OBSTETRIC CASE 12

BREECH PRESENTATION IN A PRIMIGRAVIDA WITH PRMATURE RUPTURE OF MEMRANES -CAESERIAN SECTION

NAME : P. W.
AGE : 28 YEARS
IP NO. : 0883962
D.O.A : 29/04/03
D.O.D : 2/05/03

PRESENTING COMPLAINT

The patient presented to labour ward via casualty with complaints of draining liquor for 8 hours. She also had some lower abdominal pains.

HISTORY OF PRESENTING COMPLAINT

She had drained liquor early in the morning when she noticed that her bed was wet. When she stood up there was a gush of fluid, which flowed down to the floor. There were no labour pains initially but on the way to hospital she developed some intermittent lower abdominal pains. She also had noticed blood stained mucus in the course of the day. She had been referred to Kenyatta National Hospital a week earlier for follow up and delivery by caeserian section because of breech presentation in a primigravida. She was yet to come to Kenyatta National Hospital when this complaint developed.

OBSTETRICS AND GYNAECOLOGY HISTORY

She was primigravida at 37 plus five days by extrapolation from the ultrasound which had been done earlier. She could not remember the time of her last menstrual period. Quickening had been in the middle of December, which extrapolated to about 37 weeks at the time of admission.

Menarche was at 16 years. She had regular menses, which lasts 4 days within a 30-day cycle. She had not been on any contraception.

Antenatal care

She had attended Antenatal care at a private clinic from 28 weeks.

The antenatal profile was as follows:

- Blood group – B+ve
- Hb : 11.5g/dl
- PCV – 34.5%
- Platelets – adequate
- ELISA for HIV – NEGATIVE
- URINALYSIS – Normal

- U/SOUND (15/4/03)
    - Single breech fetus at 35/40 and 5 days
    - Estimated EDD 15.5.03 +/- 10 days

PAST MEDICAL HISTORY

She had never been admitted before. She did no suffer any major illness and was not on any chronic medication. She did not have any allergies to food or drugs.

FAMILY AND SOCIAL HISTORY

She was a married architect. Her husband was a physical planner. She did not smoke or drink alcohol. There was no history of chronic illness in the family. There was no family history of twins.

PHYSICAL EXAMINATION

She was in fair general condition.
She was afebrile, note pale, not jaundiced and no oedema.
He blood pressure was 120/80mmHg, Pulse of 70/minute and respiratory rate of 20/minute and temperature of 36.8^0C.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended, moving with respiration. Had a fundal height corresponding to term. The lie was longitudinal. The presentation was breech. The fetal heart was heard in the region of the umbilicus and was 140 beats/minute and regular. No contractions were palpated.

VAGINAL EXAMINATION

Speculum examination: The external genitalia was normal. The cervix was 4cm dilated, anterior, thick and moderately effaced. The membranes and cord were

PAST MEDICAL HISTORY

She had never been admitted before. She did no suffer any major illness and was not on any chronic medication. She did not have any allergies to food or drugs.

FAMILY AND SOCIAL HISTORY

She was a married architect. Her husband was a physical planner. She did not smoke or drank alcohol. There was no history of chronic illness in the family. There was no family history of twins.

PHYSICAL EXAMINATION

She was in fair general condition.
She was afebrile, note pale, not jaundiced and no oedema.
He blood pressure was 120/80mmHg, Pulse of 70/minute and respiratory rate of 20/minute and temperature of 36.8^0C.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended, moving with respiration. Had a fundal height corresponding to term. The lie was longitudinal. The presentation was breech. The fetal heart was heard in the region of the umbilicus and was 140 beats/minute and regular. No contractions were palpated.

VAGINAL EXAMINATION

Speculum examination: The external genitalia was normal. The cervix was 4cm dilated, anterior, thick and moderately effaced. The membranes and cord were

not seen. A digital examination was then done and found a warm and moist vagina, a cervix that was 4cm dilated, anterior, thick and moderately effaced. The presenting breech was felt.

DIAGNOSIS

A DIAGNOSIS OF BREECH PRESENTATION IN A PRIMIGRAVIDA WITH PREMATURE RUPTURE OF MEMBRANES WAS MADE.

MANAGEMENT

The patient who was already aware of her fetal presentation She was given further counseling on the need of caeserian section delivery. She consented for emergency caeserian section. An intravenous line was established and two units of blood was grouped and cross-matched. The cannula was maintained with a drip of 5% dextrose. She was shaved and premedicated with atropine 0.6 mg half hour before theatre. A paediatric resident was informed to be available to receive the baby.

CAESERIAN SECTION

Patient was put in semi lithotomy position. Vulvovaginal toilet was done. She was then catheterized aseptically and 350mls of clear urine was obtained. She was then repositioned in supine position, cleaned and draped. She was then put under general anesthesia. The abdomen was opened via a sub umbilical midline incision. The paracolic gutters were then packed. A lower segment caesarian section was done. A life female infant who had an apgar scored 8/1, 9/5 and

10/10 was delivered. The infant was not weighed, as the weighing scale was out of order. The placenta was delivered by controlled cord traction and found to be normal. The uterus was closed in layers with good haemostasis. The tubes, ovaries were inspected bilaterally and found to be normal.
The swabs and instruments were counted and found to be correct. The abdomen was closed in layers. Vulvovaginal toilet was done. General anesthesia was then reversed successfully. Estimated blood lose was 500 mls.

Postoperatively she was observed ½ hourly till she was fully awake. She continued on intravenous fluids, intravenous crystalline penicillin and gentamycin and also intramuscular pethidine. On the first postoperative day, she was started on oral fluids and graduated to light diet on the second day. The rest of the postoperative stay in the ward was uneventful. She was discharged on the fourth post operative day for removal of stitches in the nearest clinic on the seventh postoperative day. She was also to be seen in the postnatal clinic in 6 weeks.

FOLLOW UP

After 6 weeks she was seen in the postnatal clinic. The wound was completely healed. The baby was fine. She was counseled on family planning and sent to the family welfare clinic to receive a method upon which she chose and received depo-medroxyprogesterone acetate.

DISCUSSION

The patient presented had been diagnosed with breech presentation during her antenatal care. She was referred a week earlier for follow up and elective caesarian section but presented with premature rupture of membranes.

The incidence of breech presentation is about 20% at 28 weeks. Most of the fetuses turn spontaneously, so that the incidence at term is 3-4%. [1,2] At KNH the incidence is reported as 3.5%. [3]

This patient also had premature rupture of membranes, which occurred 8 hours earlier. Premature rupture of membranes is said to occur when rupture occurs before labour.
The etiology is unknown but there is a strong correlation between premature rupture of membranes and ascending vaginal infection. The management of premature rupture of membranes depends on a number of factors of which gestation is the most important. At a gestation above 37 weeks, as the patient presented here, management is usually delivery. [8]

This patient had complete breech. This is where both thighs and legs are flexed. The other types of breech are frank breech and incomplete breech.

The patient presented had no obvious predisposing factor to development of breech which true in the majority of cases.
Various factors known to be associated with breech presentation are :
prematurity (the most common), oligohydroamnios, uterine anomalies such as bicornuate or septate uterus, pelvic tumors obstructing the birth canal, multiple gestation, fetal anomalies, placenta praevia, and contracted pelvis.[4,5]

It has been widely recognized that there is a higher perinatal morbidity and mortality with breech presentation due to prematurity, congenital malformation and birth asphyxia or trauma. [1,4]

Breech presentation, whatever the mode of delivery is a signal for potential fetal handicap and this should form antenatal, intrapartum and neonatal management. All women with an uncomplicated breech pregnancy at term (37-41) weeks should be offered ECV (external Cephalic Version).[1] There is significant reduction in the risks of caeserian section in women where there is an intention to undertake ECV, with selective use of tocolytics. However ECV should be done near facilities for emergency delivery.

Important issues to consider when planning a vaginal birth are the careful selection of patients, appropriate intrapartum management and the skill, experience and judgments of the intrapartum attendant. A trial of vagina breech delivery is more likely to succeed if both mother and baby are of normal proportions [1] and the presentation should be either frank or complete. There should be no evidence pelvic disproportion and the pelvis should be clinically adequate. Clinical judgment is adequate and pelvimetry need not be used routinely. [6] A trial of labour should be precluded in the presence of medical or obstetric complications, which are likely to be associated with mechanical difficulties at delivery.

Caesarian section for breech presentation has been suggested as a way of reducing the associated fetal problems [7] and in many countries in Northern Europe and North America, caeserian section has become the mode of delivery in this situation.

At KNH, it is the practice to deliver by caeserian section all primigravida with breech presentation at 37 completed weeks or on presentation in labour unless they present in second stage. The management of multiparous patients with

breech is controversial in the unit, as no policy guidelines have been given, however multiparous patients presenting in labour are sectioned unless the stage of labour does not allow. The patient presented here was presented in labour was a primigravida and was duly sectioned.

There is however insufficient evidence to support routine caeserian section for delivery of extreme preterm breech.[1] The poor outcome for very low birth weight infants is mainly related to complications of prematurity and not the mode of delivery. In the absence of good evidence that an extreme preterm baby needs to be delivered by caeserian section, the decision about the mode of delivery should be made after close consultation with the labouring woman and her partner. [(1)] Selection of appropriate candidates for either viginal or caeserian delivery relies on good clinical judgment. While the best method of delivering a term breech singleton is planned caeserian section, between 40-60% of near term or term breeches may be delivered safely vaginally. It is essential that all details of care are clinically documented, including the identity of all those involved in procedures.[1]

Patients who are likely to deliver breech successfully include those with adequate pelvis with a true conjugate of more than 10.5 cm, those with a fetus less than 3.25 kgs, those with flexed head, those who have delivered before by breech or have delivered large babies and where the presenting part is sacroanterior.[4]
The patient presented was a primigravida and therefore could not attempt vaginal delivery.
External cephalic version has been used for some decades now to convert breeches to cephalic presentation. The development of ultrasound, electronic fetal monitoring and tocolysis have improved maternal and fetal safety of external cephalic version. The procedure is done between 35 and 37 weeks. The success rate is about 65 %this markedly reduces the need for caeserian section.[4]
This is not routinely offered at Kenyatta National Hospital.

REFERENCE

1. Royal College of Obstetricians and gynecologists. The management of Breech presentation. RCOG Guideline Nov. 20, April 2001
2. O'Leary J. A
   A virginal delivery of term breech. *Obstet. Gynaecol.* **53**:341, 1979
3. Njuki S.K.
   Breech presentation at KNH: modes of delivery and outcome. M.Med Thesis, University of Nairobi, 1979
4. Cunningham F.G., Gant N.F., Leveno K.J. et al.
   Breech presentation and delivery in: Williams Obstetrics 21st Ed Chapter 22: 509-55. Appleton and Lange 2001
5. Whitefield C.R
   Dewhurst's textbooks of obstetrics and gynecology for postgraduates 4th Ed chapter 27 Breech presentation. 1998
6. Royal College of Obstetricians and Gynecologists.
   Pelvimetry – clinical indications. RCOG press, Guidelines No.4. 1998
7. Cheng M, Hannah M
   Breech delivery at term a critical review of the literature.
   Obstet. Gynaecol. 82: 605-18. 1993
8. Pernoll M.L., Decherney A.H
   Late pregnancy complications in: current Obstetrics and Gynecologic Diagnosis and treatment, 8th Ed, 15:331-336. Appleton and Lange, 1994.

OBSTETRIC CASE 13

CARDIAC DISEASE GRADE IV IN PREGNANCY –SUCCESSFUL VAGINAL DELIVERY

NAME : **L.N**
AGE : **22 YEARS**
IPNO.: **0881602**
D.O.A: **19.04.03**
D.O.D: **4.08.03**

PRESENTING COMPLAINTS

The patient presented with complaints of shortness of breath, palpitations, swollen legs and discomfort on lying flat.

HISTORY OF PRESENTING ILLNESS

She was a known cardiac disease patient since 1997. She had been referred from Kangundo district hospital for management at KNH. She was admitted with increasing shortness of breath, and associated chest pains. There was also increasing palpitations, and inability to lie flat. She was now unable to walk around an ordinary room without posing for breath.
She was being followed up at Kangundo District Hospital previously. She had been on lasix 40mg once daily and digoxin 0.125mg once daily.

PAST MEDICAL HISTORY

She had been diagnosed with rheumatic heart disease in 1997. She had been followed up at Kenyatta National Hospital by a cardiologist, but her follow up was erratic. She had been admitted once before when the diagnosis was made.

OBSTETRIC AND GYNAECOLOGY HISTORY

She was a primigravida at 34 weeks gestation. Her last menstrual period was on 10.09.02 and her expected date of delivery was 17th June 2003.

Her menarche had been at 16 years and her cycles were regular occurring every 30 days and lasting 4 days. She has never used any contraceptives.

Antenatal care

She had been receiving antenatal care at Kangundo, from 24 weeks, until the above-mentioned symptoms got worse when she was referred to KNH. The profile was as follows:

Haemogram-hb-10.0g/dl

WBC-7.5 X 10 9/L

Platelets-280x10^{12}/l

VDRL -Negative

Blood group- A positive

FAMILY AND SOCIAL HISTORY

She was single and lived with her parents in Kangundo. She was unemployed. She didn't take alcohol or smoked cigarettes.

PHYSICAL EXAMINATION

She was sick looking, was afebrile, not pale, she had mild edema. Her temperature was 36.8^{0}C, pulse rate was 85/minute and of normal volume, and respiratory rate was 18/min, blood pressure was 130/60mmHg.

CARDIOVASCULAR SYSTEM

The peripheral pulses were normal with good volume. The jugular venous pressure was not raised. The praecordium was hyperactive. The apex beat was displaced to the 6^{th} intercostal space along mid clavicular line. Both heart sounds were heard. She had a pan systolic and a mid diastolic murmur best heard at the apex.

RESPIRATORY SYSTEM

The chest was symmetrical and moved with respiration. Air entry was good but she had basal crepitation.

ABDOMEN

The abdomen was uniformly distended with a fundal height corresponding to 34 weeks gestation. The fetus was in longitudinal lie and cephalic presentation. Fetal heart rate was normal. The liver was slightly enlarged at 4 cm below the costal margin at the level of anterior axillary line. The spleen was not enlarged.

CENTRAL NERVOUS SYSTEM

There were no significant findings.

DIAGNOSIS

A diagnosis of cardiac disease in pregnancy was made.

INVESTIGATIONS

FBC – Hb – 10.3g/dl,

- WBC 5.1x10 ^{12}/l
- Platelets 250/L,
-Urine – Normal

ECHO – mitral valve disease. Mitral regurgitation grade 2-4, moderate to severe pulmonary hypertension, and moderate mitral stenosis.

