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CASE NO. 12: VACUUM EXTRACTION

Name: H.N. Age: 36 yrs. Obs. No. 3171/78  
Tribe: Kikuyu Admitted on 27-7-78  
Parvity: 6+0 Discharged on 29-7-78.  
L.M.P. 26-10-77  
E.D.D. 2-8-78

Antenatal care at Kenyatta National Hospital. She was booked at 24 weeks maturity. The uterine size corresponded with dates she attended six times. There was no abnormality detected during antenatal period.

#### ANTENATAL INVESTIGATION

Her height was 5 feet 2 inches. Hb 12.6gm %, PCV 40.2  
Serology was negative. Blood group was O Rhesus group D tve.

#### OBSTETRIC AND GYNAECOLOGICAL HISTORY:

Para 6+0. The deliveries were at term between 1960 and 1972. There were spontaneous vertex deliveries at home. All children were alive and well. The weights and duration of labour were unknown.

She had menarche at 14 years of age. She had regular menstrual cycles, each menstrual period would last for four days and occurred every thirty days.

She had never used any method of family planning.

#### PAST MEDICAL HISTORY

She had diagnosed aplastic anaemia from 1975. She had had blood transfusion in 1975 and 1976.

She was on oxymethalone and folic acid. She was being followed up in Haematology clinic.

#### SOCIAL AND FAMILY HISTORY:

She was a married housewife. Her husband was a businessman.

#### LABOUR

She was admitted with a history of labour pains for 6 hours. There was no history of bleeding or draining liquor.

She was 39 weeks by dates.



## PHYSICAL EXAMINATION

### GENERAL EXAMINATION

She was in satisfactory general condition. There was no pallor, oedema, jaundice or lymphadenopathy.

### VITAL SIGNS:

Blood pressure 120/70 mm Hg.  
Pulse 81 per minute  
Respiratory rate 21 per minute  
Temperature 36.9°C.

Cardiovascular, respiratory and central nervous systems were normal.

### ABDOMINAL EXAMINATION:

The uterine size was term. The fetus had longitudinal lie with cephalic presentation. There was no hepatosplenomegaly. Fetal heart sound was heard and regular at 138 per minute. Uterine contractions were felt. There two contractions per minute each contraction lasting 20 - 40 seconds.

### VAGINAL EXAMINATION:

The external genitalia was normal. The vaginal felt normal. The cervix was 4 - 5 cm dilated and effaced. It was well applied to the presenting part.

It was cephalic presentation in occipito-posterior position. There was no caput or moulding. It was one-fifth palpable above the pelvic brim.

The membranes were intact. Artificial rupture of membranes was done using Kocher's forceps. Meconium - stained liquor was obtained. There was no cord presentation.

The sacral promontory could not be reached. The ischial spines were not prominent. The inter-tuberous diameter were fitting four khudcles. The subpubic angle was not acute.

### IMPRESSION:

The patient was found to be in established labour.

In view of the meconium - stained liquor the following were done:

- (a) Fetal heart sound was monitored quarter - hourly.
- (b) Two units of whole compatible blood was requested.

- (c) Intravenous 500ml of 10% dextrose was started.
- (d) The patient was instructed to assume left lateral position.

Four hours later, fetal heart sounds dropped to 110 per minute and irregular. The abnormal fetal heart sound continued after uterine contraction onto the next contraction.

REPEAT VAGINAL EXAMINATION:

The cervix was fully dilated. There was cephalic presentation in occipito - posterior position. No part of the head was palpable above the pelvic brim.

A diagnosis of fetal distress in second stage of labour was made.

This necessitated urgent delivery which was explained to the patient.

VACUUM EXTRACTION:

The patient was placed in lithotomy position and oxygen was administered by mask. The vulva was cleaned and draped with sterile towels. The bladder was catheterised.

The perineum was infiltrated with 15 ml. of 2% procaine hydrochloride. Left medio-lateral episiotomy was performed.

A big malstrom cup was fitted to the scalp avoiding maternal soft tissues. Pressure was gently built up upto 0.5 Kgm sq. cm. The patient was encouraged to bear - down with each uterine contraction. At the same time, gentle traction was also performed. With such a procedure, the head was easily delivered face to pubic. The vacuum was released and cup disconnected. The rest of the baby was delivered in the normal manner. Intravenous ergometrine 0.5mg. was given with the delivery of anterior shoulder. The body scored 10 at one minute and 10 at five minutes. The body weighed 3420 kgs.

The placenta was delivered by controlled cord fraction. The placenta weighed 800 gm. Blood loss was 150 ml.

The baby and the mother well. They were discharged on third day after delivery.

POSTNATAL VISIT:

She was well. The baby was being breast-fed. She had normal involuted uterus on pelvic examination. Papanicolour smear was done and reported to be class I. She was advised on contraception. She accepted to have intra-uterine device.



## DISCUSSION

The vacuum extractor **ventouse** as we know it today was developed by malmstrom on a new principle. It depends on suction and traction on a metal cup so designed that the suction creates an artificial caput (chignon) on the fetal scalp within the cup. The cup holds firmly and allows adequate traction.

The vacuum cup does not take up any of the limited space in the birth canal. It is therefore virtually impossible to injure the mother. It brings about autorotation of the fetal head at the level of that particular pelvis where it is optimum. It involves no displacement of the head. Vacuum extraction effects delivery in the nearest way as physiological delivery (Donald 1972, Simmon and Philpott 1973).

Another major advantage of vacuum extractor is that it allows us to intervene on either fetal or maternal interest before full dilatation of the cervix (Chalmers 1964).

Maternal indications for vacuum extraction are:-

- (a) Delay of second stage. Thirty minutes or more and twenty minutes or more constitute a delay in second stage in primigravida and multiparae respectively.
- (b) In uterine inertia, where syntocition stimulation has failed and there is no cephalopelvic disproportion.
- (c) To avoid maternal effort as in cardiac preeclamptic-eclamptic patients.

The fetal indications are:-

- (a) Fetal distress in late first stage or second stage. The latter was the indication in the case being discussed. In such situations delivery may be accomplished much more quickly than would be achieved by caesarian section.

Some indications may be grouped as feto-maternal. These are borderline cases of cephalopelvic disproportion. Ventouse can be used to correct relative disproportion due to deflexion of the head. It is not used to overcome marked absolute disproportion where there is already optimal head flexion. (Simons and Philpott 1973).

Gebbie (1976) used vacuum extraction after symphysiotomy in mild cephalopelvic to achieve vaginal delivery in 98.9% out of 786 cases.

For successful delivery by vacuum extractor the following requirements need to be met:-

- (a) Cephalic presentation and engaged.
- (b) The cervix more than 6 cm.

dilated. In minor cephalopelvic disproportion the cervix should be fully dilated.

- (c) Good uterine contractions.
- (d) Mothers co-operation.

In a multiparous patient in second stage, fetal head high and unrotated ventouse will promote rotation of head and easy delivery may result. Willcock (1962) recorded a mean birth weight of 8lbs 15 oz in such cases. In promotions rotation where this is required as where occiput is transverse or posterior positions. In the case under study the head was delivered face to pubic . The fetus weighed 3420 gm.

In cases of cord prolapse where the cervix is approaching full dilatation. There is a need for urgent delivery. Vacuum extractor is a handy instrument to use. It is reported to be better than forceps in such cases. It also saves necessity for abdominal delivery (Willocks 1962).

However, ventouse is contraindicated in malpresentation and moderate to severe disproportion. It is also unsuitable in a small preterm infant.

The major causes of failure are:-

Faulty technique and undiagnosed disproportion. (Willocks 1962).

The larger the cup used the greater the adhesion which can be obtained. The largest cup with regard to the degree of dilatation of the cervix should be used. (Chalmers 1964).

The cup must be palpated all round to make sure that no maternal tissue is included when it is on fetal scalp.

A vacuum of minus 0.6 to - 0.8 kg. per sq. cm. is built up in stages over a period of five to six minutes. This period is necessary to achieve proper formation of "chignon", the artificial caput on which satisfactory adhesion depends.



With vacuum built up properly traction can begin simultaneously with a uterine contraction. Progress must be shown with each pull so that delivery is accomplished with about three pulls. (Chamers 1964, Donald 1972, Simmons and Phillipott 1973). Traction should be at right angle to the plane of cup.

The warning hiss that vacuum is about to break and cup come off is an indication that:

- (a) one is pulling hard.
- (b) Maternal soft parts have been **included** with the ring. It calls for re-examination. (Donald 1972).

The repeat application of the cup should not be done more than once. If it comes off after repeat application alternative means of delivery should be considered.

The vacuum is released as soon as the head is crowning. The delivery can then be completed in the normal way. Delivery should be completed within twenty minutes. Persistence with unsuitable case may mean disaster for the child (Willock 1964).

Fetal trauma of varying degree has been recorded in fetuses delivered by ventous. Chignon (artificial caput) which disappears within a few hours was recorded in 400 cases. There was cerebral irritation in 15 cases. Cephalo haematoma in 4, extensive scalp effusion in 18 and scalp necrosis in (Chalmers 1964). Delivery by vacuum extraction when associated with a thrombotest activity below 10% constitutes a grave risk of fatal or dangerous subaponeurotic haemorrhage in the baby. (Ahuja and Kerr 1969).

It has been next to impossible to compare vacuum extractor with forceps. The latter is hardly ever used in our unit.

Vacuum extraction enabled the baby in question to be delivered in a reasonable state as assessed by Apgarscore. No maternal injury was inflicted.

Cord prolapse and placental insufficiency in labour are added risk to the fetus. Helman and Pritchard (1976) recorded a perinatal loss of 4.6%, a 20% increase over the perinatal mortality rate in their unit.

In multiparous cases allowed trial of labour by mistake or where CFD is not recognised there is a real danger of uterine rupture.

The pelvis of the patient being discussed had demonstrated its incompetence to handle an average - sized baby. The baby died. Apart from psychological trauma, she had no long-term morbidity. Had she been allowed to continue to labour this time the consequence would have been disastrous both for her and the fetus.



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CASE NUMBER 13

P R E - E C L A M P S I A



Name : J.M.  
Age : 17 years  
Obst. No. : 3484  
Para : 0 + 0  
L.M.P. : Unknown  
Admitted : July 29, 1980  
Discharged : August 16, 1980

No antenatal care before admission.

Past Obstetric and Gynaecologic History:

Her menarche was at thirteen years of age. She had regular menstrual periods previously. Each period would last three to four days and occurring every thirty days. She had not used any contraceptive method.

Family and Social History:

She was an unmarried school girl. She was the second born in a family of seven children. She was in Form IV.

Past Medical History:

None significant.

History of Present Illness:

She was referred to Kenyatta National Hospital by a Private Practitioner. She was found to have pitting oedema of the ankles, proteinuria ++ and blood pressure of 150/100 mm. Hg. in pregnancy.

She was admitted through Casualty complaining of:

- (1) Generalised headache and
- (2) Swelling of the legs.

The symptoms had lasted for seven days.

Physical Examination:

She was in a fair general condition. She had moderate pitting oedema of the ankles. There was no pitting oedema of hands or face. She was not anaemic. She had no lymphadenopathy and jaundice.

Vital Signs:

Blood pressure 140/80 mm. Hg.

Pulse 77 per minute.

Respiratory rate 18 per minute.

Temperature 36.7° C.

Respiratory and Central Nervous Systems were normal.

Except for slightly increased blood pressure, cardiovascular system was normal.

Abdominal Examination:

Uterine size was thirty-six weeks. The fetus was lying longitudinally with cephalic presentation. Fetal heart tones were heard, 136 per minute and regular.

There was no hepatosplenomegaly or ascites.

Results of Investigations:

Hb. : 11.7 g/dl.  
Hct. : 0.376  
Blood group O Rh (D) positive  
B U N : 2.5 mmol/L.  
Uric acid : 310 umol/L.

Mid-Specimen of Urine:

Analysis: (a) Proteinuria ++  
(b) Sugar nil.  
(c) No casts, white blood cells and red blood cells.

Culture: No growth after 48 hours.

Esbach results:

(a) 3/8/80 - 0.5 gm/litre.  
(b) 7/8/80 - 1.0 gm/litre.  
(c) 15/8/80 - 1.0 gm/litre.  
(d) 16/8/80 - 1.0 gm/litre.

Management:

Having made a provisional diagnosis of pre-eclampsia, the patient was treated as follows:

Medical Treatment:

Bed rest was instituted on admission.

Four-hourly blood pressure observations were taken. Her blood pressure readings ranged as follows:

Systolic 110 - 160 mm. Hg.  
Diastolic 50 - 120 mm. Hg.

Urine was tested daily and Esbach set up whenever there was proteinuria. Estimation of proteinuria ranged from 0 to 1 gm/litre per day.



Drugs:

(a) Sedation:

Oral Sodium amytal 180 mg. eight-hourly was prescribed.

(b) Antihypertensive:

Intravenous hydrallazine 20 mg. was given intermittently whenever diastolic pressure was 100 mm. Hg. or more. Tablets of hydrallazine 25 mg. six-hourly was given.

Obstetric Treatment:

Determination of fetal lung maturity:

This was done by surfactant test on liquor amnii obtained in a manner described in Case Number 8. The surfactant was 1 : 1 and 1 : 2 positive.

Induction of Labour:

(a) Enema:

Soap enema was given early in the morning, the day induction was planned.

(b) Artificial rupture of membranes and Syntocinon:

Vaginal examination revealed that the cervix was partially taken up, and pointing anteriorly. The membranes were easily reached and were found intact. Cephalic was presenting and was five-fifths palpable above the pelvic brim.

Using Kocher's forceps, forewaters membranes were ruptured and clear liquor amnii was drained. The rate of drainage was controlled by inserting the two fingers through the cervix. Moderate amount of liquor amnii was drained. No cord was felt.

Pelvic assessment was done. Sacral promontory was not reached. The sacrum was well curved. Ischial spines were not prominent. Intertuberous diameter fitted four knuckles. Sub-pubic angle was not acute.

Syntocinon:

2.5 units of Syntocinon in 500 ml. of 5% dextrose infusion was started. Intravenous vein was established through a left cephalic vein with a brannula. 5 ml. of blood was collected in a plain specimen bottle and taken for X-match.

Syntocinon drip was set to run at 10 drops per minute for thirty minutes. The rate was increased by ten drops after every thirty minutes upto a maximum of 60 drops per minute.

After four hours the concentration of syntocinon was increased to 5 units then to 7.5 units after another four hours. 500 ml. of 5% dextrose was used in every case. Each time the concentration of syntocinon was increased, the rate of administration was adjusted accordingly.

In Labour:

Induction - labour interval was four hours. Two contractions every ten minutes were recorded. Each contraction

lasted less than twenty seconds.

Assessment eight hours after onset of induction showed that:

- (a) The cervix was four centimetres dilated and taken up,  
and
- (b) the head was four-fifths palpable above the pelvic brim.

The contractions increased in duration and frequency. Three contractions were felt every ten minutes. Each contraction lasted 20 to 40 seconds.

After twelve hours from induction time, fetal heart rate dropped from 140 per minute regular to 100 per minute and irregular.

Assessment showed that:

- (1) no head was palpable above the pelvic brim,
- (2) the cervix was fully dilated,
- (3) Cephalic presentation in Right occiput anterior position  
and,
- (4) there was no cord felt.

In view of this fetal distress arrangement was made to deliver the patient by ventouse. The patient was transferred to "second stage" of Labour Ward. She was given intravenous Pethidine 50 mg. stat. She was placed in lithotomy position.

The vulva was cleared and draped. The bladder was catheterised. The perineum was infiltrated with 2% procaine hydrochloride.

A big cup was inserted on the vertex. The vacuum pressure was gently and gradually built upto 1.5 Kg. Cm.<sup>-2</sup> At the height of a contraction, sustained gentle traction was maintained on the chain. A left medio-lateral episiotomy was performed when head was distended the perineum. An easy delivery was



effected. A live female infant was delivered within ten minutes. The baby scored 10 at 1 and 5 minutes. The baby weighed 2300 gm.

The placenta was delivered by controlled cord traction within five minutes. The placenta weighed 470 gm. The blood loss was 100 ml. No ergometrine was given.

Assessment of the baby estimated the gestation to be 34 weeks. It was however active and feeding well. It did not develop signs of respiratory distress syndrome.

Post - delivery Observations:

Blood pressure	:	150/100 mm. Hg.
Pulse	:	76 per minute.
Respiratory rate	:	18 per minute.
Temperature	:	35.9° C.

