swab taken on the fifth day. At the same time the vaginal drain was removed as it was already dry. The rest of the stitches were removed on the eighth day post operatively. After the removal of stitches there was wound adhesence of all layers 4cm lenghth. There was infected fibrinous exudate on bowel loops that

protruded through the defect of the abdominal wall. Her general condition, however, was satisfactory. This required a second suturing and the patient was broug t to theatre on 20.5.78 at 3.30 p.m. after premedication in the ward.

RESUTURE OF BURST ABDOMEN

This was done under general anaesthesia. The wound was found to contain pus and disrupted through all layers. The defect was about 4cm long. Loops of bowel had infected exudate otherwise were intact. The pelvis was clean. There was no collection of pus. Corrugated drain was left in the left flank and brought out through a stab wound in the left iliac fossa. The debris from the edges of the wound were removed using a scapel. The defect of the abdominal wall was repaired in single layer using No. 6 deep tension sutures.

RECOVERY

After this her temperature settled. The pus swab was sterile. She was on intravenous fluids for 24 hours and then started taking orally. There was pus discharging from the drain for the first 3 days only and the drain was removed on the fifth day. After the course of penicillin and streptomycin she received 500mg of ampicillin 6 hourly for one week. The tension sutures were removed on 6.6.78. The wound had healed well. She was discharged on 8.6.78.

FOLLOW-UP

When seen again on 19.7.78 she had no complaints. The wound had healed well. There was no abdominal tenderness on examination. She was discharged from the clinic.

HISTOLOGY REPORT

This is a ruptured gestational uterus containing a 180mm long dead fetus. The placental tissue is degenerate and shows numerous spotty calcifications.

COMMENTARY

By far the majority of cases of uterine rupture occur either as a result of previous caesarean section scar giving way or of obstructed labour. Direct trauma during such manipulations as version, instrumental deliveries or manual removal of placenta are other recognised causes. The danger of the use of oxytocic drugs especially in grand multiparous patients in whom the uterine response may be unpredictably violent is also well known. Lastly, pregnancy in a rudimentary horn or an angular pregnancy may result in uterine rupture. Notwithstanding all this, however, there are a number of cases in whom no cause can be found, particularly in grand multiparity (Donald). The uterine rupture in these cases occurs at term and usually in labour.

The case presented here was having abortion at 20 weeks. Although she denied interferance with the pregnancy, this still remains a possibility. No other case could be traced in the available literature for comparison. The patient was multiparous but her previous deliveries had not been attended by any difficulties nor had there been instrumental deliveries. The contractions had only been mild and the fetus was hardly big enough to cause mechanical obstruction. It was for such reasons that Feeney (1953) referred to these patients as the "unpredictable multipara". The uterine wall has been weakened by successive pregnancies and rupture may occur when contractions are only mild. In child bearing practice does not make perfect (Solomons 1934).

Rupture in labour is far more dangerous than that occurring in pregnancy because shock is greater and infection is almost inevitable (Donald). Haemorrhage and shock are the two most immediate risks. These two clinical features were present in our patient. She received morphine and intravenous fluids followed by blood transfusion, and was started on penicillin and streptomycin.

There are three alternatives for treatment of ruptured uterus, namely:

1) hysterectomy,
2) repair of the rupture, and
3) repair of the rupture with permanent sterilisation.

The choice depends on the extent of the tear, the clinical state of the patient, and the desire to have more children. None of these, except the first, influenced the decision in this case and hysterectomy seemed easier and faster.

It was as well that the infected uterus was removed. In spite of the penicillin-streptomycin combination, she developed post-operative sepsis.

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V E S I C O - V A G I N A L F I S T U L A

S U C C E S S F U L R E P A I R

NAME: LILIAN NYAMBURA

UNIT NO: 1490-19

AGE: 24 YEARS

PARITY: 1+0

ADMITTED: 22.10.75

PRESENT ILLNESS

She complained of inability to control urine since June 1970. This followed a difficult labour at home for 2 days when she was 19 years old. She thinks the pregnancy had been at term. She had not attended ante-natal clinic and when labour pains came she thought she would deliver at home. But after 2 days in pains, she was taken to Embu hospital where the doctor helped her to deliver. She was ill in the hospital for about one week but later improved and was discharged. About two weeks after this stillbirth she found that she could not control her urine. She did not go for treatment earlier because she did not know that this condition was curable.

