CASE RECORDS AND COMMENTARIES IN

OBSTETRICS AND GYNAECOLOGY

SUBMITTED BY

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FOR THE EXAMINATION OF MASTERS OF MEDICINE IN THE

DEPARTMENT OF

OBSTETRICS AND GYNAECOLOGY OF THE

UNIVERSITY OF NAIROBI

MARCH 2004

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DEDICATION

To my parents, Kirwa Arap Mosbei and Leah, my uncle Daniel for their love, and inspiration to take medicine as a carreer. To my wife Dorcas and my children Brenda and Tevin for bearing with my long absence during my studies. My brothers and sisters who all along supported me to achieve my goals.

ACKNOWLEDGEMENT

Thanks to God for all the things He is given us.

I would like to thank all the consultants, lecturers, senior registrars and my fellow registrars in the dept of obstetrics and gynaecology for their dedication and commitment to see that I achieved the necessary knowledge and skills during my training at the University of Nairobi.

I would also like to express my sincere gratitude to my supervisors, Dr Zahida Qureshi and Dr Wasike Charles for their tireless efforts to see that my proposal and long commentaries were properly written by offering experts advice and guidance and also making very meaningful critique of the long commentaries and the short cases.

I express my gratitude to those many friends who believed in me and encouraged me to keep going.

Special thanks to Dr Oyieke,the chairman, Dr Karanja, Dr Omondi Ogutu, Dr Wanjala SHM,Dr Ndavi, Dr Koigi Kamau, and Dr Machoki for their wise counsel during days of my training. I am also greatful to Prof Kigondu for the assistance she gave on my obstetric long commentary.

I thank the ethical committee of Pumwani Maternity Hospital and the medical superintendent for allowing and facilitating my data collection for my obstetric commentary, and to the medical superintendent of the Rift Valley Provincial hospital for allowing the same for my gynaecologic commentary.

I wish to thank Mr. Boaz of NASCOP and Ben for statistical analysis of my data and Jackie for typing most of this work.

Last but not least I would like to thank the staff and management of Valley hospital Nakuru who encouraged and supported me through out my training, and to anyone who in one way or another assisted me in the long journey of live.

DECLARATION

This is to certify that the case records and commentaries presented in this book are my original work and were managed by me under the supervision of the senior members of the department of obstetrics and gynaecology, Kenyatta National Hospital

DR KIRWA PHILIP KIPTANUI

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SIGNATURE : .....

DATE : 8/3/04.

CERTIFICATION OF SUPERVISION

This is to certify that the long Commentaries in this book by were researched upon under our guidance and supervision and that this book is submitted with our approval.

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This is to certify that Dr Kirwa managed obstetric cases 2, 9,15 and gynaecology cases 3,9,14 under my supervision at Kenyatta National Hospital

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INTRODUCTION

KENYATTA NATIONAL HOSPITAL

Kenyatta National Hospital (KNH) is situated in the capital city of Kenya, Nairobi, about 3.5 kilometres from the city centre. It was started in 1901 as the Native Civil Hospital. It serves as a national referral centre as well as serving the population within and around the neighbouring countries of East and Central Africa as well as from parts of the Horn of Africa.

It is currently administered as a state corporation by a parastatal board established in 1986 by an Act of parliament. It is a training centre for undergraduate and postgraduate students from the College of Health Science of the University of Nairobi. It also training centre for Clinical officers, Nurses and other paramedical staff from the Kenya Medical Training College. The hospital is housed in a 10 storey-building complex with extensions or wings that serve as outpatient clinics, casualty unit, theatres and laboratories.

OBSTETRIC AND GYNAECOLOGIC UNIT

Obstetric Services

The Obstetric unit of Kenyatta National was commissioned in 1965. Initially it catered for about 1,500 deliveries per year but currently it caters for about 8,000 deliveries annually. Outpatient services are provided at clinic number 18 which include antenatal screening and follow up, adolescent clinic, Gynaecology outpatient clinic, and fertility clinic, as well as family welfare clinic (clinic 66) and casualty department.

The in-patient department is comprised of labour ward, lying-in wards, neonatal unit and mothers hostel. This is divided into three Firms; each headed by a senior consultant Obstetrician and Gynaecologist, and senior Registrars,

Registrars, Interns, Nurses and paramedical staff. The consultants and senior Registrars are from both the University of Nairobi and Kenyatta National Hospital. The department utilizes the Kenyatta National Hospital laboratories and departmental laboratory, which also serves other University departments and whose facilities include Radioimmunoassay, cytology, Semen-analysis, surfactant bubble test, glucose tolerance test, Bilirubin spectro-photometry and chromosomal analysis.

The Casualty Department

This has a receiving area for all Obstetrical and Gynaecologic emergencies. A medical officer under the supervision of senior members of staff screens all patients and admits those requiring emergency admission. Others are treated and discharged home, while those who require specialized consultation are referred to the relevant clinics.

Antenatal Care (ANC)

Selection of patients with high risk factors in pregnancy and booking of mothers who wish to be followed up at Kenyatta national Hospital is done at the Monday morning Antenatal care booking clinic by each of the three Firms alternately. Midwives who record personal history, obstetric history and medical or surgical history first interview the patients. Height measurements, weight, blood pressure and urinalysis are carried out on every patient. A senior Registrar reviews all the patients and makes selection of high-risk patients for closer follow-up in the ANC. The high-risk mothers are selected according to the following criteria.

1. Primigravidae, especially those who are teenagers, elderly, short or have pelvic deformity.
2. Grand multiparity (Para 5 and above)

3. Bad obstetric history (BOH). These include recurrent abortions, previous stillbirth and neonatal deaths.
4. Previous obstetric complications. These comprise post partum haemorrhage, uterine rupture, and obstetric fistulae.
5. Medical conditions complicating pregnancy: Anaemia, Diabetes Mellitus, thyroid diseases Renal disease, Cardiac disease and Deep and Deep venous thrombosis (DVT)
6. Previous operative delivery: caeserian section, vacuum extraction
7. Others: Rhesus incompatibility, multiple gestation and prolonged relative infertility period.

The patients are required to pay a deposit for them to be followed up in this clinic. Booked patients get investigation forms completed for antenatal blood profile, which includes haemoglobin concentration, serology test for syphilis and Human Immune deficiency (HIV) and blood grouping. The patients are councelled by trained councellors before and after HIV testing. The phlebotomist at the routine laboratory takes the blood specimens. They are clerked by the senior house officers, who record medical, Gynaecologic, Obstetric and family history.

Antenatal follow-up

The patients are seen four weekly up to 28 weeks gestation, two weekly up to 36 weeks then weekly until delivery. Each patient is treated on her own merit, and may be seen more often when necessary. Medical personnel in appropriate clinical discipline give health education lectures to the patients in the antenatal clinic. This is done the first thing in the morning when the patients report to the antenatal clinic. Emphasis on better nutrition, the importance of regular clinic attendance, psychological and factual preparation for labour and delivery, post natal care and the need to make family planning decisions in the antenatal period.

At each visit the following items are carried out:

1. The patient is weighed and the weight gain since the last visit is calculated
2. Blood pressure is taken, recorded and compared with previous readings
3. Urine specimen is examined for proteins, sugar and leucocytes.

The mothers are then ushered into examination rooms where the Senior House officers question the patient regarding symptoms and changes related to previous treatment. The abdomen is examined at each visit together with general physical examination. The fundal height is noted ant the rate at which the uterus is enlarging is assessed. The foetal heart can be heard with the Pinnard's fetoscope after 24 weeks of gestation and the foetal lie and presentation can be determined with reasonable accuracy after 30 weeks of gestation.

The breasts are examined at least once during the third trimester of pregnancy. Those with inverted nipples are taught how to avert them in preparation for breastfeeding. This provides a good opportunity to discuss the importance of breastfeeding after childbirth.

Patients with severe medical complications such as Diabetes mellitus, pre-eclampsia, deep venous thrombosis (DVT), cardiac disease and severe anaemia during pregnancy are admitted to the various maternity wards for closer observation, investigations and management.

At 36 weeks clinical pelvimetry (pelvic assessment) is done on all primigravidae and patients with one previous scar. Radiological pelvimetry is performed on patients with one previous caeserian section with cephalic presentation, and those with breech presentation who have been assessed and found favourable for vaginal delivery. At 38 weeks amniocentesis for foetal lung maturity is performed for patients planned for induction of labour or delivery by elective

caeserian section. This procedure may be performed earlier than 38 weeks gestation if there is an indication for it.

MATERNITY UNIT

The maternity unit is made up of labour ward, three antenatal wards and the newborn unit. Over 7,000 deliveries are conducted in labour ward annually. The labour ward has the first stage cubicles each with one bed, and two delivery suites with two couches each. In addition there is an acute room for close monitoring of very sick patients. A cardiotocogram used for foeto-maternal monitoring during labour for the foetus at risk is available in one room, which also acts as the room for giving oxygen by mask to the mothers with foetal distress. There are two incubators, one in each delivery suite for transfer of preterm babies to nursery. There is an ultrasound machine used for inpatients. There are two operating theatres used for both emergency and elective obstetric surgery, but only one is functional.

Each antenatal ward has 32-bed capacity and there is usually no distinction between how many are allocated for antenatal patients and how many are for postnatal patients. Registrars review patients and do daily ward rounds, while major rounds are conducted once a week by the consultant in charge of each Firm.

The Paediatrics department manages the newborn unit. It has five nursery cubicles one of which is an isolation area for infected babies and those born before arrival to hospital. There are 30 incubators and 10 cots in the newborn unit. All newborn babies with problems or whose mothers are very sick are taken to the newborn unit for management. The obstetrics team works in close co-

operation with the paediatricians and weekly combined postnatal mortality meetings are held.

Patients admitted to the maternity unit are booked or referred. The booked patients present to the labour ward for admission. Those unbooked or referred are admitted through casualty. Patients who are not in labour or not requiring emergency care are transferred to the various antenatal wards for observation and management.

The Firm on call manages labour ward each week. The team is composed of nurses, midwives, intern-doctors, registrars, and consultants. On admission the intern-doctors and registrar respectively take full history and conduct a thorough examination of the patient. The antenatal care card is also reviewed. Aseptic digital examination is performed on all patients in labour except where history of antepartum haemorrhage or premature rupture of membranes is present. Instead, a sterile gentle speculum examination is carried out in these cases. Pelvic capacity is also noted.

First stage of labour

Patients in active labour are admitted in the first stage where a partogram is started at once. The partogram used in KNH labour ward has the alert and action lines already drawn and consists of the following:

1. Particulars identifying the patient, parity and time of admission.
2. Date and time of onset of labour
3. Date, time and mode of rupture of membranes as well as colour of liquor.
4. Half-hourly foetal heart rate monitoring.
5. Progress on descent of the foetal head into the pelvis.
6. Progress of cervical dilation recorded four-hourly.
7. Uterine contractions each 10 minutes, their frequency and duration.

8. Use of Oxytocin, its concentration and rate of infusion
9. Other drugs used, dosage and time administered.
10. Maternal vital signs (Blood pressure, pulse rate, respiratory rate and her body temperature) are taken with pulse rate every half, pulse rate and respiratory rates two hourly and blood pressure and temperature four hourly.

Cervical dilatation is recorded at the time of admission then four hourly thereafter, while other parameters are charted every thirty minutes.

The patient is nursed in left lateral position and is reviewed at regular intervals by the registrar, during which appropriate interventions are effected if the progress is poor. Amniotomy is performed as soon as the active the phase of labour has been diagnosed by cervical dilatation, uterine contractions and descent of the presenting part. Analgesia is provided by parenteral pethidine or tramadol. Patients with meconium staining of liquor but regular foetal heart rates are maintained on oxygen by mask, 5% dextrose and nursed in left lateral position. Those with poor progress of labour are augmented with oxytocin infusion. Patients known to be seropositive for HIV are not routinely done amniotomy; instead they are allowed spontaneous rupture of membranes.

Induction of labour is routinely performed in the morning, usually by amniotomy and oxytocin drip. Where indicated, Prostaglandin vaginal pessaries may be inserted the night before to ripen the cervix. Extra-amniotic prostaglandin induction is used for cases with intrauterine foetal death.

Speculum examination

This is performed in patients with antepartum haemorrhage or premature rupture of membranes. The patient is placed in dorsal or semilithotomy position and the vulva cleaned with antiseptic and draped with sterile towels. An appropriate sized Cusco's speculum is selected. It is the lubricated with a gel. the

labia are parted with the left hand, and a speculum held with the right hand. It is then inserted though the introitus with the jaws in a vertical plane, and gently rotated while being advanced into the horizontal plane. The speculum jaws are opened once the speculum is advanced fullyinto the vagina. With the aid of a good light source, the vaginal walls, the cervix and any lesions, bleeding or liquor draining through the cerical os are noted.

Vulvovaginal toilet

The patient is placed on her dorsal position with her lower limbs folded at the knees and wide apart. The examiner wears sterile gloves and uses sterile swabs soaked in an atiseptic. Five soaked swabs are held with the right hand and one is dropped at a time to the left hand. The left hand is then used to swab the vulva. The distal labia minora are swabbed from anteroposteriorly, followed by proximal labia minora, then the distal labia majora, and then the proximal labia majora. The left hand is then used to part the labia exposing the intoitus. The last swab in the right hand is then used to swab the urethra and the vestibule anteroposteriorly. Digital examination can then proceed.

Surgical scrub

The surgeon must be wearing standard theatre attire on entering the operating rooms with the hair covered and wearing a face mask. Before scrubbing one may add a water proof apron. The surgeon then proceeds to scrub. The elbow tabs are adjusted to appropriate flow. The hands are then wetted with water followed by addition of soap or antiseptic liquid from a dispenser. The soap is rubbed over the hands , forearm, and upto 5 cm above the elbow for at least one minute. Then these are rinsed with water. A sterile brush is then added soap or antiseptic and used to scrub. First one scrubs the lateral side of the thumb, then medial side, then lateral and medial side of each successive finger. Then the nails are

are scrubbed, followed by the back and front of forearm upto the elbow. The same is done for the other arm. This is repeated three times. Finally the brush is dropped to a reciever and the hands are then added soap and rubbed upto the elbow for about another minute. The hand are the rinsed with flowing water. The hands are then dried with two towels, one for each hand. The drying starts at the palms followed by the digits, then progressing up towards the elbow.

Second stage of labour

Once confirmation of full dilatation of the cervix is done in the first stage section, the patient is then taken to the second stage room. The vulva and perineum are prepared by performing a vulvo-vaginal toilet, and the perineum draped with sterile towels. The patient is then instructed to bear down with each uterine contraction.

The perineum is supported by the right hand with a sterile pad, while the left hand keeps the head in flexion to prevent sudden expulsion. This prevents sudden trauma of the perineum and to the foetal head in preterm babies. Once delivery of the head has occurred, the mouth and nares are wiped with sterile gauze to prevent aspiration of blood or amniotic fluid. A finger is passed around the neck to check for the umbilical cord. When found and if loose the cord is slipped over the head. If it is tight, it is double clamped and divided. After restitution and external rotation has occurred, the anterior shoulder is delivered by downward traction of the baby, and then the posterior shoulder is delivered by upward traction. The rest of the body easily follows. The cord is clamped and divided. The mother is shown the baby briefly before the baby is handed over to another midwife who will carry out oral-pharyngeal suction as required. In high-risk cases, a paediatrician is usually in attendance.

Third Stage of labour

At delivery of the anterior shoulder, 0.5 mg of ergometrine is given intramuscularly to effect contraction of the uterus. For patients with history of post partum haemorrhage and grand multiparity, ergometrine is given intravenously for a more rapid action. For cardiac and hypertensive patients oxytocin 5 international units are given intravenously if uterine contraction does not occur spontaneously.

The placenta and membranes are delivered by controlled cord traction. The birth canal is inspected for any tears and the episiotomy is repaired. The patient is encouraged to empty her bladder. Post delivery blood pressure, pulse rate, uterine contraction and lochia loss are observed and recorded. The patient is further observed for 1 hour and then she is transferred to the lying-in wards for further overnight observation. Patients with normal delivery are discharged after 24 hours due to pressure of bed space. They are nursed together with their babies to establish good lactation and bonding. The patient is advised on perineal hygiene and frequent saline sit baths until healing of episiotomy is achieved.

OPERATIVE PROCEDURES

Episiotomy

A midline or medio-lateral episiotomy is performed at crowning of the foetal head at the perineum in all cases where the perineum is tight and for some of operative vaginal deliveries and pre-term delivery. A medio-lateral episiotomy is commonly used in this unit because it has less risk of extension to the anal sphincter and rectum. During repair a gauze pack is inserted into the vagina. The apex at the vaginal mucosa is identified. From the apex, repair of the vaginal epithelium is carried on with continuous chronic catgut number 2/0. The perineal

muscles are then approximated by deep interrupted sutures. The skin edge is then apposed using interrupted or continuous catgut number 2/0 burying the knots and starting from the lateral edge. The patient is advised on perineal and frequent saline sit baths until healing occurs.

Vacuum Extraction

The common indications for assisted vacuum delivery are poor maternal effort, foetal distress or cord prolapse with a fully dilated cervix, and in patients with cardiac failure. The patient is placed in lithotomy position and a digital examination is performed to confirm a fully dilated cervix and cephalic presentation. The largest ventouse cap that fits into the vagina is applied to the foetal scalp close to the occiput. The index finger of the right hand is passed around the perineum to ensure that the maternal tissue (cervix and vaginal) is not trapped within the cup. The vacuum section pressure is gradually increased at a rate of 0.2kg/cm^2 to between 0.5 and 0.8kg/cm^2. This allows for the formation of an artificial caput or 'Chignon". A medio-lateral episiotomy is made under local anaesthesia, if required at the time the head is crowning.

The traction pressure or pull is applied along the midline of the pelvis and simultaneously with the uterine contractions. Once the baby's head is delivered the ventouse cup is released immediately and the second and third stages of labour conducted as usual.

CAESERIAN SECTION

The lower segment caeserian is the commonest major obstetric operation performed either electively or as an emergency. Classical caeserian section is rarely performed except for case of transverse lie with ruptured membranes.

