CASE RECORDS AND COMMENTARIES

IN

OBSTETRICS AND GYNAECOLOGY.

SUBMITTED BY

DR. JOHN KIIRU KARANJA

FOR THE EXAMINATION OF

MASTER OF MEDICINE

IN THE DEPARTMENT OF
OBSTETRICS AND GYNAECOLOGY
OF THE UNIVERSITY OF NAIROBI.

FEBRUARY 2005

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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. JOHN KIIRU KARANJA

MBCHB

MOI UNIVERSITY

SIGNATURE .....

DATE 31/1/05

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THIS IS TO CERTIFY THAT THE LONG COMMENTARIES IN THIS BOOK BY DR. JOHN KIIRU KARANJA WERE RESEARCHED UPON, UNDER MY GUIDANCE AND SUPERVISION AND THAT THIS BOOK IS SUBMITTED WITH MY APPROVAL.

1. DR. M'IMUNYA MACHOKI
   SENIOR LECTURER,
   DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY,
   UNIVERSITY OF NAIROBI

   SIGNATURE .....

   DATE .....31/1/05.....

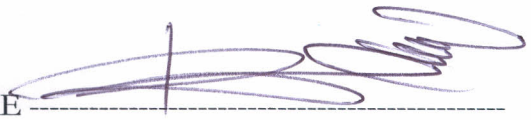
2. DR. P. OLAKHI ODONGO
   SPECIALIST OBSTETRICIAN/ GYNAECOLOGIST
   KENYATTA NATIONAL HOSPITAL

   SIGNATURE .....

   DATE .....31/1/05.....

CERTIFICATION.

THIS IS TO CERTIFY THAT DR. JOHN KIIRU KARANJA MANAGED OBSTETRIC CASES NOS. 5, 6, 9, 10, 11 AND 14 AND GYNAECOLOGY CASES 1, 2, 4, 6, 8, 11, 12, 13, 14 AND 15 UNDER MY SUPERVISION AT KENYATTA NATIONAL HOSPITAL

SIGNATURE  ----------

DATE 3.2.005 ----------

PROF S.B.O. OJWANG, MD, M.MED, (OBS/GYN), DIP. ONCOLOGY.

PROFESSOR

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

UNIVERSITY OF NAIROBI.

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SIGNATURE ----------

DATE 31.01.05 ----------

DR. J.B.O. OYIEKE MB.CH.B, M.MED.

SENIOR LECTURER AND CHAIRMAN

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

UNIVERSITY OF NAIROBI.

CERTIFICATION

THIS IS TO CERTIFY THAT OBSTETRIC CASES 3,7,12, AND 15 AND GYNAECOLOGY CASES NOS. 3 AND 7 WERE MANAGED BY DR. JOHN KIIRU KARANJA UNDER MY GUIDANCE AND SUPERVISION AT KENYATTA NATIONAL HOSPITAL.

SIGNATURE _____

DATE 27/01/05

DR. S.M.H. WANJALA, MB. CH.B, M.MED

SENIOR LECTURER

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

UNIVERSITY OF NAIROBI

INTRODUCTION

All the obstetrics and Gynaecology short cases presented here were managed at the Kenyatta National Hospital (KNH). KNH is Kenya's largest referral and Teaching Hospital. It is located about 3 kms from the centre of Nairobi, the capital city, along Ngong Road. The University of Nairobi's College of Health Sciences is based at this hospital.

THE OBSTETRICS AND GYNAECOLOGY DEPARTMENT.

The obstetrics and Gynaecology Department provides both outpatient and in-patient services. Outpatient services are provided at the obstetric and gynaecological casualty (next to ward 1D), antenatal and gynaecological outpatient clinics (clinic 18) and family welfare clinic (clinic 66). In-patient services are provided in the labour ward, acute gynaecological ward (ward 1D), elective gynaecological ward (ward 1B), as well as the lying-in (antenatal and postnatal) wards. Other services are provided at the various departments of the hospital.

Radiological and sonographic examinations are provided for at the radiology department, of both KNH and the University of Nairobi. Equally, to supplement the KHN Laboratory, the department of obstetrics and gynaecology laboratory provides specialised investigations like semen analysis, hormonal radioimmunoassay, cytology, chromosome analysis and various biochemical tests. For acute obstetric operative emergencies, labour ward theatre is used. The main hospital theatre is used for all gynaecological surgery.

CASUALTY DEPARTMENT

The obstetrics and gynaecology casualty attends to all obstetric and gynaecological emergencies round the clock. Senior house officers are the primary health care providers at this casualty. Cases needing hospitalisation are admitted either to labour or acute gynaecological ward. Those needing outpatient follow up are referred to the antenatal and/or gynaecological outpatient clinics (clinic 18)

ANTENATAL CARE

This is mainly a high-risk facility. The patients are booked into the clinic every Monday morning. Some of the criteria used for booking include: adolescent pregnancy, primigravida, grandmultiparity, previous operative deliveries, medical complications of pregnancy, bad obstetric history as well as those who have had delicate and complicated gynaecological operations like fistula repair and myomectomy. Recently however, patients without any risk factors who prefer to attend antenatal care at KNH are booked in this clinic.

At booking a detailed social, medical as well as obstetric and gynaecological history is taken. A thorough physical examination is also done. The clients are then sent to the laboratory for the antenatal profile: blood group and Rhesus state; serological test for syphilis (VDRL); full haemogram (or haemoglobin level), and voluntary counselling and testing for HIV. Other laboratory and radiological tests are ordered whenever needed. For first pregnancies and prior pregnancies with an interval of 3 years or more, two tetanus toxoid (TT) doses are given at an interval of 4 weeks. Most of the other pregnancies receive a booster dose during the second trimester.

During the antenatal period, different cadres of medical staff give health education talks on pregnancy and its complications. These sessions are either individual or group. Emphasis is laid on good nutrition, body hygiene, regular clinic attendance, important warning signs and symptoms and what to do in case they occur. They also learn about labour and delivery. Breastfeeding and family planning are also encouraged. Any illness during the antenatal period is managed accordingly, either as an outpatient or inpatient (in the antenatal wards). The frequencies of visits vary from patient to another, depending on specific risk factors and other needs. At every subsequent visit, a urine dipstick for protein and glucose is done in addition to maternal weight, blood pressure, general and abdominal examination. At 36 weeks, clinical pelvic assessment of all primigravida is done. Radiological pelvimetry is done in specific cases whenever it's thought likely to influence patient management. The time and mode of delivery is pre-arranged and patients advised to come in labour at the specified dates. Emergencies are attended at the casualty and/or labour ward as the case may be.

VOLUNTARY COUNSELLING AND TESTING FOR HIV

This is offered to all pregnant mothers and their spouses in the antenatal, labour and postnatal wards. At the KNH, it is mainly done individually. HIV negative mothers are reminded how to remain HIV negative. Those that turn out positive are informed of the various methods of reducing Mother –to- child transmission of HIV. The clients also receive more information about HIV and safer sex practices. At the KNH, the anti-retroviral regimens in use include: -

(i) The modified Thailand regimen consisting of 300mg of Ziduvudine twice daily from 34 weeks gestation. Breastfeeding is discouraged.

(ii) Nevirapine 200mg at the onset of labour. For this regimen, the infants receive Nevirapine syrup single oral dose of 2mg/kg Bwt within 72 hours of birth. Breastfeeding is also discouraged.

(iii) A newer regimen consisting of Ziduvudine 300mg twice daily and Nevirapine 200mg single dose at the onset of labour is now being introduced. This may be combined with a single dose of Nevirapine to the infant.

HOSPITAL ADMISSIONS

These fall into three categories: Booked patients from the hospital's antenatal clinic, referrals from other hospitals or health centres and those without prior antenatal care. The latter two categories constitute the majority of admissions. Booked patients report directly to Labour ward admission area when in labour or needing medical assistance outside of clinic days or the antenatal ward if an elective procedure is planned. Unbooked patients are first seen in the casualty before being sent to the labour ward admission area. Those in labour are admitted to the labour ward while those not in labour are admitted to the lying-in (antenatal) wards, or discharged at admission. Very sick patients are admitted into the acute room in labour ward and attended promptly.

LABOUR WARD:

LABOUR MANAGEMENT

Active management of labour is advocated. This involves strict diagnostics criteria for labour; early amniotomy, early use of oxytocin and continuous professional support. These measures have been shown to reduce both caesarean and operative vaginal

delivery rates. However, routine amniotomy is no longer practised in our unit, because of the significant rate of HIV infection in Kenya, in a bid to reduce vertical transmission of HIV.

FIRST STAGE OF LABOUR

Patients admitted in labour are assessed; and those in early labour with intact membranes are given a soapy enema. For those in the active phase of labour, the progress of labour is recorded graphically on a partograph, where uterine contractions, fetal heart rate and maternal pulse are recorded every half hour; abdominal and pelvic examination every 4 hours. On vaginal examination, the presentation, descent, degree of moulding and/or caput formation as well as the cervical dilation is noted. If the membranes are ruptured, its colour is noted. Urine analysis by dipstick for protein and glucose are also done.

The partograph has proved an invaluable tool in monitoring the progress of labour and predicting the occurrence of complications in labour and therefore facilitating timely interventions. Pethidine and Tramadol are the commonly used analgesics in labour in our unit. Parenteral Hyoscine Butyl Bromide (Buscopan) is also routinely used to shorten the duration of labour. To counter the emetic properties of these analgesics, Promethazine is routinely used.

SPECULUM EXAMINATION

Patients admitted with premature rapture of membranes (PROM) and antepartum haemorrhage (APH) undergoes sterile speculum examination. After the patient is placed in Lithotomy position, the vulva is cleaned with Chlorhexidine solution and draped with sterile towels. A cuscos speculum is then gently introduced into the vagina, and its blades opened slowly. The vagina and cervix are then inspected under direct light. The state of the cervix, bleeding and/or drainage of liquor was noted. The speculum is then closed, and gently withdrawn.

SECOND STAGE LABOUR

When a patient reports an urge to bear down, second stage is confirmed by an abdominal and vaginal examination. If confirmed, she is transferred to the delivery room and placed on the delivery bed. The midwife and/or doctor gowns and wears a mask. The perineum is then cleaned with Chlorhexidine solution and sterile drapes applied. A sterile delivery set is then provided. The patient is then encouraged to bear with each contraction, and to rest between the contractions by taking deep breaths. The fetal heart rate is monitored every 5 minutes.

Should the perineum be found to be tight, it's infiltrated with 1% Lignocaine and a mediolateral episiotomy done. When the head begins to crown, when the fetal head distends the perineum the latter is supported by the right hand with a sterile pad while the left hand keeps the head flexed and prevents sudden expulsion. This prevents trauma to the puerperium and fetal head in preterm babies. Once delivery of the head has occurred, the mouth and nose are wiped with gauze to prevent aspiration of blood or liquor. A finger is then passed around the neck to rule out the presence of the cord. If found and loose, it is slipped over the head, while if tight, it is double clamped and divided. The anterior shoulder is then delivered followed by the posterior shoulder, then the trunk and legs. If the umbilical cord has not been clamped, it is now clamped. The baby is then shown to the mother before being handed over to the second (2^{nd}) midwife or paediatrician for oral pharyngeal suction and resuscitation if necessary.

THIRD STAGE LABOUR

At delivery of the anterior shoulder, 0.5 mg of ergometrine is given intramuscularly to effect uterine contraction. In those at risk of post-partum haemorrhage, ergometrine may be given intravenously, for more rapid action. For those in whom ergometrine is contraindicated, an intravenous infusion of oxytocin in 5% dextrose or normal saline is used to effect uterine contraction.

The placenta and membranes are delivered by controlled cord traction (CCT), once the signs of placental separation become evident. The cervix and vagina are then thoroughly inspected for lacerations and tears and repair done as may be needed. The

episiotomy is then repaired using either chromic catgut number 2-0 or 3-0 or comparable synthetic suture like vicryl. The apex of the vaginal incision is identified and the first suture placed just above it and tied. A continuous running stitch is then used to approximate the vaginal mucosa. The muscle layer is approximated using interrupted sutures. The skin is approximated using either continuous subcuticular suture of interrupted suture, burying the knots and starting from the lateral edge. The patient is then given advice on perineal hygiene and frequent sits bath to encourage healing of the episiotomy. The patient is then cleaned up and moved to the post-delivery room for observation. Post-delivery blood pressure, pulse rate, uterine contraction and lochia loss is observed and recorded. A warm meal is then provided.

"Rooming in" is encouraged and early initiation of breastfeeding within 30 minutes is the norm, unless there is a contraindication. To encourage breastfeeding and promote bonding the mothers and their infants are nursed together. Once stable, they are transferred to the lying-in (post-natal) wards for continued observation. Within the post-natal ward, neonatal immunization is began. If stable, these mothers and their neonates are allowed home after 24 hours, for follow up in the post-natal clinic at 6 weeks.

OPERATIVE VAGINAL DELIVERY

VACUUM EXTRACTION

The vacuum extractor is used to expedite delivery in cases of fetal distress and poor maternal effort in second stage. It is also used whenever maternal bearing down efforts are contra indicated as in cardiac and hypertensive disease. It is contraindicated in: cephalopelvic disproportion; in breech, brow and face presentation, when the fetal head is not engaged in the pelvis (more than 2/5) and when the membranes are not rapture.
The patient is placed on the delivery bed in lithotomy position. The vulva and perineum is then cleaned with antiseptic solution and draped. Aseptic bladder catheterization is then done, before a repeat vaginal examination is done to exclude any contraindication to vacuum delivery. If the perineum is tight, a mediolateral episiotomy is performed during a contraction. The largest cup is then introduced; with the cup centre on the sagittal suture about 3 cm in front of the posterior fontanelle. A negative pressure of up

to 0.8 kg/cm² is induced stepwise at intervals of 0.2kg/cm² every two minutes. Once the cup has been applied, traction is made intermittently, coincident with uterine contractions and supplemented by the mothers' bearing down efforts, if not contra indicated, care should be taken to exclude maternal tissues before traction. The traction follows the pelvic curvature of carus. Once delivery of the head has been effected, the pressure is released. The mouth and nares are wiped dry as in spontaneous delivery. The rest of the delivery is completed as for spontaneous vertex delivery (SVD)

CAESAREAN SECTION.

This is the commonest obstetric operation in our unit. The low transverse uterine incision is used in most cases. The classical caesarean section is only done in cases of transverse lie with ruptured membranes or when the lower uterine segment is not fully formed or cannot be visualized.

Pre-operative care

For elective operations, the patient is starved for at least 6 hours before the rime of operation. Blood is taken for grouping and cross matching and two units of blood kept ready. Informed consent for general anaesthesia and surgery is obtained. The abdominal wall, vulva and perineum are then shaved. Premeditation consisting mainly of o.6 mg of atropine is given intramuscularly half hour before operation.

SURGICAL PROCEDURE

Once in theatre, the patient is placed on the operating table, and then repositioned to the semi-lithotomy position for aseptic catheterization after vulval cleaning. Once urine has been drained, the catheter is left in situ and the patient repositioned to the supine position.

The anterior abdominal wall is cleaned with antiseptic solution and then painted with iodine or spirit. The patient is then draped and general anaesthesia induced. Once anaesthetised, the operation now begins. The abdominal incision may either be sub-umbilical lower midline or transverse depending on the specific indication and

circumstances of the operation. In our unit, the sub-umbilical lower midline is most commonly used and will be described. The skin is opened from about one inch below the umbilicus to about 2 cm above the pubic hairline. After opening the skin, the rectus sheath is then opened using curved Mayo's scissors. One side of the divided rectus sheath is then elevated with two artery forceps and underlying muscle separated from their attachment and drawn to one side to expose the peritoneum. The latter is then held with two long artery forceps and opened. The incision is then extended up and down to the limits of the incision taking care not to injure the bladder.

Once within the abdominal cavity, wet abdominal packs are placed on either side of the uterus to prevent blood and liquor from running into the general peritoneal cavity. A Doyen's retractor is then applied to reflect the bladder away as well as expose the uterovesical fold of the peritoneum. The peritoneal fold is then picked with a non-toothed dissecting forceps and opened at the middle using a curved Mayo's scissors. The incision is then extended on either side and peritoneum stripped off the lower uterine segment with a mounted swab. The Doyen's retractor is adjusted to include the lower part of the peritoneal fold. A small incision of about 2cm is made in the lower uterine segment, about 2cm below the uterine attachment of the uterovesical peritoneal fold. Once the membranes bulge, the incision is extended laterally on either side using curved scissors directed by two fingers of the left hand. The opening is in an upward direction, forming a semi-lunar incision. The membranes are then ruptured. The Doyen's retractor is removed, and the baby delivered by elevation with the hand. This can be augmented by modest fundal pressure by the assistant. After delivery of the head, the mouth and the nares are wiped dry or suctioned as the case may be. The shoulders are then delivered using gentle traction and some fundal pressure. Trunk delivery then follows.

Immediately after the shoulders are delivered, 0.5 mg of intravenous ergometrine is given. The placenta and membranes are then delivered manually. The cut edges of the uterus are held with Green Armitage uterine clamps to control bleeding, while the uterine cavity is cleaned of blood and other placental tissue and membranes. The placenta is inspected for completeness. The uterus is lifted out of the incision and

covered with a wet abdominal pack. The uterus is repaired in 2 layers using No. 2 chromic catgut suture as a continuous stitch. The second layer effectively buries the first layer and is extended to the lateral edges of the incision. The visceral peritoneum is then closed with No. 1 plain catgut. The abdominal packs are removed and the abdominal cavity mopped of any clots and placental tissue. The pelvic viscera are inspected for abnormalities and coincidental injuries. If the instruments and swabs count is found correct, the abdomen is closed with No. 2 chromic catgut and the skin with interrupted silk or nylon. The wound is then cleaned and dressed. The catheter is then removed, and vulvovaginal toilet done. General anaesthesia is then reversed with 1.2 mg of atropine and 2.5mg of neostigmine intravenously. The patient is then transferred to the observation area, and once stable to labour ward.