PAST MEDICAL HISTORY AND SOCIAL HISTORY

Non-contributory. She was unmarried and lives with her mother.

PAST OBSTETRICAL AND GYNAECOLOGICAL HISTORY

The date of menarch was unknown. The periods had been regular, lasting 4-5 days every 30 days. Her L.M.P. was 11.10.75

The only pregnancy she had had is the one related above that ended in a stillborn.

PHYSICAL EXAMINATION

This was a slender girl whose height was 4 feet. She was not anemic or febrile. There were no palpable lymph nodes or oedema of her feet.

The cardiovascular, central nervous and respiratory systems were normal.

ABDOMINAL EXAMINATION

The abdomen was of normal shape and size. The liver and spleen were not palpable. There were no abdominal masses.

SPECULUM EXAMINATION

The external genitalia appeared normal, but there was excoriation of the vulva. There was urine in the vagina, but the site of the leak could not be determined. The cervix had no erosion but there was a left lateral tear about 0.5cm. It was closed. No urine leaked through the cervix.

PELVIC EXAMINATION

The uterus was anteverted, mobile and non-tender and normal size. There were no palpable adnexal masses. The sacral promontory could be reached easily and she had a narrow outlet.

DIAGNOSIS

A diagnosis of vesico-vaginal fistula was made. The patient was booked for repair in ward 23.

ADMISSION

This patient was first admitted on 22.10.75. An examination under anaesthesia was to be done before repair, but while waiting for this some investigations were carried out.

LABORATORY INVESTIGATIONS

Haemoglobin	: 14.6g%
PCV	: 40.6%
RBC	: 4.69 X 10^6 per mm^3
WBC	: 7.0 X 10^3 per mm^3
Blood urea	: 28mg%
Sodium	: 138 mEq/l
Potassium	: 3.9mEq/l

Chloride : 100 mEq/l

Bicarbonate: 22 mEq/l

M.S.S.U. : Sterile. No deposits.

Pap smear : Not taken.

EXAMINATIONAL UNDER ANAESTHESIA

This was done on 30.10.75. The bladder was aseptically catheterised and 100ml of clear urine was obtained. There was no fibrosis in the vagina except moderate excoriation of the vulva. There was urine in the vagina. There was a small fistula about 0.3 X 0.3cm lateral to the cervix on the right side. Urine was leaking freely through this defect. The tissues around the fistula were mobile and with minimal fibrosis. The dye was introduced into the bladder through a urethral catheter. The bladder capacity was 200ml. The dye was leaking from the described fistula. No other fistula was seen. There was no urethral incontinence.

Since the tissues around the fistula were mobile, and the exposure was adequate, repair from below was considered possible.

VAGINAL REPAIR OF THE FISTULA

The patient was brought to theatre on 5.11.75 at 8.00 a.m. After the patient was anaesthetised she was put in lithotomy position. The vulva and the perineum were cleaned with chlorpexidine solution and draped. The labia majora were retracted and fixed with silk stitches. The fistula was identified. The fibrous tissue was first removed to freshen the wound. After this the vaginal wall was carefully dissected from the bladder. Enough tissue was dissected so that after the repair pressure of the opposing tissues would be minimal. Starting at the angles the bladder was first repaired using extra-chromic No. 2 catgut. The first layer was then reinforced with another layer. The vaginal wall was then repaired in a single layer using the same

catgut. Gibbon's catheter No. 10 was introduced into the bladder through the urethra and tied with stitches of black silk fixed to the labia. The catheter was then flushed with normal saline to exclude occlusion by a blood clot. The repair was then tested with methylene blue and found to be water-tight.

POST OPERATIVE PERIOD

Relief from pain was provided by injections of 100mg of pethidine 6 hourly for 24 hours. She received intravenously 5% dextrose alternating with normal saline. After this she was put on oral fluids and later sold food. Continuous bladder drainage was maintained for 14 days. The urine output was satisfactory throughout this period. The bed remained dry. But when the catheter was removed on 20.11.75 she was wetting her bed. Another examination under anaesthesia was planned for in a week's time. During this time her urine remained sterile. She was brought to theatre on 27.11.75 for examination under anaesthesia. At this examination most of the suture line had healed well. But at one angle there was a pinhole fistula through which the dye was leaking. It was decided to delay the second attempt for 3 months. This would reduce the size of the defect by spontaneous healing and by then all inflammation will have subsided. Furthermore, the local blood supply may improve, producing much more favourable conditions for surgery. She was discharged on 30.11.75 with an appointment to be seen at the gynaecology clinic after 3 months. She, however, did not keep the appointment.