Preoperative Management

The haemoglobin estimation and blood grouping plus cross matching are carried out. Those undergoing operation electively are starved for 6 hours prior to the operation. Informed consent for the operation and for general anaesthesia is obtained. Two units of compatible blood are obtained. The abdominal wall, vulva and perineum are shaved clean. Pre-medication is given in the form of Atropine Sulphate 0.6mg intramuscularly half an hour before going to theatre. Cardiac patients 0.4mg of Hyoscine is used instead.

Surgical procedure

In theatre, the patient is placed in supine position and an intravenous infusion is started through a large bore needle. In semi-lithotomy position, the vulva and perineum are cleaned with 1% savlon solution.

Aseptic catheterisation is carried out and all the urine drained and the catheter is retained to provide conscious bladder drainage during operation. The patient is repositioned to supine position. The anterior abdominal wall is cleaned with antiseptic solution and iodine/spirit solution (Betadine). Then draping with sterile drapes is done exposing only an area bounded by the mons pubis below to about 4 centimetres above the umbilicus and 2 cm on each side of the midline if sub-umbilical midline incision is to be used. If pfannasteil incision is to be used the upper draped border need not be placed above the umbilicus. Then 100% pre-oxygenation is given to the patient for five minutes then general anaesthesia is induced using intravenous thiopentone sodium 250 to 500mg depending on the patients weight. A short neuromuscular blocking agent suxamethoneum 100mg is used to provide muscle relaxation. Anaesthesia is maintained with Nitrous oxide and oxygen in the ratio of 1:1 before the baby is delivered then a ratio of

2:1 is given. A total of 6 to 8 litres per minute is used depending on the circuit used. Throughout the operation, halothane 0.5% or trilene 0.35% is used to maintain unawareness. When the effect of suxamethoneum has worn off, pancuronium or d -tubocurare a long acting muscle relaxant is used. The abdomen is opened in layers through either a Pfannesteil incision or a midline sub umbilical incision or rarely a para median incision. With a clean knife the incision is deepened, the rectus sheath is divided and elevated with two long artery forceps and the muscles are separated from their attachment to it by blunt dissection, and then drawn to one side to expose the peritoneum. The later is held with two straight artery forceps and opened taking care not to injure the gut. The incision limits are extended with index and middle fingers of the left hand placed intraperitoneally guiding the scissors, avoiding injury to the bladder and bowels.

The uterus is then identified; wet sterile abdominal packs are placed on either side of the uterus to prevent spillage of blood and liquor into the peritoneal cavity and to protect gut. A doyen's retractor is then used to reflect the bladder downwards as well as to expose the uterovesical fold of peritoneum. Using a non-toothed dissecting forceps the loose peritoneum over the lower uterine segment is picked up and incised with curved scissors in an elliptical manner. The peritoneum is then stripped off the lower uterine segment with a mounted swab. The doyen's retractor is shifted to include the lower part of the peritoneal fold in retracting the bladder away from the lower uterine segment. The lower uterine segment is then incised in the midline about two centimetres below the uterine attachment of the uterovesical peritoneal fold. Once the membranes are reached the incision is extended laterally on either side in an elliptical manner using curved scissors directed by two fingers of the left hand and the incision is enlarged enough to allow delivery of the head and trunk. The retractor is removed and the membranes are ruptured allowing some liquor to escape. The hand is slipped into the uterus between the foetal head and the symphysis pubis,

and the head is lifted gently with the fingers and palm through the incision while a modest fundal pressure is applied. After delivery of the head, the nostrils and the mouth are wiped. The shoulders are then delivered using gentle traction. The trunk delivery follows readily. The anaesthetist at delivery of the shoulders gives intravenous ergometrine 0.5mg. The cord is then clamped and divided and baby is handed over to a midwife or assistant for resuscitation.

The placenta and membranes are delivered manually or by controlled cord traction. Green armytage uterine clamps are used to hold the cut edges of the uterus to control bleeding and the inside of the uterus is wiped of clots and membranes. If the cervix was not dilated in labour it is dilated at this juncture with a mounted swab to allow postpartum lochia drainage. The uterus is then repaired with or without lifting it out through the incision. The uterus is closed with a number 2 chronic catgut I two layers, as a continuous stitch for both layers, the second layer burying the first and extending beyond its lateral edges. The visceral peritoneum is then closed with number one chronic catgut continuous stitch.

The abdominal packs are removed, the abdomen is mopped and the pelvic viscera are inspected for any abnormality. Instruments and swabs are counted, if reported correct with the initial count, the abdomen is closed in three or four layers. Number one chronic catgut is used on the peritoneum, while number two chromic catgut is used as a continuous stitch on the rectus sheath. The skin is closed with interrupted nylon or silk suture or with subcutaneous vicryl 2/0. The wound is cleaned with hibitane solution then painted with iodine solution if it is available and covered with gauze and light strapping applied to hold the dressing in place. The catheter is removed and colour of urine is noted. The uterus is massaged and any blood clots expelled and evacuated from the vagina. A clean vulval pad is applied.

General anaesthesia is reversed with 1.2 mg atropine sulphate and 2.5mg of neostigmine. Extubation is done and oro-pharyngeal suction carried out. Blood loss is estimated and recorded and the patient is transferred to recovery room, then later to labour ward as the anaesthesia wanes.

Post Caesarean Section Care

The pulse, blood pressure, temperature and respiratory rate are observed and recorded half hourly until the patient is fully awake then four hourly. Intramuscularly Pethidine 50 to 100mg is given four to eight hourly for 48 hours for pain relief depending on the patient's weight. When the patient is allowed oral intake, further anaesthesia is given as oral Paracetamol 1000mg 8 hourly. Prophylactic antibiotics are administered routinely to all patients. Initially the patient is observed in labour ward and if her general condition remains stable and satisfactory, she is transferred to the lying in wards. Early ambulation is encouraged. Haemoglobin and urine bacteriological examination are done on the third postoperative day. Two to three litres of intravenous fluids are given in the first 24 hours (with at least 500mls of normal saline).

Normal diet is gradually introduced after free fluids and light diet. All stitches are removed on 7^{th} postoperative day and the patient is discharged home with a case summary. She is advised to attend the child welfare clinic and postnatal clinic in two and six weeks respectively.

Care of the Newborn

All the Newborn babies who are normal join their mothers after deliver unless the mother is moribund. A paediatric registrar reviews all the babies with problems or where complications are anticipated together with babies delivered by operative vaginal delivery or by caeserian section. Those having problems or who are expected to develop some problems are transferred to nursery in a

warm incubator. The premature babies are managed in nursery until their weight is about 2000 grams when they are discharged. All babies are immunized with BCG before discharge. The recuperating mothers who have babies in nursery are lodged in a mother's hostel.

Post Natal follow-up

The clinic is held on every Friday. Only those patients who had a complicated or operative delivery are seen. The rest are followed up in their nearest facility. In this clinic the blood pressure and weight are taken, urinalysis performed, history of puerperium, lactation and immunization of the baby is taken. The patient is then examined and any problems managed. Family planning advice is given and the patient is referred to the family planning clinic for appropriate method.

Family Planning Clinic

The clinic is at family welfare centre-clinic 66. Oral, injectable contraceptives, Norplants, intrauterine contraceptive devices and barrier method are offered. Patients requiring postpartum sterilization are prepared for operation in the wards then taken to the theatre in clinic 66 with informed consent duly signed. Patients requiring interval sterilization are counselled and referred to clinic 66 for the procedure through mini-laparatomy or Laparascopy.

THE GYNAECOLOGY UNIT

This is comprised of an outpatient consultant clinic and wards 1B and 1D on the first floor of the tower block. In ward 1D, emergency services are provided throughout the 24 hours and is manned by acute gynaecology team who include a registrar, interns and supervising consultants.

The Gynaecology Clinics

There are three outpatient clinics per week; Firm I on Tuesday, Firm III on Wednesday and Firm II on Thursday. At any time, there are one or two consultants, several senior registrars, registrars, medical students and nurses. There is an additional oncology clinic on Friday mornings for oncology patients who are on follow-up.

A colposcopy clinic is held every Friday morning for further evaluation of patients with abnormal cervical cytology. A fertility clinic is held every Monday afternoons. The majority of patients attending the gynaecology clinic are referred from other specialist clinics of Kenyatta National Hospital, other hospitals in and around Nairobi as well as from district and provincial hospitals. Infertility cases constitute two thirds of the gynaecology consultation, followed by uterine fibroid, abnormal uterine bleeding and adnexal masses. In the clinic, history is taken, thorough physical examination is conducted and most of the investigations are carried out while the patient attends the clinic to reduce the hospital stay. These investigations include haemogram, semen analysis, Pap smear and pregnancy test among others.

Cold Gynaecology Admission (Ward 1B)

This is the non-emergency ward to which patients are usually admitted from the clinic or are transferred from the acute gynaecology ward for further management. The ward has 32 beds divided among the three firms. Commonly, the patients admitted her have uterine fibroids, genito-urinary fistulae, gynaecological malignancies and infertility among others.

Acute Gynaecology – Ward 1D

The emergency gynaecology ward is ward 1D on the first floor of the main block. It has 32 beds, with each room having 8 beds. On average 20 to 30 patients are admitted per day majority of who are cases of abortion admitted through casualty department. They are examined by the by the registrar who undertakes the management in consultation with senior members of the Firm. Other common cases include ectopic pregnancies, acute pelvic inflammatory disease (PID) and pelvic abscess.

Uncomplicated cases of incomplete abortion have uterine evacuation performed using Karman's canulla and syringe. They are discharged home on the same day if stable, or the next day after overnight observation and treatment in the ward. These are also counselled for contraception and those willing are put on a method of contraception before discharge. Patients who have undergone emergency laparatomy for ectopic pregnancy, pelvic mass, and abscess have a minimum stay of four days postoperatively.

Patients with suspected carcinoma of the cervix who require admission are admitted to this ward. They receive emergency care; blood transfusion, antibiotic and analgesic treatment. Routine checking and laboratory investigations are carried out. Thereafter the patients are prepared for examination under anaesthesia (EUA) in the Caesium theatre for staging and biopsy. They are then transferred to the oncology ward for definitive management on receiving the histology report.

Laparascopy Theatre

Besides being used for interval sterilization by mini-Laparotomy or Laparascopy. Clinic 66 theatre is also used for diagnostic Laparascopy. Dye Laparascopy is performed on patients from the outpatient gynaecology clinics with infertility.

Before dye laparascopy the patient should have a semenalysis result and a hysterosalpingogram (H.S.G).

GYNAECOLOGIC OPERATIONS

Theatre is always available for emergency gynaecologic operations. Laparatomy for ectopic pregnancies, ovarian cysts, tubo-ovarian masses, pelvic abscesses and other minor operations such as marsupilaization, removal of misplaced intra-uterine devices, diagnostic and suction curettage of the uterus are performed.

Each of the firms has a day for elective operations from 8 am to 5 am every week. The operations are done under general anaesthesia in which intravenous sodium thiopentone and succinyl choline are used for induction of anaesthesia. Nitrous oxide, oxygen and halothane are used for maintenance of anaesthesia. Curare is given intermittently for muscle relaxation and atropine plus neostigmine are used for reversal.

Preoperative Management

Patients for emergency Laparotomy are prepared for theatre immediately. Pre-medication is given as Atropine 0.6 mg intramuscularly half an hour before operation. Blood is cross-matched and intravenous drip started. For elective operations, routine or baseline and specific relevant investigations are carried out and the date for surgery determined. The patient is starved from midnight on the evening prior to the operation. A soap enema is given in the morning and the abdomen plus pubic hair is shaved. Pre-medication is given in form of atropine sulphate 0.6mg and pethidine 50mg intramuscularly half an hour before theatre.

Postoperative Management

Vital signs are observed half hourly until the patient fully recovers form anaesthesia and then 4 hourly thereafter. Antibiotics, usually crystalline penicillin 2 mega units six hourly and gentamycin 80 mg eight hourly for the first two days then oral amoxycillin 500 mg eight hourly for five days are given. The patient is maintained on intravenous fluids of about 2.5- 3.5 litres per day until she is able to take orally. Pethidine 50 to 100mg is given every 6 or 8 hours for analgesia during the first 48 hours then oral analgesics are given. Oral feeds are re-started after ascertaining the presence of good bowel sounds. Early ambulation is encouraged to decrease the incidence of deep venous thrombosis (DVT).

Postoperative haemoglobin level is checked on the third postoperative day. The wound is inspected on the fourth postoperative day and if healing good, the patient is allowed home for the removal of the non-absorbable sutures on the 7th postoperative day at the nearest health facility. The patient is discharged home with a "discharge summary" and is booked in gynaecology outpatient clinic for review after six weeks.

COMMON GYNAECOLOGIC OPERATIONS

1. Uterine evacuation

This procedure is performed on emergency basis for incomplete abortion to empty the uterus of products of conception. A Karman's canula and syringe is used often under no anaesthesia or sedation. The patient is placed in lithotomy position and the vulva and perineum cleaned with antiseptic solution. The patient is then draped with sterile linen. The bladder is catheterised to drain urine. A pelvic examination is carried out to determine the size of the uterus and cervical dilation. A speculum is introduced gently into the vaginal and the cervix is grasped with a tenaculum forceps (Volsellum) and the appropriate size of

cannula gently inserted into the uterus. Negative pressure is applied to the syringe, which is then connected to the canulla and the valve opened. The contents of the uterus are sucked into the syringe as the canulla is moved up to the fundus of the uterus and rotated through the four quadrants of the uterine cavity.

The patient is discharged home on oral antibiotics and analgesics. If the products of conception are found to be septic the patient is started on parental broad-spectrum antibiotics.

2.Total Abdominal Hysterectomy

General anaesthesia is induced as was described above. Vulvo-vaginal toilet is performed with Hibitane solution and the bladder catheterised aseptically. The catheter is left in situ to provide continuous bladder drainage during the operation. Pelvic examination under anaesthesia is performed and findings noted. The vagina is painted with Methylene blue. The abdomen in the cleaned with hibitane and painted with iodine solution followed by draping with sterile towels.

The abdomen is opened in layers as described for caesarean section. The bowels are packed away form the pelvis using warm moist packs after general inspection of the abdominal viscera. The round ligaments on either side are identified clamped using straight long artery forceps and divided between the two forceps. The lateral lumps are each ligated with number 2 chromic catgut.

The anterior leaf of the broad ligament is parched forwards and incised with scissors. The next step depends on whether the fallopian tubes and ovaries are to be conserved or removed. If they are conserved, the tube and the ovarian ligament are double clamped en-masse and cut using a scalpel. The distal clamp

holds the ovarian vessels as they approach the anastomosis with the uterine vessels. This stump is ligated with a transfixing chromic catgut number 2 suture. The same is done on the opposite side. If the tube and ovaries are to be removed with the uterus, the infundibulopelvic portion of the broad ligament is doubly clamped with long curved artery forceps with the tips reaching the open window in the broad ligament. The ligament together with the ovarian vessels are divided between the clamps and ligated using chromic catgut number 2. The same is repeated on the opposite side.

The reflection of the bladder peritoneum onto the uterus is then freed by extending the incision in the anterior leaf of the broad ligament towards the midline. The bladder is thus separated from the lower uterine segment, the cervix and vaginal vault by careful blunt sharp dissection of the fascial fibres beneath the bladder wall. Usually the bladder can be displaced into the lower pelvis quite easily but if it is adherent, it is surgically released.

The posterior leaf of the broad ligament on either side is cut parallel with the side of uterus to better demonstrate and skeletonize the uterine vessels between the levels of the broad ligament for clamping. The uterine vessels are doubly clamped and cut using a scalpel and freed from the uterus by extending the incision around the tip of the distal clamp. This enables adequate ligation. Care should be taken to avoid freeing the tissue beyond the tip of the clamp, as this could permit bleeding from vessels that are not included in the clamp. Before clamping and cutting the uterine vessels it is always advisable to palpate the lower portion of the pelvic ureters as they cross beneath the uterine artery, lateral to the internal os, and pass medially through the base of the broad ligament to the trigone of the bladder. The uterine vessels are ligated with chromic catgut number 2.

The uterus is retracted forwards and upward to demonstrate and stretch the uterosacral ligaments posteriorly. A transverse incision is made through the uterine reflection of the cul-de-sac peritoneum between the attachments of the two-uterosacral ligaments. The peritoneum is then incised with the scalpel and reflected mobilizing it past the cervix to the posterior vaginal fornix. Each uterosacral ligament is double clamped, cut and ligated with number 2 chromic catgut sutures. Here, particular care is exercised to avoid the pelvic portion of the ureter as it causes along the base of the broad ligament. The cardinal ligaments of either side of the uterus are then clamped, cut and ligated.

The anterior vaginal fornix is opened and the vagina is circumcised by sharp knife or dissection by scissors round the cervix. The uterus together with its cervix is delivered as the anterior, posterior and lateral angles of the vaginal are secured with long straight artery forceps. The vaginal margins are then closed using a series of figure of 8 interrupted sutures. Particular care us taken when tying the lateral angles to ensure that the descending vaginal branches of uterine vessels are securely ligated. Haemostasis is ensured.

Suspension of the vaginal vault is done by tying the peritonization suture to the lateral and mid sutures of the vault. Peritonization is accomplished by means of a continuous number 1 chromic catgut sutures that first pierces the vaginal walls close near the midline and passes through the posterior leaf of the broad ligament, the free margin of the uterosacral ligament, then through the infundibulpelvic ligament, the free margin round ligament and the anterior bladder peritoneum. The suture is tied at the centre. The same is repeated on the opposite side with the suture being tied at the midline.

The abdominal viscera are inspected. If haemostasis has been achieved and instrument and swab counts are normal, the abdomen is closed in anatomical

layers. General anaesthesia is reversed and patient is then managed as described in postoperative care above.

COUNSELLING CLINICS

There are four such clinics in the hospital, which offer counselling to obstetrics and gynaecology patients. These are the: 1) patient support centre, 2) gynaecological outpatient clinic, 3) high risk teenage clinic and 4) the Nairobi Hospice.

THE PATIENT SUPPORT CENTRE

This is situated in the old hospital building where patients regularly attend from all the departments of the hospital. Sometimes the counsellors are called to the wards to counsel those patients who cannot go there. The counsellors consist of psychiatrists, sociologists, psychologists and nurses. Mostly, they deal with HIV counselling, puerperal psychosis patients, bereaved patients and support for those patients who are poor and neglected by relatives. They counsel, treat and even assist patients find their way home.