She had not passed urine. The uterus was well contracted. The lochia loss was normal. The patient was well sedated.

Postpartum treatment:

First 48 - hours:

Patient continued with bed rest and sedation with sodium amytal was continued. Her blood pressure ranged:

Systolic from 100 to 140 mm. Hg.

Diastolic from 60 to 90 mm. Hg.

The blood pressure remained between 110/60 to 120/70 mm. Hg. after the third day.

Esbach reading decreased from 1 gm/litre, to 0.5 gm/litre.

The patient was discharged on seventh day after delivery.

Postnatal Visit:

The patient was not breast-feeding because she had to go back to school. Being a catholic, she refused any form of contraception.

## DISCUSSION:

Pre-eclampsia is a disease of the first pregnancy. It, however, occurs in later pregnancies when there is a predisposing factor like antecedent hypertension, diabetes, multiple pregnancy and hydatidiform mole (Hellman and Pritchard 1969).

The incidence of pre-eclampsia decreased with increasing parity. In women suffering from essential and renal hypertension the pre-eclampsia recurs in subsequent pregnancies and tends to worsen because of the additive effect of pregnancy and increasing maternal age (Mati 1975).

Mati found that 83% of all cases of pre-eclampsia were under 25 years old. He found that the prevalence was 2.4% in patients between 30 to 40 years and between 6% and 10% below 20 years of age. He estimated annual incidence in Kenyatta National Hospital and Mombasa to be 90.6 and 89.0 per 1,000 deliveries respectively.

Acute hypertension is the earliest and most dependable warning sign of pre-eclampsia. Any persisting diastolic pressure of 90 mm. Hg. or more is abnormal. A level of 140/90 mm. Hg. or more taken, at least, on two occasions six or more hours apart will signify hypertension. In a patient who was known to have a previously normal blood pressure in early pregnancy, that blood pressure level is regarded to signify pre-eclampsia.

Sudden and excessive weight gain in many cases is the first sign. The largest component of this weight gain is usually water. Weight increments of about 1 lb. per week is normal. But increments of 2 lbs. per week or 6 lbs. per month, incipient pre-eclampsia is to be suspected.

Proteinuria is a late feature and when superimposed on



two other findings must be regarded as a serious omen. It is a sign of increase in the severity of the disease. Proteinuria may be lacking early on, but in severe grades, 6 - 8 g/litre may be found. The amount is variable from case to case and even from hour to hour within individual case.

The case under discussion was a teenage primigravida, single, schoolgirl. She was not aware that she was pregnant. She was probably trying to conceal her pregnancy. She did not know her dates and nobody knew of her blood pressure level in early pregnancy or in the non pregnant state. The problem of diagnosis was presented. However, her age, the fact that it was her first pregnancy, uterine size was thirty-six weeks, and the signs of raised blood pressure and proteinuria, the impression of pre-eclampsia was made. The amount of proteinuria was variable from day to day. It showed no consistent rise which would have indicated an increase in the severity of the disease.

Medical treatment consisted of bed rest, antihypertensives and sedation. The major purpose of which was to prevent development of eclampsia.

Bed rest has been found to be the most effective means of treating pre-eclampsia. It increases placental blood flow, reduced venous pressure in the lower extremities. It also allows reabsorption of considerable amount of fluid from lower extremities. The patient should lie in left lateral position. Bed rest reduces the demand on the circulating blood volume and removes the stimulus to sodium retention. (Donald 1972)

The principle of sedation is to prevent the occurrence of fits - eclampsia. This is the hallmark of antenatal care. The occurrence of eclampsia in a patient under supervision reflects a total failure of antenatal care. Sodium amytal has

been used in Kenyatta National Hospital with success. Whereas pre-eclampsia is not preventable, the severe form of the disease is preventable (Zuspan 1978).

The major purpose of using hypotensive therapy is to protect the mother while conservative treatment is continued or until such times as the pregnancy can be terminated. The use of antihypertensive therapy is to prevent cerebral vascular accident (Zuspan 1978). The experience of using methylopa and/or apresoline at Kenyatta National Hospital is encouraging. There is, however, no evidence that employment of hypotensive therapy reduces perinatal wastage from pre-eclampsia or eclampsia (Donald 1972, Berkowitz 1980).

Reduction of blood pressure alone without the simultaneous administration of anti-convulsants or other lines of treatment will not prevent the development of fits. (Donald 1972).

The perinatal mortality and maternal mortality was 82.5 per 1,000 deliveries and 6.7 per 1,000 mothers (Mati 1975). He found that perinatal mortality was ten times more when the disease starts before 30 weeks, than when it starts at or after 36 weeks. In the former, the disease tends to be severe. Mati found urea level a useful screening method for women at risk of increased perinatal loss. When urea clearance was less than 70% the perinatal mortality was 81.8%.

The only cure of pre-eclampsia is termination of pregnancy. It prevents convulsions and fetal death. When the disease is mild or severe and the baby is mature, the decision of termination is straight forward. But in cases where the disease is moderate and the baby premature (36 weeks or less) the decision is difficult.

The risk of intrauterine death from placental insufficiency and or abruptio placentae is considerable. The risk is proportional



to the duration of pre-eclamptic signs. (Donald 1972).

In the absence of proteinuria a rise in diastolic blood pressure upto 110 mm. Hg. increases perinatal mortality from 2.5% to 3.6%. A diastolic reading in excess of 110 mm Hg carry a perinatal mortality rate more than 5% (Donald 1972, MacGillivray 1961).

The risk of intrauterine death is 50 to 100 times greater when hypertension is accompanied by significant amount of proteinuria.

Increasing blood urea and/or creatinine levels are prognostic signs that indicate the patient with severe pre-eclampsia should be delivered (Mati 1978).

Prematurity and neonatal death from respiratory distress syndrome is 7.5% at 36 weeks, 15% at 34 weeks and 30% at 32 weeks. (Donald 1972). At this gestations delivery may convert an intrauterine fetal death to neonatal death. Yet termination of pregnancy may have to be carried out in maternal interest.

The case under discussion did not know her dates. She was delivered at the first opportunity when surfactant was positive. She delivered a small baby weighing 2300 gm. It is believed that infants of pre-eclampsia mothers have early lung maturation because of stress. They have intrauterine growth retardation, and therefore small for dates. They, however, do extremely well in nursery despite their small weight. It is therefore advisable to discontinue conservative management and deliver the patient as soon as lecithin/sphingomyelin ratio is 2 or more (Mati 1975, Gluck and Kulovich 1973).

The majority of pre-eclamptic patients will deliver within 12 hours after low amniotomy and oxytocin stimulation.



In cases where there is severe pre-eclampsia, unfavourable cervix, and failure to progress in labour, there is a place for Caesarian Section.

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CASE NUMBER 14

C E R V I C A L   I N C O M P E T E N C E



Name : J.W.  
Tribe : Kikuyu.  
Age : 23 years  
Para : 1 + 2  
Obst. No. : 3470/78  
L.M.P. : 25.5.78  
E.D.D. : 1.3.79

Antenatal Care:

Antenatal care at Kenyatta National Hospital. She was booked at 10 weeks maturity and uterine size corresponded to dates. She had ten attendances.

Antenatal profile:

Height : 5 feet 4 inches.  
Serology : negative  
Haemoglobin : 14.5 g/dl.  
PCV : 41.9%  
Blood Group : A D Positive.

During antenatal care her blood pressure remained normal. Urinalysis was normal in the prenatal period.

Obstetric and Gynaecological History:

Para 1 + 2. She had a preterm delivery at 28 weeks gestation. The duration of labour was three hours. She delivered a male infant which weighed 1760 gm. The baby was alive and well.

She had two mid-trimester abortion, one at 22 weeks and the other at 18 weeks in 1977. Both abortions occurred within

a short time of their onset.

Both preterm delivery and abortion began with draining liquor. This was followed by labour pains resulting in delivery and expulsion of products of conception soon thereafter.

Past Medical History:

None significant.

Social and Family History:

She was married and works as a clerk.

PHYSICAL EXAMINATION:

General examination:

She was in satisfactory general condition. There was no pallor, oedema, jaundice or lymphadenopathy.

Cardiovascular, respiratory and central nervous systems were normal.

Abdominal examination:

There was no abnormal findings noted.

Vaginal examination:

- External genitalia was normal.
- The cervix was patulous and soft.
- The uterus was 10 weeks size and cystic.

Impression:

In view of the past obstetric history and patulous cervix, it was thought that incompetence of the cervix was the primary abnormality.

The patient was advised that she would be admitted at 12 weeks gestation with a view to inserting a purse-string cervical suture.

She was admitted on 24 August, 1978.

Cervical purse-suture (McDonald's stitch):

The patient was prepared for general anaesthesia. Premedication of atropine sulphate 0.6 mg half before theatre.

The patient was placed in lithotomy position. Vulval toilet and draping was done. The bladder was catheterised.

Using a speculum, the cervix was exposed and held with along Allis forceps. Long no. 2 silk, on a mayo needle was used. The suture was inserted at the level of the junction between the smooth mucosa of the partio vaginalis and rugae of the vaginal wall according to McDonald's technique. The needle was directed into the stroma of the cervical wall, Endocervical canal was avoided. Four bites were used in the following sequence:

right-antero-lateral corner	-	10 o'clock
right-postero-lateral corner	-	7 o'clock
left-postero-lateral corner	-	5 o'clock
left-antero-lateral corner	-	2 o'clock

The suture was tied with surgical knot at 7 o'clock. The knot was made just tight enough for the cervix to admit a tip of a finger.



Post-operative recovery was uneventful. She was discharged on the second day after operation.

Removal of Cervical suture at 38 weeks maturity on 13.2.79:

The patient was placed in lithotomy position. Using a speculum, the cervix and suture knot were exposed. One end of the suture was cut and the rest easily pulled out. This was an outpatient procedure. The cervical canal was short but the cervical os was closed.

Readmission:

The patient was readmitted on 20.2.79.

She complained of labour pains and draining liquor for 3 hours.

PHYSICAL EXAMINATION:

General examination:

She was in a satisfactory general condition. She had no pallor, oedema, jaundice or lymphadenopathy.

Vital Signs:

Blood pressure	:	110/70 mm Hg.
Pulse	:	84 per minute.
Temperature	:	36° C.
Respiratory rate	:	20 per minute.

Respiratory, cardiovascular and central nervous systems were normal.

Abdominal examination:

The uterine size was term. The fetus had a longitudinal lie with cephalic presentation. Fetal heart sound was heard - 138 per minute and regular. Contractions were felt - 2 in 10 minutes, each lasting 20 to 40 seconds.

Vaginal examination:

The cervix was 6 cm. dilated and fully effaced. Cephalic was two-fifths palpable above the pelvic brim. Membranes were ruptured and no cord was felt.

The sacral promontory was not reached. The ischial spines were not prominent. The inter-tuberous diameter would fit four knuckles.

Impression:

In view of the findings, the patient was in established labour and spontaneous vertex delivery was expected.

Delivery:

One hour after admission the cervix was fully dilated and head was crowning.

Episiotomy was made. A male infant weighing 3000 gm was delivered. The apgar score was 10 at 1 minute and 10 at 5 minutes. Intravenous Ergometrine 0.5 mg was given with the delivery of anterior shoulder. The placenta was delivered by controlled cord-traction five minutes later. The placenta weighed 550 gm, blood loss was 50 ml.

Episiotomy was repaired as described in the introduction.

Postnatal visit:

She had a normal puerperium. She was advised to start attending antenatal clinic early in her next pregnancy. She refused advice on family planning method.



## DISCUSSION:

Cervical incompetence is any condition of the uterine cervix that permits sufficient "painless" dilatation to allow spontaneous rupture of membranes and subsequent onset of labour prior to the end of the thirty-six weeks gestation. (Baden and Baden 1960). Sudden loss of fluid between 16 and 28 weeks of pregnancy, not preceded by painful contractions, is the most striking feature in the history of such pregnancies. (Barter, Riva and Parks 1958).

The incidence varies from 1 in 300 to 1 in 500 pregnancies. A crude incidence of 1 in 90 pregnancies had been reported in Kenyatta National Hospital. (Baden and Baden 1960, Njagi 1978).

Barter and others (1958) noted that cervical incompetence rarely occurs in a first gestation. They thus did not consider the condition to be of congenital origin. Trauma is considered to play a leading role in the causation of cervical incompetence. Dilatation and curettage for termination of pregnancy and for termination of pregnancy and for treatment of dysmenorrhoea may inflict trauma if the cervix is dilated to Hegar 10 or more. Difficult previous delivery resulting into deep cervical laceration. It may be a sequel to a surgical revision. or amputation of the cervix done at the time of a previous gynaecological operation. Cone biopsy is a major cause of cervical incompetence. (Barter and others 1958, Dewhurst 1976).

In the non-pregnant, a cervix which allows a moderate-sized uterine dilator (Hegar no. 8) to pass with ease may be suspected to be incompetent. Radiographic hystero-graphy taken premenstrually and showing significant broadening of the upper part of the cervical canal suggests incompetence. (Myerscough 197

Whereas previous obstetric history is something to go by, the only sure way of diagnosing cervical incompetence is by

vaginal examination. The actual palpation and visualisation of the dilating cervix during pregnancy is the only absolute proof of cervical incompetence. The progressive dilatation or dilatation to over 2 cm and effacement of over 50% during examination in midtrimester leads to the diagnosis.

(Block and Rahhal 1976, Baden and Baden 1960).

The case under study had one premature delivery at 28 weeks. Another two pregnancies ended in midtrimester abortion. All occurred with relative ease lasting less than four hours and was heralded by drainage of amniotic fluid. There was no cervical laceration, but the cervix was short and patulous. The incompetence as judged from the history was worsening. To have waited to find a progressive, painless cervical dilatation with bulging membranes in the later part of second trimester would also lower the chance of success of the operation which was carried out.

The treatment of incompetence of the cervix is surgical. The aim of the operation is to reinforce the constrictive action of the cervix. The operation is to encircle the cervix by non-absorbable material in the hope that this will strengthen the "incompetent" cervical wall and, thus prevent early dilatation (Cushner 1963, Dewhurst 1976).

Block and Rahhal (1958) outlined a diagnostic and prognostic scoring system. They listed the following to be indications of cerclage:

- (a) Previous premature delivery or midtrimester abortion without obvious cause.
- (b) Visual evidence of previous surgical or obstetric trauma to the cervix.
- (c) History of painless premature labour and rapid delivery.



- (d) Progressive dilatation or dilatation greater than 2 cm on initial examination during midtrimester and,
- (e) Previous diagnosis of cervical incompetence with previous cerclage.

The purse-string suture is best performed between 14 and 18 weeks maturity. It is best performed before dilatation of 4 cm. is reached, whenever possible. In Njagi's series the earliest time the operation was carried out was at 10 weeks and the latest 28 weeks gestation. The mean was 15.0 weeks maturity. Barter and his associates (1958) had average gestation of 18 weeks with a range from 10 to 27 weeks at which time the operation was performed. The case being discussed had insertion of purse-string suture at 13 weeks gestation. The general agreement is to perform the operation at 14 weeks gestation. This is because cervical dilatation of this condition rarely takes place before 16 weeks. Before that time products of conception are not sufficiently large to efface and dilate the cervix in the absence of painful contractions. (Hellman and Pritchard 1976, Barter and others 1958).

In Kenyatta National Hospital we perform MacDonald's purse-string cervical suture. In cases where it is successful, the suture is removed at 38 weeks gestation to allow vaginal delivery. The suture is removed at any other time when the patient starts draining liquor, vaginal bleeding or has uterine contractions. Myerscough (1977) has warned that a woman who unexpectedly goes into labour after the "purse-string" suture has been applied, faces an obstructed labour. The patient herself must be made to understand the possible danger which she faces should she go into labour and ignore to obtain medical assistance.

MacDonald's purse-string suture is made to encircle the cervix at the very highest level of access. Each bite penetrates



deeply enough to gain anchorage in the collagenous core of the cervix. If it is not done that way the cervix may take up and begin to dilate despite the presence of the suture. (Myerscough 1977).

Overall success rate in carrying pregnancy to maturity after this procedure is of the order of 50% to 80%. Block and Rahhal (1976) reports that two-thirds of the patients had 3 or more indications for cervical cerclage. These patients had statistically significantly more favourable pregnancy outcome than did those with few indications for the procedure. The case under study had three indications for the procedure.