FOLLOW-UP

When seen again at the clinic on 3.4.77 she was still leaking urine. She was re-admitted on 25.4.77 for a second attempt to repair. Her haemoglobin was 14.1g% and PCV of 41%. She was examined under anaesthesia on 28.4.77. The defect was only pinhole, had not closed and there was more

scarring tissue. However, repair seemed possible and was planned for 5.5.77.

SECOND REPAIR

The patient was put in lithotomy position. A pinhole juxta-cervical fistula was recognised. The fistula and the surrounding bladder wall were mobilised. The edges of the fistula were excised. The bladder was closed in 2 layers of extra-chromic No. 2 catgut. The vaginal walls were proximated over the repaired area. A large Gibbon's catheter was left in the bladder through the urethra.

POST OPERATIVE PERIOD

Analgesia with pethidine was given for 24 hours. During this time she received fluids orally until she could take orally. Continuous bladder drainage was carried out for 14 days. During these 2 weeks she was also on septrin 2 tablets twice daily for prophylaxis. Her general condition remained satisfactory and she was not leaking. At the end of this period the catheter was removed and there was no leaking of urine.

Another post-operative examination was done on 26.5.77. The area of repair had healed well. There was no leaking of the dye, and the bladder capacity was 200ml. She was discharged from the ward on 27.5.77 with an appointment at the clinic in 6 weeks time. She was advised to avoid sexual contact for a minimum period of three months in order to allow complete healing. She was advised also that her next dFlivery must be by caesarean section to avoid tearing and reccurrence of the fistula.

She was seen again on 24.8.77. She had no complaints. She had a menstrual period on 17.8.77. On examination by speculum the healing was satisfactory and there was no leakage of urine. She was then discharged from the clinic.

COMMENTARY

During the labour the bladder is displaced upwards into the abdomen and the bladder base and urethra are compressed between the presenting part and the posterior surface of the pubis. If this continues for a long time as in unrelieved obstructed labour, the intervening soft tissues become devitalised by ischeamia. The ischeamic areas slough off between the third and the tenth day causing defects of various dimensions. This is the mechanism by which our patient developed urinary incontinence. The puerperal sepsis increases the area and depth of the sloughing. This is the most frequent etiological factor found in our patients. The prevalence of this type of fistulae reflects upon the frequency of cephalopelvic disproportion and the inadequacy of maternity services to deal with this problem (Lawson, 1968). The average true conjugate of 33 women with vesico-vaginal fistula at the Kenyatta National Hospital was less than 9cm (D.A.M. Gebbie).

Other obstetric complications such as obstructed labour, forceps deliveries, caesarean section and ruptured uterus are common causes of vesico-vaginal fistula in developing countries (Grech, Lawson and Naidu).

Once the fistula has formed, at least 3 months must be allowed to pass before an attempt at the repair. A detailed examination per vaginam to localise the fistula when incontinence first develops may increase the damage. Natural healing always reduces the size of the fistula and may close some completely. Time will allow all sloughs to separate and inflammation to subside. The local blood supply will improve and the tissue planes reappear, producing much more favourable conditions for surgery (Lawson). During this waiting period there is time to improve the patient's general condition and to correct malnutrition, infection and anemia.

However, the patiens treated in this hospital come from outer districts and considerable time elapses before the formation of

the fistula and repair. The patient discussed here developed the fistula in 1970 but came for treatment in 1975. Nevertheless, the secreening investigations she underwent are justified because probably she had not visited a doctor since 1970. Pre-operative evaluation of the patient's general condition improves the results of fistulae repair. Anemia, uremia, urinary tract infection must be detected before operation, and corrected.

Intravenous pyelograms may be necessary occasionally especially with large fistulae, very high fistulae or when several attempts at repair have failed. This investigation was not necessary in our patient.

It is wise to evaluate the fistula itself under general anaesthesia before attempting to repair. Valuable information is then obtained that will help to plan the repair:

1. Number and extent of fistulae.
2. Amount of fibrosis and available tissue that could be mobilised.
3. The presence of other genital tract injuries.
4. The bladder capacity.
5. The status of the urethral function.
6. The presence and mobility of the uterus, and
7. The positioning of the patient during repair (knee-chest, or lithotomy) and the approach (vaginal or abdominal).