THE HIGH RISK CLINIC (H.R.C).

This clinic is situated on the ground floor next to the maternity wards. It deals with young single mothers who have had an abortion, those who have delivered babies and even those who do not want to bring up their children. The counsellors are also nurses, sociologists and consultant obstetricians gynaecologists. They counsel their clients, treat them for any illness they may have with assistance from the obstetric and gynaecology wards and also provide them with family planning and sexual transmitted infection management

services. The patients come from other institutions or from the obstetrics and gynaecology wards.

THE NAIROBI HOSPICE

Workers here also offer counselling care in addition to management of terminal disease. They also offer narcotics analgesia and encourage home-based care for such patients instead of hospital care. Most of their patients have cancer of the cervix.

THE HOSPITAL CHAPEL

This provides spiritual nourishment to those who are in need. It is situated on level 2 of the tower block.

THE MOTHERS HOSTEL

This accommodates mothers with babies in nursery. When they get sick, they are treated from the wards where they were initially admitted.

OBSTETRIC CASE. 1

RETAINED PLACENTA – MANUAL REMOVAL:

NAME : H.M.
AGE : 40 YEARS
IP/NO. : 0903952
PARITY : 6+0
D.O.A. : 25/8/03
D.O.O. : 26/8/03

PRESENTING COMPLAINT

She was admitted through casualty with a retained placenta for six hours.

HISTORY OF PRESENTING COMPLAINT

She had given birth at home to a stillbirth six hours earlier. She was assisted by a traditional birth attendant. The labour had lasted about 8 hours. She had avoided delivering in hospital on financial grounds and wanted to avoid being operated again like in the last delivery. She also had lost alot of blood and was feeling quite thirsty.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 6 plus 0 with two living children. She had 4 earlier deliveries by spontaneous vertex deliveries, where the fourth survived but the others died soon after delivery. The fifth pregnancy was delivered by caeserian section and is alive and well. The sixth is this index pregnancy.

The last menstrual period was in November 2002, but could not recall the date. From this the expected date of delivery was sometimes in August 2003. She had attended a city council clinic only once, but there were no records available.

Her menarche was at 16 years. She had regular cycles every 28 days and lasting four days. She had never used any contraceptives.

PAST MEDICAL HISTORY

She had been admitted previously for delivery. She had no chronic illness and was not on any medications.

FAMILY AND SOCIAL HISTORY

She was a housewife. Her husband was a small-scale trader. She never drank alcohol or smoked cigarettes. There was no family history of chronic illness.

GENERAL EXAMINATION

She was in fair general condition. She was not febrile, was moderately pale, and not jaundiced. Her blood pressure was 100/70 mmHg, respiratory rate was 26/ minutes, and temperature was 37%.

RESPIRATORY, CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS

These were essentially normal.

ABDOMINAL EXAMINATION

She had an old sub umbilical midline scar. The uterus was firm; non-tender and the fundal height corresponded to 20 weeks gestation.

VAGINAL EXAMINATION

The external genitalia were blood stained but normal anatomically. There was a hanging umbilical cord, which had been tied by a string and dangled freely. Digital examination revealed that the cervix was open and the placenta was not separated from the uterus and was firmly adherent. There was minimal bleeding then.

DIAGNOSIS

A diagnosis of retained placenta made.

MANAGEMENT

The patient was started on syntocinon 40iu in a drip of 500mls of 10% dextrose. Blood was drawn for packed cell volume (PCV) estimation and grouping and cross matching and 2 units of blood were availed. The PCV was 22%.

The diagnosis and mode of management was explained to the patient. She gave consent. She was also started on crystalline penicillin 2 mega units 6-hourly and gentamycin 80 mg 8-hourly. Intramascular atropine 0.6 mg was administered and the patient taken to theatre.

In theatre, general anesthesia was induced. She was then placed in lithotomy position and draped. The bladder was aseptically catheterized and about 70 milliliters of urine was obtained. Vaginal examination confirmed earlier findings. The left hand was used to steady the uterus abdominally. The right hand was introduced into the uterus and the fingertips used to make a plane of cleavage between placenta and uterus. The placenta was then systematically removed

completely. The uterus was then messaged and syntocinon drip let to run faster. Haemostasis was achieved and the patient was reversed from general anesthesia. She was not transfused.

POST OPERATIVE MANAGEMENT

She was transferred to the recovery room where vital signs were monitored half hourly till when she was fully awake. She was continued with another drip of syntocinon and the uterus remained contracted. She was transferred to the lying in wards when she was fully awake. Intravenous crystalline penicillin and gentamycin was continued for one day. She remained stable and was discharged on the second day on amoxycillin, flagyl and ibobrufen. She was given an appointment for following up in the postnatal clinic in two weeks.

FOLLOW UP

She was lost to follow up, as she never turned up for her appointments.

DISCUSSION

The patient presented was a 40-year-old para 6 + 0 who had one previous scar and delivered at home and came to hospital after the placenta got retained. The placenta was removed manually in theatre under general anesthesia.
The patient presented did not utilise antenatal and delivery services based on the mistaken belief that she would be done caeserian section again. Thus she lost the baby and put her life in danger as she had a complicated third stage.
Following delivery, the patient took six hours before reaching hospital. This was mainly due to financial constraints and lack of transport. Thus delays accessing health care also contributed to her complications. These together with lack of availability of health care (lack of trained personnel, equipment, shortage of supplies, facilities), exemplifies the three delays model, which contribute to most maternal mortality in developing countries.[8]

The third stage of labour begins immediately after the delivery of the fetus and involves the separation and expulsion of the placenta. [1] Retained placenta is defined as a placenta that has not been expelled 15 to 60 minutes after childbirth depending on the author. [2,3,4] This patient had delivered six hours earlier.

The actual causes of failure of separation are unknown. Various causes have been postulated. Inadequate uterine contraction and retraction is the commonest cause. On occasions, the placenta may be unusually adherent to the implantation site with scanty or absent decidua. Placenta may also penetrate the myometrium or a defect of the uterine wall. [3,5,6]
Predisposing factors include prematurity, tightly adherent placenta, previous history of retained placenta, atonic uterus, repeated curettage, placenta praevia, uterine malformation, constricting ring secondary to oxytoxic drugs, high parity, precipitate labour, multiple pregnancy, delivery conducted under adjuvant

inhalation analgesia or anesthesia, massage and fiddling, and prolonged second stage.

The patient presented probably laboured for long at home and had a previous caeserian section scar. Previous scars on the uterus are known to cause increased adherence of the placenta to the endometrium and myometrium.

Following delivery, the usual signs to look for to signify placental separation includes: [1]

- The uterus becomes globular and firmer.
- There is often a gush of blood.
- The uterus rises in the abdomen as the separated placenta passes into the lower segment and vagina.
- The umbilical cord protrudes further out of the vagina indicating placenta descend.

A patient with retained placenta may present in shock; having had postpartum haemorrhage. Adequate resuscitative measures must be commenced before attempting manual removal. These should include blood if the patient is bleeding and the administration of oxytocic drugs to encourage uterine contraction and placental separation. [7] This patient was in early early shock as she was thirsty though the blood pressure was normal. She was resuscited with intravenous fluids only.

Manual removal of placenta is best done under general anaesthesia. Halothane is known to cause muscle relaxation hence ease the introduction of the hand into the uterus. In cases of constricting ring secondary to oxytoxic drugs, induction of anaesthesia causes relaxation of the uterus and placenta falls in to the vagina.[6]

Under general anaesthesia, the patient was cleaned and draped in lithotomy position. One hand was used tostabilize the uterine fundus over the abdomen while the other was introduced into the uterus. The fingers were then used to separate the placenta along a plane of cleavage from done upwards. Once separated, the placenta was manually removed as the hand was withdrawn. Manual exploration of uterine cavity with gauze wrapped around the exploring fingers helped to remove the remaining tissues.

Some tightly adherent placenta may be difficult to remove. This may be associated with severe postpartum haemorrhage. This may be managed by uterine message, increasing oxytoxic drugs speed, intramyometrial prostaglandins, legation of the uterine arteries, or even hysterectomy. In situation where it is impossible to remove the placenta, autolysis may be allowed with or without methotrexate, but must have good antibiotic cover. [5]

Endometritis may occur as a complication of manual removal and the patient should have antibiotic cover. The patient H M. was put on crystalline penicillin and gentamycin and later flagyl, and amoxil and did not develop any infection.

Retained placenta may be reduced by use of active management of the third stage. This includes[6]: Administration of prophylactic oxytoxics during or immediately after delivery of the baby, early cord clamping and cutting, and controlled cord traction. In home deliveries all this may not be possible as there may be no adequately trained personnel. Where possible, as many as possible mothers should be encouraged to deliver in health facilities, especially those with previous uterine scars as this patient.
At Kenyatta National Hospital ergometrine is given immediately after delivery of the anterior shoulder. The other alternative is a drip of syntocinon given at 15-20 international units.

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OBSTETRIC CASE 2

RHESUS NEGATIVE, BAD OBSTETRIC HISTORY-SUCCESSFUL INDUCTION, LIVE BIRTH

NAME : W.M.
AGE : 26 YEARS
IP NO. : 0901913
PARITY : 2+0
D.O.A : 21/07/03
D.O.D. : 24/07/03

HISTORY OF PRESENTING COMPLAINT

She was admitted following referral form a health centre for delivery due to bad obstetric history.

She was known to be Rhesus negative. She had attended Antenatal Clinic at Airport medical clinic and at Kitengela health centre who referred her delivery.

She was not in labour, not draining liquor, and had no per viginal bleeding. She had normal fetal movement perception

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 2+0. Her first delivery was in 1997 when she had a premature birth at 7 (28 weeks) months that died 3 days later. Her second delivery was in 1998 when she delivered a fresh stillbirth at 7 (28 weeks) months gestation.

During both deliveries she was not given anti-D immunoglobulins and neither was she investigated though she had delivered in a health centre

Her last menstrual period was on 26/10/02 with expected date of delivery being 4/08/03. Gestation by dates was therefore 38 weeks. She had attended Airport medical clinic for antenatal care once at 30 weeks and later went to Kitengela health centre where she was seen three times from 32 weeks. At 38 weeks she was referred to Kenyatta National Hospital for delivery.
She had no antenatal profile except blood group, which was B Rhesus negative.

She had attained menarche at 16 years. Her menses were regular occurring every 28 days and lasting five days. She had no history of use of contraceptives.

PAST MEDICAL HISTORY

She had no history of any other admission apart from for delivery. She was not on any medication.

FAMILY AND SOCIAL HISTORY

She was a married housewife. Her husband was a casual laborer. They lived in Mlolongo informal settlement. She does not smoke or take alcohol. There is no family history of chronic illness.

PHYSICAL EXAMINATION

GENERAL EXAMINATION

She was in good general condition. She was not pale, not jaundiced, and had no edema. Her pulse rate was 62 beats per minute, blood pressure was 100/70 mmHg, her respiratory rate was 22 breaths per minute and her temperature was $36.5^{0}C$.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended and moved with respiration. The fundal height was term, longitudinal lie with a single fetus in cephalic presentation. Fetal heart tones were heard and regular at 144 beats per minute.

VAGINAL EXAMINATION

(Was done in preparation for delivery)

There were normal external genitalia. The cervix was posterior, soft, long and os was closed.

DIAGNOSIS

She was diagnosed as a Rhesus negative mother at 38 weeks with bad obstetric history.

INVESTIGATIONS

FBC – Hb: 10.8 g / dl

WBC – $7.1 \times 10^{9}/l$

Platelets: 176x10 ^{12}/l

U/E- Na^+ - 141 mmol/l

K^+ – 3.9 mmol/l

Urea – 2.6mmol/l

Creatinine – 63 umol/l

ICT - Negative

Blood group - B Rhesus Negative

PLAN OF MANAGEMENT

A decision to induce labour was made, as she did not want to stay in hospital for long on financial grounds. She was induced with misiprostol of which 50mcg was inserted into the posterior fornix of the vagina and repeated after 8 hours. She went into labour four hours after the second insertion. She was wheeled to labour ward. On examination, the cervical os was found to be 4cm dilated. Artificial rupture of membranes was done and syntocinon 5 IU in 5% dextrose drip was put up. She was also started on a partogram. She progressed well and delivered after five hours to a male infant weighing 3000 grams, and scored 9 at 1 and 10 at 5 minutes. The cord blood was taken for Hb level, blood group and direct combs text. Serum bilirubin and reticulocyte count were not done.

The results were:

- Hb - 16g/dl,
- Blood group - O Rhesus positive
- Direct Coomb's test - negative.

The mother was given Anti-D globulin 300 ug on the second day after delivery. The baby remained well and did not develop jaundice. Both baby and mother

DISCUSSION

The patient presented was a Rhesus negative mother with bad obstetric history admitted at 38 weeks. Her antenatal care had been inadequate as she was not evaluated for development of anti- Rhesus antibodies, other antenatal profiles were not done and was not referred early to Kenyatta National Hospital for management. She was induced and delivered by spontaneous vertex delivery. The baby's blood group was O Rhesus positive and mother was given anti-D.

The red blood cell has over 400 antigenic factors of which the ABO and Rhesus are the most common. [1] The Rhesus (Rh) blood group is the most complex human blood group. These antigens are lipoproteins that are confined to the red cell membrane. [2,3] The Rh antigens are grouped into 3 pairs: Dd, Cc, and Ee. The major antigen in this group, Rh (D), or Rh factor, is of particular concern. A woman lacking the Rh factor (Rh negative) may carry a Rh-positive fetus. If fetal red blood cells pass into the mother's circulation in sufficient numbers, maternal antibodies to Rh-positive antigen may develop and cross the placenta, causing haemolysis of fetal blood cells. [2]

There is considerable variation of rhesus antigenicity in various populations. Basque populations have the highest incidence of Rh-negativity (30-50%). Caucasian populations in general have a higher incidence (15-16%, Finland 10-12%). Blacks in the USA have a rate of 8%; African blacks 4%; indoeurasians 2%, and North American Indians 1%. The incidence among mongoloid races is nil. [2]

The incidence in Nairobi of Rh-negativity was reported to be 5% of all antenatal clinic-attending mothers in 1983.[4] In 1999, an incidence of 3% of antenatal clients at KNH among the black population was found. [5]

The patient presented here was found to be Rhesus negative during antenatal visit and was of the black race. Her previous deliveries and the index antenatal care were inadequate thus risking development of isoimmunisation.

Isoimmunization may occur following transfusion with incompatible blood or when there is feto-maternal haemorrhage between a mother and an incompatible fetus. Fetomaternal haemorrhage may occur during pregnancy or at delivery.

Predisposing factors to fetomaternal harmorrhage include: spontaneous or induced abortion, amniocenteses, abdominal trauma, placenta praevia, abruptio placenta, fetal death, multiple pregnancy, manual removal of placental and caeserian section.[2]

It is also known that 30% of Rh-negative persons are none responders and ABO incompatibility also confers a protective effect.[2]

The patient W.M. was para 2 plus 0 and had indirect Coombs test being negative. She had not been given anti-D during her two previous pregnancies. The baby did not develop hemolytic disease of the new born.

Initial response of a Rh-negative individual to Rh-positive fetus is the formation of Igm antibodies. Within 6 weeks to 6 months, IgG antibodies become detectable. In contrast to Igm, IgG is capable of crossing the placenta and destroying fetal Rh-positive cells. [2, 4]

The initial isommunizaiton reaction is minimal but becomes more severe in subsequent pregnancies.[6] Haemolytic disease of the newborn occurs when the maternal antibodies destroy the Rh-positive fetal red blood cells. Fetal anaemia results, stimulating extra-medullary erythropoietic sites to produce high levels of nucleated red cell elements. Immature erythrocytes are present in the fetal blood owing to poor maturation control. Haemolysis produces heme, which is

converted to bilirubin; both of these substances are neurotoxic. If haemolysis is severe and exceeds production, erythroblastosis fetalis occurs due to anemia, extramedullary erythropoiesis, ascites, heart failure, oedema and pericardial effusion. [2,6]

The damage that could have been caused in uterus by heme and bilirubin is minimized by metabolism of the placenta.

Following delivery, severe anemia and hyperbilirubinaemia occurs leading to more red cell damage and kernicterus.[2]
The perinate delivered here had a good level blood haemoglobin .

Routine antenatal screening of mothers for their ABO and Rhesus blood group should be done on the first antenatal visit. If she is Rh- negative, her blood should be screened for antibodies. If antibodies are not detected, the test should be repeated at 34 weeks. The most common way for detection of anti-D is indirect Coombs test, which is performed in order to determine which patients are candidates for either amniocentesis and measurements of amniotic bilirubin levels or percutaneous umbilical cord sampling.[1]

The most important part of the management of pregnancies at risk of rhesus immunization is serial monitoring of maternal serum antibody level throughout pregnancy.

Assessment of a fetus identified to be at risk includes amniotic bilirubin concentration, abnormal fetal heart patterns, real time ultrasonography and pulsed Doppler ultrasound. Measurements of fetal haemotocrit through fetoscope techniques or ultrasound guidance is the only direct method of determining fetal anemia.

Prophylaxis against Rhesus immunization was introduced in 1967 and has reduced perinatal mortality associated with Rhesus disease. It is now common practice to give anti D immunoglobulin at times of recognized risk of fetomaternal transfusion. In our unit we routinely give 300mcg of anti D within 72 hours of delivery. It is also recommended that patients who are ICT negative should get anti D at 28 and at 34 weeks.

Our presented patient was seen at 38 weeks and therefore earlier interventions were not done but she received anti D after delivery. More and more mothers should however be sensitized to attend antenatal clinics from first trimester so as to institute and plan for early management.

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OBSTETRIC CASE .3

UNDIAGNOSED TWIN GESTATION ,MILD PREECLAMPSIA– FAVOURABLE OUTCOME AFTER CAESERIAN SECTION FOR CORD PRESENTATION

NAME: **H.W.C**
IP.NO: **0907730**
AGE: **20 YEARS**
D.O.A: **14.08.03**
D.O.D: **18.08.03**
WARD: **G.F.B**

PRESENTING COMPLAINT

She was admitted after being referred from AMREF Kibera Community Health Centre with facial oedema and elevated blood pressure. She also had mild low abdominal pains.