Cases who had cervical purse-string suture between 13 and 19 weeks gestation had the best results. The success rate went progressively down in an inverse ratio. Where the operation was done after 24 weeks gestation, the success rate was only 33%. Overall success rate was 55% in attaining term pregnancy. (Njagi 1978).

Barter and others (1958) report fetal survival rate of 70% after cervical suture and 11% before cervical suture.

The case under study had short labour. She arrived at 6 cm dilatation. One hour later the cervix was fully dilated. For the first time in four pregnancies she went to term and delivered 3 Kg baby. The success may be attributed to insertion of MacDonald's purse-string suture.

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CASE NUMBER 15

R E T A I N E D   P L A C E N T A

Name : H.M.  
Tribe : Kikuyu.  
Age : 20 years.  
Para : 1 + 0  
Obst. No. : 1119/80  
L.M.P. : 15.5.79  
E.D.D. : 22.2.80  
Admitted on : 11.3.80  
Discharged on : 14.3.80

Antenatal care at Kenyatta National Hospital.

Obstetric and Gynaecological History:

Para 1 + 0. Last delivery at seven months gestation in 1978. She had six hours labour and delivered a male infant weighing 1050 gm. The baby died in neonatal period presumably from prematurity.

She had menarche at 14 years of age. She had regular menstrual periods previously. Her periods lasted for four days and occurred every twenty-eight days.

Antenatal Care:

She was booked at thirty-seven weeks maturity. Uterine size corresponded to dates.

Height : 5 feet 2 inches.  
Serology : negative  
Heamoglobin : 13.9 gm%.  
PCV : 35.2%

She had two attendances and no abnormality was detected.

Past Medical History:

None significant.

Social and Family History:

She was married. The husband worked as a clerk.

Labour:

She was admitted complaining of labour pains for five hours. There was no history of vaginal bleeding or drainage of liquor.

PHYSICAL EXAMINATION:

General examination:

She was in a satisfactory general condition. There was no oedema, lymphadenopathy or pallor.

Vital signs:

Blood pressure	:	120/70 mm. Hg.
Pulse	:	80 per minute.
Temperature	:	37° C.
Respiratory rate	:	21 per minute.

Respiratory, cardiovascular and central nervous systems were normal.

Abdominal Examination:

The uterine size was term, while she had 42 weeks by



dates. The fetus had longitudinal lie with cephalic presentation. Uterine contractions were felt one in 10 minutes each lasting less than 20 seconds. Fetal heart tones were 140 per minute and regular. The head was four-fifths palpable above the pelvic brim.

Vaginal Examination:

External genitalia was normal. The vagina felt normal. The cervix was four centimetres dilated and effaced. The membranes were intact and bulging. No cord presentation was felt. Sacral promontory was not reached. Using Kocher's forceps artificial rupture of membranes was done. Moderate amount of clear liquor was drained. No cord was felt.

A provisional diagnosis of labour was made.

Urinalysis was negative for sugar and protein.

Second Stage:

Six hours after admission, the cervix was fully dilated. The head was not palpable above the pelvic brim.

The patient was encouraged to bear down with each contraction. Within ten minutes a female infant weighing 3850 gm was delivered. Left medio-lateral episiotomy was performed to ease the bearing down effort of the patient. Intravenous ergometrine was given with the delivery of anterior shoulder.

There was no blood loss with the delivery of the baby. After five minutes controlled cord traction was tried and failed. Another twenty minutes waiting for signs of placental

separation also failed. There was no lengthening of the cord with artery forceps clamping the part of the cord close to the vaginal orifice. Vaginal examination revealed that the whole placenta was still in the uterus. No bleeding occurred during this time to suggest, at least, partial separation of the placenta.

A provisional diagnosis of retained placenta was therefore made. The patient was advised that an attempt will be made to remove the placenta under general anaesthesia.

Sample of blood was taken for group and cross-match of two pints of whole. Intravenous syntocinon 40 units in 500 ml of 5% dextrose was set up in infusion.

#### Manual Removal of Placenta:

Patient was prepared for general anaesthesia in the normal way.

Under general anaesthesia, the vulva was cleaned and draped. The bladder was catheterised.

With the left hand on the abdomen, the fundus was held. The right hand was inserted into the uterine cavity following the cord. The placenta was found implanted at the fundus. At the edge of the placenta, a plane of cleavage was found. The placenta was peeled off from its uterine bed in total and in one piece. The membranes were removed at the same time. The uterine cavity was explored and found intact and empty. Repeat intravenous ergometrine 0.5 mg was given. Blood loss was estimated to be 200 ml.

Post-operatively, the patient was put on capsules Ampicillin 500 mg six-hourly for five days. The recovery was uneventful.

Baby was normal.

Postnatal Visit:

She was examined six weeks after delivery and found to have had a normal puerperium. She refused any form of family planning method.



## DISCUSSION:

Retained placenta is one which fails to be expelled within half an hour after delivery of the child. (Thomas 1963).

Normally, the placenta separates and descends to the lower level in the genital tract in about ten to fifteen minutes after delivery of the fetus. Use of ergometrine, as was done in this case, at the end of second stage or in early third stage shortens that time. (Holland and Brews 1969).

In normal circumstances, the following will lead one to assume that the placenta has separated:

- (a) The uterus is felt to be smaller, firmer, rounder and more mobile. It rises above the distended vagina.
- (b) A clamp placed on the cord flush with the vulva after drawing down till taut will have descended several inches away from the vulva.
- (c) Vaginal examination may reveal part of the placenta to be in the upper part of the vagina.

With the placenta separated, it may be enough to ask the patient to bear down. Or by gentle cord traction while steadying or elevating the uterus with the border of the hand placed below it just above symphysis pubis, the placenta will be delivered.

Placenta is regarded as retained when signs of separation and descent of placenta have not occurred within thirty minutes. When attempts to deliver the placenta by

Brandt-Andrews method as was carried out in the case being discussed fails, the placenta will be regarded as retained. (Holland and Brews 1969).

Thomas (1963) stated that any factor which increased postpartum haemorrhage or uterine atony contributed to retention of placenta. He found the incidence of retained placenta to be 1% and distributed as follows:

- (a) Twins - 1 in 37
- (b) Premature deliveries - 11.7%
- (c) Breech presentation - 6.4%
- (d) Midforceps deliveries - 6.3%
- (e) Prolonged Labour - 3.4%

None of the above criteria fit our patient, except that the baby was well above the average size. The baby weighed 3850 gm. The average at Kenyatta National Hospital is 3 Kg. This may have caused distension of the uterus leading to inertia.

Retention of placenta may occur under two different conditions.

Firstly, the placenta, though completely separated, is not expelled. The cause here may be due to uterine inertia or formation of hour-glass contraction ring.

Secondly, the placenta may still be adherent to uterine wall. In this category, one type is where the placenta remains in union with uterine wall but has a normal attachment. The other type is where placenta is morbidly adherent to the uterine wall. These two categories may only be distinguished

when attempting to manually remove the placenta. Our case had simple adhesion, without separation.

The major risks of retained placenta have been highlighted by Donald (1972).

So long as the placenta is undelivered, the patient is liable to start bleeding any time. There is occasional risk of developing a variety of postpartum collapse due to retention of placenta alone. The longer the placenta is retained the greater the chance of puerperal sepsis. During the time the placenta is still retained, close supervision must be carried out.

As long as the patient is not bleeding, she is not in immediate danger. But it must be ascertained that no blood is collecting behind the placenta.

Thomas (1963) found that 12.9% of cases lost more than 500 ml when the placenta was removed between 15 to 30 minutes. While all patients who had delivery of placenta after being retained for more than two hours lost more than 500 ml. One case lost 1.5 litres of blood.

Two factors thus become critical in manual removal of placenta in order to reduce maternal morbidity. Firstly, timing is important. Unduly delay may be dangerous. It is certainly dangerous when the patient is already bleeding. Secondly, aseptic and antiseptic technique must be employed to prevent puerperal sepsis. Prophylactic antibiotics like was used in this case should be given.

In the actual operation, gentle peeling off the placenta through a live of clearage between placenta and the uterine wall is important. It should be done with the fingers closed together while the left hand is on the



abdomen steadying the uterus. Roughly done, uterine wall may be perforated. It may also lead to weakening of the uterine wall predisposing to spontaneous uterine rupture in a subsequent delivery. (Myerscough 1977).

The causes of failure are two-fold. The presence of hour-glass contraction ring makes the placenta difficult to reach. One needs to wait for a short time for the uterus to relax. Attempts to forcibly reach the placenta frequently cause rupture of the lower uterine segment. (Myerscough 1977).

Morbidly adherent placenta reveals itself when there is no plane of cleavage while trying to remove the placenta manually. When it is completely adherent there will be no bleeding. Bleeding will occur when a part of it is separated. Manual removal should not be done. The choice lies between hysterectomy and leaving the placenta intact to spontaneously dissolve. (Myerscough 1977, Donald 1977).

Use of ergometrine and oxytocin will reduce amount of troublesome blood loss. Bladder should be catheterised to enable uterine retraction. Blood transfusion becomes necessary when blood loss is significant.

With complete removal of placenta, use of antibiotics combined with the above measures, maternal mortality has been reduced to zero. Maternal morbidity is still, however, troublesome - reported to be 1.2%. (Thomas 1963).

The case under study had simple adhesion of placenta at the fundus. Prompt manual removal of placenta reduced blood loss to 200 ml. Use of prophylactic broad-spectrum antibiotic reduced her chance of getting infection.

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LONG COMMENTARY IN OBSTETRICS

MANAGEMENT OF 112 CASES OF

C O R D P R O L A P S E

I N

KENYATTA NATIONAL HOSPITAL



## INTRODUCTION:

The umbilical cord is the life line of the fetus. It connects the fetus and the major organ of nutrition and homeostasis, the placenta. The cord is therefore vital to survival of the fetus. Any interference with transport function of the cord will certainly jeopardize the fetus existence.

The fetal umbilical blood flow is about 55% of the fetal total cardiac output. The flow depends almost entirely on arterial pressure resulting from cardiac output and peripheral resistance. Uterine contractions have no influence on the umbilical blood flow. The umbilical cord is not innervated. It has minimal response to vasoactive agents. A wide range of blood gas and acid-base states has negligible effect on the fetal umbilical blood flow. Only severe, prolonged hypoxaemia will lead to a reduction of blood flow (Dawes 1968). It is, therefore, a passive vascular bed.

However, complete occlusion of the cord, if maintained for a few minutes, will lead to a gradual fall in fetal arterial pressure until arrhythmias and death supervenes (Dawes 1968).

For practical purposes, cord prolapse and presentation should be considered as one and the same thing (Donald 1972).

Prolapse of the umbilical cord is a rare emergency in Obstetrics. Nonetheless, it accounts for such a high fetal loss that its management is of great importance. Cord prolapse is a dramatic and serious complication. It may lead to injudicious rescue attempts which may cause serious maternal complications. The fetus may even be killed in the

same process which is trying to save it (Goldthorp 1967).

#### MATERIALS AND METHOD:

This is a retrospective study between March 1st, 1974 to June 30th, 1980.

There were 236 cases of cord prolapse and presentation registered. Out of these, only 112 case notes were available for analysis. The 112 cases, therefore, form the basis of analysis and discussion. The recovery of case notes is less than half of the diagnosed cases of cord prolapse. It is, therefore, not possible to use the results to accurately discuss epidemiology of cord prolapse in Kenyatta National Hospital.

Analysis has been attempted from two main view points: predisposing factors and fetal outcome.

#### PREDISPOSING FACTORS:

##### (a) Age:

The mean age was 24.7 years. The range was 14 to 40 years. 86(76.79%) cases were 30 years or less, while 26(23.21%) were 31 years old or more. The age distribution is shown in Table 1.

TABLE 1: AGE DISTRIBUTION

Age group (years)	Number of cases ( )*	Percentage
20 and under	25(118)	22.33(21.80)
21 - 25	35(168)	31.25(31.00)
26 - 30	26(106)	23.21(19.50)
31 - 35	15(112)	13.39(20.70)
36 and more	11(40)	9.82( 7.00)
TOTAL	112(541)	100

\* In brackets were 541 of consecutive cases admitted to labour ward during the period of study and their age distribution. In this group the mean age was 26.5 years with the range from 14 years to 45 years.



(b) Parity:

The mean parity was 3.0. Parity ranged from 0 to 11. 15(13.39%) were primigravidae. 30(26.79%) cases were Para 5 or more, while 82(73.21%) were Para 4 or less. Table II exemplifies parity distribution. The number in \*brackets in Table II represents parity distribution of 541 consecutive cases admitted during the period of study.

The source of data was biased in two main ways. Firstly, booking for ante-natal care selected highly parous patients and primigravidae. Secondly, the hospital was a referral centre. Such a centre receives complicated cases both for ante-natal care and with complicated labour.

In 541 consecutive cases 178(32.90%) were grandmultiparous patients, while 114(21.07%) were primigradae. The mean parity was 3.7 with the range from 0 + 11.

Cord prolapse occurred in grandmultiparous patients, twice as much as it occurred in primigravidae. Prolapse of the cord occurred with nearly equal frequency in Para 1 as grandmultiparous patients.

TABLE II:      PARITY DISTRIBUTION

Parity	Number of cases( )*	Percentage
0+	15(114)	13.39(21.08)
1+	27(91)	24.11(16.83)
2+	14(70)	12.52(12.94)
3+	18(55)	16.07(10.17)
4+	8(33)	7.14( 6.09)
5+	5(35)	4.46( 6.46)
6+	8(27)	7.14( 4.99)
7+	10(82)	8.92(15.16)
8 or more	7(34)	6.25( 6.28)
TOTAL	112(541)	100

(\*) Numbers in brackets represent 541 consecutive cases admitted during the period of study.

(c) History and ante-natal findings:

Four cases had previous history of fresh still-birth. Two of these had past history of cord prolapse in two previous deliveries. Each ended in a still-birth.

One had a past history of neo-natal death.

Three cases had variable lie in the pre-natal period. One other case had a previous scar with abnormal presentation.

Three cases had erect lateral pelvimetry and true conjugate were 9.3 cm. in one and 9.5 cm. in two.

One case had previous scar because of cephalopelvic disproportion. This patient, apart from cord prolapse, had ruptured uterus. She had Caesarian hysterectomy and a fresh stillbirth was delivered.

Four cases had been delivered by vacuum extraction previously.

Three cases had antepartum haemorrhage. One of these, had abruptio placentae as evidenced by presence of retroplacental clot. She had a stillbirth. The remaining two had unexplained antepartum haemorrhage.

Four cases were diagnosed at Casualty and sent to Maternity Unit for emergency delivery. None of these was lost.

Twenty-three cases were referred from peripheral hospitals, delivery centres and nursing homes. There was no facility for immediate delivery in these centres.



In this referred group, there were four fresh and one macerated stillbirths. Despite the relatively long diagnosis - delivery interval, 18 babies survived. It is even more interesting that six patients came in walking with a pulsatile cord seen and found hanging, as they came off the ambulance. They were all delivered by Caesarian Section to live babies in good condition!

(d) Status of Membranes:

90(80.35%) cases had evidence of ruptured membranes. 14 cases had intact membranes and in eight cases the status of membranes was not stated.

- (i) Artificial rupture of membranes used as a method of surgical induction or to speed up labour accounted for 20(17.85%) cases.
- (ii) Fifty (44.64%) cases had spontaneous rupture of membranes and subsequent vaginal examination revealed cord prolapse.
- (iii) Twenty (17.85%) cases had premature rupture of membranes. Speculum examination showed prolapsed cord.

(e) Lie and Presentation:

In 108(96.42%) cases the lie was longitudinal, 2 transverse, and 2 oblique. The latter cases with abnormal lie had compound presentation.

In those with longitudinal lie, the presentation were: 93 cephalic and 21 breech. There were four sets of twins in breech presentation.

Out of 93 cephalic presentation, 54 had three-fifths of the head or more palpable above the pelvic brim. While 34 had two-fifths of the head or less palpable. In the five cases, the station of the presenting part was not stated.

Four cases had footling breech and six incomplete breech. In eleven cases the type of breech was not stated.

(f) Prematurity:

108 babies weighed 2500 gm. and more. The range was 2500 gm. to 4990 gm. 10 babies weighed less than 2500 gm. and could be considered premature. In the premature group the weights ranged between 550 gm. and 2350 gm. The lowest weights of 550 gm. and 650 gm. were twin pregnancy who were delivered at 26 weeks maturity. These were excluded from the calculation of perinatal loss. These twins were stillbirths. Another preterm weighing 1350 gm. died in the neonatal period. Two others weighing 1790 gm. and 2200 gm. were fresh stillbirths. Only five survived weighing 1000 gm., 1500 gm., 2350 gm., 1950 gm., and 2250 gm.