Our patient was repaired in lithotomy position approaching the fistula vaginally.

Post operative management of fistulae repaired from below may be as important as the repair itself if not more. If the repair is to heal it is essential to protect the suture line from tension and to keep the bladder at rest for 14 days after the operation. Steps must be taken to prevent infection of the bladder during the post operative period. It is preferable to give low residual diet for the first 4 days after repair, and straining at stool should be avoided. Perineal toilet may help to reduce the chances of infection of the repair.

In some cases urinary infection, vaginal bleeding, haemorrhage into the bladder, uretic obstruction or breakdown of the repair may complicate the post operative period. Our patient's fistula did not heal completely with the first repair. A second attempt to repair was done only after 3 months for the reasons discussed above.

Fortunately this problem is preventable, but only if skillful management of pregnancies and deliveries is country-wide.

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PATTERN OF THE INFERTILITY PROBLEM AT KENYATTA NATIONAL HOSPITAL

INTRODUCTION

It is always a tragedy when a woman cannot conceive or bear children which she greatly desires and would cherish. In African cultures the problem is particularly serious because her whole personal and social security may depend on her fertility. It is held that one of the prime functions of man is to reproduce himself to replace ancestors. The children are named after other members of the family whether dead or alive. Most traditional beliefs hold that the more the children the more the blessings of God. The status of childlessness in such circumstances is considered odd.

Childless married couples are subjected to the derision of the public and are a matter of concern to near relatives. The marriage is insecure. If one partner feels that the other is to blame for the infertility, it is a valid reason for divorce (Ampofo 1970). The infertile woman is often blamed for the infertile marriage. The husband's desire for children will drive him to divorce or to obtain a second wife.

For these and other reasons infertility in our community causes so much distress that the patients require sympathy, understanding and help. But our limitations in helping must be realised. In order to assess the limitations in helping these patients, a retrospective study of 274 files of patients attending the infertility clinic at Kenyatta National Hospital was carried out. The aim was to review the importance of various factors causing infertility in our patients and to assess whether the time spent on investigations of these patients is worthwhile.

It has been estimated that within the major towns and cities of East Africa, up to one-third of all women are sterile by the age of 30 years (Bennett, 1962). Therefore, infertility is a major medical problem in East Africa and almost 50% of the patients attending gynaecology clinic present with this problem (Chatfield et al, 1970). Infertility is considered present after 2 years of cohabitation without achieving pregnancy.

MATERIALS AND METHODS

The data was obtained from 274 files with the diagnosis of infertility of patients attending gynaecology clinic at Kenyatta National Hospital for the approximate period January 1976 to April 1978. The files were picked randomly from the records office and cannot be considered to include all patients attended for infertility in this hospital during this period. The patients have been subjected to various investigations. These include clinical examination at the gynaecology clinic and later in the ward for those who have been admitted, hysterosalpingography, laparascopy, hydro tubation, diagnostic curettage and occasionally laparatomy.

CLINICAL EXAMINATION

This included history of previous illnesses, social history and gynaecological history taken at the first visit. The marital history is very important as in 4 cases it revealed that coitus was unsatisfactory or impossible due to anatomical disabilities. In one case dense adhesions and fibrosis were found at the introitus. In two other patients there was absence of vagina. In the fourth patient there was scarring deformity of external genitalia following circumcision.

After history has been recorded a full physical examination is carried out for systemic illness. In one case severe anemia was found and as there was no other problem the patient was sent to the medical clinic for investigations. Diabetes was found in another patient.

HYSTEROSALPINGOGRAPHY

If no systemic illness was found, and no gross pelvic abnormalities had been detected, patients were booked for hysterosalpingography. The list of patients awaiting this investigation is so long that at the time of writing the next 10 months are fully booked. This is partly because the investigation is done once a week and then for 90 minutes only. But mainly it is due to the number of patients with infertility

problem. This is carried out on out-patient basis and no complications have been reported.

SEMEN ANALYSIS

While the patient is waiting for the booked hysterosalpingography the husband is booked for semen analysis. This investigation was carried out on all couples complaining of infertility and if the husband declined investigations, nothing further was done for the couple. Exceptions were polygamous households where the other wife had a child recently. Masturbation specimen was obtained in the clinic and analysed within the premises almost immediately. Unsatisfactory seminal analysis was repeated thrice at a month's interval before azo or oligospermia was declared.