HISTORY OF PRESENTING COMPLAINT

She was well till two weeks prior to admission when she was noted to have facial and occasional pedal oedema. The baseline blood pressure was 110/70mmHg, but during the last review at the antenatal clinic it was 140/90mmHg. She was subsequently referred to KNH for management and delivery. At the time of admission she was having intermittent low abdominal pains radiating to the back. She had not drained any liquor.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

The patient was para 0 plus O gravida 1. Her last menstrual period was on 12-11-2002 and the expected date of delivery was on 19.08.03. The gestation by dates was 39 weeks. Her menarche was at 17 years. Her cycles were regular occurring every 21 days and lasting 3 to 4 days. She had not used any family planning method previously.

ANTENATAL CLINIC

She has attended AMREF Kibera Community Health Centre since 28 weeks. Her antenatal profile was as follows:

Blood group = A Positive
Hb = 8.4g/dl
VDRL = Negative

Two doses of anti-tetanus toxoid had been given to her. No diagnosis of twins was made.

PAST MEDICAL AND SURGICAL HISTORY

She had never been admitted before. She was not on any chronic medication

FAMILY AND SOCIAL HISTORY

She was a housewife .She did not drink alcohol or smoked cigarettes. There is no family history of twins or chronic illness.

PHYSICAL EXAMINATION

The patient was a young lady in good general condition, was afebrile, not pale and not jaundiced. She had bilateral pedal pitting oedema. Her pulse rate was 88 minutes, blood pressure was 140/90mmHg, and respiratory rate was 18/minutes.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. Fundal height was term, lie was longitudinal, presentation was cephalic and fetal heart was heard and regular. There were no contractions palpated.

VAGINAL EXAMINATION

There were normal external genitalia. The cervix was soft, moderately effaced, anterior and 3 cm dilated. A pulsating cord was felt at the os.

DIAGNOSIS

A diagnosis of a primigravida with mild PET and cord presentation in latent phase of labour was made.

INVESTIGATIONS DONE

- Urine for proteins- ++(two pluses)
- U/E -Na+-140mmol/l
  K+ -3.6mmol/l
  Urea-70 um/l

MANAGEMENT

She was informed of the diagnosis and mode of management by emergency caesarian section. She gave informed consent, blood was taken for grouping and cross matching, the pubic hair was shaved and premedication of atropine 0.6mg was given ½ hour before theatre.

In theatre she was placed in semilithotomy position and aseptically catheterized. She was then repositioned in supine position. The abdomen was then cleaned draped. General anesthesia was given, then the abdomen was opened in layers and lower uterine segment caeserian section was performed. Twin gestation was found intraoperatively. The first twin was cephalic live female infant weighing 2800grams and scored 10 in 1 and 10 in 5. The second twin was breech, live female weighing 2500grams and scored 7 in 1 and 10 in 5.

There was a single placenta with one chorion and two amniotic sacs. The uterus was cleaned and stitched in layers. Persistent relaxation of the uterus was noted and was controlled by a drip of syntocinon and massaging. The swab and instrument count was correct. The abdomen was then closed in layers, with good haemostasis.

POST OPERATIVE MANAGEMENT

The mother did well postoperatively. The two babies joined the mother as soon as she was fully awake from anaesthesia and both did well. The blood pressure settled at 120/70 mmHg soon after delivery and remained so till disharge. On the fourth postoperative day, they were discharged to be seen in 6 weeks in the postnatal clinic.

DISCUSSION

HWC presented was admitted intially with preeclampsia in early labour. On examination she was found to have a pulsating cord vaginally. She was taken to theatre for delivery where a caeserian section was done. Intra operatively, twins were dicovered and delivered. The outcomes were favourable as both babies and mother were stable. They were discharged on the 4th postoperative day.

Hypertensive disorders complicating pregnancy are common and form one of the deadly triad, along with haemorrhage and infection, that results in much of the maternal morbidity and mortality related to pregnancy.[10] Multiple pregnancies are a common risk factor for development of preeclampsia as in this patient.

Monozygotic twins (identical twins) are the result of the division of a single fertilized ovum. Monozygotic twinning occurs in about 2.3 - 4 of 1000 pregnancies in all races. The rate is constant and is not influenced by heredity, age of the mother, race, parity and use of fertility drugs.
Dizygotic twins (fraternal twins) are produced from separately fertilized ova. Slightly more than 30% of twins are monozygotic; nearly 70% are dizygotic. (1)

Dizygotic twins occurs about 1 in 83 conceptions in North America. In Japan twinning is 1.3 births per 1000, while in Nigeria it is 12 per 1000. [1] The incidence of twinning at Kenyatta National Hospital was found to be 1:58.8 by Oyieke [2] and 1:46 by Mutungi [3].

Twinning is associated with increased pregnancy related complication, which includes fetal abnormalities, spontaneous abortions, hyper emesis, anaemia, polyhydroamnios, pregnancy induced hypertension, prematurity, premature rupture of membranes, twin-to-twin transfusion and postpartum haemorrhage. [1]

Early diagnosis of twin pregnancy may alter the perinatal mortality. Twins account disproportionately large share of adverse pregnancy outcomes attributed to preterm delivery. [2,4]

In the majority of twins, the diagnosis of twins is rarely made and only 25% of the twins are diagnosed before 32 weeks of gestation. [2] Diagnostic ultrasound in early pregnancy will show two gestational sacs as early as the sixth week. It should however be noted that between one -third to two -third of multiple pregnancies end in a single birth. [5,6] The incidence of loss of one fetus ranges from 0.5-6.8% after demonstration of multiple pregnancy. [7]

A high index of suspicion may lead to the diagnosis of twinning. A maternal family history of twins, older maternal age, high parity, large maternal size and a previous history of twins provide weak clues but knowledge of recent administration of either clomiphene or pituitary gonadotrophin provide strong ones.

Clinical examination with accurate measurement of fundal height is essential. During the second trimester, a discrepancy develops between gestational age determined from menstrual data and that from uterine size. The uterus that contains two or more fetuses becomes large than one with a single fetus, with a small head in proportion to uterine size. [5]

There may be increased fetal activity and multiple fetal parts may be palpated. Maternal weight gain may be greater than normal. [1] In Oyieke's study [2] only 54% of the patients with multiple pregnancy were diagnosed before labour, 38% were diagnosed after delivery of the first twin.

Sometimes it is possible to identify two fetal hearts if their rates are clearly distinct from each other as well as from the mother. Other diagnostic aids in the

diagnosis of twins include x-rays, chorionic gonadotrophins in plasma and urine, and alpha-fetoprotein.

The patient here was not diagnosed till at operation when twins were discovered, thus underscoring this fact of undiagnosed twins.

In this patient the primary reason for caeserian section was cord presentation. The cord was palpable and pulsating on examination.
Cord presentation is where the cord has slipped down below the presenting part but the membranes are still intact.[8]

The etiology of cord prolapse is caused by anything that interferes with perfect adaptation of the presenting part to the lower uterine segment.[9] In this patient the predisposing factor to the prolapse was the twinning. Once the diagnosis is made and the baby is alive and of a viable gestation once delivered, one should not rupture membranes. The patient is placed in knee chest position and prepared for emergency caeserian section. [8,9] The patient presented here was done emergency caeserian section and twins were delivered with a good outcome.

Once diagnosis of twins is made, management is geared towards reducing complications associated with twin pregnancy.

There is little question that enhancing antenatal care assists in improving outcome. The most commonly used techniques are iron supplementation, vitamin and folic acid administration, a high protein diet, more weight gain than usual, less physical exercise and more bed rest. Early and prompt therapy for any complications (e.g. vaginal infections and preeclampsia) is instituted.
Premature labour may be suppressed by use of tocolytics.
Preeclampsia is managed with sedatives and antihypertensives.

During labour, the mother is monitored using a partogram. Blood for grouping and cross matching is taken and intravenous line secured. This is in anticipation for postpartum haemorrhage.

The mode of delivery depends on presentation of the twins and other obstetric factors. In 42% both twins are cephalic, in 27% the first is cephalic and the second is breech. In 18% the first is cephalic and the second is transverse, and in 5% both twins are breech. The other presentations account for 8%.

Caeserian section delivery is commonly undertaken if the presentation of the first twin is other than cephalic. In situation where the first twin is cephalic and second is breech it is usual to opt for vaginal delivery in most centers. [5]

A patient presenting with persistent cord presentation has to be delivered by caeserian section unless she is in second stage and vaginal delivery can be accomplished quickly.this patient was in early labour with cord presentation, hence reguired emergency caeserian section.

In vaginal delivery, the second twin should be delivered as soon as the first twin has come out. If there are no contractions within 10 minutes, syntocinon should be started. The second twin is associated with a higher mortality, as there is an added risk of asphyxia and operative deliveries due to malpresentation or cord prolapse. Internal podalic version with breech extraction is occasionally used to deliver the second twin. [1]

Complications in the mother include pregnancy-induced hypertension, caeserian delivery and antepartum hemorrhage. Preterm labour, uterine dysfunction, abnormal presentation, prolapse of the umbilical cord, premature separation of placenta and immediate postpartum haemorrhage are common during labour and delivery.

The patient H.W.C presented here had preeclampsia, cord presentation, and intraoperatively had persistently relaxed uterus.

Complications such as various grades of conjoined twins, acardiac twins and twin-twin transfusion syndrome may occur in monozygotic twins with increasing morbidity and mortality. Occasionally one fetus may die in advanced pregnancy leading to increased likelihood of death of the second twin. [5]

In developed countries such as USA, maternal mortality for multiple pregnancies is only slightly higher than for singletons.

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OBSTETRIC CASE 4

SUCCESFUL TRIAL OF LABOUR IN A PATIENT WITH ONE PREVIOUS SCAR

NAME : N.W.
AGE : 31 YEARS
IP/NO. : 0911418
PARITY : 1+0
D.O.A. : 2/9/03
D.O.D. : 3/9/03
WARD : 1A

PRESENTING COMPLAINT

She was admitted with labour pains since that morning.

HISTORY OF PRESENTING COMPLAINT

She developed progressively increasing, intermittent lower abdominal pains, radiating to the back. There was no drainage of liquor, passage of mucus or bleeding vaginally. Fetal movements were perceived to be normal.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 1 plus 0 gravida 2. Her last menstrual period was 17/12/02 and the expected date of delivery was on 23rd September 2003. The gestation by dates was 37 weeks. Her Menarche was at 14 years. Her cycles were regular occurring every 30 days and lasting 3 days. Her last delivery was in 2000 at

Kikuyu Hospital where she was delivered by caeserian section because of fetal distress and baby's weight was 2.85 Kg and is alive/well.
She had been on microgynon from 2001 till November 2002 when she stopped to conceive.

ANTENATAL CARE

She attended Westland's Nairobi city council Health center from 30 weeks.
The follow up was uneventfull.

Investigations done were:

Hb -110g%
Blood group -A+ve
VDRL – Negative.

PAST MEDICAL HISTORY

She had been admitted previously for delivery only. She did not suffer any chronic illness. She had no allergies.

FAMILY AND SOCIAL HISTORY

She is a housewife. She does not take alcohol or smoke cigarettes. There was no family history of chronic illness. Husband works with East Africa oxygen.

PHYSICAL EXAMINATION

GENERAL EXAMINATION.

She was in good general condition, was afebrile, not pale and not jaundiced. Her pulse rate was 80/minutes, Temperature was 36.4oc, blood pressure was 120/80 mmHg and respiratory rate was 24/minute.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. She had an old subumblical midline scar. There were no areas of tenderness. Fundal height was term, lie was longitudinal, presentation was cephalic, the station was 3/5 up, and fetal heart was heard and regular at 142 beats per minute.

VAGINAL EXAMINATION

There were normal external genitalia. The cervical was 6 cm dilated; the cervix was soft, anterior and fully effaced. No cord was felt. Artificial rupture of membranes was done and the liquor was dear. The pelvis felt adequate.

DIAGNOSIS

A diagnosis of active labour in a patient with one previous scar was made.

MANAGEMENT

A decision to try the scar was made and patient was informed accordingly and she obliged. An intravenous cannula was inserted and maintained with a slow drip of five percent dextrose to keep it patent. Blood was taken for grouping and cross matching.

A partogram was also started and maintained. She progressed well and delivered four hours later to a life male infant who scored 9 at 1 and 10 at 5 and weigh 3400grams. The third stage of labour was uneventful. She was transferred to the postnatal ward for an overnight stay. She remained stable and discharged home on amoxil 500mg three times daily, diclofenac 50 mg three times daily, on the First post delivery day. She was counseled and given an appointment to attend family planning clinic for a method.

DISCUSSION

This is a case of a mother with one previous caeserian section scar admitted in labour for which she had a successful vaginal birth.

Caeserian section rates have continued to rise all over the world. Incidence of caeserian section in the USA has continued to rise from 4.5% in 1965 to 25% in 1988, but a decrease between 1989 and 1996. A study in Kenyatta National Hospital in 1980 found a section rate of 17.8% of which 59.8% have repeat caeserian sections.[2]

Trial of labour in well-selected patients, as the patient presented, will help reduce the increasing incidence of repeat caeserian sections.

Walton gave 5 criteria to be used in selecting patients to be tried for trial of scar. [5]

These are:

- Caeserian section should have been done for a non-recurrent condition.
- Only one scar should be tried.
- There should be no medical condition complicating the pregnancy.
- There should be no history of previous uterine rupture.
- The maternal pelvis should have a true conjugate of 10.5 cm or more.

The patient N.W was sectioned due fetal distress in the earlier pregnancy which is a non-recurrent cause, she had no medical condition complicating pregnancy, and the pelvis clinically felt adequate.

Clinical pelvimetry is considered more superior to radiological pelvimetry which is static and maternal focused. It does not assess changes that occur during labour. The best method to successful trial of labour is intrapartum monitoring

in a well-equipped centre such as Kenyatta National Hospital were theatre facilities and personel are available on short notice.[8]

Antenatal care for all pregnant women and especially one with a previous scar will help both the provider and mother to prepare for the expected delivery and the anticipated complications. The patient with one previous scar is seen in the antenatal clinic like any other patient. At 37 weeks gestation a clinical or radiological pelvimetry is done. If the true conjugate is less than 10.5 cm then the patient is scheduled for elective caeserian section. If the pelvis feels clinically adequate, or the true conjugate is more than 10.5, then she will be given a trial of labour.

The patient N.W was not seen till when she came in labour to KNH. Assesmnt then showed an adequate pelvis. She was allowed to labour with close monitoring for any danger signs. She progressed well and delivered vaginally.

The danger signs to watch out for during trial of labour include rising maternal pulse, vaginal bleeding, abnormal fatal heart tones, and poor progressing labour.

The reasons for increasing caeserian rates include reduced parity hence higher nulliparity, increasing avoidance of midforceps and vaginal breech deliveries, older women having children, increasing use of electronic fetal monitoring, concern for malpractice litigation, the mistaken belief that once a women has had one caeserian delivery all subsequent deliveries must be by caeserian section and socioeconomic and demographic factors. [1,3]

In the past 15 years or so, there has been ample evidence for trial of labour after a lower transverse caeserian section. In 1978, only 2% of women with prior one caeserian scar were delivering vaginal but there was a 14-fold increase and by 1996, 28% of women with prior caeserian deliveries were delivering vaginally.[1]

Encouraging vaginal birth after caeserian section would reduce caeserian section rates and associated morbidity and mortality.

In study by Walton in 1978 on trial of one previous scar, 74% had successful vaginal delivery, 20% had failed trial of labour due to arrest of dilatation, 5% had uterine rupture, and 9% developed fetal distress and had caeserian section.[5] Flamm et al had a success rate of 69% in trying mothers who had 2 previous caeserian section deliveries.[7]
The patient N.M presented did not develop any complication during delivery.

For a successful trial of scar, proper selection of the mother should be done. Factors that influence include the indication for the primary caeserian section, history of previous vaginal delivery, number of previous caeserian sections, probability of uterine rupture and previous maternal and perinatal outcome.

The patient presented here had 1 previous scar due to fetal distress. The pelvis was adequate clinically.

At Kenyatta National Hospital, selection of patients for delivery is more less the same as above ones but the patients with 2 or more previous scars are routinely delivered by elective caeserian section.[5]

Use of oxytocin to induce or augment labour has been implicated in uterine ruptures in women with prior caeserian deliveries.
Turner (1997) observed that 13 of the 15 women with uterine ruptures encountered at the Coombe Hospital in Dublin between 1982 and 1991 occurred in women with prior caesarians and who had received an oxytoxic agent, usually for induction of labour.[9]

In contrast, cautious use of intravenous oxytocin to augment labour in women with prior caeserian at other centers were rarely associated with uterine rupture. Zelop et al found that 2.3% of those induced had rupture compared with 0.4 to 1% in those whose labour was augmented or spontaneous.[10]

The use of oxytocin in augmenting or inducing labour is not practised routinely in Kenyatta National Hospital. The patient presented was not given any oxytocin for any reason before delivery.

Examining the old scar after successful delivery is no longer practiced, as this may be more harmful by extending any asymptomatic silent tears or ruptures.[1]

Less than 10% of women with scar dehiscence experience pain and bleeding. The most frequent signs of uterine rupture are fetal heart decelerations. Current studies cite a maternal mortality rate of about 1% and a perinatal mortality rate of about 50% in association with uterine rupture.

The patient presented delivered vaginally facing no risks of anesthesia, had a short hospital stay, saved money, and had an earlier smoother interaction between mother and her infant.

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OBSTETRIC CASE 5

ADOLESCENT PREGNANCY -VAGINAL DELIVERY- POOR OUTCOME

NAME	**:E.K**	**PARITY**	**: 0 + 0**
AGE:	**:17**	**D.O.A.**	**: 16.9.03**
ID NO.	**: 0913743**	**D.O.D .**	**: 23.9.03**

PERSENTING COMPLAINT

She was admitted after being referred with a history of labour pains for about one and a half days.

HISTORY OF PRESENTING COMPLAINT.