(g) Length of the cord was stated to be over one metre in one case.

Diagnosis:

17 cases had meconium - stained liquor.

7 cases had abnormality of fetal heart tones.

In all cases, cord prolapse or presentation was confirmed by vaginal examination.

In five cases, there was bradycardia (less than 120 per min.) with irregularity of fetal heart tones. One had a normal rate of 140 per minute but irregular, while the other had fetal heart rate of 170 per minute. Vaginal examination done confirmed that cord prolapse was the probable cause of fetal distress.

Five patients with abnormal fetal heart tones had meconium - stained liquor, two had clear liquor. Of the former, two were fresh stillbirths, a third died six hours after delivery. Two babies survived. Those with fetal heart tone abnormality alone, fetal heart tones ceased before delivery could be effected. In contrast to this gloomy picture, a patient who was delivered by a vacuum extraction within ten minutes after cessation of fetal heart tones, survived after resuscitation. In those who had meconium - stained liquor alone, none was lost.



FETAL OUTCOME:

The total number of babies born were 118. 106 were singleton and 6 sets of twins.

There were 19 stillbirths: 18 were fresh and one macerated. Of the fresh stillbirths, there was one set of twins, which were regarded as abortion. There were 4 neonatal deaths.

The perinatal mortality in this series was 198.2 per 1,000 or 19.82 per cent.

One neonatal death could be attributed to prematurity. One case of stillbirth had abruptio placentae and cord prolapse. It is difficult to say which one was predominant in causing fetal death. Both conditions are associated with a high perinatal loss individually.

The macerated stillbirth was a referral from Gatundu District Hospital. She had previous scar and past history of having been delivered by vacuum extraction. She presented with a history of draining liquor for 24 hours at home. She went to hospital when labour pains started. On examination she was found to have a non-pulsatile prolapsed cord. She came to Kenyatta National Hospital twelve hours later. She had gone off labour on arrival. Silent rupture of the uterus was suspected. She was subsequently delivered by Caesarian Section.

Factors affecting fetal outcome:

The major factors that determine the fetal prognosis are:

(a) The time interval between occurrence of cord prolapse and delivery:

As it is difficult to know exact time when the cord prolapses, the time interval between diagnosis and delivery becomes important. It is especially important when the baby is still alive. In this series time interval was not consistently recorded. It was therefore, not analysed.

However, 85 cases were diagnosed in labour ward where facilities for immediate delivery exist. 12 were lost. In those cases lost seven were alive when diagnosis was made. Five had no sign of life detectable. Despite urgent delivery six out seven were fresh stillbirth and one neonatal death. 73(85.88%) out 85 cases diagnosed in hospital survived. But still a perinatal loss of 12(14.12%) babies was significant.

(b) Cervical dilatation:

The degree of cervical dilatation is perhaps the key factor in deciding between vaginal and abdominal delivery. This is assuming that the baby is viable and vaginal delivery is not contraindicated. Probably more important, it reflects the compression force applied by the presenting part on the pelvic brim with the cord entrapped between. Table III suggests the

cervical dilatation and fetal survival has a direct relationship. The force greater when cervical dilatation is approaching 10 cm. 7(25.92%) babies died out of 27 cases who had cervical dilatation of 7 cm. or more. On the other hand, 15(18.51%) babies died out of 81 when the cervix was 6 cm. or less. Although the difference between the two group is not big, it is striking enough to call for further investigation. Table III depicts the cervical dilatation in relation to fetal outcome.

Table III: Cervical dilatation as it affects fetal outcome

Cervical dilatation	Fetal Outcome		Total
	Alive	Dead	
6 cm. or less	66(81.49%)	15(18.51%)	81
7 cm. or more	20(74.08%)	7(25.92%)	27
Not stated	9(90%)	1(10%)	10
Total	95(80.50%)	23(19.50%)	118

The high number of babies lost when cervix is 7 cm. or more may be attributed to either late diagnosis or route of delivery or both. In these cases vaginal route was given first consideration.



Method of Delivery:

84(75%) babies were delivered by Caesarian Section. Perinatal loss was 5(5.81%).

18(66.66%) babies died out of 27 who were delivered vaginally. These were vacuum extraction, breech extraction/delivery and spontaneous vertex delivery.

One case of breech extraction was lost. It was a singleton breech weighing 2750 gm. It was an incomplete breech unbooked, who arrived in Labour Ward fully dilated. On examination, a feeble pulsatile cord was found prolapsed. Immediate easy breech extraction was performed. Despite vigorous resuscitation, the baby failed to establish any sign of life.

These were crude death rates. It needs pointing out that eight babies allowed spontaneous vertex delivery were not alive, at the time the diagnosis was made. Four babies were viable and 2 were doubtful cases. These latter were delivered spontaneously soon after diagnosis was made, and before any preparation for other mode of delivery was completed. Table IV shows influence of method of delivery on fetal outcome.

In cases where the cervical dilatation was less than 6 cm., the baby alive, and Caesarian Section employed as a method of delivery the prognosis was good. On the other hand, in cases where the cervical dilatation was approaching 10 cm., that is seven or more - cephalic presentation, the cord was frequently found prolapsed and non-pulsatile. This may reflect a late diagnosis or death took place so fast that early diagnosis would not have made a difference or both.

TABLE IV: Effect on method of delivery on fetal outcome

Mode of Delivery	Fetal Outcome		
	Alive	Dead	
		Stillbirth	Neonatal Death
Caesarian Section/hysterectomy	83	3	2
Vacuum Extraction	5	1	2
Breech delivery	3	1	0
Spontaneous Vertex delivery	3	14 (8*,2*)	0
TOTAL	94	19	14

(8\*) babies were dead when diagnosis was made.

(2\*) babies signs of life were doubtful

Postural treatment:

This was not a definitive treatment for cord prolapse. It was used as a temporary measure to ease off pressure from the cord while preparation was being made to deliver the patient.

It was known that it was almost invariably used in Kenyatta National Hospital, Maternity Unit. It was, however,



not consistently documented in the case notes. Its effect on fetal prognosis was questionable. In cases where labour was advanced and presenting part engaged, no amount of postural treatment would help. Digital displacement of the presenting part would be difficult in such situations. In these cases, the temptation to manipulate the cord in an attempt to repose it, was great. This may increase the speed with which vasospasm of the cord occurs and hence fetal demise! It may itself cause vasospasm.

A case of cord prolapse had been diagnosed in Casualty. The patient was a 35 years old primigravida who came in labour. She had ruptured membranes, at home, six hours before admission. The cervix was 6 cm. dilated and the head was three-fifths palpable above the pelvic brim. The uterine contractions strong and frequent. The fetal heart tone was 140 per minute and regular. The fear that the head would soon get engaged was great. With clear instructions to the nurse not to manipulate the cord, but to continuously push the head away from the pelvic brim, the patient was placed in knee-chest position. She was transported in that position to Maternity Unit without delay. She was later delivered by a Caesarian Section to a live fetus! The nurse reported back and said, "I had to push so hard to keep the head away that my fingers nearly got gangrenous!".

Postural treatment and digital displacement of the presenting part was of definite value where the presenting part was not engaged and labour not advanced.



### Discussion:

Umbilical cord presentation and prolapse means a falling down of the cord in front of the presenting part before and after rupture of membranes respectively (Myers Cough 1977). This distinction between prolapse and presentation has been found to be of no practical value. (Donald 1972).

### Incidence:

Cord prolapse is uncommon complication in Obstetrics (Goldthorp 1967). The incidence varies from 0.27% as reported by Pathak in 1968 to 0.55% by Goldthorp in 1967.

During the period of this study (March 1, 1974 to June 30, 1980), there were 41,250 deliveries. Out of these only 236 cases of cord prolapse and presentation were recorded. The incidence in Kenyatta National Hospital is 1 in 175 deliveries or 0.57%. For reasons mentioned earlier, this figure may not reflect true situation. //

### Aetiology:

The cause of cord prolapse is unknown. But experimental work by Seligman (1960) suggest that cord prolapses when a fetus has a lowered blood pressure due to some pre-existing condition. If that plausible Seligman's theory is acceptable, then prolapse is but a symptom of lowered intra-arterial pressure of umbilical arteries.

However, one feature is common in all cases of cord prolapse. There is absence of "sealing" of the lower uterine segment. The presenting part does not fill the lower segment

which is poorly applied to it (Seligman 1960, Dewhurst 1976).

The major predisposing or risk factors can be broadly divided into fetal and maternal factors.

Age:

In a series of 516, Savage (1970) found that cord prolapse was significantly higher in women over 30 years. The prevalence was higher in negroes than whites. In the present series, women under thirty years of age were higher than those who are 31 years or more. The difference in the findings is probably because we are dealing with two different populations.

Parity:

There is greater incidence of prolapse with multiparity. Not only is prolapse of the cord more common in parous patients, but also 19.8% are grandmultiparous (Clark 1968).

The ratio of primigravida to multigravidae was 45 to 55. Only 5 women had more than four children. (Seligman 1960). Four-fifths of cases occur in multiparous patients especially of higher parities. (Dewhurst 1976).

In this series, the number of primigravidae were half the number of grandmultiparous.

Myers Cough (1977), however, maintains that parity as a causative factor, plays a relatively unimportant part.

The risk of prolapse rises with age and parity of the mother (Pathak 1968).

Contracted pelvis accounted for 4.1% cases, reported by Goldthorp (1967). Contracted pelvis predisposed to poor filling of the lower uterine segment. When cord prolapse occurs in such cases, vaginal delivery is difficult.

Fetal factors:

Abnormal presentation is probably the greatest single predisposing factor in cord prolapse (Fenton 1951).

Clark (1968) calculated the relationship of frequency of prolapse to presentation as shown in Table V.

The risk of prolapse was 3.2% in breech presentation and two-thirds of those were of footling variety.

Prematurity is an important aetiologic factor. 47% of infants weighed less than 2.5 Kg. in Clark's series.

There is an increased risk in multiple pregnancy. It occurred 16 times during 365 multiple pregnancies, an incidence of 1 in 22.8% (Goldthorp 1967). Twins present problems of prematurity, polyhydramnios, and a floating presentation. Multiple aetiologic factors increase the risk of prolapse in twin pregnancy. Association of prolapse and multiple births is six times greater than would be expected (Clark 1968).

Other factors are hydramnios, placenta praevia and long cord.



## OTHERS FACTORS:

### Obstetric manipulation:

Artificial rupture of membranes forewater has been responsible for upto 20% of cases (Dewhurst 1976).

In Clark's Series (1968) 11-19% were due to iatrogenic causes. In Fenton's Cases (1951) artificial rupture of membranes when the presenting part was not engaged accounted for 25 cases. 5 cases had manual elevation of the vertex - making a total of 15%.

Spontaneous rupture of membranes with high head accounted for 21 (21.5%) of cases of Goldthorp (1967).

### Diagnosis and Anticipation:

All patients must be told to go to hospital at once if they notice a leak of liquor, even if they feel no contractions. This should be emphasised to patients with malposition, malpresentation and when cephalopelvic disproportion exists, even if it is minor.

Cases of unstable lie, or oblique lie may with advantage be admitted electively at 37 weeks.

Cord should be felt for diligently both before and after amniotomy, especially when fetal heart rate variations follow the procedure.

In every labour, vaginal examination auscultation should be carried out when membranes rupture.

Fetal distress whenever it occurs subsequent in labour,

TABLE V: Relationship of frequency of prolapse to presentation:

Presentation	Number of births	Number of prolapse	Risk of prolapse
Vertex	28,934	54	0.18
Breech .	1,151	47	3.20
Transverse	71	8	11.30
Compound	24	8	33.30
Brow and face	64	0	0

one must suspect cord prolapse either evident or occult. (Devhurst: 1976).

It is usually assumed that cord prolapse does not occur when the presenting part is engaged. A delay in making a diagnosis account for the cases in which cord prolapse is discovered where the presenting part is engaged.

#### FETAL OUTCOME

In the past the fetal mortality was 50-60%. Even if corrected, the fetal mortality was still 30% (Fenton 1951).

#### Time interval between diagnosis and delivery:

Mortality increased proportionately with increasing time interval between diagnosis and delivery. Most striking change occurred when this time interval was from half hour to one hour. Three hours interval, the fetal mortality reached 70%.

When time interval between rupture of membranes and diagnosis was less than one hour, fetal mortality was below 34% (Fenton 1951).

If the time from diagnosis of prolapse to delivery of the infant is less than 10 minutes, the mortality was 5.5%. With increasing time, the fetal mortality rises rapidly (Clark and others 1968).

#### Station, Cervix and Method of Delivery to fetal mortality:

With alive fetus, cervical dilatation at the time of prolapse of the umbilical cord affects the method by which



delivery can be accomplished.

Fenton(1951) found that fetal mortality remained high when the cervix was less than 7 cm. dilated or unfavourable regardless of the station of the presenting part. When the cervix was more than 7 cm. dilated, the mortality varied with the station. The fetal mortality was 36.5% when the presenting part was above ischial spines and 18.2% when below the spines. Table VII shows the relationship of cervical dilatation and station to fetal mortality. On his data Fenton concluded that mortality rate was related to cervical dilatation and station rather than method of delivery. The statement exempted those cases with unfavourable cervix and unengaged presenting part. In such cases Caesarian Section had an obvious advantage over all other methods of delivery. This article was written before it became generally agreed that Caesarian Section was the treatment of choice in all cases regardless of the cervical dilatation.

When cord prolapse was managed conservatively there was an inverse relationship between fetal mortality and dilatation of cervix at the time of prolapse. There was also a greater incidence of prolapse as the cervical dilatation increased. There was a peak incidence when the cervix was fully dilated. (Fenton 1951, Goldthorp 1967).

However, with increasing use of Caesarian Section at greater dilatation of the cervix, there was almost a direct relationship between corrected perinatal mortality and cervical dilatation (Goldthorp 1967). This agrees with the finding in the present series where Caesarian Section was freely employed.

The high fetal mortality when the cervix was favourable and presenting part above the ischial spines was due to trauma. Trauma was inflicted during the haste to effect delivery. The trauma may be slight and may be insignificant for a normal baby. But for a shocked baby who is in a

precarious state such degrees of trauma may be enough to jeopardize its existence. (Seligman 1960).

Fetal mortality was highest in vertex presentation because of greater danger of cord compression. An irregular soft presenting part is unlikely to compress the cord (Fenton 1951).

Transverse lie or compound presentation had the highest mortality rate in the series reported by Daly (1968).

TABLE VII: Influence of Cervical dilatation and Station On fetal mortality.

Cases	Cervical Dilatation cm.	Station	Gross Fetal Mortality %
93	8 - 10	+1, +5	18.2
52	8 - 10	-5, 0	36.5
14	1 - 7	+1, -5	57.1
41	1 - 7	-5, -0	58.7

Fetal mortality was 10% in cases where the fetus presents no evidence of anoxia prior to delivery. Where fetal heart tone was not heard and cord pulsations were not felt, there was 90% mortality.



Method of delivery:

There is no expectant treatment in cord prolapse when the baby is alive.

Clark (1968) outlined the principles of treatment. Intelligent urgency with treatment following simple lines:

(a) Supportive therapy consisting of postural treatment. Either Trendelenburg or knee-chest position and administration of oxygen with digital displacement of the presenting part to relieve compression, are vital. The administration of oxygen is particularly important where there is evidence of anoxia as indicated by fetal heart rate variation. Attempt to reposit the cord is futile. In the absence of pressure, manipulation of the cord may cause enough spasm of cord arteries to be fatal. Cooling of the cord also causes spasm.

(b) Rapid Delivery:

In the event of cord prolapse, Caesarian Section is the treatment of choice. This is provided that the infant, by weight is potentially salvageable, and is still alive. When fetal heart tones are present although depressed, Caesarian Section may be justified (Daly and Gibbs 1968).

Daly and Gibbs (1968) recommended that after the diagnosis of cord prolapse, regardless of presentation and cervical dilatation, preparation should be made for Caesarian Section. Many of the infants will be delivered vaginally before Caesarian Section can be done. But, at least, facilities should be made available for Caesarian Section unless the



infant has been delivered prior to that time.