LAPARASCOPY, HYDROTUBATION AND DIAGNOSTIC CURETTAGE

If no physical or gross pelvic abnormalities were revealed by the above investigations and if the husband's fertility has been established, the patients were booked for laparascopy with hydrotubation and diagnostic curettage at the same time. The patients were admitted the previous day and then investigated under general anaesthesia in the operating theatre.

The contra-indications and technique for laparascopy were as those described by Steptoe (1967).

Hydrotubation was done using 20cc of methylene blue injected through a uterine canula. The distension of tubes by the dye or a spill of the dye into the peritoneal cavity was then visualised through the laparascope. This way the extent of tubal damage and the exact location of the tubal block was determined. The ovaries and the uterus were examined for abnormalities. The uterine cavity was then curetted and the specimen sent for histological examination. In cases of secondary amenorrhea or suspected tuberculosis part of the currettings was sent for microscopy and culture for acid-fast bacilli.

Insufflation alone has been shown to be very unreliable and was not employed in investigations of our patient (Stallworthy 1948).

Some patients with occluded tubes were also subjected to laparascopy if there were no pelvic masses. This is because hysterosalpingography is known to give false negatives.. During hysterosalpingography delicate fimbrial adhesions may be broken down. This possibility is supported by the fact that dye was seen to spill in 79% of patients with fimbrial occlusion (Coltart, 1970). The specific gravity of methylene blue differs from that of Urographin which this hospital uses as a contrast medium for hysterosalpingography. Furthermore, anaesthetic agents produce a general relaxation of smooth muscles including those of the Fallopian tubes (Walker and Stout, 1952). These factors may assist passage of the dye at laparascopy. In this survey patients with bilateral tubal block became pregnant after hysterosalpingography. 60 patients had both hysterosalpingogram and laparascopy. The findings in both investigations were generally similar except that in 6 patients the Fallopian tubes were not demonstrated by hysterosalpingography, but at laparascopy no pelvic adhesions were found. There was free spill of the dye in the pouch of Douglas and the tubes looked normal. Because diagnostic curettage was done at the time of laparascopy patients were admitted usually in the second half of their menstrual cycle. However, due to long waiting in the queue for a bed, and the desperate state of the patients, it was not impossible to receive incorrect dates of the last period. This as will be seen below may have influenced the number of endometrial biopsy reports received as proliferative.

LAPARATOMY

This was performed with the purpose of tubal surgery where the tubal damage was found to be minimal, fimbrial and the tubes otherwise healthy. Patients with gross pelvic inflammatory disease, dense pelvic adhesions or tubo-ovarian masses of large size may not benefit from tubal surgery (Mati et al. 1973) and thus excluded. However, laparatomy was done on a number of patients with fibroids for total hysterectomy (3) and myomectomy (3).

Two other patients with Stein-Leventhal syndrome had wedge resection of the ovaries.

POST OPERATIVE HYDROTUBATION

This procedure was not done on many patients but 5 patients had this procedure performed in the ward on out-patient basis. A saline solution containing hydrocortisone 500mg, 3cc of 0.1% procaine hydrochloride and penicillin 1000000 units was injected into the uterus via a uterine canula. No complications were reported. One more patient had a repeat hysterosalpingography post-operatively. The tubes were blocked again. This patient now has adopted a child.

RESULTS

Patients presenting with infertility may be divided into those who have never conceived at all (primary infertility) and those who have had one or more pregnancies, either successful or unsuccessful (secondary infertility). There were 152 patients (55.4%) in the first group and 122 patients (44.6%) in the second group.

TABLE I

PRIMARY AND SECONDARY INFERTILITY

	NO. OF CASES	PERCENTAGE
PRIMARY INFERTILITY	152	55.4
SECONDARY INFERTILITY	122	44.6
TOTAL	274	100

AGE DISTRIBUTION

Most of the patients presenting for infertility investigations were between 21 and 30 years old. This group alone accounted for 74.4% of patients with a total number of 204 cases. Among those 204 cases 49% had primary infertility. 24 patients (or 8.75% of all cases) had not had a single pregnancy by the age of 30

years, and 15.3% were still complaining of either secondary or primary infertility. (TABLE II).