She was admitted as a referral from a private clinic with a diagnosis of prolonged labour. She had laboured at home for about 3 hours before presenting to this private clinic. There she was admitted and laboured for a further 12 hours before referral to Kenyatta National Hospital. She had ruptured membranes before admission to the private clinic. There was no per vaginal bleeding.

OBSTETRIC HISTORY

She was a primigravida. Her last menstrual period was on 25. 1. 2003 and her expected date of delivery was 2. 9. 2003. Her maturity by dates was 42 weeks. She had attended the same private clinic for antenatal care. Antenatal profiles were done but only VDRL was indicated as negative on the antenatal card.

GYNAECOLOGIC HISTORY

She attained her menarche at the age of 14 years. Her menses were regular occurring every 26 days and lasting 4 to 5 days. She had never used any form of contraception.

PASTMEDICAL AND SURGICAL HISTORY.

She had never been treated for any major illness. She had never been admitted.

FAMILYAND SOCIAL HISTORY.

She got married at the age of 16. She was a housewife and lived in kibera with husband. The husband was a milk vendor. She never took alcohol or smoked cigarettes. There was no family history of chronic illness. She had dropped out of school at class 6.

PHYSICAL EXAMINATION

GENERAL EXAMINATION

She was a young lady in distress. She looked tired and dehydrated. She was not pale, not jaundiced, not edematous, and no peripheral lymphadenopathy. Her blood pressure was 120/80 mmHg, temperature was 36.2 °C, pulse was 90 per minute, respiratory rate 22/minute.

CENTRAL NERVOUS, RESPIRATORY AND CARDIOVASCULAR SYSTEMS.

These were essentially normal

ABDOMINAL EXAMINATION

The abdomen was uniformly distended with a fundal height corresponding to term. The lie was longitudinal with cephalic presentation that was 2/5 above the pelvic brim. She was having 3 contractions every 10 minutes each lasting 30-40 seconds. The fetal heart was heard with 140 beats per minutes but irregular.

PELVIC EXAMINATION

The external genitalia were oedematous. On digital examination, the cervix was fully effaced with a dilatation of 9cm. There was second-degree moulding and caput formation. The pelvis could not be assessed for adequacy.

DIAGNOSIS

An impression prolonged labour secondary to cephalo-pelvic disproportion in a teenage was made.

MANAGEMENT

She was prepared for immediate caeserian section operation. The patient and the accompanying adult were given explanation on the diagnosis and mode of delivery. The consent was signed by the accompanying adult who was her aunt. She was started on intravenous fluids of normal saline alternating with 10% dextrose. As she was being prepared for caeserian section, the patient progressed into second stage.

She delivered vaginally to a live male infant weighing 3200 gm and whose Apgar score was 2/2, 3/5, and 5/10.

The baby was taken to the newborn unit but died one day later.

Ergometrine was given intramuscularly at a dose of 0.5 mg. The placenta was delivered complete by controlled cord transaction. The fact that no catheter was inserted immediately was an oversight.

POST PARTUM MANAGEMENT.

Immediately post delivery she was fairly stable. She had been on intravenous fluids of 10% dextrose alternating with normal saline since arrival. Her blood pressure was 120/70 mmHg, pulse was 85/minute and respiration was 22 per minute. The uterus was well contracted. The perineum was inspected and found to be bruised but otherwise intact. She was cleaned and taken to the recovery

room. She was taken to post natal wards 4 hours later. On the second day she was noted to have severe perineal pains and difficulty in passing urine. On examination, she was found to have a full bladder and the perinael bruises were quite swollen and tender.

A foleys catheter size 18 was introduced aseptically and balooned with 20 mls of normal saline. The catheter was to be kept for 7 days. She was also started on intravenous augmentin 1.2 gm twice daily, metronidazole 500mg three times daily and ponstan 500 mg per oral three times daily. She was counseled on breast care to avoid congestion and was put on bromocriptine 2.5 mg twice daily to suppress lactation.

These were continued for seven days. The catheter was also kept for seven days. When the catheter was removed, she was found to be fully continent and lochia loss was normal. She was discharged on the seventh postnatal day in stable condition, through high-risk clinic for further follow up and to be seen in the postnatal clinic in 6 weeks.

FOLLOW UP

She was seen in the high-risk clinic six weeks later. By then she had no complaints. She was counseled on family planning, the need to get vocational training in order to support her family, and the need to improve her health seeking behaviour especially when she becomes pregnant again.

DISCUSSION

The patient presented was a 17 year old who had prolonged labour – both at home and in a private maternity home before presenting to K.N.H. She delivered just before caeserian section was done. The outcome was a baby who scored poorly and died in newborn unit. She had been married at sixteen years of age and had lived with her husband for one year.

Adolescence is the period during which an individual progresses from the point of appearance of secondary sexual characteristics to sexual maturity, progression of psychological process and cognitive function from that of a child to those of an adult, and social economic progression from total dependence to relative independence. [1]

The patient E.K had dropped out of school in standard six and soon got married.

The incidence of adolescence pregnancy has been rising all over the world. In Kenya, the rate was 11.1% in 1983 and 21% by 1985.[2, 3]

Social values, religion and culture, as well as poverty in Africa have a strong influence on sexual practices and reproductive health. It is obvious that for most people, adolescence is a critical period in the upsurge of sexual drive, the development of sexual values, and the initiation of sexual behaviors.[4] The patient E.K came from a very poor background which contributed her dropping out of school and marrying early.

Some studies have shown that up to 23% of adolescents are already sexually active with the majority having started sexual activity within 2 years of attaining menarche. [5]

The patient presented here was married and conceived at 16 years of age, and had attained menarche 2 years earlier at 14 years.

Poor education is typical of pregnant adolescents. Muraya[3] found that 66.4% of teenage pregnant women became pregnant while still in primary school.
The patient presented dropped out of at standard 6.
Besides poor education, these young mothers get married early contributing to high parity, high divorce rates, high levels of poverty, poor utilization of health services.[3, 5, 6]
The patient presented was married by age 16 years, she laboured at home, later went to a small maternity were she was poorly managed and only ended in Kenyatta National Hospital when things were out of control. The patient also pressure symptoms to the perineum as a result of prolonged labour.

The majority of teenage pregnancies are unplanned and the outcome for the mother and her child in terms of live chances are negative. The pregnant teenager is considered a high-risk obstetric patient because statistics have shown that maternal and infant mortality, preclampsia and low birth weight are more common amongst this age group.[2, 3, 7, 8] The patient presented here had early neonatal death due to delays at home, and at the peripheral centre. The main reasons for delays in utilising health care in this patient was mainly financial and poor referral system from the peripheral centre who kept the patient for long even when she was showing signs of complications.

Babies born to adolescent mothers have a higher rate of infant mortality and morbidity than those born to elder mothers even when controlling for confounding factors such as socio economic status, maternal education and marital status. Risks to the well being and development of the children of adolescent mothers may be exacerbated if the teenage mothers lack support and suffer depression.[7, 8]

Adolescent mothers have been shown to be at increased risk of repeat pregnancy while still in the tender age.[3] It is important to offer counseling and family planning advice before discharge and on follow up. The patient E.K was counseled before disharge and on followup.

Use of modern contraception among married women in Kenya has risen sharply form 10 percent in the early 1980s to 38% in 1998. Adolescents have, however, remained low users of family planning services. The low use of contraceptives is explained by a number of factors, which include lack of information, complexity in teenage sexual behaviour, and inaccessibility to family planning services. These are issues that need to be addressed in preventing adolescent pregnancy.[11] The patient presented had never used any contraceptives.

Appropriate obstetric care should be provided for teenagers who by virtue of their age are at increased risk of pregnancy and low birth weigh related complications. Care should be availed to deal with longer-term adverse health consequence associated with adolescent pregnancy. Complications of prolonged labour and difficult delivery as suffered by this patient should be prevented by delaying age of first pregnancy, improving girl child education and establishing proper referral systems.

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CERVICAL INCOMPETENCE: MACDONALD STITCH-LIVE BABY

NAME	**: M.C.N.**	**LMP**	**: 09.01.01**
AGE	**: 29 YEARS**	**EDD**	**: 16.10.01**
PARITY	**: 1+2 GRAVIDA 4**	**DOA**	**: 10.04.01**
IP NO	**: 0728553**	**DOD**	**: 14.04.01**

PRESENTING COMPLAINTS

She had no complaints. She was admitted through the antenatal clinic for insertion of McDonald Stitch. She had been seen in the antenatal clinic from 8 weeks gestation and the clinical findings were suggestive of cervical incompetence.

PAST OBSTETRICS AND GYNAECOLOGICAL HISTORY

She was a Para 1+2. She had a spontaneous vertex delivery at term in 1998. The child weighed 3kg and the child was alive and well but died at 7 months of age due to gastroenteritis. In January 2000 she had a stillbirth at 6 month and in July 2000 she had an abortion at 4 months followed by uterine evacuation. Both fetal losses started with drainage of liquor followed by abdominal pain and later expulsion of the respective fetuses. She had no history of trauma or febrile illness associated with above terminations.

Her menarche was at 18 years. Her menses lasts 3-4 days and cycles are regular with 28 days interval. The menstrual flow was not heavy and had been associated mild dysmenorrhea. She used nordette from August 2000 to January 2001.

Present pregnancy

Her last menstrual period was on 9.9.01 and expected date of delivery was 16.10.01. The maturity was 13 weeks. She had been booked in the antenatal clinic at KNH at 8 weeks gestation and this was her fourth visit.

PAST MEDICAL HISTORY

No significant history apart from the above delivery and abortion.

FAMILY AND SOCIAL HISTORY

She was married security officer. Her husband was an accountant. There was no family history of chronic illness or recurrent abortions. She did not smoke cigarettes but drank alcohol socially about 4 liters per month.

PHYSICAL EXAMINATION

She was a young woman in good general condition with no fever, no pallor, no jaundice, no oedema and no lympadenopathy. Blood pressure was 110/70 mm Hg, pulse rate was 72/minute and regular, respiratory rate was 20 per minute and temperature was 36.6^{0}C.

The cardiovascular, respiratory and central nervous system were examined and found to be normal.

ABDOMINAL EXAMINATION

There was slight distension of the lower abdomen but no areas of tenderness. The uterine fundus corresponded to 14 weeks gestation. There were no other palpable masses.

PELVIC EXAMINATION

Speculum: She had normal external genitalia with normal vaginal walls. The cervix had a defect at 6 O'clock, otherwise it had no sign of infection and no discharge or bleeding.

Digital: The cervix was 1cm long anteriorly and ½cm posteriorly and the internal os admitted a finger. The defect on posterior lip was also felt. There was no discharge on examining fingers.

DIAGNOSIS

A diagnosis of a patient with consecutive fetal wastage secondary to cervical incompetence was made and she was planned for insertion of McDonald stitch.

INVESTIGATIONS DONE

1. Hemoglobin level -10.7 g/dl
2. VDRL - negative
3. Random Blood Sugar -4.9 mmol/L
4. Brucella titers - negative
5. Blood Group -A positive
6. Urine microscopy and culture- reported normal microscopy findings and no growth.
7. Ultrasound showed a single intrauterine pregnancy of 14 weeks gestation. Cervix appears short. Placenta was anterior low but not touching the internal os. No fetal abnormalities were noted. Fetal cardiac activity demonstrated. Liquor was adequate.

500mg 8 hourly, and Ventolin 4mg 8 hourly. She was to be on complete bed rest while in the ward.

On the second postoperative day she had no complains and was discharged home on the same medication for five days. She was advised to abstain from coitus and to report to hospital in case she developed lower abdominal pain, drainage of liquor or vaginal bleeding. She was to be reviewed in the antenatal clinic in two weeks. The stitch was to be removed at 37 weeks.

RE-ADMISSION

She continued with antenatal clinic uneventfully during her seven subsequent visits. She skipped the eighth visit when the McDonald stitch was to be removed. However, she returned on 6.10.01 at 38 weeks when in labor. The stitch was removed and labor progressed well. A live male infant weighing 3500gms whose Apgar scores were 6 in one minute and 9 in ten minutes was delivered vaginally. Mother and child were observed in the antenatal ward for one day. They were discharged to go home the following day to be followed up in the postnatal clinic in six weeks.

FOLLOW UP

She was seen in two weeks in the postnatal clinic where she did not have any complaints. The baby was growing well. She was counseled on family planning and advised to come back to the family planning clinic in four weeks weeks.

DISCUSSION

The patient presented was a 28 year-old para 1+2 with consecutive fetal wastage secondary to cervical incompetence. She had McDonald stitch inserted at 14 weeks gestation and delivered a live baby at 38 weeks gestation.

In normal pregnancy the cervix remains closed and retains products of conception within the uterus and during third trimester, the cervix soften in preparation of parturation. Cervical incompetence can be due to congenital or acquired factors. [1]

The incidence of cervical incompetence ranges from 0.05 - 1 per 100 pregnancies.[2] At KNH, Njagi reported an incidence of 1 in 90 deliveries.[3] The risk of preterm delivery rises by four times after one preterm delivery and about 10% of preterm deliveries are caused by true cervical incompetence.[4]

The patient presented had two consecutive second trimester pregnancy losses before a McDonald stitch was inserted. This is the usual classical presentation of cervical incompetence.

Some women, experience cervical effacement and dilatation with every pregnancy; others have one or more uncomplicated births at term before presenting with the typical manifestations of cervical insufficiency. With cervical insufficiency there is second trimester or early third trimester fetal loss characterized by painless cervical dilatation with prolapse and ballooning of membranes into the vagina followed by rupture of membranes and expulsion of an immature fetus.[1]

The classic presentation of cervical insufficiency is cervical dilatation and effacement in the second trimester with fetal membranes visible at or beyond the external os in the absence of contractions. It may be asymptomatic or associated with one or more of the following: vaginal fullness or pressure,

vaginal spotting or bleeding, an increased volume of watery, mucous, or brown vaginal discharge or vague discomfort in the lower abdomen or back.

The diagnosis of this patient was made from the history and physical examination. A clinician should suspect cervical incompetence in a patient with recurrent second trimester pregnancy losses. Other, more subtle, markers of reduced cervical resistance include soft cervical consistency on digital examination, a history of short labors, advanced dilatation before the onset of labor, and progressively earlier deliveries with each successive pregnancy. Funneling of fetal membranes into or completely through the endocervical canal (i.e. hourglassing) or shortening of cervical length and dilatation of internal cervical os are indicators of cervical incompetence on ultrasound examination. [5, 6]

The etiology of abnormal cervical function can be divided into two major categories: congenital abnormality and trauma although factors such as uterine over distention and biochemical abnormalities also play a role. Developmental causes of reduced cervical competence include: Congenitally short cervix, Müllerian duct abnormalities and in utero exposure to diethylstilbestrol.

Congenital shortness of the cervix appears to be the commonest cause of cervical incompetence. In a prospective study of 2189 women cervical length was estimated at 24 weeks using ultrasound. Cervical length was normally distributed with a mean of 35 mm. The relative risk of preterm birth was 10-fold higher (positive predictive value about 25 percent) in women whose cervical length fell below the fifth centile (22 mm) compared to those at the 75th centile (<40 mm). [7] The risk of cervical incompetence is highest among women with unicornate or bicornuate uterus.[8] Incompetence of the cervix may occur in women exposed to diethylstilbestrol in utero where there were resultant cervico vaginal anomalies.

The patient may have sustained cervical trauma during her last delivery. Traumatic causes of cervical incompetence may be physiological or iatrogenic and the later includes: Cervical laceration following spontaneous vaginal delivery, prolonged second stage of labor, instrumental vaginal delivery, cervical injury at the time of cesarean delivery and surgical procedures involving the cervix (e.g. mechanical dilatation, cone biopsy and cervical amputation as done in management of CIN). [8,9]

In pregnancy, abdominal and especially endovaginal ultrasound has facilitated the diagnosis of cervical incompetence. It may show an open os with herniation of fetal membranes and is accurate in assessment of cervical length.[3,4] Outside pregnancy several tests can be performed. Hysterogram may show isthmal funneling. Kagia at KNH demonstrated evidence of cervical incompetence in 82.6% of patients who had preterm deliveries six weeks later by use of hysterosalpingogram.[10] Other tests include passage of size 6-8 Hegar dilators through the cervix with ease, and traction test by use of a foley catheter ballooned with 1ml of water and traction of 600mg applied.[1]

The patient presented here had second trimester abortion. Cervical dilatation characteristic of cervical incompetence seldom becomes prominent before the sixteenth week of gestation. This is because before that period, the products of conception are not sufficiently large to efface and dilate the cervix except when there are uterine contractions.[1]

The patient was treated by reinforcement of the weak cervix by purse-string suture at 14 weeks. It is best performed after the first trimester but before cervical dilatation of 2-3 cm is reached.[1] The best time for insertion is at 14 weeks so that early abortion secondary to causes like congenital and genetic abnormalities will be complete by then. Njagi found that Mc Donald stitch gave best results if it was done between 13 and 19 weeks gestation.[3]

An ultrasound was done to exclude fetal congenital anomalies and to confirm a living fetus before cerclage. If substantial dilation of the cervix ha occurred, or bulging of membranes ha occurred, then the likelihood of a successful cerclage would have been lessened. An attempt can be made to replace the protruding membranes with a balloon is deflated and removed.[2] This patient's was done cerclage at 14 weeks gestation.

Three types of operation are commonly used during pregnancy including MacDonald, shirodkar and modified shirodkar. There is less trauma and blood loss with both MacDonald and modified shirodkar than with the original shirodkar which is often preserved for previous failed MacDonald procedure and structural cervical abnormalities.[1, 2] MacDonald's stitch can be removed and so can the modified Shirodkar unlike the conventional Shirodkar, which was a permanent stitch requiring caesarean section for delivery. Transabdominal cerclage may be appropriate in rare circumstances. These include traumatic cervical lacerations, congenital shortening of cervix, advance advanced cervical dilatation and previous failed vaginal cerclage.[2,11] Disadvantages include need to perform two operations (one for suture placement and another for caesarean section delivery), and risk of injury to the uterine vessels and ureter.[2]

Contradictions to cervical cerclage include rupture of membranes, uterine bleeding, uterine contractions, chorioamnionities, cervical dilation greater than 4cm, polyhydramnious and known fetal anomaly.[1,2] Complications of cerclage especially when performed after 20 weeks gestation are high. The complications include haemorrhage, rupture of membranes, infection (chorioamnionitis and septicaemia), induction of preterm labour, cervical dystocia, cervical laceration or uterine rupture at time of delivery, vesicovaginal fistula formation and fetal death.[1, 2] This patient did not get any of the above complications.