POST-CAESAREAN SECTION CARE

The post-caesarean patient has her vital signs recorded every 15 minutes for the 1st one hour; every 30 minutes for the next 2 hours, and 4 hourly thereafter till she is fully awake. Post-operative pain relieve is provided as Pethidine 50-100mg 6 hourly for at least 48 hours. The patient remains nil by mouth till bowel sounds are established. In the meantime, intravenous fluids, 5% dextrose and normal saline are alternated every 4 hours.

For those thought to be at risk of post-operative sepsis, prophylactic antibiotics are provided. On the 3rd post-operative day, the haemoglobin level is checked. Stable mothers are discharged home from the 4th post-operative day, for removal of stitches on the 7th post-operative day as outpatients. A discharge summary describing the nature of the operation is provided and mother booked for a post-natal clinic in two weeks.

POST-NATAL FOLLOW UP

This is held every Friday morning. History is taken of the puerperium, lactation and immunization of the baby. The patient undergoes a general physical examination and a local examination of the abdomen. The scar is inspected for good healing. Family planning advice is given and the patient referred to the family planning clinic (clinic 66)

NEWBORN UNIT

This unit caters for babies with problems or where complications are anticipated. It also accommodates babies delivered by caesarean section who need paediatrician assessment. Premature babies are managed in this unit until they attain a weight of 2000gms. Mothers with babies in the newborn unit, with no medical problems are lodged in the mothers' hostel.

THE GYNAECOLOGY UNIT

This consists of the outpatient wing at clinic no. 18 and two gynaecological wards 1B and 1D on the first floor of the tower block. Ward 1D is the acute gynaecology ward whereas ward 1B is the elective gynaecology ward. The three firms in the department run the unit.

GYNAECOLOGY OUTPATIENT SERVICES.

These are mainly provided it the outpatient clinic No. 18. Firm 1 has its clinics on Tuesday, Firm 111 on Wednesday and Firm 11 on Thursday. The clinics are run by consultants, senior registrars and registrars. Medical students and nursing students are usually in attendance. In addition there is also an oncology clinic, on Friday morning and a colposcopy clinic also held on Friday morning. Majority of patients attending the gynaecology clinic are referred from casualty and emergency gynaecology ward after emergency consultation and treatment. Other patients are referred from other specialist clinics in KNH and other hospitals in and around Nairobi as well as provincial and district hospitals.

Among the most common reasons fro consultation are infertility, uterine fibroids, abdominal uterine bleeding and adnexal masses. In the clinics, history and physical examination is done. The patients are then fully investigated before admission to the gynaecological wards for treatment, mainly surgical but also medical and supportive.

FAMILY PLANNING CLINIC.

This family welfare clinic (Clinic 66) is now situated within the antenatal and gynaecology clinic no.18. All methods of family planning (FP) are offered.

GYNAECOLOGY IN-PATIENT SERVICES

Elective Gynaecology Admissions – Ward 1B

This is the elective ward to which patients are admitted from the clinics or are transferred from the acute gynaecology ward for further treatment. The ward has 36 beds divided among the three firms. Some of the most common conditions necessitating admission to this ward are uterine fibroids, gynaecological malignancies and infertility among others.

Acute Gynaecology Admission – Ward 1D

This is the emergency gynaecology ward. It has a bed capacity of 32 though most of the time it has in excess of 60 patients. On average about 15 patients are admitted daily, the most common reason for seeking medical attention being abortion and its related complications.

Most of these patients are admitted via the obstetric and gynaecology casualty, located adjacent to the ward.

Uncomplicated cases of incomplete abortion are evacuated using Karman's cannula and syringe in the manual vacuum aspiration (MVA) room in ward 1D. Many are discharged home after the procedure. Post abortion care services are provided according to the needs of the patients. Patients requiring emergency surgery for ectopic pregnancy, pelvic abscess or pelvic masses are also nursed post-operatively in this ward. Patient with suspected carcinoma of the cervix also receive emergency treatment like blood transfusion and antibiotic treatment in this ward. Examination under anaesthesia (EUA) is then planned, after which they are either referred to the radiotherapy clinic or transferred to ward 1B if surgical management is contemplated. These patients also receive supportive care from the patient support centre and Nairobi.

GYNAECOLOGICAL OPERATIONS

A theatre is reserved in main theatre daily for acute gynaecological operations. Laparotomy for ectopic pregnancy, pelvic abscesses, ovarian cyst and other tubo-ovarian masses are done here. Minor procedures like diagnostic dilation and curettage of the uterus, removal of misplaced intra-uterine contraceptive devices (IUCDS) and suction curettage are also done.

Elective operations are done on firm basis, Firm 11 on Mondays and Firm 1 and 111 o Thursdays. Most of the operations are done under general anaesthesia, though some operations such as visico-vaginal fistulae (VVF). Repairs are carried out under spinal anaesthesia.

PRE-OPERATIVE PREPARATION

Patients for emergency operations in ward 1D are prepared immediately. If the patient has fed just before admissions have stomach contents aspirated. The abdomen is then cleaned and shaved. Atropine 0.6 mg intramuscularly is given half an hour before operation. Blood is drawn for urgent group and cross matching and an intravenous drip started.

For elective operations, basic and specialized investigations are done and date of surgery fixed. The nature and purposed of the operation is explained to the patient, after which an informed consent is obtained. Blood is requested and reserved for the day of the operation. The patient is starved for 8 hours before operation. The skin over the area of the operation is cleaned and shaved. Premedication, vis-à-vis, atropine 0.6mg and Pethidine 50-100mg are provided half an hour before the patient is wheeled to theatre.

POST –OPERATIVE MANAGEMENT

After the operation, general anaesthesia is reversed and patient wheeled to the recovery room where quarter-hourly observations are taken and recorded. When fully awake she is transferred to the ward where observations are done four hourly.

For the first 24 hours, the patients are maintained on intravenous fluids. Oral fluids are initiated when bowel sounds are established. Prophylactic antibiotics are given routinely. A check haemoglobin level is ordered on the 3rd post-operative day. Before discharge, patients are informed of the operative findings and a discharge summary provided. Most patients are reviewed in the gynaecology clinic after six weeks or earlier when indicated. The most common elective operative in our unit is Total abdominal hysterectomy.

TOTAL ABDOMINAL HYSTERECTOMY

After the patient is placed on the theatre table, she is re-positioned to the semi-lithotomy position and under aseptic conditions the patient is catheterised and the catheter is left in situ to maintain continuous bladder drainage during the operation. Then general anaesthesia sis induced. Pelvic examination under anaesthesia is done, to confirm pre-operative findings. The abdomen is cleaned with Chlorhexidine and painted wit iodine. The patient is then draped with sterile towels. The abdomen is then opened in layers. Once within the abdominal cavity, the pelvic and abdominal viscera are inspected and any pathology noted.

Total abdominal hysterectomy starts with the identification of the round ligaments, which are double clamped and divided between the two forceps. The lateral stump is transfixed with No. 0 or No. 1 chromic catgut. This opens the anterior leaf of the broad ligament, which is pushed forwards through this opening with the surgeon's finger and incised with scissors. The same is done for the opposite side. The next step depends on whether the tube and the ovary are to be preserved or removed. If they are to be preserved the tube and the ovarian ligament are double clamped en masse and ligated. The distal clamp holds the ovarian vessels as they approach the anastomosis with the uterine vessels. This stamp is transfixed using chromic catgut NO. 1. The same is done on the opposite side. If the tube and ovary are to be removed wit the uterus the infundibulopelvic portion of the broad ligament is double clamped with long curved artery forceps with the tips reaching the open window in the broad ligament. The broad ligament together with the ovarian vessels is divided between the clamps and ligated using chromic catgut NO 1. The same is done on the opposite side

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

In the next step, the posterior leaf of the broad ligament on either side is cut Parallel with the side of the uterus to better demonstrate and skeletonise the uterine vessels between the leaves of the broad ligament for clamping. These are double clamped and cut using a scalpel and freed by extending the incision around the tip of the distal clamp. This enables litigation care should be taken to avoid freeing the tissue beyond the tip of the clamp as this could allow bleeding from the collateral vessels that are not included in the clamp. Before clamping and cutting the uterine vessels it is always advisable to palpate the internal as and puss immediately through the base of the broad ligament to the trigone of the bladder. The uterine vessels are ligated with chromic catgut No. 2.

The uterus is retracted forward and upward to demonstrate and stretch the uterosacral ligaments posteriorly. A transverse incision is mad through the uterine reflection of the cul-de-sac peritoneum. Between the attachments of the two-uterosacral ligaments.
The peritoneum is then incised with a scalpel and reflected, mobilising it past the cervix to the posterior vaginal fornix. Care need to be taken not to dissect vary lateral, as this may ligate the haemorrhoidal vessels at their insertion into the rectum. Each uterosacral ligament is double clamped, cut and ligated with No. 1 chromic catgut suture. Here particular attention is exercised to avoid the pelvic partial of the ureter as it courses along the base of the broad ligament. Next, the cardinal ligaments on either side of the uterus are double clamped and ligated.

More commonly the uterus is removed by the open technique, in which the anterior vaginal fornix is opened initially with the scalpel and the vagina is circumcised by sharp knife dissection or scissors. As the anterior, posterior and lateral angles of the vagina are opened, straight artery forceps are used to secure the vaginal margins. These margins are then closed using a series of figure of eight sutures. Particular attention is

taken when tying the lateral angles to ensure that the descending vaginal branches of the uterine vessels are securely ligated.

Suspension of the vaginal vault is done by tying the peritonealisation suture to the lateral and mid sutures of the vault. Peritonealisation is done by means of a continuous No. 1 chromic catgut suture that first pierces the vaginal walls near the midline and passes through the posterior leaf of the broad ligament, the free margin of the uterosacral ligament, then through the infundibulopelvic ligament, the free margin of the round ligament and the anterior bladder peritoneum. The procedure is done on the opposite side, with the suture being tied at the midline and lateral angles.

If the ovaries have been preserved an alternative suspension may be used in which the tip of the broad ligament is loosened separately with a purse string of No. 2/0 chromic catgut and the free margin of the pedicle is high against the pelvic wall and are not anchored to the vaginal vault. This is done to avoid subsequent dyspareunia and to avoid stretching of the ovarian vessels with possible thrombosis, ischaemia, and cystic changes of the ovary. After this, the abdominal viscera are inspected.

Once good hemostasis is achieved, instrument and swab count is correct; the abdomen is closed in anatomical layers. The post-operative management is as described earlier.

COUNSELLING CLINICS

These clinics offer counselling to obstetrics and gynaecology patents. These include the patient support centre, teenage clinic, the gynaecological outpatient clinic (GOPC) and the Nairobi hospice.

THE PATIENT SUPPORT CENTRE

This is situated at the old hospital buildings. It attends to patients from all departments of the hospital. Often the counsellors visit the patients in the wards in which they are admitted, the members of staff include psychiatrists, sociologists, and trained nurses. Mostly they deal with HIV counselling, puerperal psychosis, and those who have been

neglected by relatives. They counsel, treat and even assist patients find their way home.

THE HIGH RISK CLINIC (HRC)

This clinic on the ground floor of the tower block, next to the maternity wards. It deals wit teenage pregnancy, abortion and unwanted pregnancies, the staff include trained nurses, sociologists and consultant obstetrician/gynaecologists. They offer counselling, treatment for sexually transmitted diseases (STI) as well as provide clients with family planning services. Voluntary counseling and testing services for HIV are also provided to the teenagers.

THE NAIROBI HOSPICE

This institution offers counselling as well as social services to the terminally ill. They provide narcotic analgesics and encourage home-based care of such patients. Cancer of the cervix is the common gynaecological reason for referral to this clinic.

THE HOSPITAL CHAPEL

This provides spiritual nourishment to all in need. It's located in the 1st floor of the tower block.

MOTHERS HOSTEL.

This provides accommodation to well mothers with

OBSTETRIC CASE 1

DEEP VEIN THROMBOSIS IN PREGNANCY; ANTICOAGULATION THERAPY: VAGINAL DELIVERY- LIVE BABY

NAME	-	E.W.	PARITY	-	0+0 G1
AGE	-	24	D.O.A.	-	11/5/04
IP. NO	-	0957800	D.O.D.	-	4/6/04

PRESENTING COMPLAINTS

E.W. presented to the casualty department of Kenyatta National Hospital (KNH) as a referral from a City council health centre with complaints of pain and swelling of the left thigh for one week.

HISTORY OF PRESENTING ILLNESS

E.W. was well till one week prior to admission when she developed pain and swelling of the left thigh. The swelling was progressive and made walking difficult. There was no history of preceding trauma, pain in the chest or difficulty in breathing. The pain was aggravated by movement and only partially relieved by painkillers.

ANTENATAL CLINC FOLLOWUP

She attended antenatal clinic at Westlands Health Centre from about 20 weeks gestation. Her L.M.P. was on 11/9/03, so her E.D.D. was 18/06/04. Gestation by dates was 34 weeks. Her antenatal profile was blood group B+, hemoglobin level of 13.2g/dl while the VDRL and HIV tests were negative. Her antenatal period had otherwise been uneventful.

OBSTETRICS AND GYNAECOLOGY HISTORY

E.W. was a Primigravida who attained her menarche at 16 years of age. Her menses were regular, lasting 3-5 days and occurring every 28- 30 days. She had used oral contraceptives before the current pregnancy.

PAST MEDICAL HISTORY

She had no previous history of deep vein thrombosis, and had never been admitted to hospital before. She had no chronic ailment, or known drug allergies.

FAMILY AND SOCIAL HISTORY

E.W. was a married housewife, who lived with her husband in Westlands. Her husband was a businessman in Nairobi. She did not drink alcohol, or smoke cigarettes. There were no known chronic family ailments.

EXAMINATION

GENERAL EXAMINATION

E.W. was in good general condition, and well nourished. She was not pale, did not have Jaundice or look dehydrated. She however had edema of both legs, which was more marked on the leg. There were no enlarged lymph nodes. Her vital signs were within normal, with a blood pressure of 110/70 mmHg, pulse of 76/min, respiratory rate of 22/min and temperature of36.9°C.

SYSTEMATIC EXAMINATION

The respiratory and cardiovascular systems were examined and found to be normal. The central nervous system was also normal.

ABDOMINAL EXAMINATION

The abdomen was systematically distended and moving with respiratory. No areas of tenderness were elicited. The fundal height was 34 weeks, longitudinal lie, and cephalic presentation. The fetal heart rate was 136/ min. head was 5/5. Pelvic examination was not done.

LOCAL EXAMINATION OF THE LOWER LIMBS

The left thigh and calf regions were swollen. The swelling was shiny, warm and tender, especially in the thigh region. There were no superficially distended veins. There were no wounds or cuts on the limbs. The maximum circumference at a level 25cm above tibial tuberosity was 52cm for the left thigh, while the right was 47cm. The left calf

measured 38cm at a level 10cm below the tibial tuberosity while the right calf dimension was 34cm.

DIAGNOSIS

A working diagnosis of deep venous thrombosis of the left lower limb in pregnancy was made.

TREATMENT PLAN

She was admitted for bed rest. The swollen limb was elevated using pillows and was started on oral Paracetamol for pain relief. She was also started on fractionized Heparin, 10,000 units infusion six hourly. Daily measurement of limb circumference was planned. The following investigations were requested- full hemogram and platelet count, coagulation screen, urea and electrolytes, obstetric ultrasound and color Doppler studies of the limb. Activated partial thromboplastin time (APTT) was also planned.

RESULTS OF INVESTIGATIONS

- Hemogram: Hb-13.og/dl RBC $3.93\times10^{9/}$ l
  WBC $11.2\times10^{9/}$ l platelets $367\times10^{9/}$ l
- Coagulation screen KCCT, test 36 seconds. Control 40 seconds
- urea 2.1 mmol/L Na + 136mmol/L, K+3.6 mmol/L
- Ultrasound, single intrauterine foetus in cephalic presentation, adequate liquor, maturity by BPD, FL and AC=34 weeks, placenta fundal posterior. No fetal abnormality was detected.
- Color Doppler- showed extensive deep venous thrombosis involving the left external iliac veins.

SUBSEQUENT MANAGEMENT

As a result of the above investigations, intravenous Heparin was continued for one week, with a PTT maintained at between 1.5 to 2 times of the control. By this time, the swelling and pain had subsided. Because she was now about 36 weeks gestation, she was maintained on Heparin 10,000 units 12 hourly subcutaneously with the daily KCCT maintained at 1.5-2.0. At 37 weeks she went into spontaneous labour, the Heparin was

withheld and she went on to have a normal vaginal delivery to a live female infant, weighting 2800 grams, who scored 8 in one minute and 10 at 5 minutes. She lost about 400ml of blood during delivery. 12 hours after delivery she was restarted on Heparin infusion, 10,000 units 8 hourly and Warfarin 5 mg daily. Warfarin and Heparin were overlapped for 3 days. She was discharged home on Warfarin 5mg daily through the hematology and postnatal clinics.

FOLLOWUP

At 6 weeks, in the postnatal clinic she was well. The pain and swelling had disappeared. During the clinic she opted for intrauterine contraceptive device (IUCD) for contraception. Since her Prothrombin Time Index (PTI) was within acceptable limits, she was for follow up in the hematology clinic for three months. The Warfarin was continued for 6 months when she was discharged from the hematology clinic.

DISCUSSION

Presented is a Primigravida with Antepartum deep vein thrombosis (DVT) in the third trimester. Venous Thromboembolism (VTE) is the most common form of thrombosis that occurs during pregnancy and usually involves veins of the calf, thigh and pelvis. Patients with VTE disease in pregnancy may present with symptoms of DVT or with symptoms of pulmonary embolism after silent DVT. Patients with DVT present with pain, swelling, tenderness, warmth and color changes mainly in the leg, occasionally in the thigh region. Calf pain, either spontaneous or in response to stretching of the Achilles tendon (Homan's sign) is neither diagnostic nor specific for DVT. It may lead to dislodging of a cot, leading to pulmonary embolism, hence should be discouraged (1, 2).