TABLE II

AGE DISTRIBUTION

AGE IN YEARS	PRIMARY INFERT.	SECONDARY INFERT.	PERCENTAGE
BELOW 20	28	0	10.2
21 - 25	56	46	37.2
26 - 30	44	58	37.2
ABOVE 30	24	18	15.3
TOTAL	152	122	100

In this community girls especially of the less educated groups get married as early as 15 years or 16 years. It is not unusual, therefore, to find that 10% of the infertile patients are below 20 years. Secondary infertility in this group, however, is not a problem.

45.9% of patients (126 cases) were subjected to hysterosalpingography. 42.8% of them had gross pelvic inflammatory disease and could not be investigated further. 28.6% had tubal damage that was considered favourable for further investigations. 27% of them had either normal Fallopian tubes or spill of the contrast medium was noted on one side. Therefore this group does not represent absolutely healthy pelvis (TABLE III).

One hysterosalpingography was inconclusive and this patient was subjected to laparascopy.

One patient (1813-43) was found to have bicornuate uterus. No further investigations were done on her. As mentioned earlier, three patients with fimbrial bilateral tubal blocks(2161-71, 1447-75 and 1428-61) became pregnant after hysterosalpingography, but the last two patients had ruptured tubal pregnancy.

TABLE III

HYSTEROSALPINGOGRAPHY

	NO. OF CASES	PERCENTAGE
GROSS DAMAGE	54	42.8
FIMBRIAL BLOCK	36	28.6
PATENT TUBES	34	27
OTHERS	2	1.6
TOTAL	126	100

Laparascopy was performed on 92 (33.6%) patients in all. Some patients were booked for laparascopy without having had a hysterosalpingogram. This was especially so for patients investigated in 1976 and early 1977. But later it seems patients had to have hysterosalpingography prior to laparascopy. At the time of writing not all patients selected for laparascopy had obtained a bed in the ward, and most of them were still pending.

Of those who underwent laparascopic investigations two cases were unsuccessful due to technical difficulties.

78 patients (84.8%) had evidence of previous chronic inflammatory disease. Only 32 patients (11.7%) were considered for tubal surgery (TABLE IV).

Tubal surgery has been performed on 28 patients and 4 were still booked at the time of writing.

8 patients underwent surgery for other reasons. 3 of them had myomectomy with tubo-plasty, two had wedge resection, and the remainder had hysterectomy for fibroids.

TABLE IV

LAPARASCOPY

	NO. OF CASES	PERCENTAGE
GROSS DAMAGE	46	50
SALVAGEABLE TUBES	32	34.8
PATENT TUBES	12	13
OTHERS	2	2.2.
TOTAL	92	100

Endometrial biopsy was examined in 144 cases (52.6%). 74 cases showed secretory endometrium, 26 proliferative endometrium. 8 patients had endometrial hyperplasia and 8 had endometrial tuberculosis. In 28 cases the endometrium was reported as either insufficient for diagnosis, menstrual products, or the specimen was not received in the laboratory at all (TABLE V).

As mentioned earlier endometrial biopsies reported as proliferative may show a prolonged follicular phase due to irregular or absent ovulation, but it is possible that patients may have given wrong dates of their menstrual cycle due to the possibility of having to wait for another year or so before one could get a bed in the ward. At laparascopy the ovaries were reported as normal in 22 patients and 18 of them had had a pregnancy before. Only in 2 patients induction of ovulation by clomiphene was considered necessary.

TABLE V

ENDOMETRIAL BIOPSY

ENDOMETRIUM	NO. OF CASES	PERCENTAGE
SECRETORY	74	51.3
PROLIFERATIVE	26	18.1
HYPERPLASTIC	8	5.6
TUBERCULOUS	8	5.6
OTHERS	28	19.4
TOTAL	144	100

Menstrual disorders were present in 30 patients (.10.9%). Irregular, frequent and heavy bleeding was reported by 14 patients while digomenorrhea was reported by 12 patients. The other 4 had secondary amenorrhea associated with tuberculous endometritis (TABLE VI).

TABLE VI

DISORDERS OF MENSTRUATION

DISORDER	NO. OF CASES	PERCENTAGE
POLYMENORRHEA	14	46.7
OLIGOMENORRHEA	12	40
SECONDARY AMENOR.	4	13.3
TOTAL	30	100

Efforts were made to investigate as many husbands as possible. The male infertility was investigated in 200 husbands. The criteria for normality were either the presence of children by another wife, the last born being younger than the duration of infertility or satisfactory seminal analysis (Mati et al. 1973). 169 cases gave a history of the presence of a child by another wife, while 81 reports of seminalysis were traced (29.6%).