Liberal use of Caesarian Section has reduced the corrected perinatal mortality to 13.2% (Daly and Gibbs 1968). Savage and others (1970) reported a corrected perinatal loss of 17.6%. These compares favourably with uncorrected perinatal loss of 19.82% in this series.

When the cervix is 6 cm. dilated or less, vaginal delivery carries an extremely poor prognosis. A third of patients in Daly and Gibb's (1968) series were delivered by Caesarian Section. Out of these 2 died and one was injured.

Caesarian Section, when the fetus is viable, has almost eliminated the feotal mortality, when the cervix is half or less dilated. It enabled Goldthorp (1967) to deliver 63.3% of his patients within the first half hour with a considerably low perinatal mortality. In his series 38.6% of severely damaged babies were associated with internal version and breech extraction.

Extension of Caesarian Section to include more cases where the cervix is over three-quarters or even fully dilated may lower fetal mortality. This marginal area will require skilled judgement on the Obstetrician's part.

These cases where the cervix is approaching full dilatation, the fetus alive, and the lie longitudinal are among the most difficult. This group produces the highest mortality. The choice between Section on one hand, and breech extraction, forceps, ventous delivery on the other may tax the judgement and skill of the

most experienced operator (Goldthorp 1967, Dewhurst 1976). In doubt, Caesarian Section is to be performed. Internal version and breech extraction produces a damaged or dead baby in up to 40% of the cases. It may injure the mother. It should be avoided (Dewhurst 1976).

Caesarian Section rate of 30 - 50% is usual in most series. It has improved the results in the management of cord prolapse (Dewhurst 1976). Caesarian Section is not without maternal risk. But still, there is a general belief that a further reduction in fetal mortality can be achieved by a small and judicious increase to include cases where vaginal delivery is possible, but carries a high fetal risk.

When the fetus is dead, management is that of obstructed labour, if present.

#### Maternal Prognosis:

Prolapse of umbilical cord is primarily a fetal complication. However, during delivery maternal complications are often introduced.

Maternal morbidity in 117 cases was 35.8% (Clark and others 1968).

In the present series there was one maternal death due to overwhelming infection by *Clostridium welchii* causing gas gangrene.

Fetal Long—Term prognosis:

Intrauterine hypo/asphyxia is an unchallenged cause of perinatal death. The effect of sublethal degrees of hypoxia on brain of surviving infants is less certain. In a controlled study, to determine the degree of risk abnormalities in the Four year old fine motor and gross motor testings, Niswander and others (1975) found no difference in those babies who had intrauterine hypoxia/asphyxia and those who did not. In the absence of brain damage at delivery, intrauterine hypoxia/asphyxia apparently is not a major cause of neurologic dysfunction in the surviving child.

CONCLUSION:

- (a) The incidence of cord prolapse was 0.57% in Kenyatta National Hospital.
- (b) Commonest predisposing factor was ruptured membranes with a high presenting part. It accounted for 54(45.76%) cases.
- (c) Vaginal examination is the major method of diagnosis.
- (d) Cervical dilatation at the time of diagnosis is the major determinant of prognosis when the fetus is alive.
- (e) Caesarian Section is the method of choice for delivery Caesarian Section rate was 75% in this series.
- (f) Perinatal mortality was 19.82% and compared favourably with results elsewhere.
- (g) Before embarking on delivery with haste, confirm that the baby is alive. Method of delivery has a maternal risk.



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## GYNAECOLOGICAL CASES:

### CLINICS.

The clinics are held three days a week. Patients are seen by appointment. They are referred from Casualty, Filter clinics, Private practitioners in town, City Council Health Centres and upcountry hospitals.

At the clinic a detailed history of the patients complaint is obtained. Gynaecological Obstetric, Medical and Surgical history is recorded.

A systemic examination is done. Specific attention is directed to abdominal and pelvic examination.

A cervical smear is taken on nearly every patient.

Patients whose illness require operation is discussed in the clinic. They are then booked for admission. The waiting list is long, but cases suspected to be cancerous are given preferential booking.

A complete investigation of the infertile couple is done before admission into the ward.

### ADMISSION TO THE HOSPITAL

#### Emergency admission:

Gynaecological emergencies are admitted from Casualty and female filter clinic. A few come from other medical and surgical wards. Cases of abortion, pelvic inflammatory disease and ruptured or suspected ectopic



pregnancy form the majority. Cases with malignant growths are treated as emergencies.

They are admitted by Senior House Officer on take. On arrival, full history of present and past illness is obtained. Obstetric and Gynaecological history is recorded. A full physical and pelvic examinations are carried out.

Radiological, biochemical and bacteriological investigations are done whenever indicated. Haemoglobin level is estimated, and blood is cross-matched for those who require operative procedure particularly laparotomy.

#### Elective Cases:

These cases are admitted into a separate ward. Usually they come from the gynaecological clinic. They are admitted when nearly all the required workup has been completed. Consent is formally signed before undergoing general anaesthesia and operation.

#### PRE-OPERATIVE PREPARATION

##### ABDOMINAL OPERATIONS.

A light diet is taken on the evening before the operation day. A soapy enema is also given in the evening.

The abdomen and pubic areas are shaved. The patient takes nothing orally from midnight of the day of operation.

Premedication of intramuscular atropine sulphate 0.6 mg. is given half an hour before theatre. A sedative of Pethidine 50 mg is given intramuscular.

The urine is tested for sugar, protein and acetone. Vital signs are observed.

General anaesthesia is induced as in obstetric cases. But, long-acting muscle relaxant, like curare is given intravenously. Therefore to reverse the anaesthesia neostigmine is given intravenously.

#### Post-operative care:

The vital signs are observed every half an hour. The airway is kept clear and to make sure the secretions are not aspirated the patient is placed in semi-prone position. All these are done until full consciousness is regained.

Intramuscular pethidine 100 mg is given every six hours for twenty-four hours. Intravenous fluids are given for the same time or until bowel sounds are heard. Blood may be replacement whenever it is necessary.

Early mobilisation is encouraged. Skin sutures are taken off on the sixth and seventh day after operation. Post-operative haemoglobin check is done on the third day after operation.

The patient is discharged on the seventh day and appointment is given to gynaecology clinic after six weeks.

## FOLLOW UP CARE.

Patient's general health is established. At this time histology report will be available. Her illness and prognosis is discussed. Further treatment is advised whenever indicated. Cases who have had adequate therapy are discharged from the clinic.

## TWO COMMON SURGICAL PROCEDURES THAT ARE TAKEN IN THEATRE ARE:

### I. EVACUATION.

This is an operation done to empty the uterus of products of conception after a diagnosis of incomplete abortion is made. It is an emergency procedure.

The patient is prepared as already stated. The operation is done after a patient is given intravenous Pethidine 50 mg. and Diasepam 10 mg. Oxygen may be given by mask. Occasionally some patients require general anaesthesia.

The patient is placed in lithotomy position. The vulva and perineum is cleaned with antiseptic lotion and draped with sterile towels.

The bladder is catheterised. Bimanual examination is carried out to assess the uterine size cervical dilatation and any abnormal adnexal mass. This procedure is carried out for every pelvic operation.

Auverd's speculum is placed in the vagina to expose the cervix. The cervix is held by a sponge-holding forceps. Vulsellum is not used because it traumatizes the vascular cervix.



An ovum forceps is gently inserted into the uterine cavity and opened to grasp any loose products of conception. After each grasp the forceps is withdrawn and the product so obtained is macroscopically examined. The procedure is repeated severally until the operator is satisfied that most of the products of conception are removed. A blunt curette is used to loosen and remove these products of conception which are stuck to the uterine wall. This is done by gently inserting the curette into the uterine cavity and gently scrapping all the four walls of the uterus gently. This is done until a gritty sound is made when the uterine cavity is scrapped. Intravenous ergometrine 0.5 mg is given in the process to control any bleeding and to reduce the size of the uterus.

Post-operative care is the same as in the other operations. After the patient has fully recovered consciousness and vaginal bleeding is not excessive, the patient is discharged six hours later. The patient is usually given a course of Capsules ampicillin 250 mg six hourly for one week.

## 2. HYSTERECTOMY (TOTAL):

The abdominal wall is opened either by a subumbilical midline or a low transverse incision. This procedure is similar to one used in caesarian section. The abdominal wound is held open by a self-retaining retractor.

1. The uterus, tubes, and ovaries are examined and mobilised from the surrounding structures. Any adhesion is released.
2. Two haemostatic clamps are placed on the round ligament. The round ligament is divided between the clamps and parametrium is opened. The portion towards the insertion is ligated by No. 2 chromic catgut.
3. Two other haemostatic clamps are placed to enclose the fallopian tubes, ovarian ligament after bluntly dissecting through the posterior leaf of the broad ligament. These structures are divided between the clamps and the proximal portion is ligated like in the round ligament. In this way the ovary is presented. To remove the ovary in the process, the clamps are placed on the infundibulo-pelvic ligament. This is divided and the ovarian vessels in the ligament are ligated by No. 2 chromic catgut.
4. The visceral peritoneum is divided transversely in front of the uterus at the level of utero-vesical reflexion. The bladder is then pushed well down to the lower part of the uterus and vaginal vault. The bladder is pushed down anteriorly and laterally as well so that the ureters are displaced downwards and outwards.
5. Haemostatic clamps are placed on the uterine arteries close and parallel to the uterine wall. This is divided and ligated securely with No. 2 catgut.

A further haemostatic clamp is placed similarly to pick up cervico-vaginal branch of the uterine artery and transverse ligament. This is divided and ligated. These are divided by cutting with a knife directed close and parallel to the uterine wall.

6. Having exposed the anterior vaginal wall and incision is made through it. The cervix is held with vulsellum forceps. The vagina is divided at its junction with the uterus circumferentially using a curved blunt pointed scissors.

7. The vaginal angles and vault are secured by a mattress suture using No. 2 chromic catgut.

8. The peritoneum is closed over the vault with No. 1 catgut. The ovarian, round and uterine pedicles are invaginated during this closure using a continuous suture.

9. The viscera is inspected and abdominal wall closed as described in caesarian section.

10. Except in subtotal hysterectomy for ruptured uterus, we hardly ever perform this operation in elective gynaecological surgery.



CASE NO: I -CARCINOMA OF THE VULVA

Name: N.W.      Age: 70 years      Tribe:Kikuyu      IPNO. 2596-37

HISTORY OF PRESENT ILLNESS: Patient was referred from Kangemi Health Centre of Nairobi City Council. She presented with one month history of itching of the vulva and ulceration, vaginal discharge which was not bloodstained, and pain in the vulva.

PAST MEDICAL HISTORY: Nil significant.

OBSTETRIC AND GYNAECOLOGICAL HISTORY:

Para      7 + 1.

Post-menopausal for many years. She was unable to recall her last menstrual date, date of last delivery or date of menarche.

FAMILY AND SOCIAL HISTORY:

The patient is married and living with her husband. She has seven children alive and well. All the children were grown up.

PHYSICAL EXAMINATION: General examination revealed an elderly lady. She had no pallor or oedema of legs.

VITAL SIGNS: Blood pressure: systolic 120 mm/Hg, diastolic 70 mm/Hg, Pulse 80 per minute, Temperature 37<sup>o</sup>c with a respiratory rate of 20 per minute. Cardiovascular, respiratory, and Central nervous system were normal.

Abdominal examination revealed no hepatosplenomegaly and no ascites.

LOCAL VULVA EXAMINATION:

Large, necrotizing, infected fungating growth on

the vestibule involving the labia minor, clitoris, anterior one third of the urethra, anterior one third of vagina. Leukoplakia on the labia majora. There was marked oedema of the vulval skin with bilateral, fixed slightly tender enlarged inguinal nodes.

#### LABORATORY INVESTIGATIONS:

Haemoglobin 11.9 gm.%, white blood all count  $7.3 \times 10^3$  per cubic millimetre. K 4.0 mEq/co, Na 140 mEq/l,  $1 + \text{co}_3$  27 mEq/l. Urea 2.9mmol/l. Urine analysis normal.

Patient was prepared and taken to theatre for biopsy. A piece of healthy skin, hard tissue and leukoplakic area was excised over labia minora. No. two catgut suture was used to achieve haemostasis. Histology of the biopsy showed inflamed well differentiated squamous cell carcinoma.

#### RADICAL VULVECTOMY AND LYMPHADENECTOMY:

After diagnosis of invasive squamous cell carcinoma of the vulva was established, the patient was prepared for major surgery. Four units of compatible whole blood were made available. The operation was carried out under general anaesthesia. The operation was a one-stage procedure, by two surgeons one on each side.

The drawing on figure I illustrates the skin incision line. Superiorly the incision started just below the superior anterior iliac spine extended, in a semi-elliptical fashion above the mons pubis down to the abdominal aponeurosis. Laterally, the incision included the femoral triangle just above the saphenous opening.

The lateral incision went down to deep fascia of the thigh along labio-crural fold, the incision met one from the opposite side just above the external anal sphincter. The incision was made to include all skin lesions and 2 cm. clear of such lesions. Using blunt dissection, both gauze-covered finger and blunt end of scarpule adipose and cellular tissues were raised. The internal saphenous and its three branches were ligated and divided in the process.

Superficial and deep inguinal nodes were dissected out. The femoral vessels were exposed. The femoral canal was explored and femoral gland dissected out. Iliac nodes were not explored.

The anterior one-third of vagina and urethra were excised, enabling the affected tissue to be removed in one piece.

Haemostasis was achieved and skin closed with No. 1 chromic catgut.

Post-operative recovery:

Continuous bladder drainage was carried out for forty-eight hours. Capsules of ampicillin 500 mg. 6 hourly was given for ten days. Intramuscular pethidine 100 mg. was given 8 - hourly for pain for the first forty-eight hours.

The patient developed wound infection of mixed growth:- Kliebsiella, staph aurens and pseudomonas.



The wound was draining pus freely. The organisms were sensitive to septrin, which was given one gram 12 hourly for ten days. The wound healed.

Histology report showed that the edges of the excised skin contained tumour. Six lymphnodes were identified all had metastases.

Review of the patient one year later showed that she had developed recurrent disease locally and in the pelvis. She had pitting oedema of the legs.

#### DISCUSSION OF CARCINOMA OF VULVA:

Invasive squamous cell carcinoma of the vulva accounts for only 4% of cases of cancer female genital tract. It is so rare that Jeffcoate (1975) states that most gynaecologists probably sees less than fifty cases during their life time.

Despite, this rarity in the female genital tract, it is the most common malignancy of the vulva. It is a disease of old age and occurs most frequently between 50 years and 80 years of age. The mean age is 62 years - Jeffcoate (1975).

SYMPTOMS: The symptoms of patient being discussed typifies symptomatology of carcinoma of vulva. Itching of the vulva of long duration and vulval ulcer either singly or in combination are the leading symptoms. In addition Rutledge, Smith and Franklin (1970) found condyloma acuminata was present in 7% of their 101 patients. Two were suspected to have non-syphylitic granulomatous disease, 13 had either syphilis or history of the disease at one time.

The mean duration of symptoms in their series was ten months.

The commonest sites of the cancer are labium majus and clitoris. Fifty-three percent of cases of cancer of the vulva have involved regional nodes when first seen and five percent of patients show contralateral node involvement when the tumour is situated only on one side of the vulva. In bilateral or midline tumour 35% of such tumour have involved nodes. 43% of impalpable nodes in carcinoma of the vulva are involved when the patient is first seen (Phillip, Barnes and Newton 1977). Earlier Way (1960) had emphasized clinical palpation of superficial inguinal nodes, in pre-operative evaluation of patients with carcinoma of vulva.

Modern treatment follows the recommendations of Taussing (1940), Green et al (1958), Way (1960) who advocate radical vulvectomy with bilateral superficial and deep ilio-inguinal lymphadenectomy as the ideal.

Disaia (1975) has highlighted important points relevant to surgical radicality of the cancer

1. Removal of mons veneries.
2. Excision of sufficiently wide margin around the tumour.
3. Dissection to an adequate depth with removal of all tissues superficial to urogenital diaphragm.
4. Resection of / <sup>neighbouring</sup> structures such as the urethra, anus, even bone if tumour has reached these sites.

Despite their advanced age - operative rate is as high as 80-90% with an operative mortality rate in the region of 2 - 5% (Dewhurst 1976).

The presence of inguinal node metastases is associated with adverse prognosis. In Franklin and Rutledge (1971) series, 53 patients had lymphadenectomy which were negative of tumour and none of these patients died of recurrent malignancy after three to four years. On the other hand only 13 out 33 patients (39%) survived without disease three or more years when lymphadenectomy was positive.