Though venography or phlebography remains the standard diagnostic aid for confirmation of DVT, non-invasive methods have largely replaced this test to confirm clinical diagnosis (3). The dye used in venography can cause phlebitis and exposes the foetus to radiation. As such, the added benefit of seeing the iliac vessels is given up to avoid radiation exposure to the foetus. In case these vessels must be visualized, abdominal CT scan or MRI appears to be the techniques of choice (4, 5). Real time ultrasound, used along with duplex and color Doppler ultrasound, is currently the

procedure of choice to detect proximal DVT. Impedance plethysmography and fibrinogen 125 uptakes have largely fallen into disuse (1, 2). In Kenyatta National Hospital (KNH), the diagnosis of DVT is mainly clinical, based on signs and symptoms as was done in this patient. However, the false positive rate of clinical diagnosis of DVT is as high as 50%, and one has to rule out other conditions like bone and soft tissue infections, muscle inflammation as well as phlebitis. Objective confirmation of DVT is thus vital before therapy is initiated (6).

Virchow's formulation of the causes of thrombosis composed in 1854 is still accepted today (7). Thrombosis was (and is) thought to be the consequence of alterations in the vessel wall, slowing of blood flow (or stasis) and changes in blood components. Alterations in the vessel wall take the form of damage to the clot inhibiting endothelial surface, which exposes thrombogenic substances within the vessel wall, such as collagen and basement membrane. This occurs mainly during delivery, whether vaginal or operative. Blood flow from the leg and pelvic veins is slowed during pregnancy by pressure on iliac veins by the gravid uterus. Changes in blood components include moderate to marked increases in certain clotting factors, mainly fibrinogen, factor VII, VIII and X. abnormalities of the haemostatic and fibrinolytic systems, congenital or acquired that sometimes cause hyprecoagulable states in non pregnant individuals also cause a striking increase in the risk of DVT during pregnancy. (1, 2, 8)

The incidence of DVT during pregnancy and post-partum varies in different areas. The incidence of anterpartum DVT has been reported to be as high as 7 per 1000 (9) to as low as 1 per 2500 pregnancies (2). About half of all cases of DVT are identified antepartum and the other half puerperium. A study in KNH found that DVT was 3 times more common in the left lower limb that the right and it affected a younger population of lower parity than in the west. (10).

The patient presented here was a Primigravida. Her other only risk factor was use oral contraceptives prior to the current pregnancy. She did not have any prior history of DVT, trauma or sedentary lifestyle. To these risk factors must usually be added the risks associated with hereditary deficiencies of proteins involved in coagulation inhibition and in the fibrinolytic system. These include deficiencies in protein C, S and

Plasminogen. In our patient, no attempt was made to screen for these protein deficiencies as the tests are not available at KNH.

The treatment of DVT consists of anticoagulation, bed rest and analgesia. Other measures include elevation of the affected limb, physiotherapy and mobilization as soon as pain allows (10). The objective of anticoagulation therapy is to stop growth of the existing thrombus and help in its resolution. It also prevents pulmonary embolism and re-embolization. The two commonly used anticoagulants are Heparin and Warfarin.

Heparin seems to be the current consensus choice for treatment of Venous Thromboembolism in pregnancy. However, after 12 weeks, Warfarin is still an option for the patient who cannot or will not give self-injections, has Heparin induced thrombocytopenia, or has fears of osteoporosis (11). Heparin activates anti-thrombin III, which binds rapidly to thrombin, factor Xa and other serine proteases. It does not cross the placental barrier. It also has a fast acting antidote, Protamine Sulphate. Warfarin acts by prevention of the completion of the synthesis of vitamin K dependent clotting factors, II, VII, IX and X. Its use in the first 12 weeks of pregnancy may lead to Achondroplasia Puntata, Microcephaly, Hydrocephaly and Nasal Hypoplasia. Later in the 2nd and 3rd trimester it may lead to agnesis of the corpus callosum, optic atrophy and Dandy-walker malformations (1)

Intravenous Heparin is given initially. A transition can then be made to oral anticoagulation with Warfarin, which is began simultaneously with Heparin or up to 5 days after initiation; the switch being complete in 4-5 days. This switch may be delayed in very sick patients. In pregnancy, a patient on Warfarin is switched back to Heparin at 36 weeks, to decrease the risk of bleeding at delivery. The Heparin dose is withheld when in labour, and is resumed 6-12 hours after delivery, to cover for the initiation of oral anticoagulant. Warfarin is then re-started and continued for 6-8 weeks post-partum, in some circumstances up to 6 months post-partum. Heparin therapy is monitored by the Partial thromboplastin time (APTT), usually pushed to 1.5 – 2.0 times the control, while Warfarin is monitored with the Prothrombin Time Index (PTI), usually

pushed to between 1.5 – 2.5 times control. The main complication of DVT is pulmonary thromboembolism, which may be fatal.

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OBSTETRICS CASE 2

SUCCESSFUL VAGINAL BIRTH AFTER CAESAREAN SECTION:

GOOD MATERNAL AND NEONATAL OUTCOME

NAME:	J. W.	IP. NO.	0971423
AGE:	28 YEARS	D.O.A:	17/7/04
PARITY:	1 + 0 G 2	D.O.D	22/7/04

PRESENTING COMPLAINTS

J. W presented to labour ward with complaints of intermittent lower abdominal pain radiating to the back for 4 hours prior to the time of admission.

HISTORY OF PRESENTING COMPLAINTS

J. W. reported that she was well till early morning, (about 4 hours prior to time of admission) when she developed intermittent lower abdominal pain. The pain was radiating to the back, and increasing in intensity and frequency. At admission the abdominal pain was occurring about twice in every ten minutes. Soon after the onset of abdominal pain, J.W. reported having seen a bloody mucoid vaginal discharge but no drainage of liquor.

She did not have dysuria or urgency, though she had noted an increase in the frequency of going to pass urine for the past one day.

HISTORY OF CURRENT PREGNANCY

Her last menstrual period (L.M.P) was on 4^{tn} October 2003. Her expected date of delivery was therefore 11th July 2004. She was therefore 40+ weeks pregnant. J.W. started antenatal care on 15/12/03, at the KNH. At that time, the gestation of her pregnancy was about 10 weeks. She had attended antenatal clinic a total of 14 times. Her antenatal profile was as follows:

. Blood group O Rhesus positive.
. Hemoglobin level 14.7 g/dl.
. VDRL – Non reactive
. ELISA Test – Non reactive

She had received two tetanus toxoid injections during the pregnancy. An obstetric scan done at about 20 weeks gestation showed a single intra-uterine pregnancy corresponding to last menstrual dates, with no fetal abnormality. A repeat scan done at 36 weeks gestation showed a single foetus in longitudinal lie, cephalic presentation; with fundal anterior placenta and normal pelvic diameters; inlet diameter of 11.0cm: midcavity diameter of 11.5cm and outlet diameter of 11.5cm. The antenatal period was otherwise non-eventful, and she had been advised to come to hospital at the onset of labour.

OBSTETRIC AND GYNAECOLOGY HISTORY

She was now Para 1 + 0 G2. Her last delivery was in the year 2000, at the KNH. She was delivered by emergency caesarean section because of breech presentation in a primigravida. The outcome was a life female infant; who weighed 2.9 kgs and scored 8 in 1 minute and 9 at 5 minutes. The daughter was alive and well.

J. W. attained her menarche at 14 years. She had regular menses occurring at an interval of 26 days, and lasting 3 days. There was no dysmenorrhoea. She had been using oral contraceptive pills since the last delivery, stopping them when she wanted to conceive. She had never had any pap smear done.

PAST MEDICAL HISTORY

She had no known chronic ailments and had never being hospitalized for non-obstetric reasons.

FAMILY AND SOCIAL HISTORY

She was a single business lady, who stayed in Kayole with her daughter. She was the 3rd born in a family of 4. There was no family history of twins or chronic ailments.

EXAMINATION

On general examination, she was well nourished and in good condition. She had no pallor, jaundice or edema. Her vital signs were normal; with a blood pressure of 100/60 mmHg; pulse of 74 per minute; respiratory rate of 14 and temperature of 35.9° C.

ABDOMINAL EXAMINATION

The abdomen was symmetrically distended, with a lower midline sub-umbilical scar. There was linea nigra present. The fundal height was term, longitudinal lie and cephalic presentation. The head was 4/5. A contraction of moderate intensity, lasting about 30 seconds was palpated. The fetal heart rate was 132 beats per minute and regular.

RESPIRATORY, CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS

These were examined and found to be essentially normal.

PELVIC EXAMINATION

There were normal external genitalia. The vagina was moist and warm. The cervix was 4 cm dilated and fully effaced. The membranes were flat. There was no caput or moulding. Pelvic assessment felt adequate for vaginal delivery.

MANAGEMENT

An intravenous cannula was inserted and line kept open with 500ml of 5% dextrose. Blood was also drawn for blood grouping and cross matching. A partogram was started, and patient allowed to continue with labour. Intermittent fetal heart rate was instituted every 15 minutes.

4 hours later, the patient was reviewed and found to be progressing well. The fetal head was now 2/5, and fetal heart rate ranged between 120 and 150 beats/minute. Pelvic examination revealed a cervical dilation of 7 cm with bulging membranes. Artificial rapture of membranes (ARM) was done, and clear liquor obtained. No caput or moulding was felt. 3 hours later, she was found to be fully dilated and bearing down. She was taken to the delivery room and 15 minutes later had a spontaneous vertex delivery (SVD), to a life male infant, who weighed 3.0 kgs and had APGAR scores of 8 and 10 in one and five minutes respectively. The placenta was delivered by continuous cord traction (CCT). The estimated blood loss at delivery was 400ml.

After delivery she was observed in the acute room for 4 hours. Her vital signs remained normal, and there was no post –partum hemorrhage. She was subsequently transferred to the post-natal ward. 2 days after the delivery, both mother and child were allowed home, in good condition, for follow up in the postnatal clinic in 6 weeks.

Follow up

In the post-natal clinic at 6 weeks both mother and child were in excellent condition. She opted to continue using oral contraceptive pills.

DISCUSSION

Presented is a 28-year-old Para 1+0 G 2 with 1 previous scar due to breech presentation in a primigravida. She had a successful trial of labour and delivered a live male infant weighing 300gms, with good APGAR scores.

Caesarean section rates have continued to rise in the world. Indeed, as at 2000, one of every 10 American women delivering had a prior caesarean section (1). Between 1970 and 1996, in the USA, the caesarean section rate increased from 5.5% to 21%, with a peak. Incidence of 24.7% in 1988 (1, 2). In Europe, a similar increase in caesarean births occurred, though the rates were only half of those in the USA (2). The reported incidence of caesarean section for Kenyatta National Hospital (KNH) in 1980 was 17.8% with 59% of the cases being repeat sections (3). Recent data indicate a rate of 21.1% (4) at the KNH.

For many years, the scarred uterus was believed to contraindicate labour, out of the fear of uterine rapture. In 1996, Cragin made his famous and now seemingly excessive pronouncement, "once a caesarean, always10 a caesarean". It must however be remembered however, that when Crain made this statement, obstetricians routinely used the classical vertical incision on the uterus (1). The Kerr transverse incision was not recommended until 1921 (1). The year 1978, was an important year in the history of prior caesarean delivery. Merrill and Gibbs (1978) reported from the University of Texas at San Antonio that subsequent vaginal delivery was safely attempted in 83% of their patients with prior caesarean deliveries (5). This report served to rekindle interest in vaginal birth after prior caesarean (VBAC), at a time when only 2% of American women who had previously undergone caesarean birth were attempting vaginal delivery. Use of VBAC increased very significantly in the United States such that there was a 14 – fold increase to 28 percent of prior caesareans delivering vaginally by 1996 (1). However,

beginning 1989, there have been several reports published from around the United States and Canada that suggest that VBAC may be riskier than anticipated (6). Indeed recent data in the USA show that the incidence of VBAC has substantially declined, with an overall decrease of 3% in 1997 (7). The reasons for this disturbing change in trends partially centre on the risks, both actual and perceived, incurred by women undergoing VBAC (8).

Reports such as those above have raised serious concerns about the safety of VBAC and have contributed to heightened controversy. In response, the American College of Obstetricians and Gynaecologists issued an updated practice bulletin in 1998 and 1999 urging a more cautious approach to attempting a trial of labour. In part, it reads: "because uterine rapture may be catastrophic, VBAC should be attempted in institutions equipped to respond to emergencies with physicians immediately available to provide emergency care".

"Since it has become apparent that VBAC is associated with a small but significant risk of uterine rupture with poor outcomes for both mother and infant. These developments, which have led to a more circumspect approach to trial of labour by even the most ardent supporters of VBAC, illustrate the need to re evaluate VBAC recommendations". The current VBAC recommendation by the American College of Obstetricians and Gynaecologists (1998, 1999), which although urging caution, also strongly supports VBAC are:

Recommendations of the American College of Obstetricians and Gynaecologists (1999) for selection of candidates for vaginal birth after caesarean section (VBAC).

SELECTION CRITERIA

a) One or two prior low – transverse caesarean deliveries.
b) Clinically adequate pelvis
c) No other uterine scars or previous rapture
d) Physician immediately available throughout active labour capable of monitoring labour and performing an emergency caesarean delivery.

e) Availability of anaesthesia and personnel for emergency caesarean delivery.

Patients with transverse scars confined to the lower uterine segment have a small risk of symptomatic scar separation during a subsequent pregnancy.
According to the American college of obstetricians and gynaecologists (1999); rates of uterine rapture according to the type and location of the previous uterine incision, show that a low transverse incision has the lowest risk of 0.2 – 1.5%, while the classical and T-shaped incisions carry a risk of 4-9%. A low vertical incision has a moderate risk of 1– 7%. The patient presented had a low transverse uterine incision and hence low risk of rapture after trial of labour.

Though the American college of obstetricians and gynaecologists (ACOG), recommend a trial of labour for a patient with one or two low transverse incisions, this is not accepted practice in Kenya. At the KNH, only patients with one low transverse incision are offered a trial of labour. In various studies, the rates of uterine rapture after two caesarean scars are much higher than those of one previous scar. Miller and colleagues (1994) reported a uterine rapture rate of 0.6 percent and 1.8 percent for those with one and two prior caesarean deliveries. Other studies have found higher rates of up to 3.7% in two previous scars compared to 0.8% in one previous scar (10). Despite this greater risk, ACOG, has taken the position that women with two prior low-transverse caesarean deliveries may be considered for VBAC. The success rate for a trial of scar depends to a small extent upon the indication for the previous delivery. Generally 60 – 80% of trails of labour after prior caesarean birth result in vaginal delivery (ACOG, 1999). The success rates are somewhat improved when the original caesarean was performed for a non-recurrent reason, for example breech presentation or fetal distress. Our patient was operated because of prolonged labour. However, Impey and O'Herlihy (1998), reported that even when the strictest criteria are used to diagnose cephatopelvic disproportion (CPD), a VBAC rate of 68% was still achieved (1). Our patient had both a radiological and clinical pelvimetry, which showed an adequate pelvis for vaginal delivery.

Perhaps the most important prognostic factor for successful trial of labour is prior vaginal delivery. Previous vaginal deliver, either before or after a caesarean birth, significantly improves the prognosis for successful VBAC (11). Though our patient did not have any prior vaginal delivery, she went on to have a successful trial of labour. Perhaps equally important, is the patients preference regarding the mode of delivery. The patient's choice should be sought after appraisal of the risks and benefits of a trial of scar.

Whenever possible, written consent should be obtained. Our patient had opted for trial of labour after discussions in the antenatal period.

Should an elective repeat operation be selected, it's essential that fetal maturity be achieved prior to delivery. This is aimed at reducing the incidence of iatrogenic preterm birth and respiratory distress, which has a negative impact on perinatal outcome. The American college of obstetricians and gynaecologists (ACOG) 1995 has established guidelines for timing an elective operation. According to these criteria, elective delivery may be considered at or beyond 39 weeks, in a woman with normal menstrual cycles and no immediate antecedent use of contraceptives. If;

a) Fetal heart sounds have been documented for 20 weeks by non electronic fetoscope or for 30 weeks by Doppler .
b) At least 36 weeks have elapsed since a positive serum or urine chorionic gonadotropin pregnancy test performed by a reliable laboratory.
c) An ultrasound measurement of cross-rump length, obtained at 6 – 11 weeks.
d) An ultrasound obtained at 12-20 weeks confirms the gestational age of at least 39 weeks determined by clinical history or physical examination.

In all other instances, fetal pulmonary maturity must be documented y amniotic fluid analysis before elective repeat caesarean section is undertaken.

Alternatively on the onset of spontaneous labour, as occurred in our patient is awaited.

In summary therefore, based on the published data, its now considered appropriate to offer a trial of labour to any woman with a low-uterine segment caesarean section and no other adverse obstetric feature. This was the case with our patient, who went on to have a spontaneous vertex delivery (SVD) to a life male infant weighing 3.0kg and who had good APGAR scores. Since no post-partum haemorrhage occurred in our patient, no digital exploration to document integrity of the old scar was done.

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OBSTETRICS CASE 3

PERSISTENT OCCIPUT POSTERIOR POSITION: BIG BABY- EMERGENCY CESAREAN SECTION

NAME:	E. W.	IP. NO.	0976075
AGE:	21 YEARS	D.O.A	18/8/04
PARITY:	0 + 0	D.O.D	25/8/04

PRESENTING COMPLAINTS

E.W presented to labour ward, Kenyatta National Hospital (KNH), as a referral from Shauri – Moyo, Health Centre because of prolonged labour.

HISTORY OF CURRENT PREGNANCY

Her last menstrual period (L.M.P) was on 5/11/03, so the E.D.D was 12/8/04. Her gestation by dates was therefore 40+ weeks. She had attended antennal clinic in the City Council Health Centre, and the antenatal profile done was:

- Blood group - B Rhesus positive
- HB Level - 12.4 g/dl
- V.D.R.L Test - Negative
- HIV Test - Not done

She had received two doses of tetanus toxoid. The pregnancy had otherwise being unremarkable.

OBSTETRIC AND GYNAECOLOGY HISTORY

She was a primigravida. She attained her menarche at the age of 14 years and her menses were regular and lasted 3 days. The interval was 26 days with no associated dysmenorrhoea. She had never used any contraceptives nor had a pap smear done.

PAST MEDICAL HISTORY

Non – contributory

FAMILY AND SOCIAL HISTORY

She was married and lived with her husband in Shauri-Moyo. Both were business people in the city of Nairobi. She did not smoke or take alcohol. There was no family history of chronic illness.