U/E – Na^+-145mmol/l

K^+-3.7 mmol/l

Urea-5.4umol/l

DEFINITIVE DOAGNOSIS

A definitive diagnosis of mitral valve disease with mitral regurgitation, mitral stenosis and pulmonary hypertension was made.

PLAN OF MANAGEMENT

She was admitted for management of the obtaining symptoms. The dose of lasix was increased to 80mg bd, digoxin to 0.25mg OD. She was also reviewed by a cardiologist twice weekly. She was propped up in bed. She was to stay in the ward till delivery. Delivery was to be by vaginal route since there were no obstetric indications for operative delivery. On the first of July she developed chicken pox. She also had lower abdominal pains and was reviewed in labour ward but was found not to be in labour. The chicken pox was managed with analgesics and anti- pyretics only. She went into labour on 3/07/03 (was 38 weeks then) and was wheeled to labour ward.

MANAGEMENT OF LABOUR

She was put in the left lateral position and propped up in bed. She was found to be in latent phase of labour with cervix 1cm dilated, fully effaced and the head was 2/5 up with regular fetal heart and mild contractions. Sweeping of the lower segment was done during examination. An intravenous access was established, oxygen by mask was given, pethidine 100mg for analgesia was given, and prophylactic antibiotics of crystalline penicillin and gentamycin were given.

She went into active labour after 12 hours. She progressed well. Her second stage was assisted by vacuum. She delivered a live female infant who weighed

2800 grams and had in APGAR score of 8/1, 10/5 and was taken to the new born unit due to low birth weight and to avoid contracting chicken pox which had developed in the mother prior to onset of labour. The placenta was delivered by controlled cord traction. An intravenous drip with 20iu of syntocinon was run after delivery and 80mg of frusemide was given as a bolus infusion.

POST DELIVERY CARE

She was transferred to the acute room and kept in propped up position. Vital signs were observed ½ hourly and she continued with intravenous antibiotics (crystalline penicillin and gentamycin), digoxin and oral lasix. The chicken pox eruption became full blown on the first day after delivery. She was reviewed by a cardiologist and found to be stable. She was transferred to the postnatal ward after 48 hours. She continued with lasix, digoxin and haematinics. Antibiotics were changed to oral augmentin 375 mg tid from the fifth to the tenth day. She was discharged after 4 weeks. She was counseled on barrier method, and possible permanent contraception. The risks of subsequent pregnancy were explained to her. She was to continue with the cardiac clinic for further follow up.

FOLLOWUP

She was seen two weeks later in the post natal clinic. The she and the baby were doing well. The shortness of breathe had improved markedly and there was no pedal oedema. She was counseled further on family planning. She had chosen barrier methods for which condoms were provided in the family welfare clinic. She was to continue f subsequent followup in the cardiac clinic.

DISCUSSION

L. N was admitted with cardiac disease grade IV. She stayed in the ward from 32 weeks to 38 weeks when she went into labour and delivered a live female infant. Post-natally, she and her baby did well.

Cardiovascular disease is the most important non-obstetric cause of disability and death in pregnant women, occurring in 0.4 – 4% of pregnancies. The reported maternal mortality rate ranges from 0.4% in class II and I to 6.8% or higher among patients with class III and IV severity. [1]

The patient L.N presented had been diagnosed with rheumatic valvular heart disease five years earlier. Rheumatic heart disease is still a major cause of heart disease in developing countries. In developed countries, rheumatic heart disease is now less common and congenital heart disease is seen more commonly. [2,3,4] In his study, Ngotho found rheumatic heart disease in pregnancy responsible for 86.4% of cardiac disease in pregnancy. Other causes of heart disease in pregnancy include hypertension, thyroid, coronary, syphilitic, cardiomyopathy, pericarditis and other congenital heart diseases. [2,4] The majority of patients with cardiac disease in pregnancy were found to be young with the majority age group of 20-24 years. [5] The patient presented, L.N, was 22 years, which is the commonest age of patients presenting with rheumatic heart disease.

Patient L.N had mitral valve stenosis with regurgitation which is by far the most common lesion in rheumatic heart disease either in isolation or as the predominant lesion. [5]

Cardiovascular changes in normal pregnancy tend to worsen or unmask cardiac disease. As in the patient presented the cardiac condition worsened with advancing pregnancy. During pregnancy the cardiac output is increased by as much as 30 to 50 percent. It has been shown that almost half of the total

increase has occurred by 8 weeks and it is maximized in mid pregnancy. These changes further strain a non complaint heart. [7]

During labour, cardiac output increases by 34% in 1st stage, with further increase in 2nd stage due to increase in stroke volume and heart rate. [8] There is also a steady rise in blood pressure. Thus delivery is a time of maximum risk to the mother. To reduce preload and afterload this patient was given given lasix immediately after delivery. Pethidine was also given to reduce pain and to calm her.

Signs and symptoms associated with heart disease are often present in normal pregnancy. These include fatigue, dyspnea, orthopnoea, oedema, and palpitations.

Clinical indicators of heart disease which were present in the patient presented included symptoms of progressive dyspnea, orthopnoea, nocturnal cough, haemoptysis, and chest pain. Other patients may also have syncope.

Clinical findings which were present included hyperactive praecordium, pansystolic and mid diastolic murmurs,displaced apex beat, and basal crepitations.

Other signs of heart disease include: cyanosis, finger clubbing, persistent neck vein distension, arrhythmia, persistent split 2nd heart sound and criteria for pulmonary hypertension. [7]

Cardiac disease can be graded according to the New York Heart association classification. This is based on past and present disability and is not influenced by physical signs. [1,7]

Grade I : Uncompromised patients have signs of heart disease but no symptoms limiting ordinary activity.

Grade II : Slightly compromised patient with cardiac disease and slight

limitation to physical activity. They have dyspnoea on strenuous activity.

Grade III : Markedly compromised patient with cardiac disease and marked limitation of physical activity. They have dyspnoea on mild physical activity.

Grade IV : Severely compromised. They have cardiac disease and inability to perform any activity without discomfort. They have orthopnoea or dyspnoea at rest.

The patient L.N was graded as grade IV cardiac disease as she had marked disability and had to rest on ordinary walking in the room.

Patients can also be classified according to the risk of mortality associated with pregnancy into 3 classes.[9]

(i) Low risk - Mortality less than 1%
This includes atrial septal defects, ventricular septal defects, patent ductus arteriosus, corrected tetralogy of Fallot, prosthetic valve, mild mitral valve stenosis and pulmonary/tricuspid disease.

(ii) Medium risk Mortality 5-15%
Congenital heart disease without pulmonary hypertension, hypertrophic obstructive cardiomyopathy, symptomatic mitral stenoisis, ebstein's anomaly, aortic stenosis, coarctation of aorta, uncorrected tetralogy of Fallot, artificial value and previous myocardial infarction.

(iii) High risk Mortality 25 – 50%
Includes severe aortic stenosis, pulmonary hypertension with reversed central shunt and Marfan syndrome with aortic involvement.

L.N had rheumatic heart disease with multivalvular involvement. The valvular lesion was mitral valve stenosis and regurgitation. She falls into the medium risk group.

Every woman with a cardiac disease will benefit from pre- conception counseling. Women who conceive and are known to have a high risk rating should be advised on 1st trimester termination if possible, but not infrequently high desire for children may lead to dismissal of the advice. In that situation surgical correction can be offered. The patient L.N had not presented for preconception counseling and evaluation. This is common in our society as the role of preventive medicine is not widely utilized.

The patient L.N did not receive adequate follow up during her antenatal care. The antenatal profile done was incomplete as she had only done haemogram, VDRL and blood group.

Being a high risk patient, the antenatal follow up should include the full antenatal profile plus electrocardiography, echocardiogram and Ultrasound. Careful monitoring to avoid heart failure should be done with special emphasis on risk factors, which include infections especially of urinary tract, hypertension, anaemia and multiple pregnancies.

Patients with grade II disease and I are seen weekly until term then admitted to await labour. Patients with grade III and IV are admitted throughout the pregnancy. L. N was admitted on first contact at 34 weeks.

Patient L.N had spontaneous labour and vaginal delivery which is preferrable. Most patients have rapid uncomplicated labour especially if taking digoxin [7]. Caeserian section is limited to obstetric indications. The patient is propped up and vital signs monitored half hourly.

An analgesic is important as it reduces cardiac output and anxiety. Epidural analgesia acts as a good analgesic and also helps to reduce cardiac output by

reducing preload and causing peripheral vasodilatation. Narcotic analgesics (morphine, pethidine) are also used. Oxygen is also given to ensure optimal saturation of the blood and also to prevent decompensation.

Intravenous fluids should be carefully monitored to avoid fluid overload and pulmonary oedema associated with injudicious fluid loading.
The patient L.N was given pethidine for analgesia. She was also given oxygen by mask.Second stage should also be shortened by elective vacuum assisted delivery as patient L.N had.

Close monitoring of third stage was done to prevent haemodynamic changes associated with post partum haemorrhage. Oxytocin which is preferable to ergometrine was given, as the latter causes hypertension and peripheral vasospasms associated with sudden intravascular overload. [7]
Use of antibiotics, as prophylaxis to prevent endocarditis is necessary as this complication often occurs without warning. Bacteraemia following normal delivery is rare but many obstetricians prefer to give antibiotics. L .N was put on antibiotics for ten days after delivery.
Cardiac disease patients are observed for 24 to 48 hours in acute room. L.N was kept in the acute room for 48 hours. Postpartum period is critical and the patient was monitored for infective endocarditis, congestive cardiac failure, and thrombo-embolic disease. Early mobilization was emphasized.

Of the cardiac disease in pregnancy, grade III and IV account for 85% of the 0.5% mortality rate.
Complications of cardiac disease in pregnancy include premature labour and delivery, very low birth weight and higher incidence of congenital disease. [7]

The patient L.N chose a barrier contraceptive method and was still considering a permanent method.

Contraception postpartum is important and surgical sterilization is the preferred method. [9] Other methods that can be used are oral contraceptives and condoms. Use of oral combined pills is avoided in those with mitral valve disease and those with mechanical valves where risk of thromboembolism is high. Most of these patients require anti coagulation with warfarin. [9]
Intrauterine devices are not frequently used because of the associated high frequency of infection.

Successful management of cardiac disease in pregnancy requires a close cooperation between the cardiologist and obstetrician. The prognosis is usually dependent on functional cardiac capacity, other complications that further increase cardiac load, and quality of medical care provided. Though patient L.N had cardiac disease grade four, she was managed successfully to delivery by cardiologist and an obstetric team.

REFERENCES

1. Alan H. Decherney and Martin L Pernold. Cardiac Disorders in pregnancy in: Current Obstetric and gynaecologic diagnosis and treatment. 8th ed. **22**: 428-448. 1994.
2. Ngotho D.K: Cardiac in pregnancy at KNH: M.Med thesis, University of Nairobi,1982.
3. Patrick Chia, Hendrick Chia, Raman Subramaniam. A clinical approach to heart disease in pregnancy. *The obstetrician and gynaecologist.* **4**:212-6: 2002
4. Szekely P, Turnar R, Snaith L: Pregnancy and the changing patterns of rheumatic heart disease: *Br. Heart. Journal.*: **35**:1293-1303.1973
5. Spencer D.D., Makene J.W Rheumatic heart disease in Tanzania. East. Afr. Med. J.: 49:900:1972
6. Chia P. Raman S, Tham S.W. The pregnancy outcome of acyanotic heart disease, *J. Obstet. Gynaecol. Res.*: 24:267-73,1998.
7. Cunningham F.G., Mac Donald P.C., Levene K.J., Grant N.F., Giltrap L.G : Cardiovascular Diseases. Williams Obstetrics, 21st ed, **44**:1181-1207,2001.
8. Robson S.C, Dunlop W., Boys R.Y., Hunter S. Cardiac Output during labour. Brit. Med.J. 1987:296:1169-72.
9. De Swiet M. Cardiovascular problems in pregnancy. In Chamberlains G. Ed Tunrbull Obstetrics London Churchill-Livingstone, 3rd ed.: 263-274, 2001.

OBSTETRICS CASE 14

SICKLE CELL ANAEMIA IN PREGNANCY –CAESERIAN SECTION,LIVE BABY

NAME : P.A.
AGE : 26 YEARS
IPNO. : 0204148
PARITY : 0+0
D.O.A : 18/9/03
D.O.D : 14/11/03

PRESENTING COMPLAINT

The patient was admitted to labour ward with generalized joint pains and inability to walk for two days.

HISTORY OF PRESENTING COMPLAINTS

The pain was insidious in onset and involved all the joints. It was initially associated with slight swelling of the knee joints. There was no fever but had chills, headache and low abdominal pains. The low abdominal pain was continuous and dull in character. There was no history of trauma.

PAST MEDICAL HISTORY

She was diagnosed with sickle cell disease since 6 years of age and has been on follow up in haematology clinic. She has been maintained on proguanil 200mg and folate 5mg once daily continuously.
She had been admitted on varying dates in the medical ward with blockage of blood vessels managed on antibiotics, and analgesics. In 2001, she had deep

venous thrombosis confirmed by Doppler scanning involving left pelvic and left thigh veins and was managed on warfarin 7.5mg daily.
In 2003 had a left leg ulcer, which has since healed. She had also been started on hydroxyurea in March 2003 1g daily initially scaled down to 250mg daily but since she noticed she was pregnant it was discontinued.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

She was primigravida. Her menarche was at 17 years old and menses lasted 3-4 days with a cycle length of 28-30 days and regular. The flow was moderate and she had no dysmenorrhoea. She had never used contraceptives before.

PRESENT PREGNANCY

She can't remember with certainity her last menstrual period date but was in mid February 2003 giving a rough expected date of delivery to be November 2003. She could not remember when quickening was. She had not started antenatal clinic by the time of admission. She had been admitted in medical ward with crisis in July 2003 and was then referred to our antenatal clinic after discharge. However she had reported that the pregnancy was uneventful.

FAMILY SOCIAL HISTORY

She was married, stays with her husband at Kawangware. She was unemployed but the spouse was a computer engineer. She is educated upto form two and trained as hairdresser. She is the first born in a family of four siblings. She came from Homabay District, she did smoke cigarettes nor drank alcohol. There is no other family member with sickle cell disease.

PHYSICAL EXAMINATION

She was sick looking, in pain, moderately pale with jaundice and moderately dehydrated. She had no fever, no oedema, and no lymphadenopathy.

Pulse was 90/min regular and good volume, respiratory rate 20/minute, blood pressure 120/80 mmHg, temperature 37.1°C

CARDIOVASCULAR SYSTEM

She had tachycardia. The first and second heart sounds were heard and there were no murmurs.