In large series reported, if there are not involved nodes, 5-year survival is 70%, in cases where superficial nodes are involved survival rate is reduced to 55%, and 5 - survival rate is 21% if deep nodes (external iliac) are involved. Way and Hennigan (1966) stated that bilateral superficial inguinal node involvement provided that deep nodes are not involved carries no worse prognosis than unilateral node involvement.

The case being discussed had advanced tumour. All six nodes removed were positive for tumour. It is likely that the deep nodes (external iliac) were also involved. Owing to the recurrent of tumour within one year may suggest that surgery was not radical enough, but certainly is a bad prognostic sign for the patient.



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CARCINOMA OF CERVIX-UTERI-STAGE II B

CASE NO. 2:

Name J.C. IP No. 340771  
RT. No. 8307 - 4963 Age: 40 YEARS.

TRIBE: KALENJIN

History of Present Illness: Patient presented with four months history of per vaginam bleeding which was intermitte but had become continuous over the last two weeks. She had lower abdominal pain which was continuous for three weeks.

Past Medical History: Nothing was significant.

Obstetric and Gynaecology History.

Para 10+0. Last delivery was in 1977. She had had no menstrual period since last delivery as she was lactating. Previously she had regular periods each lasting four days and occurring every thirty days. She had not used any contraceptive device.

Family and Social History: She is <sup>married</sup> / and her husband is a peasant.

Physical Examination: General condition was satisfactory and she was in good nutritional status. She was slightly pale but afebrile. There was no pitting oedema of the legs nor was there any lymphadenopathy.

Cardiovascular, respiratory and central nervous systems were normal. Abdominal examination revealed no hepatosplenomegaly. There was no ascites. Slight tenderness was elicited in the hypogastrium. Vaginal examination revealed a normal external genitalia with a slight oozing of blood from the introitus.

A bulky nodular cervix was felt with a slightly enlarged uterus. This provoked some bleeding and a detailed bimanual examination was deferred until the patient was under anaesthesia. A provisional impression of Carcinoma of Cervix was made.

Results of Investigations:

Haemoglobin 11.3 g PCV . 346. Urea was 18 mg per cent. Electrolytes were normal.

Urine: PH 8 No proteinuria or glycosuria. pus cells 25-50 per high field. No casts or ova. Many epithelial cells were found. No bacterial growth was obtained after forty-eight hours. Chest X - ray was normal.

Intravenous pyelogram showed no hydronephrosis. Patient was given Euradantin tablets 100 mg three times a day for ten days. Ferrous sulphate and folic acid were prescribed in the usual doses. Patient was prepared for examination under anaesthesia (EUA).

E.U.A: Premedication of atropine sulphate 0.6 mg intramuscularly was given half hour before theatre. Patient was anaesthetised and placed in lithotomy position. The vulva was cleaned by antiseptic lotion and was draped. Cystoscopy was done which revealed normal bladder mucosa. Speculum examination showed haemorrhagic ulcerative tumour arising from the cervix and extending to the upper two-thirds of the vaginal. A piece of tissue was taken from the cervical lesion and sent for histology. Digital examination confirmed the above finding and tumour was found to involve the parametrium. Rectal examination revealed that the rectal mucosa was spared, but the parametrium was involved bilaterally, more on the left side than the right.



There was no extension to the pelvic wall. It was stage IIB carcinoma of cervix - uteri.

Result of Histology: Histology No. 8475 confirmed purely differentiated infiltrative squamous cell carcinoma of cervix-uteri.

TREATMENT:

Owing to the above findings, it was considered appropriate to treat the patient by radiotherapy alone. Whole pelvis radiation from two opposing fields (anterior and posterior) of 15 cm by 18 cm was given. Tumour dose of 200 rads was given on each field alternately for twentyeight days delivering a total dose of 4,000 rads. Except for mild diarrhoea there was no adverse reaction to irradiation. This external irradiation was delivered from cobalt 60 apparatus.

On completion of above treatment the patient was discharged and readmitted for intracavitary 137 caesium irradiation after six weeks . Vaginal examination: Vagina was of normal capacity, cervix looked red, non-haemorrhagic, short portio-vaginalis, but no tumour was seen. Rectal examination revealed that parametrium was free of tumour. Large uterine and small vaginal applicators of 137 caesium were inserted to deliver 1600 rads to the rectum and 1400 rads to the bladder.

## DISCUSSION

Carcinoma of the cervix-uteri is the commonest malignant tumour in the female genital tract. In the whole body it is second only to the carcinoma of breast. It is three times more common than carcinoma of the endometrium (Brewer and Decosta 1969).

The cause of carcinoma of the cervix-uteri is unknown. It is, however, highly associated with low socio-economic status operating via various factors. Early age at first coitus and promiscuity, among others, are the major factors. There is a high incidence of infection with herpes simplex virus type 2 in patients with cervical carcinoma (Naib et al 1969). The mean age in Kenya is forty-two years (Ojwang and Mati 1977).

The detection and vigorous treatment of dysplasia and carcinoma in-situ which are pre-malignant and pre-invasive forms respectively will help to reduce morbidity and probably mortality from invasive cervical carcinoma. Fidler (1968) reports that in a population already screened, invasive cervical carcinoma develops at a rate of approximately 4.5 per 100,000, whereas the rate of unscreened population is about 29, per 100,000. Examining the screened and unscreened population, it appears that the program has the potential of reducing the incidence of clinical disease by approximately 85% (Boyes 1969)

Intracavitary irradiation combined with external deep X-ray therapy is the method of choice in treating invasive carcinoma of cervix - uteri (Denhurst 1976). Whereas surgical treatment is possible only in selected cases, most patients seen in Kenyatta National Hospital are too late to operate on. Ojwang and Mati (1978) in their series of 200 cases of invasive cervical carcinoma found that 20 (10%) were stage I 52 (26.5%) were stage II, 112 (55.5%) were in stage III and 16 (8%) in stage IV when they were first seen. In East Africa, the results of surgery alone for the patients with cervical carcinoma are not good. Eikon and Gebbie (1974) reported that two years after treatment all but one of the eight patients treated by surgery alone had died of recurrence of the tumour. Disaia and Co-workers (1975) quotes 2,000 patients treated by radiotherapy alone in a twenty year period; the five-year cure rates were as follows: Stage I 91.5% Stage II a 83.5%, Stage III a 45.0%, Stage III b 36.0%, Stage IV 14.0%. The case being discussed typifies the clinical picture as seen in Kenyatta National Hospital. A highly parous patient at 40 years of age in a low socio-economic group. She presented, what in our circumstances is considered, early. She responded well to treatment.

Evidence available shows that cervical carcinoma is curable provided it is detected early, and correct and adequate treatment is given.



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CASE NO 3: ADENOCARCINOMA OF THE ENDOMETRIUM - STAGE I.

Name: L.O.A.                      Age: 56 Years.                      IP NO. 368289

Sex: Female                      Tribe: Luo.

PRESENT MEDICAL HISTORY:

Patient presented with one month history of vaginal bleeding and slight continuous lower abdominal pain for ten years. Vaginal bleeding was initially intermittent, punctuated with watery bloody discharge.

The bleeding had become continuous but variable in amount one week prior to admission.

PAST MEDICAL HISTORY:

Nil significant except she had lost vision on the right eye since her childhood.

SOCIAL AND FAMILY HISTORY:

Patient was a widow for the last six years. She had five grown up children.

OBSTETRIC AND GYNAECOLOGY HISTORY:

Para 5 + 0. Last delivery 1952. Last menstrual period was ten years prior to admission.

PHYSICAL EXAMINATION:

She had marked loss of weight that bordered on being wasted. Atrophic blind right eye. She had mild bilateral pitting oedema of the legs. No lymphadenopathy and paller were noted.



### VITAL SIGNS:

Temperature 36°C, Pulse 76 per minute, Respiratory rate 18 per minute; Blood pressure systolic 140 mm/Hg. and diastolic 90 mm/Hg. Respiratory cardiovascular and central nervous systems were normal.

Abdominal examination revealed softish mass arising out of the pelvis to twelve weeks pregnant uterus. It was slightly tender and fixed. It was dull to percussion. There was no hepatosplenomegaly and no ascites.

### VAGINAL EXAMINATION:

Speculum Examination:- Atrophic, but normal external genitalia vagina normal.

- cervix was normal - looking
- Bloody watery discharge issuing from the cervical os.

### BIMANUAL EXAMINATION:

Cervix was firm, uterus enlarged to twelve weeks size. It was irregular and firm. It was retroverted and fixed to pouch of Douglas. Adnexae was free and non-tender.

### INVESTIGATIONS:

Haemoglobin 11.1 g/dl

Hct. . 346.

Blood urea Nitrogen 2.7 Umol/L.

Intravenous pyelogram - normal

Chest x - ray was normal

Papanicolou smear was not done as the patient was bleeding.

DIAGNOSTIC CURETTAGE AND EXAMINATION UNDER GENERAL ANAESTHESIA:

Patient had premedication of intramuscular atropine sulphate 0.6 mg. half an hour before theatre. Anaesthesia was induced with sodium pentothal and maintained by nitrous oxide, oxygen and trilene by mask. Patient was placed in lithotomy position. Vulva-vaginal/area was cleaned and draped. Bladder was catheterized. External genitalia was atrophic but normal. Using Auverd's Speculum, vagina was found to be normal, so was the cervix. Bimanual examination revealed enlarged uterus about ten to twelve weeks size. It was irregular and firm. It was retroverted filling the pouch of douglas. Mobility was restricted and adnexae was clear of any masses.

Uterus was sounded to 6 cms., cervix was dilated to Hegar No. 8. Sharp curettage was done covering all the walls of the uterine cavity. Scanty whitish curettings mixed with dark blood were obtained. There was minimal bleeding. Post-operative recovery was uneventful.

Histology Number 2307, was reported to be moderately bulky and haemorrhagic curettings. Microscopically reported to be <sup>s</sup> menstrual products!

In view of the preceding recurrent post-menopausal bleeding, twelve weeks uterine size, carcinoma of the endometrium was considered a likely diagnosis. Total abdominal hysterectomy was decided on and patient advised thus.

Three weeks after diagnostic curettage, the patient was prepared as before, for general anaesthesia. Two units of compatible blood was made available. Anaesthesia was induced as before and endo tracheal tube was inserted with the help of intravenous succinyl choline. Anaesthesia was maintained by oxygen and nitrous oxide and for muscular relaxation curare was given intravenously.

Abdominal wall was opened through subumbilical midline incision. Multinodular uterine fibroids of approximately eight weeks size atrophic ovaries and normal tubes were found. Simple total hysterectomy and bilateral salpingo-oophorectomy was done in the manner described in the introduction. Abdominal wall was closed in layers with silk number I to the skin. Specimen was sent for histology. Post-operative recovery was uneventful.

Histology report number 3105, showed a poorly differentiated papillary adeno-carcinoma of the endometrium. The cervix, ovary and fallapian tubes were normal. No report was mentioned on whether or not there were leiomyoma.

POST - OPERATIVE IRRADIATION: Three weeks after operation,

The patient was started on external pelvic irradiation from cobalt sixty machine. The patient is receiving a daily whole pelvic dose of two hundred rads on anterior and posterior opposing fields alternatively. The field size is 14 x 15 centimetres. It is intended to delivery a total of four thousand rads by external irradiation. It is also planned to have intravaginal 137 Cs at the vaginal vault, six weeks after external irradiation. The patient has so far received two thousand rads and seems to tolerate irradiation well.



## DISCUSSION:

Adeno Carcinoma of the endometrium is second most frequent malignancy of female genital organs. It is predominantly a disease of peri-and post-menopausal age groups. It is so much so a disease of post menopausal women that Morrow, Disaia and Townsend (1973) had this to say and I quote: " Any woman who has postmenopausal **bleeding** without an obvious vaginal or cervical aetiology must be considered to have endometrial cancer until proven otherwise". Endometrial cancer occurs with greatest frequency between the ages of 40 and 60 years with a peak incidence in the 50 to 55 years group (Brewer and Decosta 1969). However Morrow and others (1973) estimate that 5% of the patients are under 40 years of age.

Estrogen - producing ovarian tumours (e.g. granulosa-theca cell group) has been associated with endometrial cancer. 4.8% of the feminizing tumours are associated with endometrial cancer - (Brewer and Decosta 1969). Individuals who are obese, infertile, hypertensive, diabetic and with a history of late menopause have a high incidence of **adenocarcinoma** of the endometrium. However, despite these associations, cause and effect relationship has yet to be established.

Abnormal vaginal bleeding in all age groups is the commonest symptom - (Morrow and others 1973). Post menopausal bleeding of any kind, is a striking event that must never be overlooked or passed off lightly. Abnormal vaginal bleeding during the climacteric should only be assumed to be due to failing cyclic ovarian function after the

necessary examination and investigation have proved negative. As no particular type of bleeding characterises cancer of the endometrium; prolongation of bleeding at menstruation; intermenstrual spotting or haemorrhage during menstrual life, calls for exclusion of endometrial cancer.

Diagnostic curettage is the most accurate method of establishing the diagnosis of carcinoma of endometrium. The occasional error arises where small growths are missed with the curette or pieces selected for section omit the relevant area - Jeffcoate (1975). Morrow and other (1973) - advises that papanicolaou stained cytologic smear, because it is unreliable, should not be used to exclude endometrium cancer but should be performed to evaluate the cervix.

According to Graham (1971) total hysterectomy and bilateral Salpingo-oophorectomy followed by post-operative irradiation is the treatment of choice of carcinoma of the uterine body. In the series he (Graham 1971) reported 31 patients who had hysterectomy and radium in the vagina to have a 5 - year survival rate of 81% or 25 patients. There was no recurrent tumour in the vagina. Three patients died from carcinoma. This contrasted sharply with five-year cure rate with hysterectomy alone. Of 64% or 21 out of 33 patients, vaginal recurrence rate of 12% and death rate from the cancer was 12% of the patients who had pre-operative radium five-year cure rate was 76% or 45 out of 59 patients, vaginal recurrence was 3%, and death rate from the carcinoma was 14% - Graham's patients were stage I Adenocarcinoma of the endometrium.

Progestogens remain a useful adjunct when conventional methods have failed. Progesterone is most valuable where growth is slow-growing, well differentiated and where pulmonary metastasis is present - Dewhurst (1976).

Like all other cancers, the single most important factor in prognosis is the extent of the disease at the time of initial diagnosis. But specific to adenocarcinoma of the endometrium, spread to the cervix, invasion of the myometrium and pelvic involvement adversely affects the prognosis. Where adenocarcinoma is restricted to endometrium alone 95% of patients survive for five years, while five year survival rate is 50% where cervix is involved. (Sall, Sanneblick and Stone 1970).

The patient under discussion presented typically with postmenopausal bleeding, but had primary surgical approach to therapy, total abdominal hysterectomy and bilateral salpingo - oophorectomy on a strong suspicion resulting in histological diagnosis, of adenocarcinoma of endometrium. It is probably stage I G 3.



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MRS. M.N.

AGE: 40 YEARS

TRIBE:

KAMBA

IP NO. 344790

HISTORY OF PRESENT ILLNESS:

The patient presented with continuous moderate vaginal bleeding for two weeks which had got worse two days prior to admission.

She had evacuation two weeks previously for incomplete abortion. The pregnancy was sixteen weeks by dates. She had presented with a history of having spontaneously aborted the evening of the day of admission. She had vaginal bleeding and intermittent lower abdominal pain for two days. When she was examined the features were consistent with incomplete abortion. Uterine size was fourteen weeks, the cervical OS was open and taken up and the adenaxae was clear. At evacuation, normal looking products of conception were removed by ovum forceps and curettage. A cyst on the left anterior vaginal wall was noted. Uterine bleeding subsided and the patient was discharged.

PAST MEDICAL HISTORY: None significant.

OBSTETRIC AND GYNAECOLOGY HISTORY:

Para 12+0. Last delivery was nine years ago. Had been on depo-provera for six years, but abandoned it because she developed high blood pressure.

PHYSICAL EXAMINATION: She was in fair general condition. She had moderate pallor, but no lymphadenopathy. She was not jaundiced either.

VITAL SIGNS: Blood pressure 80/50 mm/Hg.