MacDonald suture is removed at 36 completed weeks of gestation, or if there is vaginal bleeding, drainage of liquor, or premature labour sets in. This patient came at 38 weeks in labour and the stitch was removed.

The success rates with both MacDonald and the modified Shirodkar techniques approach 85-90%.[1] Njagi found the success rate leading to term pregnancy to be 55% and 64.2% in fetal survival.[3] Most case series quote a viable delivery rate of 70 to 90 percent after cerclage, compared to 10 to 30 percent prior to the procedure.[12]

Conservative management requires patients to have bed rest at home and weekly ultrasounds are done from 15 weeks of gestation and if shortening at or below the critical length of 15mm is noted emergency cerclage is done. All cerclages are to be removed if there is evidence of preterm premature rupture of membranes, preterm labor unresponsive to tocolytics, or attainment of 36 completed weeks of gestation.

Therapeutic bed rest is the most commonly employed non-surgical approach to the management of incompetent cervix, although its benefit has never been proved in randomized controlled trials[13]. Other suggested modalities include intramascular hydroxyprogesterone plus a program of bed rest [14], and the use of several types of vaginal pessaries and inflatable balloons in an attempt to change the axis of the cervical canal, thereby altering the gravitational force of intrauterine contents on the cervix. There is generally no indication for tocolytic therapy unless preterm labor is also present. The woman presented here was done cervical cerclage and delivered of a live male infant.

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OBSTETRIC CASE. 7

ECLAMPSIA – CAESERIAN SECTION – LIVE BIRTH

NAME: **T.O**
IP NO: **0886421**
AGE: **14 YEARS**
D.O.A: **16/05/03**
D.O.D: **21/05/03**

PRESENTING COMPLAINT

She was admitted with a history of having fitted five times over the past six hours prior to admission. The fits were described as generalized clonic tonic convulsions each lasting about 3 minutes, but the last one lasted almost 10 minutes while on the way to the hospital. At casualty she was still in semi comatose state with a BP of 160/100mmHg. She was transferred to labourward immediately.

PAST MEDICAL HISTORY

She had no history of epilepsy or any convulsive disorder. She had no chronic illness and had never been hospitalized before.

OBSTETRIC AND GYNAECOLOGY HISTORY

She was a primigravida. Her last menstrual period was sometimes in August 2002 and therefore her expected date of delivery was sometimes in April 2003. There was no history of contraceptive use.

She had been made pregnant by a close relative. The baby was to be given out for adoption and all the relevant arrangements had been made with relevant government departments.

She had attended antenatal care at Cholajimbo Provincial Rural Health Training Center in Maseno from 9th March 2003. She had attended four times and the blood pressure was ranging from 120-150/80-100mmHg. Urinalysis done once was normal. Other antenatal profiles had not been done. She was brought to Nairobi to deliver here and to give up the baby for adoption.

FAMILY SOCIAL AND OCCUPATIONAL HISTORY

She was a schoolgirl in standard seven. She was not married and had conceived following incest. She neither drunk alcohol nor smoked cigarettes. There was no history of chronic illness in her family.

PHYSICAL EXAMINATION

Patient was restless in post-ictal state. Her pupils were equal and bilaterally reacted to light. There was no focal lateralising sign. BP: 150/100mmHg, Pulse: 100/minute, RR: 20/minute, Temperature: $36.5^{0}C$

Cardiovascular and respiratory System

Both systems were normal.

ABDOMEN

The abdomen was distended with a fundal height of 36 weeks. The fetus was in longitudinal lie and cephalic presentation. The descent was 4/5 up and fetal heart was heard and regular at 140 beats per minute.

VAGINAL EXAMINATION

The external genitalia were normal. The cervical os was closed. The cervix was 2cm long, firm and posterior. The pelvis was borderline cephalopelvic disproportion. Catheterization was done aseptically.

INVESTIGATIONS

Urinalysis – proteins of 3+
Hb: 12g%
BS for mps was negative.
U/E – NA^+ - 140MMOL/L
K+ - 3.5mmol/l
Urea - 6.0umol/l

DIAGNOSIS

A diagnosis of eclampsia at term was made.

MANAGEMENT

She was given MgSO4 solution 4g bolus and then a drip of 5g in drip. Due to the unripe cervix, arrangements were made for delivery by emergency caeserian section. The aunt who accompanied her gave the consent after full explanation of the patient's diagnosis and mode of delivery.

In theatre she was placed in supine position abdomen was cleaned and draped. General anesthesia was induced and patient was intubated. The abdomen was opened through a Pfannentiel incision. A lower caesarian segment caeserian section was done. The outcome was a live female infant birth weight of 2000gm and with an APGAR score of 8/1, 9/5 and 10/10. The baby was reviewed by a paediatric resident and later transferred to Newborn unit for onward adoption. The placenta wad delivered by controlled cord traction and grossly looked normal. The uterus was then stitched in layers and the abdomen was closed after correct instrument and swab count. The general anesthesia was reversed uneventfully.

POSTOPERATIVELY

Postoperatively she was taken back to the acute room of labour ward where she stayed for 24 hours. There she continued with a drip of MgSO4 5g, 8-hourly and was also put on antibiotics crystalline penicillin and gentamycin. The Blood Pressure stabilized at the range of 120-140/80-90mmHg. She had no further

postpartum convulsions. After 24 hours she was transferred to the lying in ward. She was then commenced on tabs phenobabitone 60mg bd and oral antibiotics. She was also started on bromocriptine 2.5 mg twice daily. Further counseling was done and was also instructed on breast care and personal hygiene. The patient remained stable, the BP became normal and renal functions were normal. She was discharged on the 7th post op day on phenobabitone alone.

POSTPERATIVE FOLLOWUP

She was seen six weeks after discharge in the postnatal clinic. Her BP was 120/70mmHg. The wound was well healed and the uterus was well involuted. She was referred to the high-risk clinic but preferred to be reviewed in Maseno as she was going to resume school there. Further follow up was therefore lost.

DISCUSSION

The patient presented suffered eclampsia at term. She was delivered by emergency caesarian section due to an unripe cervix. The outcome was a live baby.

She had suffered a triple tragedy of being an adolescent, being made pregnant by a close relative which is a taboo in her community and then developing eclampsia to cap her misfortune.

She was only 14 years old. Adolescence is a critical time in a girls life because of their limited knowledge about how their body functions. They are anxious about the uncertainities of sex and face many risks including unplanned pregnancies and sexually transmitted diseases. These girls are also prone to sexual abuse including incest. Incest is a form of sexual abuse, especially of children and girls before they reach consenting age. It involves someone having sex with a close relative against the accepted norms of the community they live in.[1] The patient presented came from western province where having a baby with a close relative, such as a cousin for her, was unacceptable. In the African context such relationships viewed with contempt and the offspring were given out for adoption or the babies were abandoned to wild animals. The patient T.O presented did give out her baby for adoption.

The patient presented with eclampsia to Kenyatta National Hospital. Eclampsia is one of the complications commonly encountered by adolescents who become pregnant.

Eclampsia is the occurrence of seizures in a woman with preeclampsia that cannot be attributed to other causes. The seizures are of grand mal type and may appear before, during, or after labour. [2]

The patient presented had no other cause of seizures as she had no history of epilepsy and blood slides for malaria was negative, but had elevated blood pressure.

About 75% of cases occur before delivery most commonly in the last trimester, and become increasingly common as term approaches. About 50% of the postpartum eclamptic seizures occur in the first 48 hours after delivery but they may occur as late as 6 weeks postpartum. [2]

The incidence of eclampsia varies with geographical location. This is attributed to differing antenatal care between varying centers. It is highest in the developing countries (0.17% in Nairobi, 0.39% in Ile-Ife in Nigeria) as compared to developed countries (.0036 in Oxford UK). [4,5,6,7]

Eclampsia is therefore a consequence of poorly managed preeclampsia with a higher incidence reported in unbooked mothers.[4] Antenatal care provides the opportunity for proper screening, early recognition and provision of appropriate care for those patients with classical signs of preeclampsia.[8] This will prevent progression to eclampsia.

The patient presented had attended antenatal care in Maseno where blood pressures were normal. She had acute onset blood pressure elevation.

The actual etiology of preeclampsia is unknown, but has a complex pathogenesis. It is known to be associated with failure of trophoblastic invasion of spiral arteries and placental ischaemia, but the mechanisms of this impairment is unknown. [1,8] It is proposed that the diffuse systemic endothelial dysfunction is triggered by factors released from ischaemic placenta. Other possible causes include genetic predisposition, increased pressor response, endothelins, nitric acid, endothelial cell activation, coagulation abnormalities and cardiovascular system maladaptation.[2, ,9,10,11]

Vascular constriction causes resistance to blood flow and subsequent arterial hypertension. Endothelial cell damage and leakage causes local hypoxia, haemorrhage and end organ damage as in severe preeclampsia and eclampsia.

The predisposing factors to preeclampsia and hence eclampsia include nulliparity, black race, maternal age below 20 and above 35 years, low socio- economic status, multiple gestation, hydatidiform moles, polyhydroamnios, non-immune fetal hydrops, diabetes, chronic hypertension, and underlying disease. [3]

The presented patient was nulliparous, below 20 years, and of low socio economic status, which are predisposing factors to pre eclampsia/eclampsia.

The management of eclampsia consists of: control of seizures, blood pressure control, expedited delivery, and management of subsequent complications.

The control of seizures in this patient was done by use of MgSO4. Fifteen years of experience with MgS04 has proved it to be effective and safe. [2,3] At KNH, use of MgS04 has been adopted over the past one year.

Other drugs used for control of seizures include diazepam, phenytoin and chlormethiazole.

Blood pressure is controlled by boluses or drips of hydralazine. Other drugs, which may be used, include labetolol, nifedipine, diazoxide and trimethopan. Timing of delivery depends on the patient's condition, state of the cervix and progress of labour at admission. A 4 to 8 hour trial of labour may be indicated for most patients with preeclampsia – eclampsia. If neither effacement nor dilatation of the cervix has occurred and does not occur significantly over this period, caeserian section is performed. With severe preeclampsia fetal gestational age less than 32 weeks, and an unfavorable cervix, caeserian section is performed without a trial of labour.

The patient T.O presented had repeated convulsions, was in poor neurological state and unfavorable cervix, hence she was delivered by caeserian section.

The patient presented did not suffer any severe sequealae.
Complications of eclampsia include renal failure, DIC, pulmonary edema, abruptio placenta, pulmonary embolism, cerebral vascular accidents, blindness, hypertensive crisis, high maternal and fetal morbidity and mortality.[3]
After delivery the patient should be monitored in the acute room for 24-48 hours. The mgS04 is continued together with hydralazine if blood pressure is still elevated for that length of time. The patient presented was observed in the acute room for 24 hours and antihypertensives and anticonvulsants were then weaned off stepwise as the patient stabilized.

The blood pressure usually settles within 48 hours of delivery or may be delayed for up to 2 weeks and occasionally up to six weeks. The patient L.O had a normal blood pressure within 12 hours of delivery and there was no evidence of end organ damage. Though the baby was given up for adoption, her stay in newborn unit was uneventful.

It has been demonstrated that various tests and examinations can predict occurrence of PET. The tests that have been proved to be of some use include the rollover test, angiotensin II infusion and urinary kallekrein excretion.

A variety of strategies have been used in attempts to prevent pre-eclampsia. Usually these strategies involve manipulation of diet and pharmacological attempts to modify the pathophsiological mechanisms thought to play a role in the development of pre eclampsia. The latter includes use of low dose aspirin and antioxidants. The antioxidants commonly used include Vitamin C, Vitamin E and folic acid.[2] These strategies are experimental and most patients, including our patient was not put on this.

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OBSTETRIC CASE 8

ANENCEPHALLY – INDUCTION, VAGINAL DELIVERY

NAME	**:**	**L.O**	**AGE**	**:**	**25 YEARS**
IP NO.	**:**	**0913754**	**PARITY**	**:**	**0+0**
LMP	**:**	**4.1.03**	**D.O.A**	**:**	**16.09.03**
E.D.D	**:**	**11.10.03**	**D.O.D**	**:**	**19.09.03**

HISTORY OF PRESENTING COMPLAINT

She had come to book antenatal clinic at KHN one week prior to admission. She was noted to have a large fundus compared to the gestational dates. She was sent to do an abdominal scan, which revealed anencephalic fetus and polyhydroamnios. She was counseled on termination and subsequently admitted through labour ward for induction and delivery.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 0+0. She had her menarche at 15 years. Her last menstrual period was on 4/01/03 and the expected date of delivery was 11/10/03. Gestation by dates was 35 weeks. Her usual menstrual flow is for 3-4 days occurring every 28-35days. She had been on oral contraceptive pills for several months in 2000, but switched to depo provera injection for some months after that due to irregular periods but stopped in 2001.

Antenatal Care

She was seen for the first time at KNH booking clinic at 35 weeks. The profile done was as follows:

Hb : 12.6g%

VDRL : Negative

Blood Group : B positive

U/sound – gravid uterus

- Single fetus in cephalic lie
- No head seen, BPD not possible
- Polyhydroamnios
- Fetal heart beat 142/minute
- Fetal length corresponding to 36 weeks
- Normal spine

PAST MEDICAL HISTORY

She had never been admitted before and had never suffered any chronic illness. She not on any long-term medications.

FAMILY AND SOCIAL HISTORY

She was a housewife. Her husband was a small-scale trader. There was no family history chronic illness. She neither took alcohol nor smoked cigarettes. There was no family history of congenital abnormalities.

PHYSICAL EXAMINATION

GENERAL EXAMINATION

She was in good general condition, was afebrile, not pale, not jaundiced and not edematous. Her blood pressure was 120/70mmHg, pulse was 70/minute, respiration was 18/minute and temperature was 36.4^0 C.

ABDOMINAL EXAMINATION

The abdomen was distended and moving with respiration. There were no areas of tenderness. The uterine size was term, lie was longitudinal, presentation was not determinable, fetal heart was at 140 beats per minute.

VAGINAL EXAMINATION

There were normal external genitalia. The vagina was warm and moist. The cervix was long, posterior and firm. The cervical os was closed. There was no blood or discharge on examining finger.

DIAGNOSIS

A diagnosis of a primigravida with an encephalic fetus at 36 weeks was made.

MANAGEMENT

She was admitted and counseled further about the diagnosis. She was counseled on delivery to which she consented. She was to undergo cervical ripening using misoprostol, of which 50 ug of misoprostol was inserted 8 hourly into the posterior fornix. This was repeated 4 times without any change in the state of the cervix. This was discontinued for one day. On the third day another 50 ug was inserted. Review 8 hours later, found that the cervical ripening had occurred and os was 2cm dilated. Artificial rupture of membranes was done. A drip of sytocinon was then put up. She progressed well and delivered by spontaneous vertex delivery 12 hours later to a fresh female stillbirth weighing 1800gms and was anencephalic. The mother did well post delivery. She was counseled further and discharged on the first postnatal day, to be seen in the postnatal clinical in 3 weeks. She was advised that she takes folic for three months before conceiving and to continue during the first three months of pregnancy.

DISCUSSION

This is a case of a mother who came for routine antenatal booking at 35 weeks and was found to have a large for dates fundus. Diagnosis of anencephaly and polyhydraoamnios was made on ultrasonic scan. She was counseled and delivered by induction with misoprostol. She had a protracted induction phase but successful delivered on the third day.

The patient delivered an encephalic fetus which is one of the varieties of neural tube defects.

Defects of the neural tube closure are the most common congenital malformation of the central nervous system. Failure of closure of the cranial neuropore results in anencephaly while myelomeningocele occurs when the caudal neuropore remains open. Total failure of neural tube closure leads to the much rarer craniorachischisis .[1]Thus this fetus had failure of closure of the cranial neuropore.

The incidence of these effects is 1 to 2 per thousand live births and they are second only to cardiac anomalies as they are the most frequent structural fetal malformations.[2] It shows a clear female predominance with a female/male ratio of 4:1. [2] The baby born here was female. The frequency varies in different population e.g. as high as 10 per 1000 births in Ireland and as low as 0.8 per 1000 births in Western USA. Ninety percent are index cases without familial history. The remaining 10% however, are proper subjects for genetic counseling. In general if a couple has a child with such anomaly the chance of producing another affected child is 2-5% if they have a 2 such children, the risk is as high as 10% .[3]

The patient presented here was a index case without any family history of similar occurence.

Neural tube defects are classical examples of multifactorial inheritance. Their occurrence is influenced by environment, diet, physiological abnormalities such

as hyperthermia or hyperglycemia, teratogen exposure, family history, ethnic origin, fetal gender, amniotic fluid nutrients, and various genes.

The patient presented did not have any of the predisposing factors for anencephaly. It has been found that insulin dependent diabetes mellitus is preferentially associated with cranial or cervico-thoracic defects; hyperthermia is usually associated with anencephaly; and valproic acid exposure almost always caused lumbosacral defects .[4,5,6] She was neither diebetic, nor was she taking any drugs.

Folic acid deficiency has been found to predispose to the neural tube defects. The enzyme involved is 5,10- methylenetetrahydrofolate reductase where a mutation occurs resulting in substitution of valine for alanine.

Folic acid supplementation reduces neural tube defect recurrence by 70% and significantly reduces first recurrences .[7,8] Folic acid likely works by overcoming this relative enzyme deficiency.

Even though anencephaly means absence of the brain, functioning neural tissue is always present. The telencephalon is usually absent whereas the brain stem and portions of the mesencephalon are usually present. Absence of the cranial vault (acrania) is a constant finding. However, bones formed in cartilage at the base of the skull including the orbits are usually present.

Anencephaly is associated with extreme diminution in adrenal size. It is also commonly associated with gross hydramnios, which occasionally may be sufficiently massive to require therapeutic amniocentesis. It is also a major cause of stillbirths and neonatal and infant death.

The patient had polyhdroamnios and delivered a fresh stillbirth. The absence or the dimunitive size of the adrenals leads to fetal inability to withstand stress as in labour. This also leads to the prolonged labour or difficulty in induction as in this patient as adrenals play a role in labour.