The criteria for normal seminal analysis were:

a) A volume of semen not less than 1.5ml.

b) The count must be above 20 million spermatozoa per ml.

c) More than 40% spermatozoa show good forward progression after 4 hours.

d) 50% spermatozoa have normal oval heads (Mati et al 1979).

TABLE VII

SEMEN ANALYSIS

ABNORMALITY	NO. OF CASES	PERCENTAGE
PUS CELLS (++)	39	48.1%
ABNORMAL SHAPES	26	32.1%
OLIGOSPERMIA	3	3.7%
AZOSPERMIA	7	8.6%

Azospermia was present in 7 husbands (8.6%) while oligospermia was found in 3 cases (3.7%). Abnormal shapes were detected in 26 patients whose semen was satisfactory in other respects. Pus cells (++) were also present in many patients (48.1%) whose semen was normal in other respects (TABLE VII).

20 patients (7.3%) have so far been reported to be pregnant. 6 patients had primary infertility, the details of which are listed in Table VIII. Two patients had patent Fallopian tubes but the endometrium showed inactive glands in one case and cystic hyperplasia in the other. Both patients received 2 courses of clomiphene each. The first conceived after 6 months and was referred to antenatal clinic while the second was evacuated for incomplete abortion after an amenorrhea of 8 weeks. The surgeon was certain it was incomplete abortion.

14 patients had secondary infertility, the details of which are listed in Table IX. Two patients had tubal pregnancies after hysterosalpingography which showed one patent tube in one patient and bilateral fimbrial block in the other.

One patient (Case No. 14) had been referred with secondary infertility of 4 years duration but was found to have intra-uterine pregnancy at the first visit. No further investigations were done on her.

Case No. 6 had secondary infertility for 10 years and hysterosalpingography showed bilateral tubal block. When seen for review after 2 months she had 9 weeks amenorrhea and an enlarged uterus. This was assumed to be pregnancy and unfortunately no other visit is recorded.

It is unfortunate that in all these patients, with the exception of those who had ectopic pregnancies or abortions, only one case was followed during pregnancy. Some may have delivered in this hospital but records are kept separately for both clinics.

INVESTIGATIONS [redacted] FERTILITY [redacted] PREGNANCY

CASE NO.	AGE (yr)	DURATION OF INFERTIL.	INVESTIGATIONS	SEMEN ANALYSIS	ENDOMETRIUM	TREATMENT	PERIOD AFTER WHICH CONCEIVED	REMARKS
1	21	3	HSG - Patent Tubes	Normal	Inactive endo-matrial glands	2 courses of clomiphene	6 months	Not followed
2	22	4	HSG - fimbrial block both tubes	Normal	Secretory	Booked for laparascopy	4 months	Not followed
3	21	2	HSG, laparascopy: Patent Tubes	Normal	Cystic hyperplasia	2 courses of clomiphene	4 months	Abortion at 8 weeks
4	26	6	Fibroids. HSG booked	-	-	-	3 months	Abortion at 9 weeks
5	20	2	HSG booked	Normal but with pus cells (++)	-	-	3 months	Not followed
6	23	4	HSG - fimbrial block bilate-rally	Normal	Laparascopy and curettage booked.		6 months	Ectopic

NO.	AGE IN YEARS	DURATION OF INFERTIL.	PARITY	INVESTIGATIONS	[illegible]SIS	[illegible]UM	TREATMENT	AFTER WHICH CONCRIVED	REMARKS
1	20	2	0 + I	HSG - One tube blocked	Not done	-	-	2 years	Tubal pregnanc
2	21	2	I + 0	Clinically mild PID	Normal	-	Antibiotics	8 weeks	Not followed
3	25	3	3 + 0	HSG - One tube patent	Children of another wife	Booked	-	1 year	Not followed
4	29	5	0 + I	HSG-Both tubes blocked	Normal	-	-	3 months	Ectopic
5	29	7	2 + 2	Bilateral tubal block	Normal	Secretory	Salpingo-[illegible]	6 months	Not followed
6	33	10	0 + I	Bilateral tubal block	Another wife 's children	-	-	Uterus enlarged at 2 months' review	Not seen agair
7	23	2½	0 + I	Bilateral fimbrial Block	-	Prolifer-ative	Salpingo-lysis	1 month	Delivered here
8	31	4	I + I	HSG -Both tubes patent	Normal	-	-	3 months	Not followed
9	21	4	I + I	One tube patent	-	Secretory	-	4 months	Not followed
10	27	3½	0 + I	One tube patent at laparascopy	Normal	Secretory	-	6 months	Not followed
11	25	4	0 + I	Adhesions but both tubes patent	Normal	Secretory	-	8 months	Not followed
12	26	3	I + I	Clinically PID	Booked altho-ugh another wife wife present	-	-	2 months	Not followed
13	20	3	2 + 2	HSG -Patent tubes. Laparascopy booked	Normal	-	-	9 months	Not followed
14	24	4	I + 0	Found pregnant 8 weeks at first visit	-	-	-	-	Not followed