Pulse 110 per minute; Temperature 36.8<sup>o</sup>c and respiratory rate was 20 per minute. No abnormality was found on examination of the abdomen, respiratory, and central. Nervous systems. Except for low volume and rapid pulse and low blood pressure, cardiovascular system was normal.

PELVIC EXAMINATION: External genitalia was normal. Bimanual examination revealed open cervical OS, bulky uterus and normal adnexae. Vaginal loss of fresh blood was noted. It was decided that the patient should have a repeat evacuation in view of the recent probably inadequate evacuation and physical findings.

The patient was again prepared for general anaesthesia. She was transfused two units of blood. In theatre with the patient under general anaesthesia, pelvic examination was repeated. Speculum examination revealed minimal bleeding from cervical OS. However, two haemorrhagic cystic "2cms by 2cms" lesions were noticed on left lateral anterior walls of the vagina. The former was in the middle third while the later was in the lower third. Planned curettage was not done because the lesions were suspected to be metastasis of choriocarcinoma. There was no adnexal mass palpable at examination under anaesthesia.

The first human chorionic gonadotrophin was estimated to be more than 24 IU. per millilitre and less than 48 IU. per millilitre (The method used was a latex particle agglutination test for detection of HCG in human urine) chest x-ray was done and showed no radiological evidence of metastases. Initial Haemogram results were as follows:-

Haemoglobin 4.9 g/dl.

White blood cell count  $9.4 \times 10^9/L$

Platelets were not done.

On the second day the patient had a massive vaginal bleeding until she went into shock. She was immediately transfused with whole compatible blood. She was given four units of blood. Repeat haemoglobin 7.1 g/dl; white blood cells  $8.1 \times 10^9/L$ . Platelets were 322,000 per cubic mm. She was given another two units of whole compatible blood. Her blood group was A with (D) positive rhesus group. A repeat HCG estimation was more than 48 IU. per millilitre and less than 96 IU. per millilitre. She was given oral methotrexate 5mg. tds for five days. During this treatment she bled again necessitating transfusion of three units of whole compatible blood. The treatment was, however, continued. She stopped active bleeding after the first course of methotrexate, and had another two courses of methotrexate.



with one week treatment free interval after each course; haematological parameters allowing and in the absence of drug reaction. She had haemoglobin, white blood cell and platelet estimation twice a week and human chorionic gonadotrophin estimation weekly.

After three courses of methotrexate human chorionic gonadotrophin estimation showed it had reached non-detectable levels. Pelvic examination revealed that the metastatic lesions in the vagina were shrunken and were not haemorrhagic any more. A repeat chest x-ray remained normal. She had two further courses of methotrexate. After the fifth course, patient developed drug reaction. She developed pharyngitis, vomiting and diarrhoea with a temperature of  $40^{\circ}\text{C}$ . She became very ill indeed. Her white blood cell count had dropped to  $1.7 \times 10^9/l$ ; Platelets count 151,000 per cu.mm and HB 14.2g./dl. Blood slide was negative for malaria parasites, blood cultures grew no organism, and midstream specimen of urine was sterile. No organism was grown from throat swab.

Patient was treated with a course of chloroquine, ampicillin, and intravenous fluids. She had folic acid 3mg. once daily for one week. She recovered over a two weeks period at the end of which WBC ; was  $5.3 \times 10^9/L$ ; Platelets 230,000 per cu. mm; HB 11.6g. /dl. The pregnancy test remained negative.

Owing to the fact that the patient was 40 years old, highly parous, no chest metastasis and that vaginal metastases had completely disappeared; a negative pregnancy test it was decided that the patient should have a total abdominal hysterectomy and bilateral salpingo-coelocectomy.

Patient was prepared for general anaesthesia in the normal manner. Two units of compatible blood was made available with the patient under general anaesthesia, abdominal wall was opened through submilical midline incision. Uterus, ovaries, and tubes were found to be normal. A routine total hysterectomy and bilateral salpingo - oophorectomy was done as described in the introduction. Haemostasis was achieved. Abdominal wall was closed in layers with silk to the skin. Histology of the specimen, showed cystic hyperplasia of the endometrium, otherwise normal uterus; multiple follicular cysts of the ovaries and normal tubes.

Patient recovered from surgery uneventfully.

Post-operatively the patient had three courses of methotrexate 5mg tds. Each course lasted five days with seven day interval between courses with adequate levels of WBC: HB and platelets, post-operatively, pregnancy test remained negative and repeat chest x-ray was normal.

The patient was discharged from the ward. On discharge the haemoglobin was 11.6g.dl. WBC  $5.7 \times 10^9/l$ . and platelet count 214,000 per cu. mm. On follow up in the clinic, pregnancy test remained negative, chest x-ray was normal and clinically there was neither symptom nor sign to suggest recurrence.

## DISCUSSION

Chorio-Carcinoma is an anaplastic tumour composed of syncytiotrophoblast and cytotrophoblast that invade myometrium and cause haemorrhage and necrosis (Li, 1971.) Except for rare cases arising in teratomas, choriocarcinoma is a tumour confined to reproductive period and always follows pregnancy. It may follow ectopic as well as intrauterine pregnancy. About 40% of cases follow hydatidiform mole, another 40% follow abortions and 20% follow normal term pregnancies (Hellman and Pritchard 1971).

The incidence is variable. In north America and Britain it occurs one in 50,000 to 70,000 pregnancies while in the far East it occurs one in 5,000 to 6,000 pregnancies (Jeffcoate 1975). The predisposing factors are low socio-economic status, advanced maternal age, and poor nutrition. (Iliya, Williamson and Azar 1967). Iliya and co-workers found that consanguinity was common in the marriages whose pregnancies choriocarcinoma subsequently developed. This high incidence they explained by the probable remarkable degree of compatibility between tissues of mother and fetus.

The interval between pregnancy or a molar pregnancy or otherwise and overt choriocarcinoma may be as long as five years or more, but it is usually less than two years. Since the primary growth is in the uterine wall, the commonest presentation is irregular uterine bleeding sooner or later after expulsion of a mole or abortion or a normal pregnancy (Jeffcoate 1975). Symptoms may also arise from secondary sites. In the lungs where metastasis is found 75% of the cases, dyspnoea, cough and haemoptysis, may be the presenting symptoms. Vaginal metastasis occur 50% of the cases and bleeding from such sites may not be possible to distinguish from uterine bleeding by history alone.

The Diagnosis of choriocarcinoma is made on history, symptoms and signs which reflect the behaviour of the tumour.



Tissue diagnosis is usually not sought as surgical interference encourages haematogenous dissemination of growth. In cases where tissue is available, however, the most important diagnostic features of choriocarcinoma is the absence of avilous pattern. According to Li (1971) Chorionic gonadotrophin is a sensitive diagnostic index as well as an accurate monitor for progress of the disease. Rate of chorionic gonodotrophin excretion is used to decide whether or not treatment should be carried out. However, the technique for early diagnosis do not readily distinguish between potentially fatal proliferations and those which regress spontaneously (Bagshawe 1969). In about 80% of cases trophoblastic activity is not detectable by sixty days after evacuation of a mole, and 90 to 95% is negative by 250th day. One in three patients whose pregnancy tests are positive more than three months after evacuation of a mole have chorio-carcinoma, (Bagshawe 1969). Based on such evidence Brewer (1968) advocated treatment for all those patients who can be shown by a sensitive essay method to be excreting chorionic gonadotrophin when uterine cavity is empty sixty days after expulsion of a mole.

Chorionic gonadotrophin among other things, choriocarcinoma. Bagshawe (1969) stated that postmolar choriocarcinoma with an initial excretion of human chorionic gonadotrophin higher than one million International Units per twenty four hours always proved fatal. But according to Jones and Lewis (1974) most important prognostic criteria was the site of metastasis. Patients with brain or liver metastasis were at extreme risk even when adequate therapy and supportive care were given.

Chemotherapy is effective treatment of trophoblastic disease. Untreated metastatic choriocarcinoma, the mortality is 90%. Complete disappearance of an authentic and metastatic choriocarcinoma is less than 1% (Li, 1971). Brewer, Gerbie, Dolkort, Skom, Nagle, and Torok (1964) said that chemotherapy should be given in short intensive courses. The dosages of the agents employed should be maximum that are tolerated by the patient. One course should follow another just as soon as the toxic effects have abated.

According to the response to treatment, Ross, Goldstein, Hertz, Lipsett and Odell (1965) divided the patient into a low and a high risk group. For low risk, the criteria was:-

- (1) Inital titre of less than human chorionic ganadotrophin of 100,000 I.U. in twenty four hours.
- (2) Apparent onset of disease within four months of initiating chemotherapy.
- (3) metastasis were limited to the lungs or pelvis.

For this group a single agent is employed. Present practice has been to start treatment with methotrexate, unless there is evidence of impairment of renal or hepatic function or previous failure of methotrexate therapy. However, high risk patients such as those cases with HCG titre more than 100,000 International Units per 24 hours; hepatic or cerebral metastasis, and resistant to single chemotherapy, triple therapy as advocated by Li (1971). Jones and Lewis (1974) used a combination of therapy as advocated by Li in high risk group. They had 71.4% of 39 cases in the high risk group 80% of these went into remission. Lewis (1972) had 13 high risk cases, 11 (85%) went into remission using Li's triple therapy of methotrexate; Actinamycin D and chlorambucil. This same author (Lewis) reported 95-100% remission in cases of low risk group which is keeping with many other authors.

Hysterectomy alone is not the treatment of choice in patients with metastatic choriocarcinoma. Lewis (1966) quoted by Dewhurst (1975) said that the major role of surgery is to combat the complications temporarily in order to allow the patient to live long enough to respond to chemotherapy. For early diagnosis of choriocarcinoma and for monitoring the response to treatment, the method used to detect chorionic gonadotrophin must be sensitive and specific. Owing to cross reaction of human chorionic gonadotrophin and pituitary luteinizing hormone in both bioassays and most radioimmunoassays, one must be able to measure ganadotrophin activity down to the level where it could be accounted for by pituitary luteinizing hormone before one can say there is no evidence of increased human chorioanic gonadotrophin due to tumour.



Complete remission as defined on the basis of HCG titre is achieved where a woman has three consecutive weekly HCG levels in a range consistent with pituitary origin. When this range is achieved, it carries definite prognostic significance (Lewis 1972).

In Kenyatta National Hospital we are currently using gravindex slide test for pregnancy which is a qualitative and semi-quantitative test for the detection of human chorionic gonadotrophin in urine. It is a latex particle agglutination inhibition test and employs two reagents:-

- (a) Anti - HCG serum produced in rabbits and
- (b) latex particles coated with HCG.

It is standardized to detect 3.5 International Units of HCG per ml. of urine (IU/ML).

The case being discussed developed choriocarcinoma soon after abortion. The time interval was so short that it is likely that choriocarcinoma was present during pregnancy and that it was missed during first evacuation. The significance of a cyst in the left anterior vaginal wall was overlooked. The patient was classified as low - risk according to Ross's criteria. She developed choriocarcinoma within four months after abortion. She had no detectable chest, liver or brain metastasis. She had HCG titre of less than 100,000 I.U. per twenty four hours. Assuming that she would have passed 1.5 litres of urine in twenty four hours, the theoretical HCG excreted would still be less than (48 I.U. x 1500 ml.) 70,000 International Units in twenty four hours. She was forty - years old and had twelve children alive and well. She did not want any more children. There was a significant chance of recurrence of a choriocarcinoma in the uterus despite persistent negative pregnancy test. Hysterectomy was considered a necessary adjunct to therapy to eliminate the small chance of uterine recurrence.



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CASE NO. 5:

UTERINE FIBROIDS:

Name: P.A.

Age 50Yrs.

IP NI. 2685-62

Tribe Luo

HISTORY OF PRESENT ILLNESS: Patient was referred from Mathare Mental Hospital with a history of heavy menstrual loss and lower abdominal swelling of unknown duration.

OBSTETRIC AND GYNAECOLOGY HISTORY:

Patient had no children. She was unable to remember whether or not she had been pregnant. Her menstrual history could not be ascertained.

PAST MEDICAL HISTORY:

The patient was suffering from schizophrenia and had been in Mathare Mental Hospital for 10 years.

SOCIAL AND FAMILY HISTORY: She had no husband.

PHYSICAL EXAMINATION:

General condition was satisfactory. There was no pallor or lymphadenopathy.

VITAL SIGNS: Blood pressure 110/70mm/Hg. Pulse 80 per minute. Temperature 36.7°C. Respiratory rate 20 per minute.

Respiratory, cardiovascular, and central nervous systems were normal. On abdominal examination, a mass arising out of the pelvis to fourteen weeks pregnant uterus was found. The mass was irregular, firm and non-tender. It had restricted mobility. There was no ascites and no hepatosplenomegaly.

PELVIC EXAMINATION

External genitalia was normal. Speculum Examination - vagina was normal. The cervix appeared healthy. Had menstrual flow. ~~from~~ the cervical Os.

BIMANUAL EXAMINATION: Uterine mass of about fourteen weeks size. Adnexa were slightly thickened, but not tender.



### INVESTIGATION:

Papanicolou smear class **II**. Trichomonas was seen and treated with a course of metronidazole. Haemoglobin: 9.9gm. per 100 ml. Packed cell volume: 35.4%.

Mean Corpuscular Haemoglobin concentration - 28.7%.

Peripheral film: microcytic and hypochromic anaemia. It was suggestive of iron deficiency anaemia.

TREATMENT: The consent for operation was given by psychiatric consultant who referred the patient to Kenyatta National Hospital. The patient was transfused two pints of blood. Post-transfusion haemoglobin was 12.1 g / dl.

She was prepared in the normal way for general anaesthesia. Two units of whole compatible blood was made available.

Under general anaesthesia, the abdominal wall was opened through Subumbilical midline Incision. The uterus had multiple fibroids of various sizes.

There were minimal adhesions in pouch of Douglas and around the ovaries. A routine total hysterectomy and bilateral salpingo-oophorectomy as described in the introduction, was carried out. Haemostasis was achieved. Vaginal vault was repaired and visceral peritonization was carried out. Abdominal wall was closed in the normal way. Blood loss was estimated to be a 400 ml.

The post-operative recovery was uneventful.

Histology of the specimen obtained at operation was as follows:- Fallopian tubes, ovaries, cervix and endometrium were reported normal.

Uterine leiomyoma was confirmed. The patient was reviewed in outpatient clinic six weeks later and apart from her mental ailment she was well.

## DISCUSSION:

Uterine myomas, better known as "fibroids", are the most frequently occurring **benign** tumours of the uterus. Novak (1967) says that autopsy studies show that a considerable proportion of about 20% of women over 30 years have uterine myoma of various sizes, often without symptoms. Symptoms are often present between the ages of 35 and 45 years. Negroes race are more frequently affected than other races - Jeffcoate (1975).

Myomas frequently occur without symptoms. Rubin and Ford (1979) found that menorrhagia was a leading symptom and was present in 75% of the patients with fibroids. Menorrhagia commonly attributed to submucous fibroid occurred in less than 50% of the cases who had submucous fibroid. 63% of the cases had lower abdominal pain. 30% had dysmenorrhoea. 75% of the cases had pelvic sepsis and they attribute most local symptoms related to fibroids to be due to the associated pelvic sepsis. He found in their series that 29 patients were nulliparous, 19 were para 1+0 and 25% were para 2+0 or more. They suggest that fibroids may not be a dominant factor (as is usually claimed) in the production of infertility. Abdominal swelling is a common method of presentation which may be noticed by patient or an incidental finding on physical examination.

The mechanical interference with the delivery of the fetus is encountered more often in myomas than interfering with the ability of the patient to conceive. When implantation does occur there is increased incidence of abortion in patients with myomas especially submucous or polypoid. Nonetheless, that multiple huge tumours are compatible with and do not interfere with maintenance and normal completion of a gestation. (Brewer and Decosta 1969). Sarcomatous change is **rare**. An incidence of 0.13% or 1:800 cases were reported by Blaustein (1977).

Persaud and Arjood (1970) reported 298 cases of leiomyomata. They found 63% with hyaline changes, 13% myxomatous, 8% calcification, 6% mucoid, 4% cystic, 3% red degeneration; 3% fatty degeneration and 0.7% sarcomatous change.

Brewer and Decosta (1969) outlined factors which should be considered before a decision is made to treat or not to treat uterine myoma: 1, presence of symptoms and their severity, 2, future risk the patient may undertake because of the tumour 3, presence of co-existing lesion(s) that require treatment.

The type of treatment depends on the age of the patient and desire for pregnancy. Her ability to conceive and consummate a gestation will affect her treatment.