SYSTEMIC INQUIRY

This was non – revealing.

PHYSICAL EXAMINATION

She was a young lady in good general condition. She was dehydrated but did not have pallor, jaundice or lymphadenopathy. She had bilateral pedal edema.

- Blood pressure was 100/60mmHg,
- Pulse rate 78/min,
- Temperature 36.5°C.

RESPIRATORY, CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS

These were normal.

ABDOMINAL EXAMINATION

The abdomen was distended, and moving with respiration. The lower abdomen was flattened and it was difficult to feel the fetal back. The fundal height was however term, lie, longitudinal, and the presentation cephalic. The fetal heart rate was 136/min, and head 3/5. There were moderate contractions noted.

PELVIC EXAMINATION

The external genitalia were normal. The cervix was 7cm dilated and fully effaced. The anterior fontanel could be palpated but not the posterior fontanel. This was felt in the anterior segment of the pelvis. There was moulding (+), and some caput (+), formation. The membranes had ruptured earlier and there was minimal clear liquor still draining. No cord was felt. The pelvis was thought to be otherwise normal, but vaginal delivery in the current circumstances unlikely.

DIAGNOSIS

Prolonged labour as a result of persistent occipital posterior position (POPP)

MANAGEMENT

The patient was scheduled for emergency caesarean section. An informed consent was obtained, patient shaved, and an intravenous drip of 5% dextrose started. Blood was drawn for group and cross-match and patient taken to theatre.

IN THEATRE

Examination under anaesthesia confirmed above findings. An emergency lower uterine caesarean section was performed. A life male infant, in occipitoposterior position (POPP), was extracted. Birth weight was 3.4 kgs, and APGAR scores 8/1, 10/5, and 10/10. There was some caput and moulding. The liquor was clear. The placenta was delivered manually, and looked normal. The uterus was cleaned and then closed in layers and hemostasis achieved. On inspection, the uterus, ovaries and tubes were found to be normal. The bladder was also normal. The abdomen was closed and wound dressed. Vulvo vaginal toilet was done and clots expelled. Estimated blood loss was 500mls. Anaesthesia was successfully reversed.

POST OPERATIVE CARE

The mother was treated with crystalline penicillin, Gentamycin and Metronidazole for 3 days, and then put on oral Amoxicilin and Ponstan. The wound dressing was changed on the 4th postoperative day and the wound found to be healing well. The baby was breastfeeding well. On the 5th postoperative day she was allowed home, to come for a postnatal check in 2 weeks.

FOLLOW UP

At two weeks, the wound was well healed. The baby and mother were in good condition. They were discharged from the clinic for contraceptive advice and follow up in their local health centre.

DISCUSSION

The patient presented was a 21-year-old primigravida referred from a health centre with prolonged labour as a result of persistent occipital posterior position (POPP). She underwent an emergency caesarean section with good maternal and fetal outcome.

Occipito posterior position is the most common malposition encountered in obstetric practice. The actual incidence of occipito posterior position depends on the time of diagnosis: In late pregnancy early or late labour. Occipito posterior position is found in about 10% of women at the onset of labour (1). It's associated with partial deflection of the head, so that the occipitofrontal diameter (11.5cm), presents which results in some degree of positional cephalopelvic disproportion. Right occipitoposterior position is more common than left occipitoposterior position; this being favoured by the dextrotation of the uterus, and the presence of large bowel on the left side of the maternal pelvis (2).

In a majority of labour, the foetus enters the pelvis with the sagittal suture in the transverse diameter of the pelvis. In a small minority of, it enters the pelvis in the occiput posterior position. Occipito posterior position may be primary i.e. present in late pregnancy before onset of labour, or secondary, developing during labour as a result of posterior rotation from the lateral positions. (2). Among the factors found to predispose to the occipitoposterior position, both in pregnancy and labour are:

Pelvic type – Primary occipitoposterior position occurs particularly in association with the "Android" type of pelvis. The Anthropoid pelvis is a high "assimilation type" with the 5^{th} lumbar (L5) vertebrae incorporated into the sacrum. This results into a deeper pelvis and higher angle of inclination; which also favours rotation of the occiput into the sacral hollow. Spontaneous vaginal delivery is however common in this type of pelvis is common. Secondary occipitoposterior position is more commonly associated with the "Android" type of pelvis (2). Other conditions include:
Fundal anterior placenta, Cephalo pelvic disproportion, Epidural block

When the fetal back is on the right side of the mother before onset of labour. This occurs in about 30 – 40% of vertex positions and tends to favour POPP.

In the great majority of labours in the occiput posterior positions, the mechanisms of labour is identical to that observed in transverse and anterior varieties, except that the occiput has to rotate to the symphysis pubis through 135 degrees, rather than 90 and 45 degrees respectively. With effective contractions, adequate flexion of the head, and a foetus of average size, the great majority of posteriorly positioned occiputs rotate promptly as soon as they reach the pelvic floor and labour is not lengthened appreciably. In perhaps 5-10% of the cases, however, these favourable circumstances do not occur (3). For instance, with poor contractions, faulty flexion of the head, or both, rotation may be incomplete or may not take place at all, especially if the foetus is large. Epidural analgesia, which diminishes abdominal muscular pushing as well as relaxing the muscles of the pelvic floor, also predisposes to incomplete rotation. If rotation toward the symphsis does not take place, the occiput may rotate to the direct occiput posterior position, a condition known as persistent occiput position (3). Both persistent occiput position and transverse arrest represent deviations from the normal mechanisms of labour.

Most often, occiput posterior positions undergo spontaneous anterior rotation followed by uncomplicated delivery. Although the precise reasons for failure of spontaneous rotation are not known, transverse narrowing of the mid pelvis is undoubtedly a contributing factor (3). Gardberg and associates (4) showed that most occiput posterior presentations at delivery are the result of mal rotation of occiput anterior position during labour and most (87%), of occiput posterior presentations at the outset of labour spontaneously rotate anteriorly. The possibilities for vaginal delivery include:

- Awaiting spontaneous delivery
- Forceps delivery with occiput directly posterior
- Manual rotation to the anterior position followed by spontaneous or forceps deliver.

In our unit, forceps delivery is not practiced. As such, if spontaneous vaginal delivery does not occur, caesarean section is performed. Spontaneous vaginal delivery is

possible if the pelvic outlet is roomy, and the vaginal outlet and perineum are somewhat relaxed from previous vaginal deliveries. If the vaginal outlet is resistant to stretch and the perineum tight, labour may be prolonged. A generous episiotomy is usually needed.

Some authors have described managed of persistent occiput posterior position (POPP), similar to occiput anterior position, namely delivery without manual or forceps rotation (5). However, this is only possible when there are no other factors indicating absolute obstruction or fetal distress (5). In this study, compared with occiput anterior position, labour in occiput posterior position was prolonged an average 1 hour in parous, and 2 hours in nulliparous women. The perinatal mortality rate of 2.2% did not different significantly from 1.8% for occiput anterior group. A more recent study has shown that both 1st and 2nd stages were longer in POPP and that 65% required operative intervention (6).

If vaginal delivery occurs or has been attempted, maternal morbidity including generous episiotomies, and other lacerations and tears of the genital tract occur. Other associated problems include; backache, premature rapture of membranes and prolapse of the cord (7). During labour, operative intervention is indicated if:

- There is fetal distress
- There is failure of labour to progress
- If obstetric complications like cord prolapse, or cephalo pelvic disproportion (CPD) are detected.
- Delayed second stage > 1 hour, and vacuum delivery cannot be done.

The patient presented had failure of labour to progress, hence the decision to deliver her by caesarean section. The outcome was good for both mother and her child.

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OBSTETRICS CASE 4

BRONCHIAL ASTHMA IN PREGNANCY; VAGINAL DELIVERY – LIVE BABY

NAME	-	E.M	IP. NO - 0956614
AGE	-	26 YEARS	D.O.A - 6/3/04
PARITY	-	1 + 0	D.O.D - 16/3/04

HISTORY OF PRESENTING ILLNESS

She was well till about 5 days prior to admission when she presented at the casualty department with complaints of sneezing, running nose, dry cough and chest tightness.

HISTORY OF PRESENTING ILLNESS

She was well till about 5 days prior to admission when she developed sneezing, running nose and itchiness in the throat. Subsequently she developed difficulty in breathing, characterized by dry cough and wheezing in the chest. She had two similar attacks in the past 1-month, which were treated with improvement in the local health centre. However, the current episode had not responded to treatment, hence her referral to KNH.

She did not have any history of orthopnea, paroxysmal nocturnal dyspnoea, fever or chills. There was no associated chest pain.

PAST MEDICAL HISTORY

Her first attack of difficulty in breathing had occurred about 3 years ago. Since then she was on regular inhaled drugs with occasional oral medication. She had occasional exacerbations, which were treated on out patient basis with improvement. During her first pregnancy however she required hospitalization for an acute attack. She did not have any other known chronic ailments.

ALLERGY

- She had no known food or drug allergies

- She however had occasional episodes of sneezing running nose, and itchiness in the ears, eyes and throat especially an exposure to cold.

OBSTETRIC AND GYNECOLOGY HISTORY

E.M was now Para 1 + 0 G2. Her first delivery was in 2002, SVD, to a live female infant weighing 3.2 kgs and who was alive and well. The labour and peuperium were normal. Her L.M.P was on 12/6/03, so her E.D.D was 19/3/04. Gestation by dates was approximately 38 weeks. She had not started attending antenatal clinic in the current pregnancy.

Her menarche was at 15 years, and her menses regular, lasting 3 – 5 days on average, with an interval of 24 days. Se had used oral contraceptive pills after her first delivery, stopping them when she wanted a second child.

FAMILY AND SOCIAL HISTORY

She was a married tailor working at Dagorreti market. Her husband was a mechanic in the same township. She did not drink alcohol or smoke cigarettes. There were no chronic ailments in the family.

EXAMINATION

On general examination, she was in fair general condition, though in moderate respiratory distress. She was not pale or jaundiced. She did have lymphadenopathy but had some pitting pedal oedema. Her vital signs were a respiratory rate of 32/min, pulse 96/min, temperature of 37.2C and a blood pressure of 110/70mmHg.

RESPIRATORY SYSTEM

She was in moderate respiratory distress. The respiratory rate was 32/min with flaring of the alae Nasi and sub costal retraction. Generalised rhonchi could be heard all over the lung fields. There were also scattered basal crepitations.

ABDOMINAL EXAMINATION

Fundal height was term, longitudinal lie and cephalic presentation. The fetal heart rate was 138 beats per minute. The head was 5/5. No contractions were palpated.

OTHER SYSTEMS

Other systems were examined and found to be normal.

DIAGNOSIS

A working diagnosis of an acute asthmatic attack in pregnancy was made.

TREATMENT PLAN

She was started on I.V. Hydrocortisone 200 mg bolus and 250mg Aminophylline slowly. She was then continued on an Aminophylline drip 250mg in 500 ml of 5% Dextrose 8 hourly. In the antenatal ward she was started on oral prednisone 10mg three times a day. On this treatment she did very well and after 5 days, the prednisone was stopped, and she was started on pulmicort inhaler. A day later Ventolin tablets were substituted with Ventolin inhaler two to four puffs twice a day.

During the course of her stay in hospital, the antenatal profile and an obstetric scan were done.

RESULTS OF INVESTIGATIONS

Antenatal profile:

- Hb 13.2gldl,
- VDRL was negative,
- Blood group was B Rhesus positive,
- HIV – Test, negative.

Obstetric scan – showed a single intra-uterine pregnancy, at estimated gestational age of 37 weeks and posterior fundal placenta. Estimated fetal weight was 2.9 kgs.

SUBSEQUENT MANAGEMENT

Patient was maintained on the pulmicort and ventolin inhaler without exacerbations. One week after admission, she was allowed home on the same treatment and follow up in the antenatal clinic. She however did not go home. While in the ward, awaiting collection, she went into spontaneous labour. She progressed well and delivered SVD, birth weight 3.0 kg, Apgar scores of 7 in 1 min, 10 in 5 minutes. This time it was a boy. Delivery was uneventful. Post delivery she continued to use the pulmicort and ventolin

inhalers. She was discharged 3 days after delivery through the chest clinic after 6 weeks.

FOLLOW UP

When she was seen at the post – natal clinic she was well. The uterus was completely involuted. She was counselled on Family Planning and opted to continue using oral contraceptives. She had been seen in the chest clinic, and found to be doing well on the treatment discharged on, and was advised to continue with the same treatment for follow-up in 3 months.

DISCUSSION

A 30 year old Para 1+0 9 2 with bronchial asthma is presented. Her asthma got worse during pregnancy. Bronchial asthma is a chronic disease of uncertain aetiology. It's an obstructive airway disease characterized by limitation of airflow that is generally more marked during expiration than inspiration. In asthma, the obstruction is a reversible process caused by airway inflammation and increased responsiveness of the airways to a variety of stimuli. The airway response to these stimuli includes contraction of bronchial smooth muscle, mucus hyper secretion and mucosal edema, all of which contribute to the pathophysiology of reversible airway obstruction characteristic of the disease (1).

Asthma affects about 3-4% of the general population (1). Asthma is also probably, the most common form of lung disease in pregnancy (2). It affects 0.4 – 1% of all pregnant women. Severe asthma (status asthmaticus) complicates about 0.2 % of all pregnancies. The patient presented here had developed asthma about 3 years earlier and experienced acute exacerbations in the first pregnancy.

Several studies have investigated the natural history of asthma in pregnancy and although there are minor differences in the results, most data suggest that the course of asthma during pregnancy is variable. In a review of more than 1000 cases, reported in 9 (nine) studies, maternal asthma during pregnancy was found to be unchanged in 49% better in 29% and deteriorated in 22% (3). In the patient, her asthma deteriorated

in her first and current pregnancy. It has been suggested that the severity of asthma is an important factor, predicting the likelihood of deterioration during pregnancy (4), but other data to refute this association have also been presented (5).

Several interacting factors have been postulated to account for changes in the course of asthma during pregnancy, and although the relative importance of any of these factors is unclear (4,5), an increase in circulating free cortisol, a decrease in plasma histamine, and a decrease in bronchomotor tone and airway resistance (possibly due to progesterone) could each contribute to improvement in the frequency and severity of asthma attacks during pregnancy. Conversely, increased levels of progesterone, and mineral corticoids which compete for glucocorticord receptors, an increased incidence of viral respiratory tract infections and bacterial sinusitis, increased levels of prostaglandin F 2 – alpha increased gastroesophageal reflux and hyperventilation could provoke attacks or an increase in symptoms The unpredictable course of asthma during pregnancy however makes it difficult to quantitate the role of these or other factor in any given patient.

The effect of asthma on the outcome of pregnancy has also been analysed. No significant increase in premature delivery or spontaneous abortion, compared with controls has been documented. No significant differences have been found between the two groups in the incidence of preeclampsia, perinatal mortality, pre term birth, low birth weight infants, intra-uterine growth restriction, or congenital malformations. The investigators have concluded that the outcomes were similar if asthma is well managed (6). It however seems that pre term delivery, premature rapture of membranes (prom) and low birth weight are more common in patients with severe asthma (6). The mode of delivery seems to have a significant impact on the disease process. Mabie et al (1992) reported an 18 fold increased risk of exacerbation following caesarean delivery compared to vaginal delivery (7). Indeed, 10% of the women have an exacerbation during labour and delivery (8). Our patient delivered SVD and did not have an exacerbation.

Status asthmaticus attacks are associated with poor pregnancy outcome. There is a higher perinatal death rate, as well as a higher incidence of asphyxia and respiratory distress. Severe uncontrolled asthma has several maternal risks, namely: pneumothorax, pneumomediastinum, acute cor pulmonale, cardiac arrhythmias as well as muscle fatigue with respiratory arrest (9).

The ideal management includes avoiding triggering factors such as dust, emotional stress, exertion, and exposure to cold and certain drugs like aspirin. Our patient had atopy, and such advice would have been most appropriate. Treatment of suspected infection should be a high priority, as this may be a precipitating factor for an attack. Our patient was put on antibiotics and had no exacerbations.

Fortunately, medications currently used for asthma are generally well tolerated during pregnancy and appear to be safe for the foetus, so that management of asthma in a pregnant woman differs little from the management of asthma in a non-pregnant patient (10). It is also widely accepted that the risk to the foetus is greater from poorly controlled asthma than from any of the drugs that are required to gain optimal control. Although bronchodilators have traditionally been the primary form of therapy for asthma, emphasis has shifted over the past several years to the early use of ant-inflammatory agents such as inhaled, parenteral or oral corticosteroids. Our patient was started on intravenous hydrocortisone early, which was substituted with oral prednisone and ultimately an inhaled steroid, pulmicort. Indeed current literature now indicate that any potential risks of steroid use in pregnant asthmatics, appears to be small and its now generally agreed, that steroids should not be withheld in any setting whenever clinically indicated. Potential concerns about steroid use in pregnancy include increased incidence of placental insufficiency leading to low birth weight and/or stillbirths, fetal adrenal suppression and congenital malfunctions, specifically cleft palate.

B2 adrenergic agonists like Terbutaline, Salbutamol, Metaproterenol and Albuterol bind to specific cell surface receptors, activate Adenyl cyclase, which increases intracellular cyclic AMP to modulate bronchial smooth muscle relaxation. These still form the 1st line of pharmacological therapy of acute asthma and are critical in acute attacks. They also

remain the mainstay of therapy in patients with occasional mild asthma. In acute attacks, patients not responding well can be given Theophylline derivatives. Membrane stabilizers like Sodium Cromoglycate may also be used. Special considerations in labour include choice of analgesic to avoid histamine releasing narcotics like Meperidine or Morphine in favour of Fentanyl. For surgical delivery, some avoid general anaesthesia believing tracheal intubation can trigger severe bronchospasms. If post partum hemorrhage (PPH) occurs, prostaglandin F 2 – alpha should be avoided because of its potential to trigger an acute attack.