SUMMARY AND DISCUSSION

Chronic pelvic inflammatory disease is the major cause (75%) of infertility in our patients. This is higher than the incidence (56.1%) reported by Chatfield et al (1970) but agrees with that (76%) reported by Mati et al (1973). This difference may be accounted for by the different methods used for investigations. The 1970 survey was based on data obtained by tubal insufflation alone, while in 1973 laparascopy was combined with hydrotubation. At present hysterosalpingography was combined with laparascopy and hydrotubation (Table X).

It is also possible that abuse of antibiotics, inadequate treatment of pelvic inflammatory disease and widespread of the disease may influence the significance of pelvic inflammatory disease as a cause of infertility.

TABLE X

SIGNIFICANCE OF PELVIC INFLAMMATORY DISEASE AS A CAUSE OF INFERTILITY

FACTOR	Chatfield et al. 1970	Mati et al 1973	This study 1978
P.I.D.	56.1%	76%	75.2%
TUBERCULOSIS	2%	-	2.4%
MALE FACTOR	-	4.8%	3.0%

Of the patients with pelvic inflammatory disease 100 cases (36.5%) had either gross damage of the Fallopian tubes, or had tubo-ovarian masses which excluded the possibility of surgical treatment. Some patients who had been selected for further investigations after hysterosalpingography had not undergone laparascopy. Of those that had undergone laparascopy only 32 patients were selected for tubal surgery (11.7%), which is in agreement with the figure reported in 1973.

TABLE XII

CAUSES OF INFERTILITY

FACTOR	NO. OF CASES	PERCENTAGE
P.I.D.	248	75.2
MENSTRUAL DISTURBANCES	30	9.1
ANOVULATION	12	3.6
FIBROIDS	16	4.8
MALE INFERTILITY	10	3.0
TUBERCULOSIS	8	2.4
TRAUMATIC & CONGEN. DEFORMITIES	6	1.8
TOTAL	330*	100

*The total figure is more than the 274 cases reviewed as some patients had more than one factor.

Fibroids were detected in 4.8% of cases. Nearly half of these patients had blocked tubes due to concurrent pelvic inflammatory disease and they were not suitable for reconstructive surgery. 3 patients had total hysterectomy, 3 had myomectomy with salpingolysis and one conceived without surgery.

Anovulation was present in 12 patients. They were treated with clomiphene and 2 conceived (Table VIII).

According to the criteria of satisfactory seminalysis quoted above, most of the husbands investigated showed abnormal semen. Mati et al. (1979) showed that nearly 50% of the males investigated had abnormal findings. But when one considers overall responsibility for infertility, the male factor becomes less important.

Tuberculosis was present in 2.4% of cases which is in agreement with the figure (2.0%) reported by Chatfield et al. (1970), but significantly lower than the incidence of 5.7% in developed countries (Sharman 1961). Explanation of the difference is lacking. Tuberculosis remains a less important cause of infertility in our environment (Table XII).

CONCLUSIONS

Because of the social implications of infertility in our society, our infertile patients are desperate, and form majority of gynaecological patients. Nevertheless, only a handful (less than 25%) can be helped.

The major cause of infertility is tubal damage due to pelvic inflammatory disease. Most of the patients have gross damage and only about 11% are suitable for tubal surgery. This condition is so prevalent and one can only agree with Mati et al. (1973) that infertility is more public health than gynaecological since gonorrhea is the main cause of pelvic inflammatory disease in this hospital (Carty et al.1972).

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