RESPIRATORY SYSTEM

There was flaring of alae nasae, respiratory rate of 20/min, use of accessory muscles of respiration. No orthopnoea. No added respiratory sounds heard.

CENTRAL NERVOUS SYSTEM

These was essentially normal

MUSCULAR SKELETAL SYSTEM

She had a healing ulcer on the medial side of the left ankle joint. Otherwise other areas were normal. There was slight tenderness of the joints of the lower limbs bilaterally.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended and moved with respiration. She had no surgical scars or therapeutic marks. She had a non-tender hepatomegaly of 6cm below the costal margin. The spleen was no palpable. The fundal height corresponded to 34 weeks gestation. The foetus was in longitudinal lie and in cephalic presentation. The head was five fifth above the pelvic brim. Foetal

heart tones were heard, regular and at rate of 140/minute. No contractions were palpable.

Pelvic examination was deferred since she was not in labour.

DIAGNOSIS

A diagnosis of a known sickler in painful thrombotic crisis at 34 weeks gestation was made.

MANAGEMENT

She was admitted to the labour ward acute room. A large bore intravenous access line was put and rehydration started with normal saline. She was put on analgesics pethidine 100mg start then tramadol tablets 50mg twice daily. Once stabilized, she was transferred to the ward to continue management.

At admission various tests were done and results are shown below:

1. Haemogram:

   Haemoglobin -7.9g/dl

   RBC -4.6 $X10^9$ /L

   WBC -13.7$X10^9$/L

   Platelets -442 x 10^9/L

   Neutrophils -79%

   Lymphocytes -19%

   Peripheral blood film – Macrocytes, Poikilocytes Target cells, hypochromia were present.

2. Blood slide for Malaria – Negative

3. Urine – urinalysis: PH6.5

   Protein Nil

Sugar Nil

Leukocytes ++

Urine culture: No organism grown

3. Urea, Electrolyte

Na^+	-135 mmol/L
K^+	-4.2 mmol/L
BUN	- 3.2 mmol/L
Creatinine	- 82 mmol/L

FURTHER MANAGEMENT IN THE WARD

While in the ward she was advised on bed rest, intravenous fluids were continued, antibiotics were started (crystalline penicillin 2mega units 6 hourly and gentamicin 80mg 8 hourly). Folate 5 mg and proguanil 200mg was also to continued.

The haematologist was consulted to review the patient. The haematologist advice was that she should continue pregnancy in the ward until delivery. The also recommended transfusion to increase haemoglobin level to over 9.0g/dl. She was then transfused two units of whole blood.

INVESTIGATION DONE WHILE IN THE WARD

1. Haemogram	13.10.03	24.10.03	2.11.03
Hb	9.1	9.5	9.0g/dl
RBC	4.6	4.1	
MCV	102	110	
Platelets	490	420	
WBC	13.1	12.5	
Neutrophils	72	68	
Lymphocytes	22	25	

2. Hb SAg - Negative

3. VDRL Negative

4. Blood Group -"O" Rhesus Positive

5. Sickling test -Positive

6. Haemoglobin electrophoresis – HbSS

7. Abdominal and pelvic ultrasound 25/9/03

-The liver was enlarged and had reduced echogenicity. The bile ducts were dilated. The gall bladder was normal with no calculi. Both kidneys were normal in size. The spleen was small in size with calcific deposits. The pancreas and para aortic nodes were normal.

-There was a single intrauterine foetus with a normal somatic and cardiac activity. The gestational age by BDP, A/C and FL was 32 weeks 6 days. There was no gross foetal anomaly noted. The placenta was fundal posterior. The amniotic fluid was adequate.

DELIVERY

While in the ward at 38 weeks 4 days, she reported reduced fetal movements. She was put on fetal kick chart, which she only charted five times for 12 hours. An urgent biophysical profile was ordered and reported as follows; -

Biophysical profile

> Intrauterine pregnancy, cephalic presentation dated at 38 weeks 3 days. Fetal cardiac activity noted at rate of 144 beats per minute. Fetal movement seen but the tone was not noted. The fetus was grossly normal and liquor was adequate. Total score of 6/8 was recorded.

Upon receipt of the biophysical profile score and history of reduced fetal movement, a decision was made to deliver her. She was informed of the decision and was transferred to labour ward.

In labour ward; she was seen and Bishop score was done where the cervix was found to be unfavourable (poor score of 3/13). Cervical ripening was started with insertion of Misoprostol pessary 50ug into the posterior fornix. Meanwhile, haematologist was consulted. Blood for grouping and cross-match was done and two units of blood prepared and she was transfused. She was put on intravenous fluids, oxygen by mask, crystalline penicillin and sedated by phenobarbitone 30mg 8hourly. She was reviewed by the haematologist who recommended that we transfuse her up to Haemoglobin level of 10.00g/dl, hydration to be updated and pain to be controlled with opiods. She was subsequently started on intramuscular Tramadol100mg 8hourly. Hydration with normal saline was maintained.

On review after 6 hours, the cervix was still unripe and repeat Misoprostol 50ug was inserted. She continued with the above management and a further review 6 hours later noted cervical dilation of 4cm, artificial rupture of membranes was done and liquor was found to be meconium stained grade 2. An impression of fetal distress in early labour was made and decision to deliver her by emergency

caesarean section made. She was informed of the decision and anaesthetist reviewed her. Blood for renal function tests was drawn and was found to be within normal level.

Premedication was given Atropin 0.6mg stat, was seen by haematologist, anaesthetist and obstetric team and classified as American Society Of Anaesthesia class IIE (ASAIIE).

Intra-operatively, a low uterine segment section was done and the outcome was a live male neonate with birth weight of 3400g, Apgar score of 8/1, 9/5, 10/10. the placenta had no calcification or infarcts. The abdomen was closed in layers. Post operatively she was stable. She was started on oral sips on the first postoperative day, light diet from the second day and normal diet by the third day. The baby joined the mother as soon as she she was out of anaesthesia and did well through out while in the ward. Their stay in the ward was uneventful. She was seen by haematologist who found her to be stable and she was discharged home after 10 days through haematology clinic and postnatal clinic where she was to be seen after two weeks.

POSTNATAL CLINIC

She was seen in the clinic and was found to be stable. She was started on progesterone based contraception and advised for follow up in the haematology clinic. She was also advised to continue with the baby welfare clinic.

DISCUSSION

The patient P.A was a 26 year old primigravida who was a known sickler since childhood who presented with painful crises in pregnancy. She was managed in the ward from 34 weeks to 38 weeks when she was delivered by caeserian section due to fetal distress.

Sickle cell disease is genetic disorder characterised by abnormal haemoglobin, which courses red blood cell to become sickle shaped when exposed to hypoxic or acidic environment.[1,2] Sickle cell haemoglobin results from genetic substitution for glutamic acid in sixth position of the N-terminal of beta chains. Instead of glutamic acid there is valine in HbS, lysine in HbC and glutamine in Hb D.[2] The autosomal recessive sickle cell gene is passed to both sexes. Patient with homozygous (SS) for haemoglobin S gene have sickle cell disease and those with heterozygous (AS) have sickle cell trait. The patient presented had HbSS diagnosed during childhood at 6 years and confirmed on repeat haemoglobin electrophoresis while in the ward.

The inheritance of sickle cell gene is autosomal recessive. Therefore an offspring needs to inherit the gene from both parents to have the disease.[2] About 10% of blacks in America have sickle traits and 1:1500 have sickle anaemia. In Kenya sickle cell disease has been reported mainly among young children from western Kenya and coastal region.[3] Our patient was from Western Kenya.

The distribution of sickle cell trait appears to follow very closely that of the plasmodium falciparum endemicity, this is due to less susceptibility of red cells with HbAS to infection by the malaria parasite, an example of balanced pleomorphism.

The patient presented was 26 years old and pregnant. This shows that more women with sickle cell disease reach adulthood and carry pregnancy to term successfully. This gives the apparent increase in cases of sickle cell anaemia worldwide.[2,4]

The patient presented with painful crises and was found to have features of sickle cell anaemia. The haemoglobin level was 7.9 grams percent with immature cells in the peripheral blood. Painful crisis involves the bone and joints and is precipitated by dehydration, acidosis, and infection. This is one of the crises which can occur in patients with sickle cell. Intravascular sickling leads to the vaso-occlusion,which in turn causes infarction, bone necrosis and organ damage. The other crises which may occur include aplastic crisis, acute splenic sequestration, and haemolytic crisis.

Chronic anaemia also characterizes sickle cell disease. This results from shortenened survival of homozygous S red blood cells and intravascular haemolysis or phagocytosis by reticuloendothelial cells of the liver and spleen. Patients with sickle cell trait are not anaemic and usually asymptomatic though they have increased prevalence of urinary tract infection than normal women.[1]

The patient presented was managed by rehydration with fluids,antibiotics and analgesics.

The patient did not develop sequestration crisis. This is usually associated with severe anaemia and hypovolaemic shock and is due to sudden massive trapping of red blood cells within the spleen. Other manifestations include increased susceptibility to bacterial infection, especially streptococci pneumonia, pulmonary infarction, myocardial damage, haematuria due to renal damage, cerebrovascular accidents, retinopathy and cholelithiasis.[3,5]

The patient P.A was managed by a multi disciplinary approach which included the haematologist and obstetrician, neonatologist and good laboratory back up. Regular antenatal care by obstetricians experienced in the management of sickle cell is essential. The antenatal care in this patient was wanting as she had not started antenatal care at 34 weeks.

Infections and painful crisis in the patient was treated promptly on admission by use of analgesia and antibiotics. She was also hydrated by use of intravenous

fluids. The fetus was monitored by use of ulrasonography and later by biophysical profile.

She had been taking folic acid throughout though erratically. Folic acid 5mg is given daily to prevent megaloblastic changes and the consequent fall in haemoglobin level. It is now recognized that patients with sickle cell disease have inadequate iron stores for demands of pregnancy and after delivery if peripheral blood picture is dimorphic suggestive of low iron stores. [2]

The patient was transfused several pints of blood with the aim being to elavate the haemoglobin to at least 10 grams per deciliter. This was aimed at minimizing the risks associated with anaemia. The risks of heart failure and maternal death are reported to be proportionate to the haematocrit and prognosis is dramatically improved by exchange transfusion or by simple transfusion in combination with diuretics.[1,8] Blood transfusion should be considered in cases of a fall in haematocrit to less than 25%.[1]

The patient was on proguanil prophylaxis for malaria. Malaria prophylaxis should be provided throughout pregnancy and even preconception as infection can cause profound anaemia. The haematocrit in our patient did not fall below 25%. Some people advocate hypertransfusion to keep haematocrit above 30% in hope that it will suppress the bone marrow thereby reducing the number of sickle cells and subsequently sickling crises. Protagonist of this theory argues that this exposes the patient to risk of disease transmission including HIV and also may lead to development of antibodies against rare antigens hence making blood transfusion in emergency cases difficult.[7]

Patient P.A was delivered by emergency caesrian section due to fetal distress. However most patients with sickle cell disease have normal vaginal delivery. Caesarean section delivery is indicated for the usual obstetric indication. In

general, normal vagina deliveries occur with relative case partly due to low birth weight babies born to mothers of SS disease

The patient was given progesterone based pills for family planning. Patients with sickle cell disease should be offered reliable contraception. Oral contraceptive pills are contraindicated due to the increased risk of thrombo-embolism, while IUCD predisposes to infection. With no further pregnancies desired, tubal ligation offers a safe and permanent method of contraception, while progesterone only contraception can be used as a reversible method.

REFERERNCES

1. Manoj K.B. Dovontere, P: Cardiac, Haemotologic, Pulmonary, Renal and urinary tract Disorders in pregnancy. In, Current obstetric and Gynaecologic Diagnosis and Treatment, 8th Ed.; Appleton and Lange, 22: 451. 1994.

2. Graham R. S. Pregnancy and contraception in sickle cell disease, 2nd Ed. Oxford University Publication, 23:353,1992

3. Otieno M.R. B.
   Maternal and Fetal outcome of pregnant patients with sickle cell Haemotoglobinopathy at Kenyatta National Hospital (1981-1986))
   M.med Thesis, 1988; University of Nairobi.
4. Powars, DR., Sandhu, M. Niland Weiss,
   Pregnancy in sickle cell Disease. Obstet. Gynaecol; 67:217,1986
5. Hibbard, B.M.
   Haemoglobinnopathies. Principle of obstetrics, 4th Ed. Butterworth, 1988; 253 –61
6. Aluoch, J.R
   Sickle cell Anaemia in pregnancy. *J. Obstet. Gynaecol. Cent. Afri.* 6:95,1987
7. Baunn, K.F., Dark, D.T., Maude, G.H. The painful crises of Homozygous cell Diseases. A study of Risk Factors, *Arch intern. Med.*; 147:1231 –41, 1996

8. Harrison, K.A., Ajabor, LN, J.B Ethacrynic Acid packed – blood cell transfusion in treatment of severe Anaemia in pregnancy. Lancet 2000; 11-14.

OBSTETRIC CASE 15

HUMAN IMMUNODEFFICIENCY VIRUS INFECTION IN PREGNANCY-CAESERIAN SECTION DELIVERY

NAME : O.O
IP NO. : 0901958
AGE : 20 YEARS
D.O.A : 22/07/03
D.O.D : 28/07/03

PRESENTING ILLNESS

She was para O plus O admitted through the antenatal clinic for elective caeserian section.

HISTORY OF PRESENTING ILLNESS

She had attended antennal clinic from the 13th week of her pregnancy at Kenyatta university health servises. During routine antenatal profile tests, she was found to be HIV Positive. She was counseled on diet, personal hygiene, and methods of prevention of mother to child transmission (PMCT). She was referred to Kenyatta National Hospital at 28 weeks. Here further counseling was done and was followed up till delivery. She was started on AZT at 34 weeks and was advised on elective caeserian section to be done at 37 completed weeks.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was a primigravida. Her last menstrual period was 30.10.02 and her expected date of delivery was 6.08.03. Gestation by dates was 38 weeks. Her

menarche was at 14 years. Her cycles were regular occurring every 30 days and menses lasted for 4 days. She has never used any contraception. She had attended antenatal care at Kenyatta University from 13th week and Kenyatta National Hospital from 28 weeks.

ANC INVESTIGATION AND RESULTS

Hb : 13.4g%
Blood group : B Rhesus Positive
U/E : K^+ 3.77 mmol/l
Na^+ 136 mmol/l
Urea- 2.6 umol/l
ELISA for HIV: POSITIVE

PAST MEDICAL HISTORY

She had never been admitted before. She had never suffered from any major illness before.