Our patient responded well to ventolin nebulization, intravenous hydrocortisone and Aminophylline. There was no need for induction of labour, as she went into spontaneous labour. Breast-feeding is not contraindicated in asthmatic patients and our patient initiated breast-feeding as soon as was possible. Though theophylline is secreted in breast milk, the infant receives less than 10% of the mother's dose, which has no significant effects on the baby. It may however cause insomnia and irritability. Rarely, this may be troublesome, necessitating withdrawal of the drug.

A few cases are reported in literature in which life threatening status ashtamticus during pregnancy could not be controlled by intensive medical therapy. In these cases, termination of pregnancy by cesarean section was followed by dramatic improvement in otherwise uncontrolled asthma (1).

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OBSTETRICS CASE 5

PLACENTA PRAEVIA TYPE IV – ELECTIVE CESAREAN SECTION – LIVE BABY

NAME	- M.N	IP. NO.	- 0334715
AGE	- 29 YEARS	D.O.A	- 23/4/04
PARITY	- 2 + 0 G3	D.O.D	- 27/6/04

PRESENTING COMPLAINT

M.N presented at labour ward via casualty as a referral from Pumwani Maternity Hospital, with a 6-hour history of painless PV bleeding.

HISTORY OF PRESENTING COMPLAINT

M.N was well till about 6 hours earlier, when she woke up to find her clothes and bedding soaked with blood. There was no associated lower abdomen pain. On standing, the bright red blood dripped down her legs to the floor. She had changed 3 pads since then, which were fully soaked.

She reported no history of abdominal trauma, PV discharge, dyuria, frequency or urgency. She had no prior history of PV bleeding either in the current or past pregnancies. She did not have dizziness, palpitations or fainting attacks.

She sought assistance at the Pumwani Hospital where an intravenous drip of normal saline was started and she was then referred to KNH.

OBSTETRICS AND GYNAECOLOGY HISTORY

She was Para 2+0 G3 and her first 2 deliveries were by caesarean section. (C/S).

Her first delivery was in 1995, by C/S section as a result of failed induction for prolonged pregnancy. Outcome was a life male infant, 2.9kg who scored well, 9 at one minute, 10 at 5 minute and who was alive and well.

Her second delivery, by C/S, because of failed trial of scar was in 2000. Outcome was another life male infant 3.1 kg, Apgar scores of 8 in one minute and 10 at 5 minutes. He was alive and well.

Her LMP was 27/9/03, so the E.D.D was 4/7/04, so at admission the gestational age was 29 weeks.

She had not started attending antenatal clinic in the current pregnancy.

Her menarche was at 14 years and the menses were regular, lasting 3-5 days and at an interval of 24-30 days.

She had used Norplant after the first delivery in 1995, till 2000, and a coil before the current pregnancy.

PAST MEDICAL HISTORY

Non contributory

FAMILY AND SOCIAL HISTORY

She was the 3rd sibling in her family of 4. She lived with her husband in Bahati who was a civil servant. She was a lab technician with the Nairobi City Council. She did not smoke cigarettes nor drink alcohol. There was no history of chronic ailments in the family.

EXAMINATION

General condition was good. She was mildly pale. She had no edema or jaundice. The vital signs were, blood pressure of 110/60 mmHg, pulse 90/min, temperature of 37.2°C and a respiratory rate of 14/minute.

RESPIRATORY SYSTEM

She was not in distress. Chest was clear.

CARDIOVASCULAR SYSTEM

Pulse was 90/min, blood pressure of 110/60 mmHg. The neck veins were not engorged. The precordium was not hyperactive. The first and second heart sounds were heard and normal. There were no murmurs.

ABDOMINAL EXAMINATION

Fundal height was 30 weeks, longitudinal lie, and breech presentation. The abdomen was soft, non-tender and fetal heart tones were heard, the rate being 140 beats per minute and regular.

PELVIC EXAMINATION

External genitalia were normal. Speculum examination done revealed a closed cervical 0S, with slight bleeding. The cervix was other wise healthy. No placental tissue was seen. No digital examination was done.

OTHER SYSTEMS

Other systems were examined and found to be normal.

DIAGNOSIS

A working diagnosis of antepartum hemorrhage (APH) most likely due to placenta praevia was made.

TREATMENT PLAN

In the labour ward, blood was taken for grouping and cross match and 3 units of blood requested. She was also requested to use a pad to help monitor the pace of active bleeding. An intravenous line was fixed and normal saline infusion started. An urgent obstetric scan was requested. Blood was withdrawn for full haemoglobin, coagulation screen, and antenatal profile. She continued to rest in bed with the pad remaining virtually dry for most of the day.

Later in the day, she was taken for ultrasound examination, which revealed a single intra-uterine foetus in breech presentation at a gestational age of 30 weeks. Fetal somatic and cardiac activity were detected, with a fetal heart rate of 138/minute. The placenta was low lying covering the entire cervical 0S (type IV). Amount of liquor was adequate. On the second day in labour ward, the bleeding had stopped, vital signs remained stable, and foetus remained active and therefore the patient was transferred to the antenatal ward for further management.

RESULT OF INVESTIGATIONS

. Hemogram

Hb level	8.9 gldl	WBC 5.82 X 10^9/L
HCT Level	28.1%	Neutrophils 66.8%
MCV	79 FL	Lymphocytes 26.7%
MCHC	34.7gldl pg	Monocytes 4.62%
MCH	27.9 Pg	
Plaletels	214x10^9/L	

. Antenatal profile - Blood – Group 0 + Ve
VDRL - Non reactive
ELISA - Non reactive

. Coagulation Screen – whole blood clotting time of 7 minutes. Normal.

. Obstetric Ultrasound – single intrauterine pregnancy in breech presentation. Fetal heart rate 140/min. No fetal abnormalities detected. Amount of liquor adequate. Gestational age by BPD, FL and AC corresponded to 30 weeks.

The placenta was low lying, covering the cervical OS completely. The Radiologist made a conclusion of – A single intrauterine foetus in longitudinal lie, breech presentation, at 30 weeks gestation with placenta previa type IV.

SUBSEQUENT MANAGEMENT

In the antenatal ward, the patient was put on bed rest. Bleeding was monitored by means of a pad. She was on 4 hourly measurements of vital signs. She was put on oral hematinic Ranferon, 1bd for the rest of the pregnancy. She was also put on oral Ventolin 4mg TID x 5/7 as a tocolytic. She was also put on Dexamethosone 6mg BD for 4 doses to promote fetal lung maturity. Blood, (2 units) was kept ready at the blood transfusion unit, incase it became immediately necessary.

She remained stable, and the bleeding as monitored by pads ceased. At 37 weeks, a repeat Hb level showed a Hb level of 12.2gldl. The urea and creatinine were normal. She underwent elective caesarean section on 23/6/04, the outcome being a life female

infant 3.6 kg. During the caesarean section, she had opted for bilateral tubal ligation which was done. The APGAR scores were 9 in 1 minute and 10 in 5 minutes.

The post-operative period was uneventful for both mother and child. On the 5th Post-operative day she was allowed home on Ranferon 1 od x 1/12, Augmentin 625 mg Bd x 5/7, Ponstan 500 mg TID x 5/7 and removal of stitches in the nearest health facility and follow up in the post-natal clinic in 6 weeks.

FOLLOW UP

She did not show up for postnatal clinic at 6 weeks.

DISCUSSION

Presented is a 29-year-old Para 2+0 G3 with 2 previous scars who presented with vaginal bleeding after 28 weeks gestation, Antepartum haemorrhage. Even though maternal mortality rate has been reduced dramatically by hospitalization for delivery and the availability of blood for transfusion, death from haemorrhage remains a common occurrence, both in the "developed" and "developing" world.

Antepartum or third trimester haemorrhage is a common complication of pregnancy, requiring medical evaluation in 5-10% of all pregnancies. Differentiation must be made between obstetric and non-obstetric causes of bleeding. Non-obstetric causes usually result in relatively little blood loss and little threat to the life of the mother and foetus. Obstetric causes are of more concern. Antepartum or third trimester haemorrhage is a common complication of pregnancy, requiring medical evaluation in 5 – 10% of all pregnancies. Differentiation must be made between obstetric and non – obstetric causes usually result in relatively little blood loss and little threat to the life of the mother and foetus. Obstetric causes are of more concern. Most serious obstetric haemorrhage, complicating 2 – 3 % of all pregnancies, are mainly due to abruption placentae and placenta praevia (1).

In placenta previa, the placenta is implanted in the lower uterine segment within the zone of effacement and dilatation of the cervix, thus contributing an obstruction to

descent of the presenting part (1). 1yasu and co-workers (1993), in an-analysis of the National Hospital discharge survey from 1979 to 1987, found that placenta praevia to complicate 1 in 200 deliveries. At parkland Hospital, the incidence 0.26 percent (1 in 390 deliveries) for more than 169000 deliveries over 12 years (2). In KNH, Ojwang (3), found an incidence of 1 in 400 deliveries: Kirima (4), reported an incidence of 0.9% : while Mbithi (5) found an incidence of 1%, Mati et al, in the 1983 birth survey, found an incidence of 0.15% (^).

Four grades of placenta previa, have been described:

a) Grade 1 (Lateral). The placenta just encroaches on the lower uterine segment.
b) Grade 2 (Marginal). The placenta reaches the margin of the cervical internal OS.
c) Grade 3 (complete). The placenta covers part of the internal OS.
d) Grade 4 (complete). The placenta is centrally placed in the lower uterine segment, completely covering the cervical internal OS.

The exalt etiology of placenta praevia is unknown, but various risk factors have been identified. These include age, parity and previous caesarean delivery (7). In a study of 147 cases, of major placenta previa, MCShane et al (7) found that 22 (15%) had a previous caesarean section. In another study Clark found that a single caesarean section scar increased the risk by 0.65%, three scars by 2.2% and four or more scars by 10% (8). The patient presented here had 2 previous caesarean sections. She was Para 2+0, and 29 years of age. Other risk factors include smoking and prior placenta previa. Our patient did not have any of these risk factors either. The recurrence rate of placenta previa is 4-8% after one episode of placenta previa (9). Increased surface area of the placenta as occurs in twins, succenturiate lobe and placenta membranacea also predispose to placenta previa. Other gynaecological surgery, specifically dilatation and curettage also influences the occurrence of placenta previa.

Characteristically, placenta previa presents with unprovoked painless vaginal bleeding, occasionally however, it may be provoked by coitus. Threatened abortion in the 2nd trimester may precede placenta previa; though such bleeding may have been minor and in some cases unreported. The initial incident of bleeding has a peak incidence at

about 34 weeks, and occurs in over 50% of cases before 36 weeks, only 2% after 40 weeks (10). The absence of pain is often regarded as a significant distinguishing factor between placenta previa and placenta abruption, but 10% of women with previa will have a co-existing abruption (10). Such patients and those presenting for the first time in labour (25%), may present a diagnostic problem. Our patient presented with unprovoked painless vaginal bleeding which started while she was sleep.

Physical examination may reveal anaemia and/or hypovolemia depending on the extent of bleeding. Our patient had anaemia.
Abdominal findings in cases of placenta previa are mal presentation, which in 35% of cases is either breech or transverse, slight but persistent deviation of the presenting part from the midline and difficulties with palpating the presenting part. Our patient had breech presentation, with a presenting part which was high.

There is no place for routine vaginal examination in the diagnosis of placenta previa. Such examination may provoke torrential bleeding. Since local causes are likely to be benign, vaginal examination, including a sterile speculum, is probably wisely differed until the placenta has been localized. In our patient a speculum examination revealed some bleeding from the cervical 0S, with a healthy cervix. Various methods have been used for placentography. Some, such as soft tissue placentography (using x-rays) radioisotope radiography, pelvic angiography and thermography are no longer used. Magnetic resonance Imaging (MRI) may be the technique of the future, but at present, high costs limits its availability. The mainstay of diagnosis is ultrasonography. Our patient had an ultrasound scan which showed intro-uterine foetus at 30 weeks in breech presentation with placenta previa type IV.

The management depends on the gestation of the pregnancy, fetal status and extent of hemorrhage. Initial general management should include establishment of a wide bore intravenous cannula, removal of blood samples for grouping and cross matching and other tests as well as infusion of crystalloids, in case of hypovolemia. If possible, an

utrasound should be obtained to localize the placenta. Once the patient has been stabilized, subsequent management depends on:

a) Extent of bleeding
b) Gestational age
c) Fetal status

The specific measures for the management of placenta previa include immediate delivery and expectant management. In patients with a gestational age greater than 36 weeks or when life-threatening bleeding continues regardless of gestational age or a viable foetus shows signs of distress, then immediate delivery either by vaginal or abdominal route is indicated. In these circumstances, the double set up technique may be used, to determine those who may deliver vaginally or through caesarean section.

In 1962, MacAfee (11) and Johnson et al (12) introduced expectant management, aimed at achieving maximum fetal maturity while minimizing the risks to the mother and foetus, the overall objective being to reduce perinatal mortality while at the same time reducing maternal mortality. The approach involves hospitalization for easy access to resuscitation and delivery and ensuring bed rest and limitation of activities. Our patient was managed expectantly till the 37^{th} week when she underwent elective caesarean section. In this expectant pregnancy are allowed to progress to 37 – 38 weeks, when fetal lung maturity is confirmed. If the surfactant test is positive, for minor placenta praevia, especially where the placenta is anterior, an examination under anaesthesia (EUA) is done and if confirmed to be minor placenta previa, without other obstetric contraindications, amniotomy is done and syntocinon drip fixed for vaginal delivery. In major placenta previa (type II posterior, type III and type IV) a caesarean section is done. Since emergency delivery exerts a negative effect on the perinatal mortality and morbidity, independent of gestational age, elective operation is ideal.

The complications associated with placenta previa may either be maternal. Maternal risks include hypovolemia and anaemia, risk of post partum haemorrhage, air embolism as well as post – partum haemorrhage, air embolism as well as post-partum sepsis. Placenta accreta leading to lethal haemorrhage is especially catastrophic. Added to these are the anaesthetic and surgical complications of operative interventions. The

foetus is at risk of being born premature, having cord prolapse or compression, hence increased perinatal mortality and mortality. Fortunately, none of these complications occurred in our patient.

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OBSTETRICS CASE 6

PRETERM PREMATURE RAPTURE OF MEMBRANES AT 34 WEEKS– LIVE BABY

NAME	-	G. N	D.O.A - 20/5/04
AGE	-	23 YEARS	D.O.D - 1/7/04
PARITY	-	2 +0 G3	IP.NO. 0966481

PRESENTING COMPLAINTS

She was admitted through labour ward with a 6-hour history of drainage of clear fluid running down her legs.

HISTORY OF PRESENTING COMPLAINTS

G. N was well till the day of admission when after coming from the market in a matatu she noticed clear fluid draining down her legs. It had continued to drip, wetting the 2 pads she had used. There was no associated lower abdominal pain or PV bleeding. She had no history of trauma, and last had sexual activity with her husband one week earlier. She did not have any history of dysuria, frequency or urgency prior to the drainage of liquor. She reported feeling the baby moving as before.

OBSTETRICS AND GYNECOLOGY HISTORY

She was Para 2+0 G3. Her previous deliveries were as follows;

- 1st pregnancy was in 2001, antenatal period was uneventful, delivered SVD at term to a life male infant, weight 4.0 kg. He was alive and well.
- Her 2nd pregnancy – was in 2002. Antenatal period was complicated by malaria. Had an SVD delivery at term, to a life female infant, 3.5kg that was alive and well.
- She was not sure of her L.M.P because she had conceived with an IUCD in situ. An obstetric scan done earlier, on 19/3/04 showed a gestation of 19 weeks.
- She attended her Antenatal clinic at Woodley clinic and her antenatal profile was as follows:

  Blood group - B + ve

  HB Level - 13.5 g/dl.

VDRL - Negative

ELISA - Negative

- Her menarche was at 14 years, and the menses were regular, lasting 3 – 5 days and at an interval of 24 – 30 days.

PAST MEDICAL HISTORY

Non-contributory.

FAMILY AND SOCIAL HISTORY

She was the first born in a family of 7 siblings all of whom were alive and well. She was a married housewife, who stays with her husband in Kawangware. She did not smoke cigarettes or drink alcohol. Her husband is an Engineer with the Ministry of Public Works.

There was no history of chronic illness in the family.

EXAMINATION

She was well nourished and in good general condition. She was not pale, jaundiced or dehydrated. She did not have edema or lymphadenopathy. The vital signs were:-

Blood pressure of 130/75 mmHg, Pulse rate 76/min, respiratory rate 14/min and temperature of 36.8°C.

RESPIRATORY EXAM

The lung fields were clear.

CARDIOVASCULAR SYSTEM

The first and second heart sounds were heard and normal. There were no murmurs.

ABDOMINAL EXAMINATION

Fundal height was 32 weeks, longiturdinal lie, and cephalic presentation. Fetal heart rate was 136/min. There were no palpable contractions. No areas of tenderness were elicited.

PELVIC EXAMINATION

The external genitalia were normal. On speculum examination, there was pooling of liquor in the posterior fornix. The liquor was clear. The cervix was healthy and closed. No cord or membranes were seen. There was slow drainage from the cervix without stress.

DIAGNOSIS

A diagnosis of premature preterm rapture of membranes at 32 weeks was made.

TREATMENT PLAN

The patient was planned for conservative management. She was put on strict bed rest and monitoring for continued drainage of liquor done by use change of pads. A urinalysis, full hemogram, and obstetric scan were ordered. She was given dexamethasone intra muscular 6mg twice daily for 2 days and erythromycin orally 500mg TID for 1 week. She was to maintain a fetal kick chart and have 4 hourly vital signs record.

RESULTS OF INVESTIGATIONS

- Urinalysis - No pus cells. No nitrites. 5.G 1.0010
- Hemogram - WBC Count 7.6 x 10^6 /mm
  - RBC count 4.2 x 10^6 /mm
  - HB Level 12.6 gldl.
  - HCT 32.1%
  - Platelet 259 x 10^9/l.

Ultrasound

Single intrauterine pregnancy in cephalic presentation. Fetal cardiac and somatic activity demonstrated. Fetal heart rate 136/min. Slightly reduced liquor. Estimated gestational age by BPD, FL and Abdominal circumference of 32 weeks 5 days. Placenta fundal posterior. Estimated fetal weight 1.8 kgs.