Polyhydroamnios in this patient was the first indicator that something was not right. Anencephaly is frequently associated with polyhyroamnios in 50% of cases. The causes of excess production of liquor amnii may be due to transsudation from the exposed meninges, absence of fetal swallowing reflex and possible suppression of fetal antidiuretic hormone leading to excessive urination.[9]
Late in pregnancy when severe hydroamnios is almost always the rule, the slow aspiration of 2 to 3 litres for excess amniotic fluid may reduce the risk of placental separation following spontaneous rupture of membranes with sudden loss of amniotic fluid and marked uterine decompression. Moreover, the myometrium appears to contract more effectively after slow removal of some fluid.

Once diagnosis of anencephaly was made the mother was counseled on termination of the pregnancy. The patient was given time to reflect and come to terms with this reality. Once she had accepted and was ready for termination she and her partner should give a verbal consent. The patient L.O took one week to reflect before termination.

The uterus containing an encephalic fetus may be refractory to oxytocin. This also explains the frequent post datism noticed in patients carrying anencephalic fetus. Cervical ripening in this patient was quite difficult as she initially did not respond to misoprostol till the third day when ripening was repeated. Responds to oxytocin was normal.

Antenatal diagnosis of anencephaly is made from combination of tests and high index of suspicion. For the couple at risk such as of Irish descend, previous affected child or sibling of an individual with an affected child – a maternal serum alpha-fetoprotein test between 16 and 18 weeks gestation is indicated. If an elevation of 2.5 or more standard deviations above the mean is noted,

amniocentesis for alpha-fetoprotein should be done along with a careful ultrasound study of the fetus for structural anomalies.[3]
In the patient presented here there was no suspicion of this condition as this the first incidence in her and her family. However the larger than expected fundus was suspicious.

Alpha- fetoproteins is elevated in situations where fetal integument is not intact and the protein leaks from the capillaries into the amniotic fluid such as open neural defects, congenital skin defects, omphlocele, gastroschisis, oligolydroamnios etc.

Maternal serum alpha-fetoprotein screening will detect about 90% of cases of anencephaly and 80% of all open spina bifida. The alpha-fetoprotein level that is considered abnormal is based on the statistical likelihood that a fetus will be affected at that level. It is customary to report values as multiples of the median (MOM) because serum alpha-fetoproteins do not follow a Gaussian distribution. Most laboratories establish a cut off of 2.0 or 2.5 M.O.M (Multiples of mean) as indicating an abnormal result.

Levels of alpha-fetoproteins are influenced by a number of factors, including gestational age, maternal weight, race and presence of insulin dependent diabetes mellitus.
Elevated levels of acetyl cholinesterases in amniotic fluid accompany most open neural tube defects. This can be used in association with alpha-fetoproteins.

Overall the prognosis of babies born with anencephally is poor. The baby delivered here died in utero. When delivered alive, these babies die soon after because they cannot breath spontaneously.

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OBSTETRIC CASE 9

PLACENTA PRAEVIA GRADE IV CAESERIAN SECTION - LIVE BABY

NAME : D.N.
IP NO. : 0911477
AGE : 27 YEARS
D.O.A. : 5/9/03
WD : GFB
L.M.P : 10.12.02
E.D.D : 17.09.03
PARITY : 1+0
D.O.D. : 11/9/03

PRESENTING COMPLAINT

She presented from home with per vaginal bleeding for 5 hours and accompanying lower abdominal pains.

HISTORY OF PRESENTING COMPLAINT

She presented to labour ward with spontaneous onset of per vaginal bleeding and abdominal pains. There was no history of trauma. She has not drained liquor. The bleeding was a small trickle, which soaked her panties. The abdominal pains were mild, not colicky, persistent and not progressive.

There was no history of dysuria, per viginal discharge or frequency of micturition.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 1+0. The last menstrual period was on 10.12.02 and her expected date of delivery was on 17.9.03. She was 38 weeks gestation by dates.

Her previous delivery was by caeserian section due to antepartum haemorrhage. She attained her menarche at 16 years. Her menses were after every 28 days lasting 3 days. She had used depo provera injection for family planning from middle 2001 to middle 2002.

ANTENATAL CARE

She attended antenatal care at Kanyatta National Hospital from 30 weeks. It had been uneventful. Her antenatal profile was:

Haemogram – Hb – 10.3 g/dl
WBC – 8.2×10^{9}/l
RBC – 3.7×10^{12}/l
Platelets – 226×10^{9}/l

Blood group – B positive
VDRL – Negative
ELISA FOR HIV – Negative

PAST MEDICAL HISTORY

She had never been admitted before except for delivery. She did not suffer any chronic illness.

FAMILY AND SOCIAL HISTORY

She was a housewife. She lives with husband in Kibera. She does not take alcohol nor smoke cigarettes. There is no family history of chronic illness.

PHYSICAL EXAMINATION

She was in good general condition. She was not pale, not jaundiced and not cyanosed. She had no edema. Her blood pressure was 120/80 mmHg, her pulse was 76/minute, respiratory rate was 20 per minute, and her temperature was $36.4^{0}c$

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. There was an old midline sub umbilical scar. The fundal height corresponded to term. The fetal lie was longitudinal, presentation was cephalic, the head was not engaged, and fetal heart was 140 and regular. There were no palpable contractions. There were no abvious areas of tenderness. There was no organomegally or other added masses.

SPECULUM EXAMINATION

The external genitalia was normal. The vaginal walls were healthy looking. The cervix was long, and closed. There was some old blood around the os but no active bleeding. The posterior fornix was bluish in colour.

CARDIOVASCULAR, RESPIRATORY, MUSCULO-SKELETAL AND NERVOUS SYSTEMS

All these systems were normal.

OBSTETRIC ULTRASOUND

She was immediately sent for an obstetric ultrasound. The scan confirmed a single intrauterine pregnancy at term with placenta praevia grave IV

DIAGNOSIS

A diagnosis of Placenta Praevia Grave IV at term was made.

MANAGEMENT

She was retained in labour ward for preparation for emergency caeserian section. A wide pore cannula IV line was established, blood was taken for grouping and gross matching and two units were made available. The diagnosis and mode of management were explained to her and she gave consent. The abdomen and pubic hair were shaved. She was premedicated with atropine 0.6mg half hour before theatre. She was then wheeled to theatre.

In theatre she was placed in semi lithotomy position, cleaned and draped. She was then catheterized obtaining 150 mls of clear urine. She was then repositioned in supine position and abdomen was cleaned and draped. General anesthesia was then induced. The abdomen was then opened in layers via a sub umbilical midline incision. The intestines and paracolic gutters were packed. Lower uterine segment was identified. The visceral peritoneum was incised three centimeters away from the bladder and reflected downward with the bladder. Lower uterine caeserian section was then done. The anterior part of the placenta praevia type four was encountered. The placenta was quickly separated and the baby was delivered cephalic. The birth weight was 3450grams, Apgar score was 7/1, 8/5, and 10/10, and sex was male. The rest of the placenta was removed with difficulty, as it was firmly adherent and showed features of placenta accreta. After the placenta and membranes were completely delivered, the patient had severe post partum haemorrhage from the placental bed. This was controlled by use of syntocinon at 70 i.u drip running fast, uterine massage and figure 8 sutures on obvious bleeding sinuses. The uterus was then closed in 3 layers, with good haemostasis. The abdomen was closed after correct swab and instrument count.

Intraoperatively she was transfused one unit of blood. General anesthesia was reversed uneventfully. Estimated blood loss was 3000 mls. Post operatively she was put on intravenous fluids until bowel sounds were present. Pain was managed with intra muscular pethidine 100 mg 6 hourly. Crystalline penicillin 2 mega units 6 hourly and gentamycin 80 mg 8 hourly intravenously was given for 2 days as prophylaxis against infection.

Postoperatively she did well and was discharged on the fifth postoperative day with her baby to have stitches removed in the nearest facility on the seventh day.

FOLLOWUP

She was seen in the postnatal clinic after two weeks to review her healing progress. By then the wound was healing well and all stitches had been removed. She was breastfeeding exclusively and the baby was growing well. She was given another appointment in six weeks from delivery for review and discussion on family planning.

When she was seen in the sixth week postpartum. Then she had no complaints. The baby was gaining weight adequately. She was counseled on family planning. She chose the use microlut pills, which she received from the family planning clinic after further counseling. She was given another appointment in the family planning to be seen after one month.

DISCUSSION

This is a case of patient who presented with antepartum haemorrhage at term secondary to placenta praevia type IV. She was done emergency caeserian section and a live baby was delivered. She had moderate postpartum haemorrhage, which was controlled conservatively.

The patient D.N had obstetric haemorrhage which is a known leading cause of maternal mortality in developing countries. Preoperatively she had persistent moderate vaginal bleeding but intraoperatively she lost whopping 3000 mls of blood and was transfused one unit. In the western world, maternal mortality due to haemorrahage has been reduced considerably by easy availability of blood bank, antibiotics, expert administered anesthesia and caeserian section.[1] Makokha in his study found that haemorrhage followed by infections were the leading causes of maternal mortality in Kenya.[2]

Third trimester haemorrhage continues to be one of the most ominous complications of pregnancy. Bleeding in late pregnancy is common; it requires medical evaluation in 5-10% of pregnancies.[2]

Most serious haemorrhages (2-3% of pregnancies) loose more than 800mls of blood and are due to premature separation of the placenta or placenta praevia. Less common but dangerous causes of bleeding include circumvellate placenta, abnormalities of the blood clotting mechanisms, and uterine rupture. Bleeding from the peripheral portion of the intervillous space, or a marginal sinus rupture is a debatable cause of bleeding. Extrusion of the cervical mucus ("bloody show") is the most common cause of bleeding in late pregnancy.[1, 3]

The patient presented had placenta praevia type IV. In placenta praevia, the reference is the location of the placenta from the internal os.

Placenta praevia can be classified into four types: [1,3]

Type 1: low lying placenta: the placenta is implanted in the lower uterine segment but does not reach the internal os.

Type II : marginal placenta praevia : the edge of the placenta is on the margin of the internal os.

Type III : partial placenta praevia : the placenta partially covers the internal os.

Type IV : total placenta praevia : the placenta completely covers the internal os.

The incidence of placenta praevia is 0.5 % in the west.[4] At KNH, incidence of placenta has been found to range from 0.25 to 0.9 %. [5, 6]

The D.N had had severe antepartum bleeding in her previous pregnancy and was delivered by caeserian section.

The aetiology of placenta praevia is unknown, but the risk factors include: advanced maternal age, multiparity, and previous caeserian section delivery. Cigarette smoking is also implicated as an important risk factor. The possible etiological factors include scarred or poorly vascularised endometrium in the corpus, a large placenta, and abnormal forms of placentation such as succenturiate lobe or placenta diffusa.[3]

A large placenta probably accounts for the observation that the incidence of praevia is doubled in multiply pregnancy. A low segment caeserian section scar triples the incidence of placenta praevia.[1, 3,7]

Bleeding from placenta praevia may be due to any of the following causes: mechanical separation of the placenta from its implantation site, either during the formation of the lower uterine segment or during effacement and dilatation of the cervix in labour, or as a result of intravaginal manipulation; placentitis; and rupture of poorly supported venous lakes in the deciduas basalis that have become engorged with venous blood. This patient had started bleeding around term possibly as the lower segment was being formed.

In women presenting with bleeding in the later half of pregnancy such as was the case with our patient , placenta praevia or abrubtio placenta should always be suspected.

The principles of management include: [1, 3, 7]

- Any woman presenting with vaginal bleeding in late pregnancy must be evaluated in a hospital capable of dealing with maternal haemorrhage and a compromised perinate.
- A vaginal or rectal examination must not be performed until preparations are complete for management of massive haemorrhage and maternal or perinatal complications.

Signs and symptoms of acute blood loss (hypovolaemic shock) must be quickly noted. These include pallor, clammy skin, syncope, thirst, air hunger, restlessness, agitation, anxiety, confusion, falling blood pressure, increased or thready pulse and oliguria (or anuria). The patient presented had with mild to moderate bleeding. She did not have any signs of shock then.

Hypovolaemic shock requires immediate treatment first; general antishock measures must be undertaken. The patient is placed in trendelburg position, ensure the airway, keep patient warm, establish intravenous access and replace fluids using 5% dextrose and saline or lactated ringers while blood components are being obtained.[1, 3]

Prior to vaginal examination, an effort should be made to confirm or rule out placenta praevia by means of sonography. The real time scanner is ideal for screening purposes, because the equipment is portable and the accuracy is over 95%. In this patient placenta praevia was was confirmed by ultrasound.

The type of management depends on the amount of uterine bleeding; the duration of pregnancy and viability of the fetus; the degree of placenta praevia, the presentation, position, and station of the fetus; the gravidity and parity of the patient; the status of the cervix; and whether labour has began or not.

If the fetus is preterm and the bleeding is not excessive, then conservative management is adopted. This consists mainly of strict bed rest until 37 complete weeks. If the fetus is at term or the patient is in active labour, then examination under anesthesia is done and the is fetus delivered. The patient presenting with severe hemorrhage should be delivered by emergency caesarian section. In most cases a transverse uterine incision is made but because fetal bleeding may result from an incision into an anterior placenta, a vertical incision is sometimes recommended in these circumstances. Because of the poorly contractile nature of the lower uterine segment, there may be uncontrollable hemorrhage following placental removal. The placenta praevia may be complicated by various degrees of placental accreta. This will render control of bleeding from placental bed difficult.

The patient presented here had placenta praevia with one previous scar. Since placenta praevia had been confirmed by scan, the most appropriate management in theatre was caeserian section. The use of syntocinon in inducing labour in a patient with a previous scar is controversial and is not practiced in our setup.

The patient had firmly adherent placenta intra operatively. This let to marked intra operative haemorrhage. This was managed by sewing the implantation site with chromic catgut sutures to provide haemostasis. In some cases bilateral uterine artery ligation is helpful, and in others, bleeding ceases with internal iliac artery ligation.

With availability of antibiotics, blood banking, expertly administered anaesthesia, and caeserian section; the maternal prognosis is excellent.

The perinatal mortality associated with placenta praevia in most medical centres has been 10 – 20%, or at least 10 times that of normal pregnancy.[1, 3] It has also been found in various studies that congenital malformations are increased with

praevia.[8] It is also reported that the incidence of fetal growth restriction is about 20%.[9]

The patient presented had good maternal and perinatal outcome.

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OBSTETRIC CASE 10

DIABETES MELLITUS – CAESERIAN SECTION DELIVERY.

NAME : M.O.
AGE : 23 YEARS
IP.NO. : 0864556.
L.M.P : 10/10/02
E.D.D : 17/7/03
PARITY : 1+0
D.O.A. : 06/06/03.
D.O.D. : 20/06/03.

HISTORY OF PRESENTING ILLNESS.

She was a known diabetic who was admitted through the antenatal clinic due to poorly controlled blood sugars. She had been diagnosed to have juvenile onset diabetes mellitus 8 years previously and was on insulin (humulin) 20 IU morning and 20 IU at night prior to conception, but had been stepped up to 30 IU morning, 30 IU at night during the pregnancy.

OBSTETRIC AND GYNAECOLOGY HISTORY.

She was para 1+ 0 gravida 2. Her last menstrual bleeding was on 10/10/02 and her expected date of delivery was on 17th July 03. She was now at a gestation of 34 weeks. She had no living child. The last pregnancy ended in intrauterine fetal death at 36 weeks and was induced at Kenyatta National Hospital and delivered a macerated stillbirth in 1999. The fetus was not weighed. Pueperium was uneventful. She attained menarche at 12 years and had regular periods every 28 days, lasting 3-4 days. She had never used any contraceptives.

Antenatal care

She had attended Kenyatta National Hospital antenatal care clinic since 28 weeks and had been seen thrice. Her blood group was AB positive and VDRL was negative. In the last two visits, she was found to have very high blood sugars and was admitted in the last (third) visit.

PAST MEDICAL HISTORY.

She was a known diabetic since 1995. She was being followed in Medical outpatient clinic by a diabetician. She had been on humulin insulin since then with good sugar control. She was also on a diabetic diet. Had been admitted once during the onset of diabetes for evaluation and sugar control. There was no other history of illness.

FAMILY AND SOCIAL HISTORY.

She was single and unemployed. She lived with her parents in Kibera. She did not take alcohol or smoked cigarettes. There was no family history of diabetes mellitus or any other chronic illness in the family.

SYSTEMIC INQUIRY

This was not significant.

PHYSICAL EXAMINATION

She was in fair general condition, not pale, not jaundice and not oedematous. Her blood pressure was 110/80 mmHg and temperature was 36.7%, her pulse was 80/minute, and respiration was 22/minute.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended with a fundal height corresponding to 36 weeks gestation. The fetus was in longitudinal lie and cephalic presentation. Fetal heart rate was normal. The liquor felt adequate.

DIAGNOSIS

A diagnosis of poorly controlled diabetes mellitus at 34 weeks gestation was made.

PLAN OF MANAGEMENT

She was admitted to the antenatal ward for control of sugars. She was put on a strict diabetic diet and humulin insulin was stepped up.

She was put on monitoring chart for serial blood sugar levels. An obstetric scan was ordered to asses' fetal maturity and anomalies.

SUMMARY OF INVESTIGATIONS

Serial blood sugar: Ranged from 5.6 – 24.1mmol/L.
Fasting blood sugar: 8mmol/L.

FBC: Hb – 10.9. g/dl.
WBC – 8.4
Platelets – 284.

Urinalysis - No ketonuria.

- Glucose +++.
- Blood +.
- Leucocytes ++.

BS for mps – Negative.

U/E - Na+ 127 mmol/L,
K+ – 3.9mmol/L,
BuN-2.2 mmol/L.
Creatinine – 68.

Blood group: AB + VE.

VDRL – Negative.

Obstetric scan: single viable intrauterine pregnancy at 34 weeks with features of fetal macrosomia. Fetal weight was 2750 grams. No fetal abnormalities were seen.