FAMILY AND SOCIAL HISTORY

She was a student at Kenyatta University. She was single. The baby's father was someone she had a short-term relationship with but had now disowned her and her baby. She neither took alcohol nor smoked cigarettes. She had no family history of chronic illness.

EXAMINATION

She was in good general condition not pale, not jaundiced, was afebrile, had no edema and had no lymphadenopathy. Her temperature was $36.5^{0}C$ and her blood pressure was 120/80mmHg. Her pulse was 80/minute.

CARDIOVASCULAR, CENTRAL NERVOUS AND PRESPIRATORY SYSTEMS

These were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. The fundal height was term, lie was longitudinal, presentation was cephalic and head was 3/5 up. The fetal heart was heard and was regular at 140 beats per minute.

PLAN OF MANAGEMENT

She was informed and counseled on the need of operation. She gave a written consent. Blood was taken for grouping and gross matching. In the morning of the operation she was premedicated with atropine 0.6mg ½ hour before theatre and she took her morning dose of 300mg of AZT.

She was wheeled to theatre and a caesarian section was done after a pfannestiel skin incision. The outcome was a life female infant who weighed 2400grams and had an Apgar score of 8 in 1, 9 in 5 and 10 in 10.The uterus was stitched in three layers with good haemostasis. The skin was stitched with subcutaneous vicryl 3/0. The baby was seen by a pediatric resident and nevirapine drops was prescribed and given to the baby. The baby was admitted to newborn unit for one day.

POST OPERATIVELY

She did well and was started on oral sips on the first postoperative day. On the second day she was started on light diet and oral medications. She was counseled on baby feeding techniques using formula feeds. She did well post operatively. The wound was exposed in the third day and it was found to be clean and dry. She was discharged on the 4th postoperative day on amoxicillin 500 mg three times daily and ibuprofen 400mg three times daily for five days.

FOLLOW UP

She was seen six weeks postpartum and she was in fair general condition. The operation site was well healed. The baby was growing well and had adequate weight gain.

DISCUSSION

O.O was a 20-year-old primigravida with human immunodeficiency virus (HIV) infection in pregnancy diagnosed during the usual antenatal testing. She was started on AZT from 34 weeks gestation and underwent an elective caesarian section to minimize mother to child transmission (MTCT) at 38 weeks.

Human immunodeficiency virus (HIV) is an RNA retro virus. It enters the body as a free virus or as virus-infected cells. [1] There are two types of HIV virus identified. The most common HIV-1 and infects millions of people worldwide and is also more virulent. HIV-2 is confined to some parts of West Africa and runs an indolent course. Both HIV 1 and 2 progress to Acquired Immunodeficiency Deficiency Syndrome (AIDS). The HIV predominantly infects cells with CD4 antigen particularly T- helper lymphocytes, macrophages, cells of the central nervous system and the placenta. [2]

Patient O.O is among the more than 40 million people estimated to be infected with HIV, the AIDS causing virus. The world Health Organization estimated that in 1996, there were 27.9 million people infected with AIDS. It was then estimated that by the year 2000, AIDS would afflict 30-40 million people of whom 19 million would in sub Saharan Africa. [2, 3]In Kenya the overall prevalence of HIV is about 15% of the adult population.[4]

This was an adolescent girl who was relatively new in the university. A majority of young people like her are sexually active and are often involved in unsafe sex practices such as multiple sex partners and low use of condoms. This risky behaviour often results in unplanned pregnancies and sexually transmitted diseases such as HIV/AIDS. For this patient she became pregnant and may have also acquired the HIV from the same person. More often than not the girl is abandoned by the partner on learning of the pregnancy, as in this patient. Once

the mother to be is diagnosed to be infected with HIV, it becomes the duty of the medical personnel to assist her in counseling and PMCT. This prevention of mother to child transmission of HIV will help reduce the baby's chance of becoming another statistic of infection.

An estimated 600,000 children became infected with HIV 1 worldwide in 1997.
In Kenya in 1999, 10% of all reported AIDS cases in children were under 5 years of age and 90% of infection of children was due to MTCT.[5]
Further, about 100,000 children are infected by HIV annually due to MTCT.
Transmission can occur during pregnancy, labour, delivery and breastfeeding. Overall transmission rate is 30-45% with 10-20% in antenatal period, 35-50% during labour and delivery and 30-50% during breastfeeding.
The chances of MTCT is affected by various factors which include: Viral load, viral genotype and phenotype, advanced disease, HIV Infection acquired during pregnancy or breastfeeding period, viginal delivery, rupture of membranes for more than 4 hours, prematurity and breastfeeding. Those that have limited evidence include viral resistance, Vitamin A deficiency, anemia, sexually transmitted diseases, chorioamnionitis, frequent unprotected sexual intercourse, multiple sexual partners, smoking, injections, drug abuse, invasive procedures, episiotomy, antepartum haemorrhage, external cephalic version, and lesions of skin or mucous membranes.[6]
Factors known to reduce MTCT are elective caeserian section, non breast-feeding, and antiretroviral therapy.[5]

The patient O.O was tested in early pregnancy and knew her status early. The best time to screen a potential mother is and should be preconception period. Alternatively if this was not possible or was over looked, then testing should be done in early pregnancy. Therapeutic termination in early pregnancy can be offered as an option of management where the laws permit.

The laws of the country however do not permit termination of pregnancy on this basis.

In 1994, the paediatric AIDS clinical trials group protocol (PACTG) 076 demonstrated the efficacy of a three part regimen of zidovudine prophylaxis in reducing perinatal transmission of HIV From 25.5% to 8.3%. [7]
In the PACTG 076 study the use of zidovudine for both mother and baby and use of replacement feeds and avoidance of breastfeeding showed an efficacy of 68%. [7]

In the Thailand study where zidovudine was administered at 300mg orally bd from 36 weeks gestation and the 300mg 3 hourly intrapartum and no treatment for the infant and no breastfeeding showed a 50% efficacy. [8]
A study at Mulago hospital where nevirapine 200mg orally was given at the onset of labour and 2mg/kg to babies within 72 hours of birth or zidovudine 600mg orally to mother at onset of labour and 300mg every 3 hours until delivery, and 4mg /kg orally bd to babies for 7 days showed estimated risk of HIV-1 transmission at birth in zidovudine was 10.4%, in nevirapine was 8.2%. In this study the babies were breastfed.

In Kenya, the Thai regime is the most advocated. The patient presented here (O.O) started taking zidovudine from 34 weeks and was delivered at 38 weeks by elective caeserian section.

During antenatal care, the patient should have regular visits. Invasive procedures such as amniocentesis and chronic villous sampling were avoided. Manipulations such as external cephalic version should also be avoided.
The mothers should also be counseled on nutrition, risky behavior change, early treatment of infections and pregnancy complications, and alternative infant feeding regimes. These procedures and advices were followed for her(O.O).

Delivering this patient by caeserian section was done to minimize transmission of the infection to the baby. During labour and delivery practices are modified. Routine episiotomies should be avoided and routine rupture of membranes should be avoided as rupture of membranes for greater than 4 hours is associated with increased transmission. Elective caesarian section should be done when possible. [5,6]

The patient as presented here received AZT, and opted not to breastfeed.

O.O was counseled on barrier method and accepted to use it all the times.

Counseling on contraception should and was begin antenatally. A barrier method should be advocated highly of as it prevents transmission of the virus and *reinfection.*

REFERENCES

1. Adler M.W
   ABC of AIDS, 4th Ed.
   Br. J. Publishing gp. 1997.

2. Cunningham F.G. MacDonald PC, Leveno K.J et al
   Sexually Transmitted Diseases – AIDS. In: Williams Obstetrics 21st Ed.57: 1495-1513

3. Anthony D.H. Mahler D.
   TB/HIV A clinical manual WHO, Geneva, Switzerland, 1996

4. Epidemiological fact sheets on HIV/AIDS/STDS 2002 update: KENYA
   World Health Organization, UNAIDS, UNICEF, 2002.

5. Guidelines to antiretroviral drug therapy in Kenya. A ministry of Health: Republic of Kenya, February, 2001.

6. Nduati R, John G, Mbori -Ngacha D. et al March 2000.
   Effect of breast feeding and formula feeding on transmission of HIV 1: A randomized controlled trial. *JAMA* vol 283 No. 9 Pgs 1167-1174. 2000.

7. Connor E.M., Sperling R.S., Gelber R. et al
   Reduction of maternal infant transmission of HIV-1 with zidovudine treatment. *New Eng. J. Med.* 331:1173-80, 1994

8. Mofenson L.M.
   Commentary, short course zidovudine for prevention of perinatal infection. *Lancet*, 353:766.1999

OBSTETRIC LONG COMMENTARY

TITLE: MANAGEMENT OF LABOUR AND DELIVERY AT PUMWANI MATERNITY HOSPTIAL

SUMMARY

This hospital based prospective descriptive study was undertaken at Pumwani Maternity Hospital. It is the largest delivery facility in East and Central Africa with about 30000 deliveries annually.
The broad objective was to determine patterns of labour, the process of labour monitoring and delivery, and outcomes at Pumwani Maternity Hospital, Nairobi.

The specific objectives were to determine the sociodemographic characteristics, the use of partogram, the prevalence of intra partum complications, modes of delivery, and fetomaternal outcome.

The study population included all mothers who delivered in this facility during the study period and were willing to participate.

The information sought included socio-demographic characteristics, details of antenatal care, and previous obstetric history, details of labour and delivery and finally foetal and maternal outcome. Information was obtained from the patients' antenatal records and files, admission registers, ward notes, postnatal ward records, nursery records and files and also by interviewing the patients. Mothers interviewed were those who had delivered in the previous twenty-four hours.

The obtained data was entered into a pre-tested questionnaire, which was primarily closed ended. All the information collected was coded and entered into a computer. The data was then analysed using SPSS/PC+ software.
The study population was 1600. The majority of patients were young with those below 29 years accounting 86%. Also the majority of patients were married (85%), had some formal education (99%), and were of low parity (primigravida-50%).

Most patients had spontaneous labour (82.4%). The majority of patients were monitored and delivered by midwives (61.9%). The partograph was not used in the majority of patients (60.9%). The single commonest intrapartum complication was fetal distress (16.9%).

About 85.6% of patients delivered by spontaneous vertex delivery. The caesarian section rate was 12.9%. The commonest indication was fetal distress.

The early neonatal mortality rate was 53 per 1000 births.
Since nurses offer the majority of delivery services, improvement in care can achieved by continuous education and motivation of the nurses. There is an urgent need to improve the utilization of the partogram in managing labour.

INTRODUCTION

Labour may be defined as a co-ordinated effective sequence of involuntary uterine contractions that result in descent of the presenting part, effacement and dilatation of the cervix and voluntary bearing-down efforts leading to the expulsion per vagina of products of conception. Delivery is the mode of expulsion of the foetus and placenta. [1]

When a patient is admitted in labour she should be carefully examined to confirm labour and to identify significant abnormalities. The history of the onset of contractions, the presence or absence of bleeding, the possible loss of amniotic fluid, and the fetal heart tones and activity of the foetus should be recorded. A record of the prenatal care visits; examinations, laboratory reports and any treatment given should be reviewed if it is available. The review of recent events should include not only data regarding intercurrent infections or other illnesses but also the time of the patient's last meal.

Physical examination is then done and includes: vital signs, abdominal examination which includes fundal height, fetal presentation, lie, position and fetal heart rate, the frequency, length and intensity of contraction. If there are no contraindications to vaginal examination, it is done to ascertain the status of external genitalia, cervix, membranes, presenting part(s) and station of presenting part.

Based on all these information, the risk status of the patient is ascertained. Patients with high-risk pregnancy are given due attention and managed accordingly. However, labour surveillance is mandatory for all patients in labour. Patients who have had no prior antenatal care should have complete history taken and thorough, complete physical examination conducted. Blood counts, blood typing, Rhesus determination and urine testing are done.

It is recommended that labour be recorded on a partogram, which is a graphical representation of the progress of labour. Fetal heart rate is recorded half hourly, vaginal examination is done every four hours or as may be appropriate with cervical dilatation being plotted on a graph. Interventions in the process of labour will depend on the plottings of the graph if found that the values are outside the accepted range.

LITERATURE REVIEW

Antenatal care prepares the mother, the unborn child and the family for optimum labour and delivery outcome. Access by all pregnant women to prenatal care, trained attendants during child birth and referral facilities for high risk pregnancies and obstetric emergency should be a target for all countries of the world.[2]

Antenatal care is now universally accepted as an essential part of obstetric care, which has played an important role in the tremendous decrease in maternal and perinatal morbidity and mortality in developed countries.[3] In many developing countries, complications of pregnancy and childbirth are the leading causes of death among women of reproductive age. More than one woman dies every minute from such causes; 585,000 women die every year. Less than one percent of these deaths occur in developed countries demonstrating that they could be avoided if resources and services were available.[4]

In addition to maternal deaths, women experience more than 50 million maternal health problems annually.[5] As many as 300 million women – more than one-quarter of all adult women living in the developing world – currently suffer from short- or long-term illnesses and injuries related to pregnancy and childbirth.[6] Women risk death and disability each time they become pregnant. Women in developing countries face these risks more often, since they bear many more children than in developed countries.[4]

The maternal mortality rate, MMR, which measures their risk of dying from a given pregnancy is highest in Africa with community rates of up to 1000 per 100, 000 live births reported in some rural areas. The estimated rates per 100,000 lives for the rest of African sub-regions are reported to be 500 in Northern Africa, 690 in Central Africa, 570 in Southern Africa and an overall rate of 640.[7] Studies done in Kenya have reported the MMR as 190 per 100,000 live births in Thika[8];

271 per 100,000 in Kakamega, Kirinyaga and Kilifi districts between 1989 and 1991.[9]

The Kenyan maternal mortality ratio is estimated to be 590 maternal deaths per100, 000 live births, applicable to the period1989-1998.[47]

Each year, almost 8 million stillbirths and early neonatal deaths (deaths within one week of birth) occur. These deaths are caused by the same factors that lead to maternal death and disability – women's poor health during pregnancy, inadequate care during delivery and lack of newborn care.[10] At least 40% of women experience complications during pregnancy, childbirth and the period after delivery. An estimated 15% of these women develop potentially life-threatening problems. Long-term complications can include chronic pain, impaired mobility, damage to the reproductive system and infertility. Most maternal complications and deaths occur either during or shortly after delivery. Yet many women do not receive the essential health care they need during this periods.[10, 11]