Subsequent Management

She was continued on conservative management for till 10 days later, when she went into spontaneous labour, at night, to deliver a premature life female infant 1900 gms, who scored 8 in one minute and 10 at 5 minutes. Placental weight was 250 gms.

The baby was taken to the newborn unit because of prematurity but was discharged 3 days later in good condition.

Post delivery she did well, with no evidence of infection.

She was discharged on the 5th post delivery day for follow up in the post natal clinic in 6 (six) weeks.

FOLLOW UP

She did not turn up for the post – natal clinic.

DISCUSSION

Presented is a Para 2+0 G3 with preterm premature rapture of membranes (PROM). Premature rapture of membranes (PROM) is an obstetric conundrum; poorly defined with an obscure etiology, difficulties in diagnosis, associated significant maternal, fetal and neonatal risks, and management strategies which are often diverse and controversial.

By definition, PROM is the rapture of fetal membranes with a latent period before the onset of spontaneous uterine activity (labour). The length of this latent period varies in different definitions from not being specified to 8 hours. It's generally accepted that PROM occurs in 10% of all pregnancies (1), with the majority occurring after 37 completed weeks of gestation. If PROM occurs before 37 completed weeks, like the patient presented here, then the condition is referred to as preterm premature rapture of membranes (PPROM).

If 24 hours elapse between rapture of membranes and onset of labour, the problem becomes one of prolonged premature rapture of the membranes (1).

The incidence of PROM is 10.7% of all pregnancies. Out of these only 5% occur preterm while 94% are term pregnancies (1). At KNH, Wanjala in 1980 found the

incidence to be 8.2% (2). In a more recent study, Orina found the incidence of PPROM at KNH to be 6.4% (3).

In term pregnancies, 90% of patients with PROM deliver within the first 24 hours, while in preterm pregnancies between 28 and 37 weeks) 50% of patients with PPROM deliver in 24 hours.
Premature rapture of membranes before 28 weeks account for 0.5% of all premature raptures. Of these, 75% will have prolonged premature rapture of membranes. (1).

The exact cause of membrane rapture is not known. However there are many associated conditions, which include maternal infections, (e.g. urinary tract infections, lower genital tract infection, sexually transmitted infection) cervical incompetence, multiple pregnancies, poly hydramnios, nutritional deficits and a family history of premature rapture of membranes (4). Trauma and cigarette smoking are also associated with PROM.

In the patient presented, the only factor possibly present was trauma as a result of travel in a matatu, which because of the dilapidated infrastructure cannot be ignored.

Symptoms are key to the diagnosis of PROM. This is collaborated with the findings of a sterile speculum examination. The patient usually reports a sudden gush of fluid or continued leakage. Increased perineal moisture may also be the only complaint. (1) Our patient presented with continued leakage of clear fluid down her legs. History alone has an accuracy of about 90% (5), in the diagnosis of PROM. The most reliable sign of membrane rapture is the direct observation of amniotic fluid flowing from the cervix into the vagina fornices. This was the case in the patient presented. If this is not visualized initially, slight fundal pressure, or asking the patient to cough or bear down by a valsalva moneuver may induce leakage of amniotic fluid. If no fluid is found, a dry pad should be placed under the patients' perineum and observed for leakage.

In case the examiner cannot confirm rapture of membranes but the history is highly suspicious for PROM, it may be necessary to perform amniocentesis and inject a dilute

solution of Evans blue or indigo carmine dye. This is done after removal of amniotic fluid for physiologic maturity testing, analysis for white blood cells or bacteria, and possible culture and sensitivity. A repeat speculum is then done in 15 – 20 minutes to look for the blue dye in the vagina. An ultrasound scan may also reveal oligohydramnios.

The examination is key to differentiating PROM from hydrorrhea gravidarum, vaginitis, increased vaginal secretions and urinary incontinence. Collected fluid should be subjected to some tests, if the diagnosis of PROM is in doubt. In the nitrazine test, a sterile cotton tipped swab is used to collect fluid from the posterior fornix and apply it to the nitrazine paper. In the presence of amniotic fluid the nitrazine paper turns blue, demonstrating its alkaline PH (7.0-7.25). In the Fern test, a drop of fluid from the posterior fornix is placed on a slide and allowed to air dry. Amniotic fluid will form a fern like pattern on crystallization.

In addition to the above tests, certain laboratory and radiological tests may be useful in the management of patients with PROM. The main objective of these tests being to identify precipitating causes of PROM and the early identification of chorioamnionitis. These studies include a complete blood count with differential, urine for urinalysis, culture and sensitivity, obstetric ultrasound and in some cases amniocentesis. In the patient present, a urinalysis and hemogram done were normal.
An obstetric scan showed a viable intra-uterine pregnancy in cephalic presentation at 32 weeks with slightly reduced liquor.

Preterm premature rapture of membranes (PPROM) is an important cause of preterm labour, prolapse of the cord, placental abruption and intrauterine infection. Amnionitis is an important cause of endomyometritis and puerperal sepsis. In prolonged rapture of membranes, the foetus may have an appearance similar to that of potter's syndrome i.e. extraordinary flexion and wrinkling of the skin. It have been reported, but not confirmed that these anomalies many result from chronically decreased amniotic fluid volume. If PPROM occurs early in pregnancy, it can cause pulmonary hyoplasia and limb positioning defects in the new born (1,4).

Should preterm delivery occur, the infant is at risk of some serious complications like hyaline membrane disease, intraventricular haemorrhage, pulmonary hypoplasia, positional deformities, retinopathy of prematurity, cerebral palsy, necrotizing enterocolitis, neonatal sepsis, thermal instability, hypoglycemia, hyperbilirubinemia as well as fluid and electrolyte abnormalities (5).

As such, PPROM is a significant contributor of increased perinatal morbidity and mortality. Mechanical difficulties encountered with the delivery – be it vaginal or abdominal – of a preterm infant, as a result of the increased incidence of mal presentations and reduced amount of liquor further compounds the neonatal prognosis.

The management of PPROM depends on several factors, especially the gestational age and presence or absence of amnionitis. The management may either be expectant, active or aggressive. In the presence of amnionitis, a patient with PPROM should be delivered regardless of the gestational age.

Broad-spectrum antibiotics should also be given to treat the infection. PPROM should be should be delivered regardless of the gestational age. Brood spectrum antibiotics should be given to treat the amnionitis.

In patients with PPROM without amnionitis, management may be aggressive, active or expectant depending on the fetal status and gestational age. Expectant management involves hospitalisation of the patient with continued clinical and laboratory monitoring of the mother and foetus. Surveillance for infection and/or fetal distress, the main indications for termination of expectant management remain the focus of this mode of management. It is the preferred mode of management of pregnancies before 24 weeks gestation complicated by PROM, because these pregnancies have extremely low rates of fetal salvage with considerable maternal risk. Furthermore, at this gestation, steroids, tocolytics and antibiotics have no proven benefit.

For pregnancies complicated by PROM after 24 weeks but before 32 completed weeks, active management is recommended. Several interventions, notably bed rest, use of

steroids, antibiotics and tocolytics in selected patients have been shown to prolong pregnancy and improve outcome. Pregnancies beyond 33-34 weeks gestation can be managed as term PROM by delivery as no evidence shows better outcome with active management. However, if the patients show no signs of amnionitis, they can be managed expectantly.

At the KNH, when the estimated gestational age is 34 weeks and above and fetal weight 2500gms or more, the patient is usually delivered. However, if the gestational age is less than 34 weeks, then active management is preferred, in the hope that additional maturity of the foetus will be attained. In the patient presented, the active and conservative management was chosen because she was at a gestation of 32 weeks and there was no evidence of infection. She went into spontaneous labour about 2 weeks later with good maternal and fetal outcome.

The risk of maternal mortality from PPROM is small, but the morbidity may be high. Antepartum infection or fever occurs in 3-30% of cases and post-partum infection in 2% (5). There is also the increased likelihood of operative intervention and retained placenta in patients with PPROM. Happily the patient presented did not develop any of these potential risks. Her baby was equally well.

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OBSTETRIC CASE 7
TWIN GESTATION: ELECTIVE CESAREAN SECTION- LIVE BABIES

NAME	L.W	DOA 17/8/04
AGE	30 YEARS	DOD 24/8/04
PARITY	2+0 G3	IP NO. 0976086
WARD	1A	

PRESENTING COMPLAINTS
L.W presented with a six hours history of lower abdominal pain, and drainage of liquor.

HISTORY OF PRESENT ILLNESS
L.W was well till about 6 hours prior to admission when she developed intermittent lower abdominal pain and back pain. The pains were increasing in frequency and intensity. About 3 hours after the onset of lower abdominal pain, there was a sudden gush of clear fluid down her limbs to he floor. It continued to wet her inner clothes. There was no history of vaginal bleeding. There was no history of dysuria or urgency, but had frequency of passing urine.

HISTORY OF CURRENT PREGNANCY
Her last menstrual period (L.M. P) was on 1/12/03, so her expected date of confinement (E.D.D) was 8.9.04. The gestation by dates was therefore 36+ weeks. She attended her antenatal clinic in Kayole Health Centre, and the antenatal profile done at the institution was:

- Blood group - A + ve (positive)
- VDRL - Non reactive
- Hb level - 10.2 g/dl

The HIV test was not done. She received a single dose of tetanus toxoid. The pregnancy was otherwise unremarkable.

OBSTETRIC AND GYNAECOLOGY HISTORY
She attained her menarche at 14 years. She had regular menses, occurring every 28-30 days, and lasting 4-5 days. There was no associated dysmenorrhoea. She had used

injectable contraceptive, Depo provera for 2 years before the current pregnancy. She had never had a pap smear done.

She was now Para 2+0 G3. Her first delivery was in 1999, at Pumwani maternity hospital. The outcome was a life male infant 2.9kgs, who cried immediately and was a live and well. The last delivery was in 2001, to a live female infant, who weight 3.1kg, and was a live and well. Both deliveries were spontaneous vertex deliveries (S.V.D) and the antenatal, delivery, and postpartum periods were uneventful.

PAST MEDICAL HISTORY

She had no known chronic ailment. She had never being admitted to hospital outside pregnancy.

FAMILY AND SOCIAL HISTORY

She was in a monogamous marriage, and lived with her husband in Kayole. She was a businesswoman in Kayole. There was no family history of twinning or chronic illness. She did not smoke nor drink alcohol.

PHYSICAL EXAMINATION

She was in good condition and well nourished. She was not pale, did not have Jaundice, dehydration or lymphadenopathy. She had mild pedal pitting oedema. Her vital signs were normal, with a blood pressure of 110/70 mmHg; pulse rate of 84 beats per minute; respiratory rate of 14 breaths per minute, and a temperature of 36.8^{o}C.

CENTRAL NERVOUS, CARDIOVASCULAR AND RESPIRATORY SYSTEMS

These were normal

ABDOMINAL EXAMINATION

The abdomen was grossly distended but moving with respiration. The fundal height was term. There were multiple fetal parts. There were two distinct fetal heart tones. The fetal heart rates were 132 beats per minute and 148 beats per minute. The first twin was in breech presentation. There were palpable contractions.

PELVIC EXAMINATION

She had normal external genitalia. There was a lower limb protruding via a partially dilated cervix. The cervix was about 5cm dilated, and liquor was clear. No cord was felt.

DIAGNOSIS

A diagnosis of twin gestation at 36^{+} weeks gestation with footling breech presentation of the first twin in labour was made.

Investigations

Blood was drawn for group and cross-match, urea and electrolytes. Informed consent for emergency caesarean section was obtained. She was premedicated with IM atropine 0.6mg start and taken to theatre.

In theatre

A lower midline sub-umbilical scar was used to do a lower uterine caesarean section. Twins, female, the 1^{st} breach and the 2^{nd} cephalic, weighing 2200gms and 2500gms respectively were extracted. Apgar scores were 8/1, 9/5, 10/10, and 6/1, 8/5 and 10/10 respectively. The placenta was monochorionic and diamniotic. The uterus was cleaned and closed. Estimated blood loss was about 1000ml. Recovery from anaesthesia was uneventful.

POSTOPERATIVE CARE

Vital signs were monitored quarter hourly until she was fully awake. She remained on intravenous fluids for 24 hours, and thereafter began first on oral sips, then later on free fluids and finally solid food. Her wound was exposed on the third post-operative day and was found to be clean and dry. She was discharged home on the 7^{th} postoperative day. The wound was fully healed. She was advised to return for a postnatal check of the scar in 2 weeks.

POSTNATAL FOLLOW UP

At 2 weeks her wound had healed and her baby was breastfeeding well. She was discharged through the family planning clinic for contraception.

DISCUSSION

The patient presented had a twin gestation, which was undiagnosed in antenatal period. It was only discovered in labour, and she underwent emergency caesarean section because of footling breech presentation of the 1st twin.

Most twin gestations are the result of fertilization of two separate ova, that is, double ovum, dizygotic, or fraternity twins. Dizygotic twins are always diamniotic dichorionic. The remaining one third of twins arise from a single fertilized ovum that subsequently divides into two similar structures, each with the potential for development into a separate individual that is, single ovum, monozygotic, or identical twins. Monozygotic twins may be diamniotic dichorionic, diamniotic monochorionic, or monoamniotic monochorionic (1). The patient presented had diamniotic monochorionic twins. Either or both processes may be involved in the formation of higher number of foetuses.

The frequency of monozygotic twin births is relatively constant worldwide, at about 2.3 – 4 of 1000 births, and is largely independent of race, heredity, age and parity. The frequency was once thought to be independent of therapy for infertility; however, there is now evidence that the incidence of zygotic splitting is increased following assisted reproductive technologies (1,2). The incidence of dizygotic twinning is influenced remarkably by race, heredity, maternal age, parity, and especially fertility drugs (1, 2). Dizygotic twins are more common in blacks, least common in Asians, and of intermediate occurrence in whites. Dizygotic twinning is also probably inherited via the female descendants of mothers of twins; the father's genetic contribution playing little or no part. These twins also tend to be recurrent, with a woman who has borne twins having a 10-fold increased chance of a subsequent multiple pregnancy. Dizygotic twinning peaks between 35 and 40 years, and then declines sharply. Women of increased weight and height have a higher incidence of twinning, with no variation among the social classes (2). Oyieke (1978), found the incidence of twinning in KNH to be 1 in 58 live births (3), whereas Mutungi (1990), in her study at KNH and Pumwani Maternity hospital found an incidence of 1 in 46 live births (4).

Twin gestations receive special emphasis because they are at greater risk of almost all complications except macrosomia and postdates than are singletons. The most serious risk is spontaneous preterm delivery, which is associated with increased perinatal mortality and short-term and long-term morbidity (5). Higher rates of intrauterine growth restriction (IUGR) and congenital anomalies also contribute to adverse outcome in twin births. Appropriate and timely decisions regarding antepartum assessment and delivery are essential to ensure optimal prenatal outcomes in twin pregnancies.

In order to forestall potential complication, twin gestation ought to be recognised early. Randomised clinical trials comparing routine second-trimester ultrasound with ultrasound performed for clinical indications have shown that a significant number of twin pregnancies are not recognised until the third trimester of delivery in women in the latter group (6, 7). In the case presented, the diagnosis of twins was only made in labour. Routine ultrasound in the second trimester is recommended at KNH. However, not all women seen at this hospital attend antenatal care at KNH. Furthermore, cost is a major consideration for many of the patients attended in this hospital.

Every attempt should be made to determine zygosity in early pregnancy since monozygous twins are at increased risk of anomalies, preterm labour and caesarean delivery. Ultrasound done in the first or second trimester should be the goal. Findings of two different gender foetuses almost certainly confirm dizygosity. However, in extremely rare circumstances there may be monozygosity with Turner's syndrome in one male resulting in gonadal dysgenesis, hence the phenotypic discordance (1). Ultrasound also aids in the diagnosis of fetal anomalies, and is of great benefit in monitoring fetal growth. In order to detect a compromised foetus early and the twin-to-twin transfusion syndrome; serial ultrasounds may be done every 2-3 weeks during the third trimester for monozygotic twins (8).

Fetal assessment is indicated in higher risk situations, including: IUGR, discordant growth, abnormal amniotic fluid volumes, monoamniotic twins, and preeclampsia. Non-stress testing (NST) and or Biophysical profile (B.P.P), Performed once or twice weekly

may help identify foetuses for early delivery. Both NSTS and BPPS have been shown to be as reliable in twin gestation as in singleton pregnancies (9, 10).

Enhancing antenatal care assists in improving outcome. The most commonly used techniques are iron supplementation, Vitamin and Folic acid administration (in a attempt to avoid anaemia), a high-protein diet, and more weight gain than usual. There is not enough evidence to suggest a policy of routine hospitalisation for bed rest in multiple pregnancy because no reduction in the risk of preterm birth or perinatal death is evident. There is also no evidence that prophylactic cerclage improves outcome. More frequent antenatal visits are scheduled and several authorities recommend closely following cervical length by ultrasound. Emergency cerclage can be offered for a short cervix or large funnel of membranes prior to 24 weeks. Early and prompt therapy for any complications e.g. preeclampsia-eclampsia should be instituted (2).

Tocolytic drugs may suppress premature labour and extend gestation for 48 hours so that the effects of steroids may be realized. There is no evidence that long-term oral or intravenous tocolysis improves outcome (1). In case of antepartum bleeding or hydramnios, try to delay delivery until each twin weighs at least 2000 grams, or after 34 week's gestation (2).

The mode of delivery of twins is dependent on the gestation, attendant complications whether maternal or fetal, and presentation of the first twin. In cases where both twin A and B are vertex, vaginal delivery may be chosen in the absence of standard indications for caesarean delivery. In case twin A is vertex and twin B is non-vertex, each weighing over 2000 grams, vaginal delivery is usually successful for both. This is usually accomplished by external version of twin B immediately after delivery of twin A. If twin B weighs less than 2000 grams and external version is unsuccessful caesarean delivery is preferred. When either twin A or both twins are non-vertex, primary caesarean section should be performed (1, 2). One twin may obstruct the delivery of both foetuses in locked twins. In these circumstances, twin A is always a breech and twin B a vertex presentation. The heads become impacted in the pelvis. Locked twins can be avoided by caesarean delivery in all cases in which twin A is non-vertex. The patient presented

had twin A, being non-vertex and twin B, in vertex presentation. The caesarean delivery was therefore warranted.