PROGRESS

Her stay in the ward was stormy. The blood sugar levels kept swinging over a wide range. Two days after admission, she was sent to labour ward for blood sugar control where she was put on soluble insulin drip and bolus infusions. The sugars settled after one day. She was also scheduled for early delivery by caeserian section. She was put on steroid dexamethasone 6mg 12hourly for 3 days. A fetal kick chart was also maintained.
On the eve of the operation she was given her usual evening dose of insulin. She was starved from midnight.

She was admitted to labour ward from midnight in preparation for caeserian section operation, which was to be on 11th June 2003.

In the morning of the day of operation, she was given half the usual dose of insulin. A drip of 5% dextrose was given to run slowly.
Two units of blood had been cross-matched and availed on the day of operation.

She was taken to theatre where a lower uterine segment caeserian section was done as described earlier in the introductory pages.

The outcome was live male infant who weigh 2800gm, with no abnormalities. The apgar score 5 in1 minute,6in 5 mintes and 8 in 10 minutes. He was admitted to the newborn unit for sugar control and respiratory distress.
Post delivery, the blood sugar of the baby was between 5 and 7 mmol/L. The respiratory distress subsided and she joined the mother on the 3rd day.
The mother's blood sugar settled at between 6 and 10 mmol/L. The dose of humulin insulin was reduced stepwise and by the time of discharge at the 10th postoperative day, she was on 20 IU unit (pre-pregnancy level).
All stitches were removed on the 8th postoperative Day. The wound had healed well. She was reviewed by a physician who recommended continuation of the pre-pregnancy dose of insulin and follow up in the diabetic clinic. She was discharged to be reviewed in the postnatal clinic in 2 weeks.

POSTNATAL CLINIC

She attended postnatal clinic after 2 weeks. She had no complaints. The random blood sugar was 6.4 mmol/L. The baby was developing normally. She was advised to continue with the diabetic clinic and to attend Family Welfare Clinic for family planning in another four weeks. Four weeks later she was seen

in the postnatal clinic and family welfare where frther counseling was done. She chose to use microlut as she was ponder what to use later. She was also advised to come for preconception evaluation in gynecological outpatient clinic before any future pregnancy if she still desired to have children.

DISCUSSION

This was a case of a mother with juvenile onset diabetes mellitus exacerbated by pregnancy. She had been seen three times in the Kenyatta National Hospital antenatal clinic. Her blood sugars were found to be severely out of control. She was subsequently admitted for blood sugar control and early delivery. She had lost her last pregnancy at 36 weeks probably due to poorly controlled sugar. Decision for emergency caeserian section was made in view of this poor control, and previous pregnancy loss.

Pregnancy is stressful state which combined with metabolic changes of pregnancy leads to poor glucose tolerance. Patients like the case presented here become poorly controlled on previous doses of insulin as the demand increases. Diabetes mellitus is characterized by a state of diminished insulin action due to its decreased availability or effectiveness in varying combinations (1). This results in derangements in various metabolic fuels, carbohydrates, amino acids, lipids and ketones with the potential to adversely affect the developing fetus.

Strict control of hyperglycemia beginning prior to conception markedly reduces the fetal and maternal mortality and morbidity.
At the beginning of the 20th century, diabetic women suffered from infertility. The discovery of insulin in 1921 restored fertility and abolished maternal mortality (2).
Before then, pregnant diabetics had a mortality of 20 percent and perinatal mortality of 60 percent[3].
Currently most diabetics, like the patient presented, look forward to a pregnancy outcome that is comparable to that of the general population. The reduction in perinatal and maternal mortality over the past few decades can be attributed to the introduction of insulin, sophisticated technologies for monitoring glycaemic control and intensive medical, obstetrical and neonatal management of the

diabetic mother and her infant by specialized teams of physicians experienced in caring for pregnancy complicated by diabetes [4,5].

The patient presented was class C according to White's classification.[3] This is where onset is age between 10 and 19 years. The classification describes progressive severity from A through to F.

The patient presented had overt diabetes in contrast to gestational diabetes. In overt diabetes diagnosis is made in a woman with high plasma glucose levels, glycosuria and ketoacidoxs or in women with random plasma glucose levels greater than 200mg/dl, plus classical signs and symptoms such as polyuria, polydipsia and weight loss[6].
Gestational diabetes is defined as Carbohydrate intolerance or variable sensitivity with onset or the first recognition during pregnancy. Because gestational diabetes is a disorder of late gestation, hyperglycaemia during the first trimester usually means overt diabetes[7].

The diagnosis of gestational diabetes involves the ingestion of 100gm oral glucose and glucose levels checked over 3 hours, after an overnight fast.

Pregnancy is a diabetogenic condition. This is due to insulin antagonism as a result of the actions of placental lactogen, estrogens and progesterone. Also placental insulinase may contribute by accelerating insulin degradation. During pregnancy diabetes control is usually made more difficult by a variety of complications. Nausea and vomiting may lead to insulin shock following insulin administration. With diabetes, the likelihood of severe metabolic acidosis is increased appreciably. Infection during pregnancy commonly results in insulin resistance and ketoacidosis unless the infection is promptly recognized and treated.

The patient was delivered by caeserian section because of fetal macrosomia, poor blood sugar control and considering the previous pregnancy adverse outcome. Diabetes in pregnancy leads to increased likelihood of preedampsia-eclampsia, infections particularly of urinary tract and large fetus who may complicate labour and delivery. There is also increased rate of caeserian section and its attendant risks. Other complications include polyhydroanmios and post partum haemorrhage.

Complications to the fetus include increased perinatal mortality, increased morbility such as birth trauma, asphyxia, hypoglycaemia, electrolyte imbalance and an increase in congenital anomalies.

Following delivery,the neonate developed mild fetal distress. This is usually as a result of delayed maturation of surfactant system in babies born to diebetic mothers.

The management of diabetes should start at the non pregnant stage, with counseling and tight control of blood sugars at the time of conception and in the early weeks during orgnogenesis[8].

Antenatal care for existing diabetics should be between the obstetrician and a diebetician. Though this patient she was on followup by a diebetician, she did not book ante natal clinic till 28 weeks. Early booking of antenatal clinic will ensure adequate sugar control hence pre-empt complications of poor control. There should be regular blood glucose profiles and urinalysis at least 2-3 times weekly with the aim being to maintain fasting levels at below 6 mmol/L and post prandial levels of less than 8 mmol/L. Maternal health should also be followed closely paying attention to weight, optic fundi, blood pressure and renal functions[9].

Fetal malformations should be monitored closely with baseline scans to confirm gestation and to exclude major anomalies. Fetal well being should be assessed regularly and especially for excess fetal weight gain.
Admission to hospital is usually indicated if there is poor glucose control, severe preeclampsia, excessive weight gain, renal function deterioration and if fetal well-being is of concern. The presented patient was admitted due to poorly controlled sugars and possible fetal macrosomia.

Delivery of the diabetic mother is planned for the thirty eighth week unless there are complications such as preeclampsia that necessitate early preterm delivery. When diabetes is well controlled and pregnancy is uncomplicated, vaginal delivery is expected between 38 and 40 weeks, but should not be allowed to exceed 41 weeks.
Caeserian section is chosen if there is another obstetric inductions and also if there is fetal macrosomia. M.O. as presented poorly controlled sugars and suspected fetal macrosomia at 34 weeks and was delivered by caeserian section.

On the morning of delivery, half the insulin dose was given and an intravenous infusion of 5% dextrose is set up run at 500mls every 4 hours. Blood glucose was monitored half hourly.
Rapid acting insulin may be added to the infusion or given via an insulin pump as required. If syntocinon is required, it should be made up using normal saline for a patient whose delivery is by caeserian section, she is starved from midnight and is usually started as the first patient in the list. Following delivery, the sugar control is litrated against insulin dose. Resumption of feeding is like for any other patient when bowel sounds resume. The patient M.O had her blood control reverting to prepregnancy control level soon after pregnancy.

Premature delivery requires amniocentesis to confirm lung maturity as diabetics tend to have delayed development and maturity of surfactants. Fetal lung

maturity may be accelerated by use of B- mimetics or occasional steroids are used with caution [8].

Post delivery, the neonate is at risk of hypoglycaemia and should be monitored closely. Our case presented was admitted to new born unit for this purpose and joined the mother on the 3rd day.

Contraception recommended for diabetics is usually oral contraceptive pills though there is increased risk of causing thromboembolism.[10] Surgical sterilization offers the most satisfactory long term solution for those with a completed desired family size.

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OBSTETRIC CASE 11

DEEP VENOUS THROMBOSIS IN PREGNANCY, REDUCED FETAL MOVEMENTS, CAESERIAN SECTION DELIVERY-GOOD OUTCOME

NAME:	**S.N**
AGE:	**19 YEARS**
IP NO:	**0897143**
WARD:	**GFB**
PARITY:	**O + O**
D.O.A:	**6/07/03**
D.O.A:	**18/08/03**

PRESENTING COMPLAINT

The patient was admitted following referral from a Kangemi city council clinic with a two-week history of swelling of the left lower limb.

HISTORY OF PRESENTING ILLNESS

She had been well till two weeks prior to admission when she noticed that the lower limb was swollen. The swelling was progressive and ascended up to the groin. The swelling was painful and walking was difficult. There was no history of trauma. She had no history of fever.

OBSTETRICS AND GYNAECOLOGICAL HISTORY

PRESENT OBSTETRIC HISTORY

She was para 0+0. Her last monthly period was on 12/11/02 and the expected date of delivery was on 19/08/03. Her maturity by dates was 34 weeks. She had attended Kangemi city council clinic for antenatal care from 26 weeks. The follow

up had been uneventful till she developed the leg swelling. There was no antenatal profile available.

GYNAECOLOGIC HISTORY

Her menarche was at 14 years. Her cycles were regular occurring every 28 days with a flow of 5 days, and she had mild dysmenorrhoea. She had never used any contraceptives.

PAST MEDICAL AND SURGICAL HISTORY

She had never been admitted before. She was not on any medication.

FAMILY AND SOCIAL HISTORY

She was a single schoolgirl in form four. She was single and lived with her parents in Kangemi. She neither took alcohol nor smoked cigarettes. There was no family history of chronic illness.

PHYSICAL EXAMINATION

She was a young lady in good general condition, was not pale, was afebrile, was not jaundiced, and had no lymphadenopathy. Her blood pressure was 120/80 mmHg, her temperature was 36.4^{0}c her pulse was 78/minutes and respiratory rate was 20 per minute.

CARDIOVASCULAR RESPIRATORY AND THE CENTRAL NERVOUS SYSTEM

These were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. The fundal height was 34 weeks, longitudinal lie, cephalic presentation and fetal heart was heard and regular at 140 beats per minute.

PELVIC EXAMINATION

This was not done, as there was no indication for it.

LOCAL EXAMINATION

The left thigh and leg was swollen, shiny and tender. Circumferential measurements taken below the tibial tuberosities showed that a difference of three centimeters between left and right whereas that of the thigh had 5-centimeter difference.

DAILY LOWER LIMB MEASUREMENTS

(Leg reference point was 10 cm below the upper edge of the tibial tuberosity; thigh reference point-20cm above the upper edge of the tibial tuberosities)

	Right thigh	right calf	left thigh	left calf
▪ 8.7.03	52	37	57	40
▪ 9.7.03	52	37	56	39
▪ 10.7.03	52.5	37	56	39
▪ 11.7.03	53	37	55	38
▪ 12.7.03	53	37	54	37

DIAGNOSIS

An impression of Deep venous thrombosis at 34 weeks of pregnancy was made.

MANAGEMENT

The patient was admitted for bed rest and anticoagulation therapy. She was started on an infusion of heparin at 10,000IU in 500mls of normal saline to run 6 hourly. She was also started on ibuprofen 400mg 8 hourly for analgesia. Daily measurements at above mentioned reference points were done. Regular coagulation profiles were taken. Within five days the swelling and pain had substantially reduced. She was subsequently changed to subcutaneous heparin 5000 IU 8 hourly.

INVESTIGATION

1.

KCCT: 8/07/03	Test: 32.7sec	control: 36.7sec
10/7/03	Test: 32.2 sec	control: 34.5 sec
18/07/03	Test: 32.sec	control: 33.0sec
22/07/03	Test: 29.4sec	control: 35.3 sec
15/08/03	Test: 43 sec	control: 34.0sec
14.08.03	Test: 34.4s	control: 28.7 sec

2. Haemogram

Hb: 10.4 g/dl

WBC: 17.6 x10 ^{9}/l

Platelets: 429x 10 ^{12}/l

3. Venous Doppler of left lower limb.

This was done on 8/07/03. Showed extensive thrombosis of left limb veins, from the common iliac vein of the left side, to the common femoral vein then superficial femoral vein, popliteal vein and down to calf muscle veins.

The diagnosis of deep venous thrombosis was confirmed.

4. Obstetric scan (8/07/03) showed a single intra uterine pregnancy at 33 weeks and three days.

FURTHER MANAGEMENT –CAESERIAN SECTION

She remained in the ward from 34 weeks to 38 weeks. She was maintained on 5000 units of subcutaneous heparin. A decision was made not to change her to warfarin as she was nearing term.

Her stay was uneventful till at 38 weeks when she complaint of reduced fetal movements on 13.8.03.

An obstetric scan was done on 14.8.03 and biophysical profile score of 6 out of 8 was obtained. A decision was made to deliver her by emergency caesarean section and was performed on 14/08/03.

She was wheeled to theatre after she gave informed consent. She was given atropine premedication. In theatre she was placed in semilithotomy position, cleaned and draped. She was then catheterized obtaining clear urine. She was then replaced in supine position cleaned and draped. General anesthesia was then induced .the abdomen was then cleaned and draped. Abdomen was opened via a midline subumbilical incision and a lower segment caeserian section was done. The baby's cord was found to be tightly around the neck. The outcome was a live female infant who weighed 28000grams and an apgar score of 8 in 1, 9 in 5 and 10 in 10.

POST OPERATIVE MANAGEMENT

Post operatively she was taken to the recovery ward till fully awake. She was subsequently taken back to the ward. On the first post operative day subcutaneous heparin was restarted together with warfarin 5 mg once daily. Four days later heparin was stopped, and she continued warfarin. She was discharged on the fourth day. She was to be reviewed in one week in the postnatal clinic. She was also to be seen in the hematology clinic.

FOLLOW UP

After one week she was seen in the postnatal clinic. The coagulation profiles were acceptable. The wound was healing well. She was advised to continue warfarin till six weeks.

After six weeks she was seen and found to have recovered. Warfarin was discontinued. She was counseled on family planning and on the need to start early antenatal care in the next pregnancy. She was advised that she was not going to use hormonal contraceptives especially those containing estrogens because of the history of DVT.

DISCUSSION

The patient presented with clinical manifestation of deep venous thrombosis (DVT) in the third trimester. She was started on heparin till delivery by caesarean section. Post delivery she was given warfarin and heparin, which was discontinued on the fourth day. She continued with warfarin for six weeks.

DVT and its sequelae, pulmonary embolism is a major cause of maternal morbidity and mortality. [1]

The incidence of thromboembolism is 0.2% in the antepartum period and 0.6% in the postpartum period. Pulmonary embolism, with a mortality rate of 15% occurs in 50% of patients with documented deep vein thromboses; only 5-10% of these are symptomatic.[2] Women with previous DVT have a 12-35% increase in incidence compared to women who have never had it. [3]

The patient did not have any obvious predisposing factors to the development of DVT except pregnancy. Vascular clotting develops mainly due to circulation stasis, vascular damage, or hypercoagulability of blood. All these elements of Virchow's triad are present during pregnancy. Venous return from the lower extremities is reduced by the pressure of the gravid uterus on both the iliac veins and the inferior vena cava. Other important predisposing factors include heavy cigarette smoking, obesity, previous thromboembolism, anemia, hemorrhage, heart disease, hypertensive disorders, prolonged labour, operative delivery, postpartum endomyometritis and thrombophilias. [2,4]

The venous thrombi may develop first in the relatively small veins of the calf muscle and extend proximally as far as the femoral or iliac veins, or rarely, even into the inferior vena cava.

The DVT in this patient was in the left lower limb. Almost 90% of DVT in pregnancy are on the left side as compared to 55% in those not pregnant. This may be due to compression of the left iliac vein by the ovarian arteries. [5]

The patient had presented with progressive lower limb swelling with accompanying pain. The sings and symptoms of the DVT involving the lower extremity vary greatly depending on large measures upon the degree of occlusion and the intensity of the inflammatory response. Classical puerperal thrombophlebitis involving the lower extremity, sometimes called *phelgmasia Alba dolens* or milk leg is abrupt in onset, with severe pain and edema of the leg and thigh. The thrombus typically involves much of the legs venous system from the foot to the iliofemoral region. Occasionally reflex arterial spasms cause a pale cool extremity with diminished pulsations. [4]

This patient was diagnosed from history, physical examination and confirmed by Doppler studies. Diagnostic studies for DVT include Doppler ultrasound, venography, impedance plethysmography, and magnetic resource imagining. Serial physical measurements were done and they showed progressive improvement of the swelling after the start of treatment.

It is well established that heparin is a safe drug during pregnancy because it does not cross the placenta. Heparin may be given by continuous intravenous infusion, intermittent intravenous or subcutaneous intermittently. Intravenous heparin is given initially. A loading dose of 80u/kg is given followed by a continuous infusion of 15-25 u/kg/hour.

After four hours the activated partial thromboplastin time (aPTT) is determined and the dose adjusted accordingly. Treatment may also be by use of subcutaneous adjusted dose heparin to maintain aPTT at 1.5 times the control as determined at 6 hours after the last injection. The major side effect of heparin is

bleeding; other complications include thrombocytopaenia, osteoporosis and fat necrosis. Warfarin is known to cross the placenta and should ideally be avoided in pregnancy. The teratogenic effects of warfarin include nasal hypoplasia, skeletal abnormalities, and multiple central nervous system abnormalities. The usual dose of warfarin is 10-15mg daily until the therapeutic level of prothrombin time (PT) of 1.5-2.5mg times the control value is achieved. Warfarin should be continued for six weeks postpartum [2,5,6]

S.N was put on both warfarin and heparin after delivery, and heparin discontinued on the fourth day, to continue with warfarin. Warfarin was then discontinued after six weeks.

The patient was delivered by caeserian section because of reduced fetal movements. Intra operatively it was found that the cord was very tight around the neck. This was possible the cause of the fetal compromise.

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