The percentage of women who seek antenatal care at least once is 63% in Africa, 65% in Asia, and 73% in Latin America and Caribbean. At the country level, however, use of such services can be extremely low. In Nepal, for example, only 15% of women receive antenatal care.[10] According to the Nairobi birth survey, 96.4% of women attended antenatal care at least once, the majority (74.4%) being looked after at health centre level.[12] The Kenya Demographic and Health Survey (1998) found that for 92% births, mothers received antenatal care from a doctor or a trained nurse or midwife. Women received antenatal care from traditional birth attendants (TBAs) for only 2% of births and no antenatal care at all for 6% births. Forty two percent of births in the last 3 years (prior to 1998) were delivered in health facilities.[13] The Nairobi birth survey III, showed that almost all births in Nairobi take place within an institution, nearly 60% of them occurring at Pumwani maternity hospital. The trained midwives as well as trainee midwives conducted approximately 80% of

the deliveries and this means that their performance profoundly influences the outcome of labour in Nairobi.[14]

For many years, the World Health Organization (WHO) was an active proponent of the "risk approach" aimed at channelling limited resources more effectively towards the women most likely to have serious complications. However, it has been realized that only a few commonly used antenatal interventions improves maternal health and few still have an impact on maternal mortality. Currently, preventive intervention has been shown to be effective in terms of prevention of pregnancy rather than preventing its complications. Hence the safe motherhood initiative has replaced the high-risk approach. It aims at provision of a comprehensive and integrated system of reproductive heath care. It integrates quality antenatal care for all women, provision of effective and safe family planning (FP) services, provision of safe termination of pregnancy where abortion is legal and treatment of abortion related complications. It integrates the prevention of other causes of maternal death such as haemorrhage, sepsis, eclampsia, labour, embolism and ectopic pregnancy.[15] In Kenya, this has led to the initiation of the national reproductive health strategy whose aim is to integrate all the above.[16]

Many studies have been done to evaluate causes of poor maternal outcome. In a study on ruptured uterus done on 82 patients, it was found that 71.9% were either not booked or were booked in other places other than Kenyatta National Hospital.[17] In Dar-es-Salaam, the main causes of maternal mortality were identified as hypertensive disease in pregnancy, complications of operative delivery, anaemia, sepsis, and postpartum haemorrhage. These were avoidable with quality antenatal care and delivery.[18] In Cameroon, a study done in 1989 showed a maternal mortality of 2.8/1000 live births and it was felt that most of these deaths (95.2%) could have been avoided. Some factors that were thought to have contributed to these mortalities included late presentation for antenatal

care or intrapartum care, inadequate therapy, lack of materials and supplies in referring units as well as poor communication, and lack of transport.[19]

In Kenyatta national hospital, it has been shown that despite the fact that over 97.3% of all emergency referrals having attended antenatal clinic elsewhere, the perinatal mortality among this group stands at three times that of the booked patients.[20] In another study, it was found that 6.9% of all deliveries in 1990 were emergency referrals from health centres, dispensaries, and nursing homes in Nairobi, as well as referrals from district and provincial hospitals. In this study, the perinatal mortality was found to be ten times that of the booked patients. The maternal outcome was equally poor. These poor outcomes were attributable to delays in arrival to the hospital and delays in decision-making as well as poor transport.[21]

At Nazareth Mission hospital in Kiambu district, it was found that mothers who had attended antenatal care in that hospital had a better perinatal outcome. It was also noted that a complication in pregnancy significantly contributed to poor perinatal outcome with hypertension playing a leading role followed by prolonged first and second stages of labour.[22]

Age too is important in determining obstetric outcome, with extremes of age having poor outcome. In a study on pregnancy outcome in teenagers at Kenyatta national hospital, it was found that antenatal care attendance was low (24% had no attendance at all), delivery was associated with a higher caesarean rate (28.1%) with obstructed labour being the principal cause followed by eclampsia. It was also seen that babies born to these mothers had a higher low birth weight and a higher perinatal mortality.[23]

Perinatal mortality, like maternal mortality is a good measure of quality antenatal and obstetric care. Several factors have been shown to influence the perinatal mortality rate. In the Nairobi birth survey, the early perinatal mortality rate was found to be 35.6/1000 live births.[24] In this survey, the factors shown to have

contributed to this high perinatal mortality included age (with teenage mother highest), failure to book at place of delivery, short stature (<150cm), mode of delivery (with breech being associated with highest), and duration of labour. A study done at Mulago special baby care unit showed that perinatal mortality and morbidity varies with the degree of care during pregnancy, labour, delivery as well as postnatally.[25]

In Kenya, monitoring labour is done using a partograph that gives a quick pictorial representation of labour. In a study done at Nazareth, it was found that the adequacy of labour monitoring was 90.3%. [26] In a study to evaluate the usefulness of a partogram at Moi Teaching and Referral Hospital, it was found that the complications of labour were reduced by the use of a partogram from 9.4% to 4.8%. Fetal distress was reduced from 11.3% to 6.5% and complications of cephalo- pelvic disproportion (such as obstructed labour) from 12.1% to 5.0%. Prolonged labour was decreased from 12.7% to 6.5% and postpartum haemorrhage from 8.5% to 4.2%. Fetal outcome was also more favourable with the use of a partograph.[27]

The high morbidity and mortality associated with pregnancy needs to be addressed. The1994 international conference on population and development addressed this issue in paragraph 8.22 and 8.23: All countries, with the support of all sections of the international community, must expand the provision of maternal health services in the context of primary health care. These services, based on the concept of informed choice, should include education on safe motherhood, prenatal care that is focused and effective maternal nutrition programmes, adequate delivery assistance that avoids excessive recourse to caesarean sections and provides for obstetric emergencies; referral services for pregnancy, childbirth and abortion complications; postnatal care and family planning. All births should be assisted by trained persons, preferably nurses and midwifes, but at least trained birth attendants. The underlying causes of

maternal morbidity and mortality should be identified, and attention should be given to the development of strategies to overcome them and for adequate evaluation and monitoring mechanisms to asses the progress being made in reducing maternal mortality and morbidity and to enhance the effectiveness of ongoing programmes. Programmes and education to engage men's support for maternal health and safe motherhood should be developed. All countries, especially developing countries, with the support of the international community, should aim at further reductions in maternal mortality through measures to prevent, detect and manage high-risk pregnancy and births, particularly those to adolescents and late parity women.[28]

Safe motherhood cannot be concluded without mention of challenges caused by emergence of human immunodeficiency virus (HIV)/AIDS. HIV tests should be fully incorporated into antenatal care.[29] This is because there are measures now to help in reducing mother to child transmission.

Preventing maternal death and disability and ensuring the survival of the new born is not only a health issue – it is also a moral issue underpinned by guiding principles of human rights, social responsibility, participation and equity.

RATIONALE

Pumwani Maternity Hospital is the largest maternity hospital within Nairobi city. It caters mainly for the less endowed economically in Nairobi. According to the Nairobi birth survey III, 58.8% of all deliveries in Nairobi took place in this facility. This study will investigate issues such as the current general trends in the rates of modes of delivery, and causes of poor outcomes.

Studies on all aspects that determine the general trends of the birth processes where last done in the early 1980's in the Nairobi Birth Survey.

The partogram was introduced to Pumwani Maternity Hospital in May 2001 and since then the staffs have been involved in in-house training on its use. This study was therefore to evaluate the effectiveness and the utilisation of the partogram the hospital.

OBJECTIVES

Broad objectives

To describe the sociodemographic characteristics, the frequency of use of a partogram in labour monitoring, modes of delivery and feto-maternal outcome at Pumwani Maternity Hospital.

Specific objectives

1. To describe the sociodemographic characteristics of patients delivering at Pumwani Maternity Hospital.
2. To describe the frequency of use partogram in monitoring labour in Pumwani maternity hospital.
3. To describe the prevalence of intrapartum complications.
4. To describe the rates of modes of delivery.
5. To describe the maternal outcome.
6. To describe the fetal outcome.

STUDY DESIGN

This was a prospective cross-sectional study.

The study was carried out from first of June 2003 to 30th June 2003.

STUDY AREA

The study was done at Pumwani maternity hospital, Nairobi. The hospital is run by the Nairobi city council and it provides low cost maternity services. Approximately 25,000 to 30,000 patients are delivered in this hospital annually. [30] It is managed by a hospital management board. A medical superintendent runs its day-to-day duties. The other staffs include 6 consultant obstetrician/gynaecologists, 8 medical officers employed by Nairobi city council,

and about 15 medical officers who work on locum basis. The nursing staffs include qualified midwives and also trainee nurses undergoing mid wifery training.

Only patients receiving antenatal care from at the city council clinics may deliver at this hospital. None booked patients are referred to KNH unless they are in second stage or too close to it.

STUDY POPULATION

Mothers who deliver in Pumwani during the study period.

a) Inclusion criteria
   - Mothers who deliver during the study period
   - Mothers willing to participate in the study
   - Singletons or multiple pregnancies
   - Any modes of delivery (e.g. vaginal or caesarean section)

b) Exclusion criteria
   - Mothers who deliver before arrival/ babies born before arrival (BBA)
   - Mothers not willing to participate
   - Mothers who are too sick to participate in the study
   - Mothers whose gestation is less than 20 weeks

SAMPLE SIZE

To determine the sample to 99% confidence limits, the following formula was used:

$$n = \frac{Z^2 \times P(1-P)}{d^2}$$

Where:

n = desired sample size

z = standard errors from mean; here taken as 1.96 for a 99%confidence limits)

p= prevalence (here taken as 8% i.e. the induction rates found at both The Aga Khan Hospital and Nazareth Mission Hospital.)[26,33]

d = level of precision. (0.01)

$$n = \frac{(1.96)^2 \times 0.92\,(1-0.92)}{(0.01)^2}$$

$$= 1200$$

However this was increased to 1600.

The sample size was increased in the cause of the study because originally the study had been designed to take one month, however due to the high turnover of patients, the sample size was reached in three weeks. It was therefore decided that the sample sized be increased to 1600 to cater for the extra week. This was also hoped to increase the chance of inclusions more conditions and situations in the study, thus increasing the power.

SAMPLING FRAME

Sampling involved recruitment of consecutive willing patient as per the admission register. For mothers not willing to participate, the next patient was chosen.

STUDY INSTRUMENTS

The study instruments comprised a pretested questionnaire that was completed.

PRE TESTING THE QUESTIONNAIRE:

Prior to the initiation of the study, pretesting of the questionnaire was carried out in the obstetric ward at Kenyatta National Hospital. This was done on twenty

subjects who satisfied the same criteria as required for the study population. Difficulties encountered in the administration of the questionnaire at this stage were then rectified.

DATA COLLECTION

The study was conducted by the principal investigator under the guidance of two supervisors from the Department of Obstetrics and Gynaecology of the University of Nairobi.

The investigator was directly involved in collecting data during the study period with the assistance of tree other persons. These included two nurses who work in this facility and one clerical officer also based here.

They (data collectors) underwent a two-hour induction course of how to administer the questionnaire with practical demonstration during the pretesting phase. Patients were interviewed after delivery principally in the postnatal ward. Prior to the interview the patients were asked give a written informed consent.

The information on antenatal care was obtained from the antenatal card and part from patient; information about labour was obtained from the patient's notes and other information obtained from labour ward record books, nursery and baby notes, and even mortuary and post mortem notes.

The study was done from 1st of June to 30th of June 2003. The new patients were identified every morning in the admission registers and labour ward register and traced the the admitting ward. The patients were then informed individually of the purpose of the study. All their concerns were addressed. They then gave a written consent to be included in the study. This interviews were conducted by the principal investigator with the two nurses and a clerk who assisted in identifying the patients from the registers. Patients who were not willing or too sick to give consent were excluded.

DATA MANAGEMENT

The collected information was kept in safe custody by the principal investigator. Data was coded and entered into a microcomputer using SPSS/PC+ and analysed using data editor programme. Analysis involved descriptive statistics like frequencies, means, and standards deviations, etc. Coding, data entry and analysis was done with the assistance of a bio -statistician.

ETHICAL CONSIDERATIONS

1. Permission to carry out the study was sought and obtained from the Ethical Committee of Kenyatta National Hospital and the ethical committee of Pumwani Maternity Hospital.
2. All information obtained from the study was treated with utmost confidentiality and was used for the intended purposes only.
3. The results obtained from the study may not be used to form an inquiry into the hospital. Information obtained was used purely for health improvements and academic purposes. No person will be incriminated for any of the information obtained.
4. Necessary feedback will be availed to the study area on request from the principal investigator.
5. A written informed consent was obtained from the patients.
6. No inducements were offered to any patient for accepting to participate in the study; and neither were services denied for refusal to participate.
7. The principal investigator assisted in managing patients during the study period.

LIMITATION OF THE STUDY

Patient's antenatal records were sometimes unavailable giving inadequate antenatal care information. Patient's notes were sometimes incomplete with procedures done but not recorded introducing errors. Some information from the patients depended on recall hence some recall bias.

Some important incidence may have been missed as some patient may not have been entered into the registers.

Patients who were too sick or unwilling to give consent may have had subsequent adverse outcome which were missed in the study.

DEFINITIONS /EXPLANATIONS OF SOME KEY WORDS

1. Quality health care and quality labour monitoring:

There is no single definition or measurement of quality but there are fundamental elements that are generally accepted as essential. [31]

Quality health care means doing the right thing, at the right time, in the right way, for the right person, and having the best possible results.[31]

Quality labour monitoring means monitoring labour at the right time, in the right way, for the right person, and having the best possible results. There are two types of quality health measures: consumer ratings and clinical performance measures, both being based on "outcome research" which measures the end results of health practices and treatments. [31]

Quality of care also refers to the overall safety, effectiveness, and appropriateness of health care.

2. Induction of labour

Induction of labour indicates initiation of labour with oxytocin with or without artificial rupture of membranes.[1]

3. Intrapartum complications of labour:

These are complications that occur during labour. They include abnormal patterns of labour, antepartum haemorrhage, and abnormalities of the placenta, cephalopelvic disproportion, and fetal compromise among others. [32]

4. Questionnaire answering /scoring criteria:

a) Score 0- answer for where event has never occurred, or complaint not detected
   - Where, for one reason or another, no management was instituted.

b) Score1- stands for yes, i.e. where event occurred.

-Where management was attempted, but not according to standard, not properly, and not according to protocol.

c) Score 2- Management of the complication was to the expected standard and according to protocol /accepted standards.

RESULTS

1. Sociodemographic characteristics (from the patient and file notes)

Table 1.