Neonatal outcome is very much dependant on gestational age at delivery. In general, morbidity and mortality rates are similar for twins and singletons of equivalent gestational ages. Many outcome data are stratified according to birth weight. Because infant survival is much more likely after 34 weeks, it is desirable to prolong gestation at least to this point when possible. The adage "one day in utero saves two days in intensive care" applies to the economic as well as the emotional costs of caring for premature infants. In the patient presented, both twins were above 2000 grams, and did not require neonatal intensive care. Twin gestations are considered to be postdates if they reach 40 weeks gestation and delivery should then be expedited (1).

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OBSTETRIC CASE 8

FRANK BREECH PRESENTATION IN SECOND STAGE OF LABOUR; ASSISTED BREECH DELIVERY-LIVE BABY

NAME S.N	PARITY	4 + 0
AGE 31YEARS	IP No.	0982428
D.O.A 9/9/04	WARD	1A
D.O.D 12/9/04		

PRESENTING COMPLAINTS

S.N. presented with a 6-hour history of lower abdominal pains and drainage of liquor prior to admission.

HISTORY OF CURENT PREGNANCY

Her last menstrual period (L.M.P) was on 30.12.2003, and her expected date of delivery was 6.10.2004. Gestation of the pregnancy at admission was therefore 36+ weeks. She had attended antenatal clinic twice at Karuri Health centre. No Antenatal profile was done but she had received a single dose of tetanus toxoid. She began to experience lower abdominal pain early in the morning of 12/9/04 but no transport was available to take her to hospital. She had no prior history of trauma, febrile illness, or strenuous activity before the onset of lower abdominal pain.

OBSTETRICS AND GYNAECOLOGY HISTORY

She was Para 4 + 0. Her first delivery was in 1990, by spontaneous vertex delivery (SVD), at Pumwani Maternity Hospital. The 2nd was in 1994, the third in 1996, and the last delivery in the year 2000. Like the first delivery all were by spontaneous vertex delivery (SVD), at Pumwani Hospital. All the children, 3 girls and one boy were alive and well. She could not remember their birth weights. She attained her menarche at 14 years; her cycle interval was 26 days, lasting 2 – 3 days. She had used oral contraceptives between 1996 and 1999. She had never had a pap smear done.

PAST MEDICAL HISTORY

Non- significant

FAMILY AND SOCIAL HISTORY
She was in a monogamous marriage and lived in Kasarani with her husband. Both were casual workers in a coffee estate. She neither smoked cigarettes nor drank alcohol. There was no family history of chronic illness.

SYSTEMIC INQUIRY
This was non-revealing.

PHYSICAL EXAMINATION
She was a young lady in good general condition. She was not pale, did not have Jaundice, edema or lymphadenopathy. Her vital signs were normal with a blood pressure of 11/70mmhg, pulse rate of 80 beats per minute respiratory rate of 16 and a temperature of 36.7^{0}c.

RESPIRATORY, CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS WERE ESSENTIALY NORMAL

ABDOMINAL EXAMINATION
The abdomen was uniformly distended and moving with respiration. The fundal height was 36 weeks, longitudinal lie and breech presentation. She was having 3 strong contractions in 10 minutes, each lasting over 40 seconds. Fetal heart was heard and regular at 136 beats per minute. Presenting part was 2/5. Estimated fetal weight was 2.5 kg.

PELVIC EXAMINATION
The external genitalia were normal and there was meconium staining at the vulva. The cervix was fully dilated, with the breech presenting, with sacral anterior position, feet were flexed at the hip joints and extended at the knee joints (Frank breech); there was no cord felt. The presenting part was well applied to the cervix. She was draining clear liquor. The pelvis was clinically adequate and roomy. The patient reported an urge to push.

DIAGNOSIS
A diagnosis of frank breech in 2^{nd} stage of labour in a Para 4 + 0 was made.

MANAGEMENT

The patient was planned for assisted breech delivery. The patient was counseled on what this involved and the need for cooperation. A pediatrician was summoned, and a delivery pack opened.

In the delivery room an I.V line was put up and 5% dextrose started. The vulva was cleaned and draped. When she reported an urge to push, a medialateral episiotomy was made when the breech dilated the perineum ("crowning"). The breech was then allowed to deliver spontaneously to the level of the umbilicus. During this time, the midwifes ascultated the fetal heart rate every 5 minutes.

Once the breech was delivered beyond the umbilicus, it was allowed to hang on its own, and the mother encouraged to bear down with each contraction. Once the axilla was visible, the corresponding shoulder and upper limb were delivered. Once the nape of the neck was visualized using mariceu-smellie-viet maneuver whereby the right hand of the operator was introduced and he middle finger inserted into the baby's mouth, and the middle and index fingers placed on the malar eminences to aid in flexion of the fetal head, while maintaining continuous gentle traction and an assistant keeping supra-pubic pressure on the head to maintain flexion. Burn-Marshall maneuver was then used by elevating the trunk of the fetus in sweeping motion to allow delivery of chin over the perineum, the head was delivered. The outcome was a life female infant with APGAR scores of 8/1; 10/5; and 10/10, and birth weight 2700 grams. The placenta was delivered by continuous cord traction (CCT), and the vagina and cervix inspected. No tears or lacerations were found. The episiotomy was repaired. The baby did not have any abnormalities. Rooming in was instituted and breastfeeding initiated. After observation for 4 hours, the mother and child were transferred to the postnatal ward in good condition. They were discharged on the 3rd postnatal day for follow up in the family planning clinic in 6 weeks.

DISCUSSION

The patient presented was a Para 4 + 0 who presented with undiagnosed frank breech presentation in the 2nd stage of labour. She had a successful assisted vaginal breech

delivery to a live female infant who weighed 2700gms and APGAR scores of 8/1; 10/5; and 10/10. During delivery no maternal injuries were sustained. She was allowed home with her baby on the 3rd postnatal day.

Breech presentation occurs when the fetal pelvis or lower extremities engage in the maternal pelvic inlet. For a number of reasons, breech presentation is more common remote from term. Most often, however before the onset of labour the fetus turns so that breech presentation persists in only about 3-4 percent singleton deliveries (1). Predisposing factors to persistent breech presentation at term include; pre-maturity; uterine abnormalities (e.g. fibroids); fetal abnormalities (e.g. anencephaly, neck masses); and multiple gestation (1,2).

For most cases of breech presentation the approach to delivery is controversial. In the management, a diligent search for any complication, actual or anticipated, that might justify cesarean delivery has become a feature of most philosophies for managing breech delivery. Cesarean delivery is commonly used in the following circumstance to deliver all but the extremely immature fetus whose potential for survival is negligible (1):

(i) A large fetus.
(ii) Any degree of contraction or unfavorable shape of the pelvis.
(iii) A hyper extended head.
(iv) No labour, with maternal or fetal indications for delivery such a pregnancy induced hypertension or ruptured membranes for 12 hours or more.
(v) Uterine dysfunction
(vi) Footling presentation
(vii) An apparently health but pre-term fetus of 25 to 26 weeks or more with the mother in either actual labour or in need of delivery.
(viii) Severe fetal growth restriction.
(ix) Previous perinatal death or children suffering from birth trauma.
(x) If permanent contraception (BTL), is requested at the same delivery.

In persistent breech presentation, an increased frequency of the following complications may be anticipated: perinatal morbidity and mortality from difficult delivery; low birth weight from pre-term delivery, growth restriction or both; cord prophase; placenta

previa; fetal, neonatal or infant – anomalies; uterine operative intervention especially cesarean section.

In considering vaginal breech delivery the prognosis for the fetus in breech presentation is considerably worse than when in cephalic presentation (3). The major contributing factors to this state of affairs are: pre-term delivery (low birth weight); increased risk of congenital anomalies (6.3% V_S 2.4%); birth trauma: brain, spinal cord, liver, adrenal glands and spleen; delayed head delivery – hypoxia, acidemia, forced delivery compression, traction or both (3).

What then is the "standard of care" for delivery of term and pre-term singleton breech presentations? The answer is not easy, and a flexible approach is that individualized cesarean or vaginal delivery is both reasonable and acceptable in current obstetric practice (3). The patient discussed presented in the second of labour and assessment revealed no apparent contraindication to vaginal breech.

Assessment of cervical dilation and effacement and the station of he presenting part are essential in planning the route of delivery. If labour is too advanced as in the patient discussed, there is no sufficient time to do pelvimetry. This alone is not an indication for cesarean delivery, satisfactory progress in labour being a better indicator of pelvic adequacy (2, 3).

The fetal status is also crucial and a quick thorough assessment to ensure, for example, that a cesarean section is not done under emergency conditions for an anomalous infant with no chance of survival (1). Fetal monitoring is essential, fetal heart rate every 5 minutes or where possible continuous fetal monitoring is recommended (4). Intravenous infusion and laboratory investigations may be necessary during labour and delivery. Recruitment of nursing and medical personal as additional help is required for managing labour and delivery of a breech. For labour, one-on-one nursing should be practiced. It is essential that the delivery team include an experienced obstetrician and an assistant, an anesthesiologist who can provide anesthesia if needed, and a pediatrician or one trained in neonatal resuscitation, including intubations (1, 2, and 3).

For a favorable outcome with any breech delivery, at the very minimum, the birth canal must be sufficiently large to allow passage of the fetus without trauma. The cervix must be fully dilated and if not, then a cesarean delivery nearly always is the more appropriate method of delivery as when suspected fetal compromise occurs (2,3,4)

CRITERIA FOR VAGINAL DELIVERY

Frank Breech presentation; gestational age of 34 weeks or more; estimated fetal weight of 2000 - 3500gms; Flexed fetal head; Adequate maternal pelvis as determined by X-ray pelvimetry (pelvic inlet with transverse diameter of 11.5 cm and A-P diameter of 10.5 cm, mid pelvis with transverse diameter of 10.0 cm and an A-P diameter of 11.5 cm); previable fetus (gestation age < 21 weeks and weight < 750 gram); Documented lethal fetal anomalies; presentation of the mother in advanced labour with no fetal or maternal distress, even if caesarean section was originally planned; some carefully selected cases of complete or footling breech (continuous electronic monitoring must be done to detect variable heart rate decelerations due to umbilical cord pro-lapse, if this occurs immediate cesarean delivery is indicated (2). The patient discussed presented in advanced labour and had no contraindication to vaginal delivery.

MANAGEMENT DURING LABOUR

As delivery of the breech occurs, increasingly larger diameters (Bitrochanteric, bisacromial, biparietal) of the body enter the pelvis, whereas in cephalic presentation the reverse is true. This poses great complications (2). Partial breech extraction is employed when the operator discerns that spontaneous delivery is indicated for fetal or maternal reasons. The body is allowed to deliver spontaneously up to the level of the umbilicus. The operator then assists in delivery of the shoulders, arms and head.

An assistant supports the body, while the operator rotates the spine as necessary till it rests directly under the symphisis pubis, and the left arm is delivered in a similar fashion. Rotating the spine again to a position below the pubic symphisis. The operator locates the right humerus and applies gentle downwards pressure until the right arm is delivered. The body is then rotated until the left shoulder is beneath the symphisis, and the left arm is delivered in a similar fashion. Rotating the spin again to a position below

the symphisis, the operator begins to deliver the head. As the body is lifted gently upward and as fundal pressure is applied from above to keep the head flexed, the head may be delivered spontaneously over the perineum. The operator may elect to manually assist in the delivery of the head by performing the maricean-Smellie-viet maneuver. In this maneuver, the index and middle fingers of one of the operator's hands are applied over the maxilla as the body rests on the palm and forearm of the operator. Two fingers of the operator's other had are applied on either side of the neck with gentle downward traction. At the same time, the body is elevated towards the pubic symphisis, allowing for controlled delivery of the mouth, nose and brow over the perineum. Delivery of the head may be accomplished by the Burns- Marshall maneuver (5), but more safely with obstetric forceps (not done at KNH).

Another alternative technique for breech delivery is the Bracht maneuver, popular in Europe. The breech is allowed to deliver spontaneously to the umbilicus. The fetal body is then held, but not pressed against the maternal symphisis. This force is meant to be equivalent to gravity. The suspension of the fetus in this position, coupled with the effects of uterine contraction and moderate supra pubic. Pressure by an assistant, often results in spontaneous delivery (5).

If by accident or carelessness, the head enters the pelvic cavity with the occiput posterior, delivery may be effected by using the Prague grip in reverse, the direction of the shoulder traction being downwards and backwards. In occiput posterior, one hand of the operator supports the shoulders from below while the other hand gently elevates the body upward toward the maternal abdomen. This flexes the head within the birth canal and results in delivery of the occiput over the perineum (1, 2, and 5).

Occasionally during partial breech extraction and more often during total breech extraction, excessive downward traction on the body to effect delivery of the scapula's results in a single or double nuchal arm. Because the body descends too rapidly through the birth canal one or both arms are extended upwards from their normal flexed position against the chest and become lodged behind the neck.

A single or bilateral nuchal arm is suspected when delivery of the shoulder is difficult to accomplish. To dislodge an impacted nuchal arm, the operator rotates the body in a half circle to bring the elbow towards the face. The humerus can then be readily identified by palpation and delivered as previously described. For bilateral nuchal arms, the foetus is rotated counter clockwise to deliver the right arm and often clockwise to dislodge and delver the left arm. If rotation does not dislodge the arm, the operator must insert a finger humerus, and possibly extract the arm. Fractures of the humerus or clavicle may result (2).

TOTAL BREECH EXTRACTION

In total breech extraction, the obstetrician delivers the infant with no assistance from the mother. The process has been used to expedite delivery in cases of fetal distress or prolapsed cord and occasionally when progress ceases in second stage or for delivering the second twin. A footling presentation is easier to extract than a breech with extended legs, in which the foot must first be delivered by inserting a hard into the uterus and using pinards manoeuvre to convert it into a footing presentation (1, 2, and 5). Pinard manoeuvre is used sometimes in case of frank breech presentation to deliver a foot into the vagina. Two fingers are carried up against one extremity to the knee then push it away from the midline. Spontaneous flexion of the knee follows, and the foot of the fetus is felt to be impinging upon the back of the hand. The fetal feet may then be grasped and brought down (5).

In premature delivery, if the head is entrapped, a hysterostomatotomy (Duhrssen's incisions) must be considered to preserve fetal life. Incisions are made in the posterior cervix at 6 O'clock to loosen the entrapped head. Occasionally, additional incisions are necessary at 2 and 10 O'clock. Severe hemorrhage may result from these latter incisions (1, 2, and 5).

Complications of vaginal breech delivery include: Fetal asphyxia, neurological damage, infection and trauma. Maternal complications include infection, uterine rapture and hemorrhage (1, 2, 3, and 5)

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OBSTETRIC CASE 9

CARDIAC DISEASE IN PREGNANCY – ASSISTED VACCUM DELIVERY- LIVE BABY

NAME: D. W. DoA 2/9/04

AGE: 35 YEARS DoD 10/9/04

PARITY: 3+0

IP No.: 0986581

PRESENTING COMPLAINTS

She was admitted with complaints of lower abdominal pain and drainage of liquor for 6 hours, having been referred from a City Council health centre.

HISTORY OF CURRENT PREGNANCY

Her last menstrual period (L.M.P.) was on 8/12/03, the E.D.D being 15/9/04. The gestation at admission was therefore 38 weeks. She started antenatal care at Wangige Health Centre at about 28 weeks gestation, and the antenatal profile done revealed:

Blood group;	B positive
VDRL ;	Non reactive
Hemoglobin level;	10.6 g/dl.
HIV test;	Not done.

- She had received two tetanus toxoid injections.

- The antenatal period was otherwise unremarkable.

OBSTETRICS AND GYNAECOLOGY HISTORY.

She was Para 2 + 0 G3. Her last delivery was a spontaneous vertex delivery (SVD), at term at Kikuyu Mission Hospital in 2000. The outcome was a live male infant, 2.8 kg who was alive and well. Her first delivery was in 1984, at KNH, SVD. The daughter however died in 2001 after a road traffic accident.

Her menarche was at 16 years, cycles were regular with an interval of 28 days and lasting 3-4 days. She had been using Depo- provera for 3 years before the current pregnancy. She had never had a pap smear done.

PAST MEDICAL HISTORY.

She was a known cardiac disease patient since childhood and had been on regular follow- up in the cardiology clinic until about one year earlier when she defaulted. The lesion was a small VSD, and was NYHA grade I during the first pregnancy. She had never been admitted to hospital in failure.

SYSTEMIC INQUIRY

Non – revealing.

FAMILY AND SOCIAL HISTORY

She was a single small scale farmer in Kikuyu, who lived with her children. There was no family history of chronic illness.

PHYSICAL EXAMINATION

She was a young lady in fair general condition, afebrile, not pale, no cyanosis, no dyspnea, no finger clubbing, no edema and no sphinter hemorrhages.

CARDIOVASCULAR EXAMINATION

Pulse was 76 per minute, regular, good volume and normal rhythm. The blood pressure was 115/68 mm kg. The precordium was not hyperactive; apex beat was in the 5th intercostal space, mid- clavicular line. She had systolic ejection murmur at the apex radiating to the axilla.

RESPIRATORY SYSTEM

The chest was clear, no Rhonchi and no crepitations. The respiratory rate was 16/ minute.

ABDOMINAL EXAMINATION

The fundal height was term, with longitudinal lie and cephalic presentation. The presenting part was 4/5 up, with a fetal heart rate of 138 beats per minute. There were 2 mild – moderate contractions lasting < 30 seconds in 10 minutes.

VAGINAL EXAMINATION.

There were normal external genitalia. The cervix was central, 4cm dilated and soft in consistency. There was drainage of clear liquor. The pelvis felt inadequate.

DIAGNOSIS

A diagnosis of a Para 2+0 with cardiac disease grade 1 in active labour was made.