Whereas many patients with uterine fibroids may require reassurance and regular observation to detect subsequent enlargement, a good number will require operation to relieve their symptoms. Dewhurst (1976) says that in the presence of symptoms and uterine size is equal to, or larger than a sixteen week pregnancy, surgical treatment is indicated. Dewhurst in such instances advocates hysterectomy in view of the facts that symptoms will be permanently relieved and non-recurrence of uterine myomas. In a young patient myomectomy is the operation of choice provided the tubes are patent. The patient under discussion was in postmenopausal age group and total abdominal hysterectomy-salpingo-oophorectomy was the treatment of choice, her mental state aside.

The conservative management of a patient with menorrhagia approaching her menopause, with the hope that the cessation of ovarian function will soon relieve her symptoms is misplaced. Such hopes should be abandoned in favour of hysterectomy. (Soffcoate 1975)



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A small uterus was felt separate from the pelvic mass which was thought to arise from Right adnexae. Left adnexae was free. No palpable mass was felt in Cul-de-sac. Per rectum revealed no abnormality.

Results of Investigations:

- Haemoglobin 12.4 gm. per 100 ml.
  - White blood cell count  $2 - 8 \times 10^3$  per ml.
  - Papanicolou Smear Class I.  
of urine,  
Mid stream specimen/was normal. Mantoux was negative.
- Chest X - ray showed no radiological abnormality  
Urea and Electrolytes were normal.  
A provisional diagnosis of ovarian cyst was made.

TREATMENT:

Patient was prepared for laparotomy. Two units of compatible blood were available. Premedication of atropine sulphate 0.6 mg intramuscularly was given half an hour before theatre. Anaesthesia was induced by sodium pentothal and maintained by nitrous oxide and oxygen. A long acting muscle relaxant was given.

Laparotomy: The abdomen was opened in layers through a right paramedian incision. Small amount of straw-coloured fluid in the peritoneal cavity. A well encapsulated cyst free and mobile was found arising from right ovary. It was so big that the incision had to be extended above the umbilicus. The cyst was twisted at its pedicle but not strangulated. The uterus was free, mobile and normal in size. Left ovary was atrophic. Omentum was normal. There was no evidence of peritoneal seedlings.



Despite the fact that the incision had been extended, the cyst was too big to deliver from the abdomen. To enable delivery of the cyst, about five litres of chocolate coloured fluid was drained taking care that there was no spillage into peritoneal cavity. The cyst was untwisted and oophorectomy was done. This was immediately followed by total hysterectomy and bilateral salpingectomy and unilateral oophorectomy. Haemostasis was achieved. All the specimens were sent for histology. Blood loss was minimal. The abdomen was closed in layers with silk No. 1 to the skin and wound dressed.

Post-operative period was uneventful and patient recovered completely and was discharged on the ninth day after operation.

Histology showed a 170 cm. cystic granulosa - theca cell tumour. Sections of the uterus showed feature of leiomyoma. Endometrium was atrophic. Cervix was normal. The contralateral ovary was normal.

#### DISCUSSION:

Granulosa - theca cell tumours comprise 1.6 to 3% of all ovarian tumours and 1% of all ovarian cancers (Dinnerstein & O'LEARY 1968). Half of primary cases are postmenopausal women while 5 - 10% occur before puberty. The median age is forty-two years.

Symptoms are caused by size, pressure or endocrine function or a combination of these. It seldom invades adjacent organs. Menstrual irregularities or postmenopausal bleeding occur in about two-thirds of the patients. Norris and

(1968) in reviewing 203 patients with granulosa-cell tumours found 24% with post menopausal bleeding, four patients had precocious pseudopuberty, 27% had pelvic or lower abdominal pain, 24% had menorrhagia, 22% had metrorrhagia or vaginal spotting, Amenorrhoea occurred in 15%, 7% were asymptomatic. Anderson's et al (1971) series 20% had history of breast complaint. Previous history of breast tumour preceded the diagnosis of the ovarian tumour in three cases. Owing to sparse connective tissue granulosa - cell tumour is liable and frequently ruptures. It is considered to be the major neoplastic cause of intraperitoneal haemorrhage (Simmon and Sciarra 1967).

Owing to endocrine function of the granulosa - theca cell tumours, it is now recognised that there is increasing risk of proliferative endometrial disease after menopause. This is particularly apparent for prevalence of cancer and its precursors as shown in Table I below by Gusberg and Kardon (1971) in their series.

Table I Theca - granulosa Cell tumours.

<u>Endometrial Histology</u>	<u>Premenopause</u>	<u>Postmenopause</u>
	<u>%</u>	<u>%</u>
Adeno Carcinoma	12.5	24
Carcinoma - in - situ	3.0	5.0
Adenomatous hyperplasia	31.25	42.0
Cystic glandular hyperplasia	18.75	12
Normal (proliferative, )	34.5	17.0
Secretory, atrophic )		

It is now generally agreed that at least 25% of these tumour will recur and many of these will appear five years or more after treatment of primary **tumour**. Widespread dissemination is unusual and almost all early metastasis appear within the peritoneal cavity. This is contrary to initially held view of the benign nature of the tumour. That view confirm that well capsulated lesions indeed recur (Simmons and Sciarra, 1967). However, the metastasis is slow-growing and amenable to resection.

The treatment of primary lesion should aim at prevention of recurrence. In view of the foregoing and in view of the fact that prevalence of pre-and concevous lesions is high in postmenopausal patients the treatment should include



total abdominal hysterectomy and bilateral salpingoophorectomy. In case of recurrence, a second look laparotomy and resection of the tumour is advocated. This should be followed by post-operative irradiation. Tumour shrinks with irradiation. There is, however, little evidence concerning the effectiveness of hormonal or chemotherapy.

From large series the mortality rate vary from 8% to 28%. However, five year survival rate in those large series vary from 68 - 84% irrespective of the age of the patient.

The case being discussed was postmenopausal and operative findings of a well - capsulated ovarian tumour of a large size tend to agree with the findings of other workers. Had she presented with postmenopausal bleeding, the pre-operative suspicion of granulosa-theca on tumour would have been stronger.

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7 BENIGN CYSTIC TERATOMA OF THE OVARY.

Name: D.G.                      Tribe: Luhya.                      Age: 22 years.

IP NO. 200409.

HISTORY OF PRESENT ILLNESS:                      The patient presented with one year history of slight continuous lower abdominal pain and progressive lower abdominal swelling for one year.

PAST MEDICAL HISTORY:                      Nil significant.

OBSTETRIC AND GYNAECCOLOGY HISTORY: Para 1 + 0. Last delivery was three years prior to presentation to the clinic. Her menarche was at sixteen years of age. Last menstrual period was on November 25, 1977 for four days. She had regular menstrual period, each lasting three to four days every twenty-eight days. She has had no pain associated with menstrual period and no intermenstrual discharge. She had never missed her period. She has not used any contraceptive.

SOCIAL AND FAMILY HISTORY:                      She is a married housewife.

PHYSICAL EXAMINATION:                      Her general condition was satisfactory. There was no pallor nor lymphadenopathy. Cardiovascular, respiratory and central nervous systems were normal.

VITAL SIGNS:                      BP 120/70 mm/Hg, Pulse 78 per minute, Temperature 36.5°C, Respiratory rate 18 per minute.

ABDOMINAL EXAMINATION:

                    Showed a freely mobile, non-tender, well defined, partly cystic and partly solid mass. The mass was about six centimetres in diameter. The mass was situated in the hypogastrium.



#### PELVIC EXAMINATION:

External genitalia was normal. Speculum examination showed normal looking cervix and vagina was normal. On bimanual examination the cervix was firm and uterus was normal size and anteverted. There was a cystic mass on the left adnexae, mobile and non-tender. The mass was separate from the uterus. Provisional diagnosis of ovarian cyst was made. She was advised that her illness required surgery.

#### INVESTIGATIONS:

HB 13.7 g/dl.

PcV .422

Papinicolau smear class I.

The patient was prepared for general anaesthesia. At laparotomy using pfannenstiel incision to open the abdominal wall, a large mobile cystic left ovarian tumour about 15 centimetres in diameter was found. Both tubes and uterus were normal. Right ovary was normal. Cystectomy was done through a plane of cleavage leaving behind normal ovarian tissue which was repaired by 2/0 catgut. Haemostasis was achieved. Abdominal wall was closed in layers with catgut no. 1 to the skin. The specimen removed was sent for histology.

Histological report showed a directed chronically inflamed benign cystic teratoma.

On review of the patient in the gynaecological clinic the patient had no complaints and was discharged.

## DISCUSSION:

Benign cystic teratoma is one of the most common ovarian germ cell neoplasms and accounts for over 95% of all ovarian teratoma. It accounts for 10% of all ovarian neoplasms. It is the most common ovarian neoplasm of childhood. 85% of the tumour is removed in patients between 16 years and 55 years of age. The remainder occurring in postmenopausal women. About 12% of teratoma are bilateral. They are slow growing and seldom attain a size greater than 16 centimetres in diameter. The average size is 8 centimetres. Blackwell, Dochety, Marsson, and Mussey (1964) found in their series of 225 consecutive cases that tissues derived from ectoderm was evident in 100% of cases, mesoderm 93% and Endoderm 71%.

Benign cystic teratoma is often discovered as an incidental finding on physical examination. However, Blaustein (1977) reported frequency of symptoms to be as follows: Abdominal pain 47.6%. Abdominal mass or swelling 15.4%, Abnormal bleeding 15.1%. Decreased fertility has been uterine observed even though 10% of the cases occur during pregnancy. Altered Physiology of menstruation is not however a characteristic symptom of adermoid cyst of the ovary. Preoperative complications occurred in 15% of 225 cases of Blackwell and others (1946). Twisted pedicle of the cyst was commonest complication. Torsion is commonest during pregnancy. Torsion tends to predispose to rupture. Rupture, in itself is uncommon, but tend to be common during pregnancy.

When torsion occurs, the abdominal pain which is usually an ache changes to sharp pain. Malignant change is rare and is reported to be under 2% and is often squamous cell carcinoma.

The treatment of choice for uncomplicated benign cystic teratoma is the excision of the affected ovary. In young patients, however, with small tumour, conservation of a part of the ovary is possible excision of the tumour may be adequate treatment. Local recurrences following conservative treatment for benign teratoma are very rare and occur in less than 1% of the cases - Blainstein (1977).

The patient being discussed typically presented and being young, low parity, uncomplicated small tumour, excision of tumour with conservation of normal part of the ovary was considered as the appropriate treatment.



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CASE NO. 8 : SEPTIC ABORTION

Name: J.W.M.      Age: 21 years      Tribe: Kikuyu

IT. NO. 298954.

History of Present Illness:

Patient presented with a history of abdominal distention, vaginal discharge three days prior to admission. She also gave a history that she had aborted a week prior to admission but had not sought medical help. She was constipated for three days. Had nausea but not vomiting. She also gave history she was passing very little urine.

Past Medical History:    None significant.

Obstetric and Gynaecology History:

Para 2 + 1. Last delivery was five years prior to admission. Last menstrual period was June 3, 1978, giving her anenceuhaea for twenty-two weeks. She had regular cycles previously, each menstrual period would last three to four days and occurred every twenty-eight days. She had menarche at fourteen years of age. She had never used any contraceptive device.

Family and Social History:    She was a married patient who works as an enrolled nurse.

Physical Examination:

She was a very ill-patient with marked pallor and deeply jaundiced. She had no pitting edema of legs nor lymphadenopathy.

Vital Signs: BP 110/70 mm Hg, Pulse 128 per min, Temperature 39°c, Respiratory rate 24 per min.

Except for the above findings respiratory and cardiovascular systems were normal.

She was stuporous, otherwise her central nervous system was normal. Her abdomen was distended. There was generalised tenderness with guarding all over the abdomen. It was **tympanitic** to percussion and bowel sounds were reduced. There was no visible peristalsis. No hepato splenomegaly and no evidence to suggest ascites.

Pelvic Examination:

External genitalia was normal. Profuse foul-smelling yellowish vaginal discharge. Cervix was open. Adnexae was exquisitely tender. Uterine size could not be ascertained because of tenderness. Touch of Douglas was bulging with a boggy tender mass.

Provisional diagnosis of Septic abortion complicated by pelvic abscess and generalised peritonitis. The patient was started on intravenous crystalline penicillin 2 mega units six-hourly and intramuscular streptomycin Gentamycin 80 8-hourly. Intravenous line was established with 5% dextrose.



Investigations:

Haemoglobin 11.3 gm %

White blood cell count  $23.8 \times 10^9$  / L.

Urea 30 mg per litre

Sodium 135 mEq per litre

Potassium 4.3 mEq per litre

Bicarbonate 18 m Eq/litre litre.

High vaginal swabs -- grew gram negative bacilli  
anaerobic bacteroides were grown.

Blood cultures had no bacterial growth three  
times.

The patient had antibiotic therapy for twenty  
four hours. Evaluation of the patient showed that  
the temperature was  $37.6^{\circ}\text{c}$ , pelvic and abdominal  
findings were the same as before. Urine output was  
700 ml. It was then decided on  
surgical intervention.

The patient was prepared for general anaesthesia.  
Patient was placed in lithotomy position, vulval  
toilet was done and examination was carried out. The  
findings confirmed the previous findings with a  
bulky uterus. Using ovum forceps and curettage  
foul-smelling products of conception were removed.

Abdominal cavity was explored through a right  
paramedian incision. Large amounts of foul-smelling  
pus was drained from pouch of Douglas and subphreonic  
spaces. Amount was about 1250 cc.

There was evidence of generalised peritonitis with filmy adhesion of small bowel, with loculi of pus which was drained. Both fallopian tubes were thickened and distended with pus. Pus was drained through the fimbrial end of Right tube. Left tube was opened at the distal end through which thick yellow pus was drained.

Uterus was covered with thick filmy yellow pus, but was found to be intact. Whole abdominal cavity was washed with rificin in warm normal saline. Two long, wide corrugated drains were inserted into pouch of Douglas, both paracolic gutter, with distal ends passing through stab wounds in both iliac fossae. Abdominal wall was closed in three layers with silk to skin. Three tension sutures were inserted.

Post-operative Period:

Immediate post-operative recovery was stormy. The general condition was poor, with moderate pallor and mild jaundice. She was tachypnoeic with a respiratory rate of 80 per min, pulse 120 per min. Blood pressure 100/70 mm Hg. Patient was transferred to intensive care unit for close monitoring and supportive therapy.

MANAGEMENT IN INTENSIVE CARE UNIT:

1. Antibiotic Therapy: Intravenous crystalline penicillin 2 mega Unit 6 hourly and intramuscular Garanycin 80 mg 8 hourly was continued. Dalacin 300 mg shorly intramuscularly was added on after bactericidal species had been isolated from the pus swab.
2. Hydrocortisone: IV Hydrocortisone 2 mg stat Solu-medrol intravenously 125 mg 6 houly was given in the first twenty-four hours.
3. Analgesia; Pethidine 75 mg intramuscular was given 6 hourly in four doses. IM Dolc Adamon ivial was given after pethidine doses were over.
4. Nasogastric suction was carried out 300 ml. was obtained in the first twenty-four hours, then progressively decreased to 0 on the fifth day.
5. Urine Output was 450 ml on a day 1 - post-operatively. 970 ml of urine was obtained on day two post-operatively.
6. Blood gases done in the first twenty-four hours 12 hrs apart were 1st. PH Po2 PCO2 So2 HCO3 BE  
7.520 140 20 99. 16 - 45. respectively.  
Haematocrit was 40% Kt 3. 8 MEq/Litre and  
Nat 140 mEq l L.

Repeated blood gases results.

PH 7. 520, PCO2 28, Po2 100, So2 985 HCO3  
22, Base excess + 1 Haematocrit 40%.



Patient never developed hypotension. After 48 hours, the condition of the patient had improved. Urine output plus insensible loss was 1,970 ml. after intake of 2400 ml. giving a positive balance of 400 c.c. Temperature had settled down to 37°C and blood pressure was maintained. Renal function with Urea 20 mg% and normal potassium of 3.8 mEq/litre and urine output of 970 was considered reasonable. Patient was transferred back to the ward.

Drains were shortened on sixth day post-operatively and ultimately removed on the seventh day. All stitches were removed on the tenth day post-operatively and patient was well and discharged.

She was reviewed four weeks later in the outpatient clinic and found to have no residual pelvic masses.