Age		Frequency	Percent
	Upto 14 years	1	.1
	15 - 19 years	310	19.4
	20 - 24 years	705	44.1
	25 - 29 years	360	22.5
	30 - 34 years	179	11.2
	35 - 39 years	40	2.5
	40 and above years	5	.3
	Total	1600	100.0
	Education level		
	None	30	1.9
	Primary	943	58.9
	Secondary	614	38.4
	College	13	.8
	Total	1600	100.0
	Marital status		
	Single	242	15.1
	Married	1357	84.8
	Widowed	1	.1
	Total	1600	100.0
Parity			
	0	793	49.6
	1	436	27.3
	2	213	13.3
	3	99	6.2
	4	40	2.5
	5&above	19	1.2
	Total	1600	100.0

A total of1600 patients were recruited into the study. The tables above describe their sociodemographic characteristics.

Most of the patients were young with those below 29 years being majority accounting for 86% of this population. The ages ranged from 14 t0 45 years. The mean age was 23.6 +/-4.8 years (1SD).

The majority of patients (58.9%)were educated up to primary level while 38.4% had secondary level of education.

The majority of patients (85%) were married; those who were single were 15%.

Their parity ranged from 0-9 with the mean being 0.89. About 50 % of patients were primigravidae while those who were para 1 were 436 (27.3%).

2.Antenatal care

(from patients antenatal card)

Table 2.1

Number of antenatal visits

Number	Frequency	Percent	Cumulative Percent
0 - 2 visits	232	14.5	14.5
3 - 4 visits	581	36.3	50.8
5 - 6 visits	486	30.4	81.2
7 - 8 visits	197	12.3	93.5
9 - 10 visits	84	5.3	98.8
11 - 12 visits	15	.9	99.7
13 - 14 visits	5	.3	100.0
Total	1600	100.0	

Table 2.2

Time of first antenatal visit (weeks)

Time of first visit	Frequency	Percent	Cumulative Percent
No visits	15	.9	.9
1 - 10	3	.2	1.1
11 - 15	10	.6	1.8
16 - 20	379	23.7	25.4
21 - 25	340	21.3	46.7
26 - 30	655	40.9	87.6
31 - 35	137	8.6	96.2
36 - 40	60	3.8	99.9
41 and above	1	.1	100.0
Total	1600	100.0	

About 50% of patients attended antenatal care between 1 and 4 times. The majority of patients (66.7%) attended between 3 and 7 times.

The mean attendance was 4.89 +/-2.3 (1SD) times.

Most patients started ANC in late second and early third trimester with the mean starting time being 25.7 +/-5.6 (1SD) weeks.

Those who never attended antenatal clinic (0.9%) came in second stage and could not be referred to KNH.

3..Admission status

(from patient and patient file)

Table 3.1

Primary reason for referral to Pumwani maternity hospital

	Frequency	Percent
Not known	11	23.9
Prolonged labour	4	8.7
Hypertensive disorders	3	6.5
Haemorrhage	3	6.5
Fetal distress	12	26.0
Previous scar	6	13.0
Other	7	15.4
Total	46	100.0

These were patients referred from Nairobi city council health centers and clinics were they had gone to deliver. Most (26%) were referred due to fetal distress.

Table 3.2

Estimated duration of pregnancy at admission (weeks)

Gestation	Frequency	Percent
24-32	24	1.5
33-36	163	10.2
37-42	1369	85.5
Above 43	44	2.8
Total	1600	100.0

Most patients (85.5%) were term. The range of gestation was 24 to 44 weeks with a mean of 39+/-2.14 weeks (1 SD).

Table 3.3

Stage of labour at admission

Dilatation in cm	Frequency	Percent
Not in labour	86	5.4
Latent phase of labour	578	36.1
Active phase of labour	911	56.9
Second stage	99	6.2
Undetermined (no V.E)	25	1.6
Total	1600	100.0

Most (56.9%) patients admitted were in active labour. The average cervical dilatation was 4.19+/-2.5 cm (1SD). Those in second stage were 6.2 % of patients came in second stage.

4. Labour monitoring

(from patients notes)

Table 4.1

Type of onset of labour (from the patient and patient file notes)

Type	Frequency	Percent
No labour	37	2.3
Spontaneous only	1319	82.4
Spontaneous, augmented ARM/syntocinon	179	11.2
Induced - prostaglandins only	30	1.9
Induced - ARM, syntocinon only	5	.3
Induced - prostaglandins, ARM/syntocinon	28	1.8
Other (use of catheter)	2	.1
Total	1600	100.0

The majority (82.8%) of patients had spontaneous labour. About 11.2% had spontaneous labour followed by augmentation with oxytoxin. The patients induced were 4.1%.

Table 4.2

Primary/ first caregiver monitoring labour/patient (from the patient and file notes)

Personnel	Frequency	Percent
None	11	.7
Nurse/midwife	991	61.9
Medical or nursing student	572	35.8
Medical officer/resident	9	.6
Obstetrician/	17	1.1
Total	1600	100.0

Most patients (61.9%) were taken care of by a nurse / midwife. Nursing/medical students took care of 35.8% of patients.

Table 4.3

Utilization of the partogram against fetal outcome (frompatients file notes)

Utilization	No death	Fresh stillbirth	Macerated stillbirth	Died immediately	Died within 24hrs	Total no	(%)
Not used	950 (58.1)	5 (0.3)	9 (0.55)	11 (0.67)	15 (0.9)	999	(61)
Partial use	526 (32.2)	10 (0.6)	8 (0.5)	5 (0.3)	9 (0.55)	560	(34.2)
Full use	71 (4.3)	2 (0.1)	2 (0.01)	1 (0.06)	0 (0.0)	76	(4.6)
Total	1549 (94.7)	17 (1.0)	19 (1.2)	24 (1.5)	24 (1.5)	1635	(100)

X^2=20 p=0.002

Bracketed()=percentages

In about 61% of patients, no patograph was ever filled or used. In 34.2%, the partogram was partly filled and only in 4.6% was it fully filled.

There was a statistically significant association between the use of a partogram and neonatal outcome (p=0.002).

Table 4.4

Maternal vital signs monitoring

	Frequency	Percent
No/not done	157	9.8
Partially /inconsistently	1362	85.1
Observations done correctly/fully	81	5.1
Total	1600	100.0

Maternal vital signs were partially observed in 85.1% of patients. There were no maternal observations in 9.8% of patients. Full observations were taken in 5.1% of patients. The most common observation taken was blood pressure, which was taken in at least 90.2% of patients.

Table 4.5

Fetal monitoring

	Frequency	Percent
No/not done	23	1.4
Partial observations	1342	83.9
Observations done correctly /fully	93	5.8
Total	1458	91.1
Others	142	8.9
Total	1600	100.0

Fetal monitoring was complete in5.8% of cases, while it was partial or incomplete in 83.9% of cases. About 8.9% of patients (referred to as others) were not observed as they came in second stage, had intrauterine fetal death, or were taken to theatre immediately among others.

Table 4.6

Cervical dilatation

	Frequency	Percent
No/not done	46	2.9
Observations done incorrectly	1331	83.2
Observations done correctly	81	5.1
Subtotal	1458	91.1
Others (no V.E)	142	8.9
Total	1600	100.0

The majority of patients (83.2%) had inconsistent observations. Full observations were taken in only 5.1% of patients.

Table 4.7

Duration of labour

Length of labour	Frequency	Percent
First stage (hours)		
0-12	1061	73.3
13-18	321	22.0
19-24	60	4.1
25 and above	6	0.6
Total	1448	100.0
Second stage (minutes)		
0-60	1378	98.7
61-120	16	1.1
Above120	4	0.2
Total	1396	100.0

Most patients (73.3%) had first stage of labour lasting 12 hours or less. The range was 2 hours to 44 hours, with a mean of 10.47 +/-4.3 hours (1SD).

The majority of patients had second stage of labour lasting less than 60 minutes. The range was 2 to 420 minutes (7hours). Only 0.2% of patients had labour lasting more than two hours. The mean duration was 24+/-20.6 minutes (1SD).

Table 4.8

Intrapartum complications of labour

Complication	Frequency	Percent of responses
Antepartum (undetermined) haemorrhage	50	8.8
Abruptio placenta	6	1.0
Placenta praevia	6	1.0
Ruptured uterus	5	0.9
Poor contractions	90	15.8
CPD	87	15.3
Prolonged labour >=18 hours	84	14.8
Hypertensive disorders	55	9.6
Cord prolapse	20	3.5
Fetal distress	157	27.6
Anemia	8	1.4
Complications of anesthesia	1	0.3
Total	569	100.0

N=513

Those who suffered no complication=1087

Total =1600

There were 513 patients with various complications. Some patients had more than 1 complication hence the responses were 569. About 27% of complications were fetal distress, 14.8% were prolonged labour, 15.3 % were cephalopelvic disproportion and 15.8 % were due to poor contractions.

5. DELIVERY

(from patient and files)

Table 5.1

Care-giver at delivery

Attendant	Frequency	Percent
None	14	0.7
Medical/nursing student	514	25.0
Nurse/midwife	1250	60.7
Medical officers	238	11.6
Obstetricians	29	1.4
Others	13	0.6
Total	2058	100.0

N=1600

There was more than one attendant during delivery in some case. Nurse-midwife delivered patients in 60.7% of the time. Medical and nursing students delivered patients in about one quarter of the time. There were 14 (0.7%) who were not assisted during delivery.

Table 5.2

Procedure used at delivery

Procedure	Frequency	Percent
No intervention/spontaneous	1407	88.0
Vacuum assisted	4	0.2
Breech spontaneous	11	0.7
Breech assisted	31	1.9
Breech extraction	7	0.4
Caeserian section, emergency	178	11.1
Caeserian section, elective	26	1.6
Caeserian section plus hysterectomy	2	0.1
Episiotomies	296	18.5
Total	1962	100.0

N=1600

About 85.6 % of patients had spontaneous vertex deliveries. Another 3% had breech vaginal deliveries.

The caesarian sections rate was 12.8%.

About 18.5 % of patients were given episiotomies. Of these 82% were primigravidae.

Table 5.3

Indication for caeserian section

	Frequency	Percent
CPD	40	19.4
Fetal distress	60	29.1
Hypertensive D. of pregnancy	5	2.4
1 previous scar	30	14.6
2 previous scars	27	13.1
Breech	20	9.7
Malpositions	6	2.9
Antepartum haemorrhage	5	2.4
Others	13	6.4
Total (N)	206	100

N=206

Fetal distress was the commonest indication (29.1%), followed by previous scars (27.7%), and then cephalopelvic disproportion (19.4%).

Delays in caeserian section

(from patients file, labour ward registers and theatre register)

Table 5.4

Length of waiting from decision making to surgery against the immediate neonatal outcome

Time(hr)	No death	FSB	MSB	Immediate death	Within 24 hours	Total
0-2	64	3	0	0	1	58(28%)
3-5	70	2	0	2	1	75(36.4%)
6-10	50	2	0	0	1	53(28.7%)
10-30	10	0	1	0	0	11(5.3%)
Total	194	7	1	2	3	206(100%)

$X^2 = 32$ p=0.0001

Among the patients done caeserian section, the waiting period was 0 to 30 hours. Those patients considered to have had a reasonable time (less than 2 hours) of waiting before surgery was about 33%. Another 33% of patients waited for more than six hours.

There was a strong association between length of waiting and fetal outcome (p value=0.0001).

6. Maternal outcome

(from patient and patient's file)

Table 6.1

Postpartum maternal outcome

	Frequency	% Of responses
No complication	1181	73.4
Perineal trauma/tears	405	25.2
Retained placenta	4	0.2
Postpartum haemorrhage	14	0.9
Other	5	0.3
Maternal death	0	0.0
Total responses	1609	100

N=419 (1181(73.4%) had no complication)

Some patients have more than one complication.

There were 405 (25.2 %) patients with perineal trauma. Those who had retained placenta more or less had postpartum haemorrhage. The postpartum haemorrhage rate was 1.1 %.

There were no maternal deaths recorded in the study. This was possible because patients who were too sick could not give consent or some patients being unwilling to participate.

Table 6.2

Maternal complications against the use of a partogram

Complications	Use of partograph			Total	
	Not used	Partial use	Used fully	No	%
None	710(44.1)	413(25.8)	59(3.7)	1182	73.4
Perineal trauma/tears	258(16)	130(8.1)	16(1.0)	404	25.1
Retained placenta	2(0.1)	2(0.10)	0	4	0.3
Postpartum haemorrhage	10(0.6)	4(0.3)	0	14	0.8
Other	1(0.06)	4(0.3)	0	5	0.31
Total	974(60.6)	553(34.4)	75(4.7)	1609	100

N=1600

Bracket =percent

There were 73.4% of patients with no complications. Patients who had perineal injuries were 25.1% ,where in 16% there was no partogram used at all, but used partially in 8%.

7.Fetal outcome

(from babies notes, mothers file and nursery notes and records)

Table 7.1

Birth weight (gms) singleton

Weight	Frequency	Number
600-1500	20	1.3
1501-2500	131	8.4
2501-4000	1352	86.6
Above 4001	62	3.9
Total	1565	100

About 86.6 % of babies were of normal weight. Babies who were above 4000 gm were 3.9%.

Table 7.2

Birth weight of the twins.

Weight	Frequency	Percent
1000-1500	9	12.8
1501-2000	17	24.3
2001-2500	23	32.9
2501-3500	21	30.0
Total	70	100.0

The rate of twinning was 2.2%(1 in 45).

About 37.1 % of the twins weigh less than 2000 gms.

Table 7.3

Apgar score at 5 minutes for singletons

Apgar score	Frequency	Percent
0	35	2.2
1-4	57	3.6
5-7	94	6.0
8-10	1259	80.4
Total	1565	100

About 80 % of neonates had Apgar score of 8 and above. There were 35 (2.2%) babies born dead.

Table 7.4

Apgar score at 5 minutes for twins

Apgar score	Frequency	Number
0	1	1.4
1-4	4	5.7
5-7	18	25.7
8-10	47	67.2
Total	70	100.0

The Apgar score was more than 8 in majority of the babies (67.2 %).

There was 1(1.4%) one baby born dead.

Table 7.5

Fetal outcome

	Frequency	Percent
Completely healthy	1249	74.4
Respiratory distress	283	16.9
Premature	57	3.5
Malformations	18	1.1
Trauma	40	2.3
Stillbirths	36	1.8
Total	1684	100
Admitted to NBU	430	26.3

N=378

A total of 378 babies had various complications. Some had more than one complication. Those admitted to newborn were 430 (26.3%).

There were 283 (16.9 %) cases of respiratory distress.

The principal reason for admission to new born was respiratory distress. Other reasons included prematurity, malformations, and trauma.

Some babies were admitted to new born to await mother's recovery from caeserian section.

Distribution of early neonatal Mortality

Table 7.6

Distribution of the outcome of delivery and types of early neonatal mortality.