MANAGEMENT

She was admitted into the acute room of labour ward. She was placed in a propped up position, and started on oxygen by mask. A partograph was started. An intravenous drip of 10% dextrose was started. Broad-spectrum antibiotics were also started. She was scheduled for review every 2 hours or whenever necessary. About two hours later, the contractions had picked up, and she was now having three contractions every ten minutes, lasting over 40 seconds. She was given I.M. Pethidine 100mg for analgesia and Buscopan 20 mg start to enhance cervical dilation. The patient was still in stable condition.

Two hours later, a repeat vaginal examination found a cervical dilation of 8-9 cm with full effacement. The liquor remained clear. The plan was to monitor closely for eminent second stage and prepare for assisted vacuum delivery.

About one hour later (6.15 pm), the patient reported an urge to bear down. Her general condition remained stable. Examination revealed that she was in the second stage and

she was taken to the delivery room. An episiotomy was done and assisted vacuum delivery conducted. A live female infant was delivered with Apgar scores of 9/1, 10/5, and 10/10. She weighed 2600 grams. Grossly, the foetus appeared normal. I.V. Lasix 120mg was given immediately and 10 I.U. of syntocinon put up in a drip after delivery of the placenta. The episiotomy was repaired as described in the introduction. Post delivery observations remained normal with a pulse rate of 84/ minute; B.P. of 110/70 mm kg, RIR of 18/ min. She was returned to the acute room for observations in the 4th stage for 24 hours. She remained stable and was allowed to the postnatal ward after 24 hours. On the 5th post natal day she underwent a mini laparotomy where bilateral tubal ligation was done because of desired family size. She did well post BTL and was discharged on the 7th post- natal day in good general condition. She was advised of the great need to restart her cardiac clinic follow up. She was booked for a postnatal clinic in 6 weeks together with the cardiac clinic. She did not honour her appointment.

DISCUSSION

The patient presented was a known case of cardiac disease since childhood, the lesion being a small VSD, which is likely to have been congenital. She had been followed up in the cardiac clinic since childhood and she had never had any serious complications requiring hospitalization. She was admitted to labour ward, from a City Council clinic where she had been attending antenatal care. She was referred for delivery because of her cardiac lesion. She was admitted in early labour and went on to have an assisted vacuum delivery to a live baby. Her postnatal period was unremarkable.

Cardiac disease complicates 1-2% of all pregnancies and is the most important non obstetric cause of maternal death (1, 2, and 3). Sequeira and Ojiambo in 1969 Kenyatta National Hospital found an incidence of 0.5% with 95% of the cases being of Rheumatic heart disease (RHD) origin, 35% of the RHD cases had mitral stenosis (3).

In a later study Ngotho reported an incidence of 0.66 %(4), again with 86.4% due to rheumatic heart disease and 12.9% congenital heart disease (4). These results are similar to other studies from the African region where rheumatic heart disease is predominant (5).

Rheumatic heart disease is the commonest heart disease in pregnancy in our set up, in contrast to the developed world where congenital heart disease predominates. However, with improving medical services and advancement on cardiac surgery some women with congenital heart disease will not only survive to reach the age of childbearing, but also a pregnancy to term successfully (5).

Pregnancy is associated with the major hemodynamic changes in the cardiovascular system that can contribute to greater morbidity and mortality in women with underlying heart disease. Therefore, the management of these disorders in the pregnant patient requires understanding of cardiovascular physiology during pregnancy, labour, delivery and the puerperium (6).

Mitral stenosis is the commonest lesion accounting for up to 90% of all cases of cardiac disease (2, 4). Bhatt in 1978 found that the majority of his patients had combined mitral stenosis and regurgitation.

The management of heart disease in pregnancy is dictated by functional capacity of the heart and special emphasis should be placed on prevention and early detection of heart failure. The severity of heart disease is usually graded according to the New York Heart Association (NYHA) classification. The grading is clinical and depends on cardiac response to physical activity with no relationship to the extent of the heart lesion (2, 7). The management calls for team approach involving obstetrician, cardiologist and anaesthetist.

Grade one and two patients are managed as outpatient after clinical evaluation. They are seen frequently by both the cardiologist and obstetrician as their grades may change to higher grades, and present with complications. At 36 weeks they are admitted into the ward to await delivery (8). Grade three and four patients are usually confined in the wards until delivery.

Restriction of maternal physical activity tends to avoid cardiovascular compromise and improves utero-placental perfusion (9). The supine position should be avoided as pressure on the inferior vena-cavae reduces the venous return. Haematinics are recommended for the prophylaxis of anaemia or its vigorous treatment when it occurs.

Respiratory infections must be treated with antibiotics and oxygen liberally given if respiratory difficulties develop. It is imperative to await the spontaneous onset of labour, since induction is associated with significant haemodynamic changes that could precipitate cardiac failure and in case of failed induction caesarean section carries an added risk of pneumonia, infective endocarditis and pulmonary embolism (8). However, caesarean section should still be performed if there is an obstetric indication (5).

Relief from pain and apprehension without undue depression of the infant or mother is especially important during labour and delivery. The mother should be kept in a semi-recumbent position in bed and oxygen given by mask if need be. The patient should be started on parental antibiotics and for grade three and grade four patients, Digoxin and Frusemide administered. Monitoring of vital signs, auscultation of lung bases are important to detect early signs of congestive cardiac failure. A tray containing Aminophylline, Digoxin, Morphine, Sodium bicarbonate and Frusemide is kept ready for use if need arises. Vaginal delivery should be aimed at with shortening of second stage by use of elective vacuum extraction. Ergometrine should be avoided during the third stage of labour, and Syntocinon used early if bleeding is excessive.

A bolus of frusemide 40- 120 mg is given immediately after the third stage to offset the anticipated cardiac output increase from the placental bed.

Close medical and obstetric surveillance must continue particularly during the first 24-48 hours, and infection guarded against especially infective endocarditis. Early ambulation is encouraged for patients with medical disorders complicating pregnancy.

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OBSTETRIC CASE 10

GESTATIONAL DIABETES MELLITUS -ELECTIVE PRETERM DELIVERY BY CESAREAN SECTION

Name:	F.W.	1P No:	0709225
Age:	31 yrs	DOA:	16/6/04
Parity:	2 +0 G 3	DOD:	17/7/04

PRESENTING COMPLAINTS

F.W. was admitted via the antenatal clinic because of elevated random blood sugar (11.6 mmol/L) after clinical suspicion of diabetes mellitus because of glycosuria (3+) and Bad Obstetric History (BOH).

OBSTETRICS AND GYNAECOLOGY HISTORY

- F.W was now Para 2 + 0 G3, L.M.P. of 08/11/03, so the E.D.D was 13/08/04, and the Gestation by dates 33+ weeks, with no living child. She had one previous scar of 2002. She also had chronic hypertension diagnosed in the year 2001.
- Her first delivery was induced at about 8 months because of intra-uterine fetal death in the year 2000. The outcome was a fresh stillbirth weighing 1900gms. No cause was identified for the fetal demise. Her 2nd delivery in 2002 was by caesarean section at about 32 weeks because of reduced fetal activity. The resulting life male infant, weighing 1.5 kg, died within the day of delivery because of respiratory distress. She had both deliveries at the KNH.
- She started antenatal clinic early, in the current pregnancy, at bout 12 weeks gestation. Her antenatal profile was as follows;
    - i) HB 12.8gldl – Normal RBC indices.
    - ii) Blood group O Rhesus positive
    - iii) VDRL and ELISA both non reactive
    - iv) Renal function tests: Normal urea, electrolytes and creatinine.
    - v) Her initial random blood sugar was 7.2mmol/L.

- Her antenatal period had been unremarkable. However, on the day of admission a urine dipstick showed plus 3(3+) glucose and a random blood sugar requested was elevated 11.6 mmol/L. She was therefore admitted for investigations and management.
- Her menarche was at 15 years, menses were regular, not painful, lasting between 3-5 days, and occurring at an interval of 22-28 days. She had never used any contraceptives methods.

PAST MEDICAL HISTORY

She was diagnosed to have chronic hypertension in 2001. She was well controlled on Aldomet 500mg three times daily. She had never been hospitalized for non- pregnancy related illness in the past.

FAMILY AND SOCIAL HISTORY

She stayed with her husband in upper hill Nairobi. She was a laboratory technician, working with the ministry of health. She did not smoke cigarettes or drink alcohol. There was no family history of diabetes mellitus or twinning. Her father was on treatment for hypertension. Her brothers and sisters were all alive and well.

EXAMINATION

- She was in good general condition, well nourished, not obese. She was not pale, did not have jaundice, edema, or lymphadenopathy.
- She weighted 72 Kgs. Blood pressure 140/90 mmhg pulse 80/min, respiratory rate 18/min and temperature of 36.6^{0}c.

SYSTEMIC EXAMINATION

- The respiratory and cardiovascular systems were examined and found to be normal.
- The central Nervous system was also normal.

ABDOMINAL EXAMINATION

The fundal height was 32 weeks, longitudinal lie, and cephalic presentation. The fetal heart was 138 beats per minute and regular. The head was 5/5. She had a midline sub-umbilical scar.

PELVIC EXAMINATION
This was not indicated

WORKING DIAGNOSIS
A working diagnosis of Gestational Diabetes mellitus was entertained and the following investigations geared towards confirming the diagnosis and planning management were ordered: Fasting blood sugar, oral glucose tolerance test (OGTT), Glycosylated hemoglobin and an obstetric scan. Results were as follows: -

i) Fasting blood sugar 7.8 mmol/L (above normal)

ii) 3 hour 100g glucose tolerance test

- At 1 hour = 11.2 mmol/L (above normal)
- At 2 hrs = 8.5 mml/L
- At 3 hrs = 7.8 mmol/L

iii) Obstetric scan – showed a single intra-uterine pregnancy with a Biophysical profile score of 8 in 8. The fetus corresponded to 33 weeks by BPD, FL and AC. The placenta was fundal posterior and estimated fetal weight 2.2 kgs. No fetal anomalies were detected. Umbilical artery blood flow was also normal.

iv) HBA 1_c 6%.

Based on the above results a diagnosis of Gestational Diabetes mellitus at 33 weeks was confirmed.

Treatment plan

- F.W was started on subcutaneous regular insulin 8 i.u 8 hourly. Serial blood sugars were done early in the morning (fasting, 6.00 am), at 3.00 p.m. and 9.00 p.m. daily. The insulin was adjusted according to the blood sugar levels, and good control of between 3.8 – 5.8 mmol/l achieved with 12 i.u of S.C. insulin 8 hourly. The dietician also gave her dietary advice.
- Fetal well-being was monitored by means of a fetal kick chart and weekly Biophysical profiles planned. She was however unable to do weekly scans because of the cost. The fetal kick chart was satisfactory as was the blood sugar control. Because of previous unexplained intra-uterine death, at 35 weeks a

decision to enhance fetal lung maturity with Dexamethasone and delivery at 36 weeks was made. No surfactant test was done.

- At 36 weeks, she underwent an elective caesarean section, and delivered a life female infant 2550grams, with APGAR scores of 7 in one minute, 8 at 5 minutes and 10 in 10 minutes. The baby had no congenital malformations, and did not develop any complications in the early neonatal period. The mother did well post-operatively with no evidence of puerperal sepsis. After delivery blood sugars fell dramatically to below 5.0mmol/l, and she was discharged on the 5th postoperative day for follow up in the post-natal clinic in 6 weeks.

FOLLOW UP

At 6 weeks, a fasting blood sugar was found to be 4.6 mmol/L and thus normal. She opted for barrier methods of contraception for the time being, so that she can achieve her desired family size. Both mother and baby being well, they were discharged from the clinic.

DISCUSSION

Presented is a 31-year-old Para 2 + 0 G3 with no living child with mild chronic hypertension and gestational diabetes mellitus. She was managed with insulin and delivered preterm by elective caesarean section with a good maternal and neonatal outcome.

Diabetes mellitus is a clinical syndrome characterized by lack of, or insensitivity to insulin (1). It is the most common medical complication of pregnancy in the United States. Patients can be separated into those who were known to have diabetes prior to pregnancy (overt or pre-gestational), and those diagnosed during pregnancy (Gestational). Gestational diabetes mellitus, accounts for close to 90% of found all cases of diabetes in pregnancy, and has been found to complicate 4% of all pregnancies, in the United States. Pre-existing diabetes affects approximately 1-3 pregnancies per 1000 births (2).

The modified white's classification is still widely used to classify pre-gestational diabetes occurring in pregnancy. This classification emphasizes that end-organ derangements especially involving the eyes, kidneys and heart have significant effects on pregnancy outcome. The following table depicts this classification.

Whites classification of diabetes in pregnancy description

Class	Description
Cass A	Chemical diabetes diagnosed before pregnancy; managed by diet alone; any age of onset or duration.
Class B	Insulin treatment necessary before pregnancy; onset after age 20 years; duration less than 10 years.
Class C	Onset before age 10-19 years; or duration of 10-19 years.
Class D	Onset before age 10 years; or duration of 20 or more years; or chronic hypertension; or background retinopathy.
Class F	Renal disease
Class H	Coronary artery disease
Class R	Proliferative retinopathy.
Class T	Renal Transplant

However, for most clinical purposes diabetic women in pregnancy may be divided into 3 classes, predictive of the maternal and perinatal outcome (1):

Class I Non insulin requiring glucose intolerance responsive to dietary management.

Class II Insulin requiring glucose intolerance without associated vasculopathy.

Class III Insulin requiring glucose intolerance with associated vasculopathy.

Our patient had gestational diabetes mellitus without apparent vasculopathy. She therefore fell into class I of the general classification of diabetes in pregnancy, the white's classification being non applicable to her condition.

Pregnancy is a diabetogenic condition. This is because of insulin antagonism by the action of human placental lactogen (HPL), oestrogen and progesterone. Placental insulinase may also contribute, by accelerating insulin degradation. Other insulin antagonists like cortisone are also elevated in pregnancy. As a result of these changes, pregnancy may unmask previously undiagnosed diabetes mellitus. In addition some complications of pregnancy like nausea and vomiting and increased incidence of urinary tract infections make control difficult. Indeed the pregnancy-associated switch in fuels from glucose to lipids predisposes pregnant diabetics to Diabetic Ketoacidosis (DKA).

Diabetes in pregnancy is associated with significant maternal, fetal and neonatal risks. The risks to the mother and foetus are related with the degree of control and the presence of cardiovascular and renal complications. The presence of other conditions like hypertensive disease further complicates the outlook. Our patient was well controlled when the diagnosis was made and had no evidence of end-organ derangements. Her hypertension was mild and well controlled. Among the maternal risks is the difficult associated with blood sugar control, hence likelihood of DKA and hypoglycaemic episodes; increased incidence of operative delivery due to macrosomia; increased incidence of infection, especially urinary tract infections; increased incidence of preterm labour; increased incidence of preterm labour; increased risk of hypertensive disease in pregnancy and exaggerated pressure symptoms of pregnancy due to macrosomia and hydramnios. Fetal risks include: congenital anomalies; macrosomia leading to birth trauma and late unexplained fetal demise. Neonatal morbidities include respiratory distress syndrome neonatal hypoglycemia, hypocalcemia, polycythemia, hyperbilirubinemia and future developmental delay. Our patient and her baby did not develop any of these complications.

Gestational diabetes mellitus (GDM), i.e. diabetes which first appears and that which is 1st recognized in pregnancy is diagnosed based on the original work of O' Sullivan and Mahan and modified by carpenter and Coustan (3). Risk assessment is undertaken in the first visit and those thought to be at high risk have a glucose tolerance test (OGTT) as soon as possible. For those not at high risk, a screening 50g oral glucose load without regard to meals or time of the day may be undertaken. If the results are

unequivocal, then a 100g oral 3 hours OGTT is done in the USA. The WHO recommends a 75 g oral glucose load. Plasma glucose levels suggested in 1982 (carpenter and Coustan) were a fasting level > 95 mg/dl; 1 Hour values > 180mg/dl; 2 hour values > 155mg/dl and 3 hour values > 140mg/dl. The WHO 75gm load has a fasting level of $\geq$ 140mg/dl and a 2 hour value $\geq$ 200mg/dl as the cut-off for diagnosis of diabetes mellitus. In the carpenter and Coustan O.G.T.T., a diagnosis of Diabetes is made if more than one abnormal result is obtained. Women with one abnormal value should undergo repeat testing.

The centrality of blood sugar control to outcome both pre-conceptionally and during pregnancy has been recognized, but the optimal method of achieving euglycemia in diabetic pregnancy is unknown. Many have suggested that fluctuations in blood sugar lead to fetal hyperinsulinemia and excessive fetal growth. The aim of insulin therapy should be to obtain pre-prandial values of glucose of between 60 – 105mg/dl or post prandial values less than 140mg/dl. Accurate Antepartum fetal surveillance for growth and status is also mandatory, to avoid unexpected fetal demise. For patients requiring insulin, weekly non-stress tests should be undertaken beginning 32 weeks. After 36 weeks this should be done twice weekly. Any abnormal test of fetal status is an indication for delivery if the foetus is viable. Delivery is usually planned at 37 completed weeks (Term) unless other complications call for elective preterm delivery (4). Should preterm delivery be considered, a surfactant test is advised. Our patient was delivered by elective caesarean section at 36 weeks after a dose of dexamethasane to enhance fetal lung maturity because she complained of reduced fetal movements, though the fetal kick chart and Biophysical profile were acceptable.

During labour or operation, an intravenous drip of 5% Dextrose to run at about 500ml in 4 hours is fixed and blood sugars monitored hourly. Should insulin be necessary it may be added to the drip or given by an infusion pump. The morning insulin dose before surgery is usually omitted. After surgery the same infusion is maintained and blood sugar monitored till able to take orally. After delivery, insulin needs dip significantly and often no insulin is required. In our patient no insulin was required 24 hours after delivery. For those with overt diabetes their insulin dosage is usually adjusted to their

pre-pregnancy level. Post delivery, the increased risk of infection must be remembered and looked for.

No single contraceptive method is ideal for all diabetics. Estrogens have the added risk of thromboembolism, stroke, and myocardial infarction (5). If hormonal methods are selected, then the low dose triphasic pill or the progesterone only pills are to be advised. Barrier methods may also be used. However their high failure rates should be weighed against the risks of another pregnancy. Complicated by diabetes mellitus. For those with a complete family, sterilization offers a long-term solution.

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