Outcome	Frequency	Percent
No death	1549	94.7
Fresh stillbirth	27	1.6
Macerated stillbirth	18	1.2
Died immediately after birth	17	1.1
Died with 24 hours	24	1.5
Total	1635	100.0

There were 1549 (94.7%) babies alive within the first 24 hours of this study. Early neonatal mortality rate was 53 per 1000 births. The fresh stillbirth rate was 16.5 per 1000.

DISCUSSION.

This study involved 1600 mothers delivering at Pumwani Maternity hospital. The obstetric population in this study was young with 63.5% of them being between 20 and 24 years, 19.4% were teenagers, and 14% were above 30 years. These correspondents to the findings of the Nairobi birth survey [34] were those between 20 and 24 years were the majority accounting for 39.3%, teenagers were 18.4% and 83.1% were below 30 years, and 17% were above 30 years. In Machakos it was found that the obstetric population was young with 54 % of them being below 25 years and teenagers were 14 % [42]. On the other hand, the British birth survey [3] was slightly different, age wise, from this population. In the British birth survey, teenagers were less by half at 9.8%, those above 30 years were more at 23.6% but the total mothers delivering by age 29 were similar at 75.8%.

This study finding also corresponds, with slight differences, to a study done at Nazareth Mission Hospital. [26] In that study teenagers were far few at 4.6%, whereas those below 30 years were 75.6% corresponding to this study findings. The higher teenage population in this study is a cause of worry as this group represents persons with lost opportunities in career choice and development and they tend tent to have poor obstetric outcome as seen in Machakos.[48]

About 59% had primary level of education and only 19% had no formal education, while 38.4% had secondary school education. This contrast with the Nairobi population findings of the Nairobi birth survey were 12% had no formal education, and only 10% had completed secondary education .[34]

Nearly 85% of patients were married and only about 15% were single. The Nairobi birth survey had similar findings, where 15% of patients were single.[34] In the study at Nazareth Mission Hospital, single patients were nearly 11%, which is in the same magnitude as these study findings.

Primigravida were close to 50%, which corresponds to the young age in this population. Those who were between para 1 and 3 were 46.8%. Only 1.2% of

patients had 5 or more children. This defers slightly from both the Nairobi birth survey [34] and the British birth survey.[3] In the Nairobi study 25.7% and in the British study 35% were primigravidae. Those between para 1 and three were 51.3% in Nairobi and 57.4% in Britain, and these were almost similar to the findings in this study.[3, 26,34]

Over 99% of mothers attended antenatal clinic at least once. Those attending between 3 and 6 times were 66.7%. Most patients started attending antenatal care late in the second trimester and early third trimester. These findings are corresponding to the Nairobi birth survey II where 96.4% of women attended antenatal services at least once. [12] Similarly in the Nairobi birth survey, most patients attended ANC at health center level. In 1993,there was an ANC attendance of 95% and in 1998 it was 96% in Kenya. [13]

In most patients, labour was spontaneous (93.6%). Those induced were 4.0%, while those who had spontaneous labour were augmented were 11.2%. These findings correspond to the findings of Nairobi birth survey III, but contrast to the British birth survey.[3, 14] In Nairobi, it was found that 94.3% of labour was spontaneous while in Britain was 72%. The induction rate in Nairobi was low at 5.7% while in Britain it was 26% contrarily augmentation rate in Britain was much lower at 1.1% while in Nairobi it was 16.3%. The low levels of augmentation could imply more efficient uterine contractions or lack of active management, the latter being more likely.

The majority of patients were monitored by nurses in 61.9% of cases and delivered by them in 60.7% of cases. Medical students and Nursing students supervised labour in 35.8%, and delivered 25% of patients. Medical officers were primary labour attendants in 0.6% of patients, but were second attendants in 25.2% of cases and delivered 11.6% of patients. The Obstetric specialists supervised 1.1% of patients and delivered 1.4 % of them. Most patients seen

and delivered by specialists were those being prepared and delivered by elective surgery. This affirms that nurses and midwives play a major role in management of labour and delivery as seen in previous studies [26,35] and the fact that their roles needs more recognition and motivation. Further, any attempts at improving quality of care requires improving the quality of training of nurses and midwives. The utilization of the partograph in monitoring labour in this unit was poor; to say the least, with none use in 60.9% of patients. A few parameters were filled in 34.4% and only 4.7% of cases were the partographs fully utilized. The use of the partogram had a statistically significant association with neonatal outcome. The partograph has been in use since early 1970s to detect labour that is not progressing normally, to augment delays and to recognize complications early. It serves as an 'early warning system' and assist in early decisions on transfers, augmentation and termination of labour. It has also been shown to help prevent prolonged labour, reducing operative deliveries and improve neonatal outcomes [27]. Recent studies such as the Nazareth study have shown that the center has better utilization of a partograph at about 90% hence fewer complications. [26]

The low use of a partograph in this study is a cause to worry and the nursing staff needs to be encouraged and trained on the importance of the partogram in monitoring labour.

Maternal monitoring, fetal monitoring, contractions, and cervicograph were monitored partially in most cases ranging from 67 to 85%. These parameters were plotted on a paper and usually included blood pressure, fetal heart, and cervical dilatation.

The use of oxytocin was 15.3%. This is low unlike many studies done in Kenya and developed countries. In Britain for example, the induction rate is in the region of 26 – 30%. [3] This low intervention rates and poor utilization of the

partogram means a higher likelihood of prolonged labour and labour complications. In fact in this study, labour lasting more than 18 hours occurred in 4.7% of patients with the longest length of labour being 44 hours. However, the majority of patients (95.3%) delivered in between 0 and 18 hours.
The rate of twinning was 1 in 46. This is comparable to what Oyieke [48] (1:58.8), and Mutungi [49] (1:46).
About 30% of patients experienced various complications. The single most important complication was fetal distress (27.0%) of the complications, followed by abnormal contractions (15.6%) and cephalopelvic disproportion (15.3%). This relatively high complication rate can be reduced by use of a partograph as demonstrated by Wasike [27] in Eldoret teaching and referral hospital. Early identification of complications such as prolonged labour and fetal distress will help reduce neonatal morbidity and mortality.

Spontaneous vertex delivery (SVD) occurred in (84.5%) with caesarian section rate being 12.8%. About 3.0% of patients delivered by vaginal breech breech. Overall 18.5% of patients were given episiotomy. While caesarian section rates have increased, there have not been corresponding reduction in operative vaginal deliveries in many countries, although the rates of overall spontaneous vaginal deliveries have reduced. [36] A caesarian section rate of 21.1% was found in 1989 by Wanjohi [37], while Rupani [38] in 1991 reported a rate of 7.1% at the Coast provincial general hospital, Karanja [39] reported a rate of 6.8% at Pumwani Maternity Hospital, while Wahome [40] in 2000 reported a rate of 25.3% in a retrospective study at one of the major private hospitals in Nairobi. From available records Kenyatta National Hospital currently has a rate of 35.9%. ([41]) Elsewhere, the rate in Israel was found to be 9.6% [43], 14.6% in Britain [44], and in Italy 29.4% .[45] The low caesarian section in this study implies that in Pumwani, the interventions rates are much lower despite being a referral center for city council clinics. However there has been an increase over the previous finding by Karanja.

Fetal distress followed by repeat caesarian section (previous scars) was the commonest reasons for caesarian section.

The waiting period was prolonged in a significant number of patients with those waiting for between 5 and 10 hours being 31.9% and those waiting for more than 10 hours being 5.3%. These abnormal long waiting periods needs to be addressed as this also contributes to poor outcomes. The usual reasons for waiting were unavalability of theatre in a majority of patients.

Postpartum maternal complications developed in nearly 26% of cases, majority being perineal injuries accounting for 25.2% of complications. Perineal injury is strictly speaking not a maternal complication. This injury is expected to be more common as health providers try to avoid giving episiotomies. A previous study had found perineal injury rate at about 20% and are therefore almost of the same magnitude [35]. Omolo[26] in his study had found a rate of 40% of perineal injuries.

Post partum haemorrhage occurred in 1.1 % of patients. Haemorrhage is known to be the leading cause of mortality in regions were maternal mortality is high such as Kenya. In KNH it was found that maternal mortality from haemorrhage was 10.8 % between 1995 and 1999.[50]

There were no maternal deaths during the study. However, it was noted that critically ill patients were referred to Kenyatta National Hospital and some of them are known to have died, nevertheless this study was not designed to follow external referrals. Still some deaths may have been missed in the study as patients who were too sick could not give consent while a few other patients were unwilling to participate.

Among singleton, 1249(74.4%) were healthy while 16.9% had respiratory distress and overall 419(26.2%) were admitted to Newborn Unit. In this group

the estimated early neonatal mortality was 53/1000 births with a fresh stillbirth rate of 16/1000 births.

Early neonatal mortality in Kenya is reported to have ranged between 68 and 74 per 1000 in the past 10 years. However the probability of dying in the first month of live was found to 42 per 1000 births.[46]

CONCLUSIONS.

1. The majority of patients delivering in Pumwani were young, of low parity, had some formal education and were married.
2. The midwives supervised labour and conducted deliveries in the majority of patients.
3. The poor(low) use of the partograph in monitoring labour was associated with increased fetal morbidity and mortality.
4. The mean length of labour was 10 hours, however in a small number of patients labour was allowed to continue for unjustifiably long periods due to delay in decision making thus contributing to increased poor fetal outcome.
5. Perineal trauma accounted for a significant proportion maternal morbidity.
6. Early neonatal mortality rate among singletons was 53/1000 births.
7. Delays in performing caeserian sections was associated with increased perinatal mortality

RECOMMENDATIONS.

1. The proper use of partograph needs to be further enforced and encouraged in order to improve the fetal and maternal outcome.
2. There should be timely intervention in managing patients in labour so as to avoid untoward outcomes.

REFERENCES

1. Alan H. D., Martin L. P: the course and conduct of normal labour and delivery. In *Current Obstetric and Gynaecologic Diagnosis and Treatment.* 8th Edition 1994, **10**, 202-227.
2. World summit for children. Goal No. 11. UNICEF end decade database.
3. British Birth Survey. 1970.
4. "Revised 1990 estimates of maternal mortality. A new approach by WHO and UNICEF". World health organization. Geneva 1996.
5. Tsui A.O., Wasserheit J.N., Haaga J.G. "Healthy pregnancy and childbearing" in: Reproductive Health in Developing Countries. Expanding dimensions, building solutions; Washington D.C., *National Academy Press,* 1997.
6. "The progress of nations" UNICEF. New York 1996.
7. Royston Erica, Sue Armstrong (eds). Preventing maternal deaths. *WHO, Geneva 1989.*
8. Ruminjo J.K. Socio-demographic and gynaecological variables of maternal mortality in a Kenyan sub-district. *E. Afr. Med. J. 1990 ,**67**(2): 118.*
9. Makokha, A.E., Kirumbi, L.W. Mukolwe, B.A., Sekadde Kigondu, Nichols, D.D. Causes and prevention of maternal mortality in Kenya (unpublished report) Dec. 1994.
10. "Coverage of maternal care: A listing of available information, fourth edition". World Health Organization, Geneva 1997.
11. Graham W., " A question of survival? A review of safe motherhood". *Ministry of health, Kenya. 1997.*
12. Mati, J.K.G., Aggarwal, V.P., Sanghvi, H.C.G., Lucas, S., Corkhill, R. The Nairobi birth survey II: "Antenatal care in Nairobi" *J. Obs. Gyn. East. Cent. Afr. **2**:1:1983.*
13. "Maternal and Child Health". In *Kenya Demographic and Health Survey,* Kenya ,National council For Population and development. ***8**: 97-113:* 1998.

13. Mati, J.K.G., Aggarwal, V.P., Sanghvi, H.C.G., Lucas, S., Corkhill, R. The Nairobi birth survey III: "Labour and delivery" *J. Obs. Gyn. East. Cent. Afr. 2:2:1983.*

14. Abour Zahr C.L. WHO in action: Lessons on safe motherhood. World health forum: *An intern. J. Of health development: 19:3: 256-260:1998.*

15. National reproductive health strategy: 1997-2010. Ministry of health, Kenya, Nov 1997.

17. Makhoha, E.A. "Factors responsible for poor maternal outcome". *E.A. Med. J., 57(2) .1980.*

16. Mtimavalye, L.A.R., Lisasi, D., Ntiyabaliwe, W.K. "Maternal mortality in Dar-es-Salaam, Tanzania, 1974-1977". *E. Afr. Med. J. 57(2) 1980.*

17. Mafany, N.M. Maternal mortality. Southwest province, Cameroon, 1982-1987. A retrospective study. M.Med. Thesis, University of Nairobi, 1989

18. Nyongesa, P.J. Immediate pregnancy outcome of emergency referrals to KNH. M.Med. Thesis. University of Nairobi, 1990.

21. Njogu, S.N. Effectiveness of our referral system as perceived by patients in KNH. M.Med. Thesis. University of Nairobi, 1991.

22. Mugo R. The assessment of antenatal care and the perinatal outcome at Nazareth Mission Hospital. M. Med.Thesis.University of Nairobi, 1997.

23. Osore B.T. Socio-demographics, pregnancy outcomes and perception in adolescents at Kenyatta National Hospital.
M.Med Thesis. University of Nairobi 1999.

24. Mati, J.K.G., Aggarwal, V.P., Sanghvi, H.C.G., Lucas, S., Corkhill, R. The Nairobi birth survey IV: "Early perinatal mortality" *J. Obs. Gyn. East. Cent. Afr. (2): 1983.*

25. Musoke, R.N. Admissions in Mulago hospital care unit. *E. Afr. Med. J. (10) 60:1983.*

26. Omolo, N.O. Pattern of labour and delivery at Nazareth missionary hospital. M.Med. Thesis, University of Nairobi, 1999.

27. Wasike C.S.G.Evaluating the impact of the ministry of health partogram on active management of labour at Moi Teaching and Referral Hospital- Eldoret.M.Med.Thesis.University of Nairobi, 1999.

28. International conference on population and development, Programme of action, New York: United Nations, 1994 paragraph 8.22, 8.23.

29. Lindgren, S., Bohlin, A.B., Forsgren, M. et al. Screening for HIV-1 antibodies in pregnancy: results from the Swedish National Programme. *Brit. Med. J.* ***307****:144-1451:1993.*

30. Bansal, Y.P. A profile of intrapartum and postpartum aspects of antepartum haemorrhage at Pumwani maternity hospital. *E. Afr. Med. J. 62: 11: 807. Nov 1985.*

31. "The agency for Health Care Policy and research. AHCPR Publication #99-0012:A Quick Look at Quality. Last update July 1999. (Online). *http:/www.ahcpr.gov/consumer/qntascii/qntqlook.htm"*

32. Alan H.DeCherney, Martin L.Pernoll:"Complications of labour and delivery". In Current *Obstetric and Gynaecologic Diagnosis and Treatment.* 8 th edition, 25: 506-519.

33. Onyambu .B. The progress of labour following induction with PGE-2 pessaries at Aga Khan Hospital Nairobi.M.Med Thesis. University of Nairobi.2001.

34. Mati J.K.G., Aggarwal V.P., Luca S., Sanghvi H.C.G., Corkhill R.: The Nairobi birth survey I: The study design, the population and outline results. *J. Obstet. Gynaec. East. Cent. Afr.* 1:132.1982

35. Wanyoike J. G. incidence and risk factors associated with perineal trauma in childbirth. M. Med thesis, University of Nairobi, 1995.

36. Macfarlane A., Mugford M., Henderson J., Furtado A., Stevens J., Dunn A. Obstetric intervention rates by mother, age and parity, NHS hospital births, England and Wales, 1967, 1975, 1980; England 1980, 1985, 1994/5. Birth counts: statistics of pregnancy and childbirth.London: The stationery office; 2000. pg 535-6

37. Wanjohi E. N.
Risk factors associated with wound infection after caesarian section delivery at K.N.H. M. Med Thesis university of Nairobi 1989

38. Rupani N.P
Caesarian section deliveries at Coast provincial general hospital, Mombasa. M. Med. Thesis University of Nairobi 1991.

39. Karanja S.K
A prospective study on the pattern of caesarian section at Pumwani Maternity Hospital. M. Med Thesis, University of Nairobi, 1991.

40. Wahome N.
Caesarian section at the Mater Hospital in 1998. Overview. M. Med Thesis, University of Nairobi, 2000.

41. Medical records – Kenyatta National Hospital. Statistics report 2000

42.Kavoo L.A.P.
Aspects of early perinatal mortality rate at Machakos district hospital. M.Med Thesis, university of Nairobi,1988.

43. Shalom M. ,Yosef A.
Factors influencing caesarian section. Israel *J. Obs. Gynaec.* 75: 944. 1990

44. Savage W. G., Frarcome G.
British caesarian section rates – Have we reached a plateau?
Brit. J. Obstet. Gynaec. 100: 4993 – 96, 1993.

45. Ssignorelli L. C.
Risk factors for caesarian section in Italy
J. article. Multicentre study v, 109; 191-199. 1995.

46. Kichamu G.
Early childhood mortality in Kenya Demographic and health survey 1998,7:89-96.

47 Adult and maternal mortality. Kenya Demographic and Health Survey. National Council for Population and Development. Republic of Kenya .11.161-176.1998.

48. Oyieke J.B.O.
Two and half year review of some aspects of twin deliveries at Kenyatta National Hospital. M.Med. Thesis, university of Nairobi, 1978.

49. Mutungi A.K.
A Prospective study of twin deliveries at Kenyatta National Hospital and Pumwani hospital, antenatal care and delivery.M.Med Thesis.

50. Obore S.
Review of mortality in Kenyatta National Hospital 1995-1999.
M.Med Thesis, University of Nairobi,2001.

APPENDIX 1

OBSTETRIC QUESTIONNAIRE

MANAGEMENT OF LABOUR AND DELIVERY AT PUMWANI MATERNITY HOSPITAL.

Hospital No. _____

Study No. _____

Date of admission: _____

Residence _____

A: SOCIO-DEMOGRAPHIC INFORMATION

(Information to be obtained from the patient and patients' notes)

1. Age (years) | | |

2. Education level | |

0. None
1. Primary
2. Secondary
3. College
4. University

3. Marital status ☐

0. Single
1. Married
2. Widowed
3. Other (specify) _____

B: PAST OBSTRETRIC HISTORY

(*From the patient and the patients' notes*)

4. Parity ☐ + ☐

5. Number of living children (males and females) ☐

6. Outcome and time (of delivery/termination) of the last pregnancy (year) ☐☐☐

0. No previous pregnancy
1. Live birth, living child
2. Live birth, deceased ☐ ☐
3. Stillbirth
4. Spontaneous abortion
5. Induced abortion
6. Other (specify)
7. (In case of twins fill both boxes)

C: ANTENATAL CARE

(From the patients antenatal care records)

7. Number of antenatal visits ☐☐

8. Time of first antenatal visits in weeks ☐☐

9. Primary site of antenatal visits ☐

0. No antenatal visits
1. Dispensaries, health centres of Nairobi city council
2. Private clinic
3. Pumwani maternity hospital
4. Obstetrician/gynaecologist
5. Kenyatta National Hospital
6. Other (specify)

D. ADMISSION AND REFERRAL STATUS

(*From the patient's admission records, patient's notes and from the patient*)

10. Emergency admission

0. No ☐
1. Yes

11. Primary reason for referral ☐

0. Not referred
1. Not known
2. Prolonged labour
3. Hypertensive disorder
4. Haemorrhage
5. Uterine or other obstetric trauma
6. Fetal distress

7. Previous scar
8. Other, (specify) _____

12. Best estimated duration of pregnancy at admission (in completed weeks since the first day of the last menstrual cycle or otherwise; specify method) | | |

13. Estimated cervical dilation at admission in cm | | |

E. LABOUR MONITORING

(From the patients' labour ward notes)

14. Type of onset of labour | |

0. No labour
1. Spontaneous only | |
2. Spontaneous, augmented ARM/syntocinon | |
3. Induced – prostaglandins only
4. Induced – ARM, syntocinon only
5. Induced – prostaglandins, ARM/syntocinon
6. Other (specify) _____

15. Attendants monitoring labour | | | | | |

0. None
1. Medical or nursing student
2. Nurse/midwife
3. Medical officer/resident
4. Obstetrician/gynaecologist
5. Other, (specify) _____

For question 16 –22, fill 0 for no/not done, 1 for observations done but not according to protocol, 2 for observations done correctly and according to accepted standards. Fill second column (labelled 2) for reasons why the particular event was not done (question 23)

	1	*2*
16. Use of a partograph		
17. Maternal monitoring		
a) Blood pressure		
b) Pulse		
c) Temperature		
d) Respiration		
e) Urine exam		
18. Fetal monitoring		
a) Fetal heart rate		
b) Moulding		
c) Amniotic fluid monitoring		
19. Progress of labour		
a) Contractions		
b) Descent		
c) Cervical dilatation		
20. Use of lab tests		
21. Was there active management?		
22.Management of complications		

(Total score (column *1*) i.e. from question 16-22)- ☐

23. If any of the above (17-23) is no, what were the reason(s)? *(Fill in the second column adjacent to the question (labelled 2))*

0) Not required

1) Patient not seen/no decision made

2) Lack of materials/drugs /theatre

3) Others (specify)

24. Length of first (active) stage of labour in hours ☐☐

25. Duration of second stage of labour in minutes ☐☐☐

26. Intrapartum complications of labour- for no fill 0 in the box, for yes fill 1.

a) Antepartum/intrapartum haemorrhage ☐

b) Abruption placenta ☐

c) Placenta praevia ☐

d) Ruptured uterus ☐

e) Abnormal contractions ☐

f) CPD ☐

g) Prolonged labour ≥18 hours ☐

h) Hypertensive disorders (chronic hypertension, PET, eclampsia). ☐

i) Cord prolapse ☐

j) Fetal distress ☐

k) Anaemia ☐

l) Complications of anaesthesia ☐

m) Any other condition of the mother (specify) ☐

F.DELIVERY:

(From labour/delivery ward notes)

27. Procedure used at delivery (mark 0 for no, and 1 for yes)

0 – no intervention/spontaneous ☐

1 – assisted second stage ☐

2 – vacuum assisted ☐

3 – breech spontaneous ☐

4 – breech assisted ☐

5 – breech extraction ☐

6 – destructive vaginal ☐

7 - caesarean section, emergency ☐

8 – caesarean section, elective ☐

9 – caesarean section, plus hysterectomy ☐

10 – episiotomy ☐

11-Delivered while waiting for theatre ☐

12-others (specify) ☐

28.Attentant at delivery

0.none ☐

1.medical or nursing student ☐

2.nurse /midwife ☐

3.medical officer/resident ☐

4.obstetician/gynaecologist ☐

5.other, (specify) ☐

29.Reasons for Caesarean section (0 for no, 1 for yes)

1.CPD	
2.fetal distress	
3.pre-eclampsia/eclampsia, specify	
4.one previous scar, specify	
5.two or more previous scars	
6.placenta praevia (type)	
7.breech presentation, specify	
8.malposition, specify	
9.others (specify)	

30.a) Length of waiting in hours from decision making to actual surgery(c/s). ☐☐

b) Reasons for waiting *(use choices in question 23)* ☐

F. MATERNAL OUTCOME

(From labour ward and post-natal ward notes)

31. Immediate postpartum complications (-0 for no, and 1 for yes)

0 – none ☐

1 – perineal trauma/tears ☐

2 – retained placenta ☐

3 – cervical tear ☐

4 – postpartum haemorrhage ☐

5 – maternal death ☐

6 – other (specify) _____ ☐

32. For maternal death, what was the primary cause (of death)?

1.Hypertensivedisorders	
2.Heamorrhage	
3. Sepsis	
4.anaemia	
5.Anaesthetic causes	
6. Others (specify)	

G. FETAL OUTCOME (for 2nd twin)

(From labour ward and newborn unit baby's notes)

33. Birth weight in grams ☐☐☐☐ ☐☐☐☐

34. Apgar score at 5 minutes ☐☐ ☐☐

35. Fetal/neonatal outcome (0 for no, 1 for yes)

a) Completely healthy ☐ ☐

b) Respiratory distress ☐ ☐

c) Premature ☐ ☐

Malformations ☐ ☐

Trauma ☐ ☐

d) Admitted to NBU ☐ ☐

e) Other (specify) ☐ ☐

36. Death of foetus/new-born ☐ ☐

0) No death

1) Fresh stillbirth

2) Macerated stillbirth

3) Died immediately after birth

4) Died within 24 hours

5) Other, specify _____

KENYATTA NATIONAL HOSPITAL
Hospital Rd. along, Ngong Rd.
P.O. Box 20723, Nairobi.

Tel: 726300-9
Fax: 725272
Telegrams: "MEDSUP", Nairobi.
Email: **KNHplan@Ken.Healthnet.org**

Ref: KNH/ERC/01/1630 **Date: 16 January 2003**

Dr. Philip Kiptanui Kirwa
Dept. of Obs/Gynae
Faculty of Medicine
University of Nairobi

Dear Dr. Kirwa,

RESEARCH PROPOSAL "MANAGEMENT OF LABOUR AND DELIVERY AT PUMWANI MATERNITY HOSPITAL" (P77/7/2002)

This is to inform you that the Kenyatta National Hospital Ethics and Research Committee has reviewed and **approved** the revised version of your above cited research proposal.

On behalf of the Committee, I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of database that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely,

PROF. A. N. GUANTAI
SECRETARY, KNH-ERC

Cc Prof. K.M. Bhatt, Chairperson, KNH-ERC
The Deputy Director (C/S), KNH
The Dean, Faculty of Medicine, UON
The Chairman, Dept. of Obs/Gynae, UON
Supervisors: Dr. Zahida Qureshi, Dept. of Obs/Gynae, UON
Dr. Wasike Charles S.G., Dept. of Obs/Gynae, KNH
CMRO, KNH

GYNAECOLOGY SHORT CASES

GYNAECOLOGY CASE 1

PELVIC ABSCESS – LAPARATOMY/DRAINAGE:

NAME	:	**F.N.**
AGE	:	**30**
IP/NO.	:	**0903992**
PARITY	:	**5 + 0**
D.O.A.	:	**30/8/03**
D.O.D	:	**12/9/03**
DATE OF OPERATION	:	**8/9/03**

PRESENTING COMPLAINTS

She was admitted through casualty with low abdominal pains and fever for 2 weeks and diarrhoea for 3 days.

HISTORY OF PRESENTING COMPLAINT

She was well prior to two weeks prevoiusly. She developed progressively increasing lower abdominal pains. The pains were episodic and progressively becoming incapacitating. She also had fever alternating with chills. During the two weeks, she had dysuria, frequency of micturition and a foul smelling per vaginal discharge. Three days prior to admission, she had profuse watery diarrhoea.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She had attained menarche at 16 years. Her last monthly period has 21/8/03.

Her menses were regular occurring every 28 days and lasting 4 days. She was para 5 + 0. All deliveries were by spontaneous vertex delivery and her last delivery was in 2001. There was no history of use of contraceptives.

PAST MEDICAL HISTORY

She had no history of previous admissions and no history of any serious illnesses.

FAMILY AND SOCIAL HISTORY

She was a housewife. Her husband was a small-scale businessman. She did not take any alcohol or smoked cigarettes. There was no family history of chronic illness.

PHYSICAL EXAMINATION

GENERAL EXAMINATION.

She was sick looking and in pain. She was not jaundiced, not pale, not cyanosed, and no lymphadenopathy. Her temperature was 37^0C, the blood pressure was 120/70 mmHg,the pulse was 100/minute and the respiratory rate was 24 per minute.

CENTRAL NERVOUS, RESPIRATORY AND CARDIOPULMONARY SYSTEMS

These were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was distended and diffusely tender in the suprapupic region. She had a pelvic mass corresponding to 14 weeks gestation. The mass was very

tender, irregular, poorly delineated and not mobile. There was no organomegally.

PELVIC EXAMINATION

The external genitalia appeared normal. The vaginal walls were smooth and moist. The cervix was long, closed and firm.
The uterus was normal size. There was a tender mass lying more on the left adnexa and very tender corresponding to 14 weeks gestation. There was no blood on examining finger.

DIAGNOSIS

An impression of pelvic abscess was made.

MANAGEMENT

In the ward, an intravenous drip of 5% dextrose was started to alternate with normal saline 6- hourly. She was also started on intravenous of metronidazole, crystalline penicillin and gentamycin. She was also prepared for laparatomy. Informed consent was obtained from her after explanation of the procedure details. Blood was taken for grouping and cross matching, parked cell volume and urea and electrolytes. The diagnosis was confirmed after doing a pregnancy test and an ultrasound. She was pre-medicated with atropine 0.6 mg. half hour before theatre.

INVESTIGATIONS AND RESULTS

Haemogram

Hb –12.5g/dl

WBC -14.4 $X10^9$/L

Platelets -300$X10^9$/L

U/E :

Na+ - 136mmoll/L

K+ - 3.16 mm0l/L

Cr - 69 umol/L

PDT – Negative.

U/sound:

- Uterus was none gravid, anterverted and normal echo pattern and size.
- No myometrial lesion.
- Uterus surrounded by a complex cystic mass with debris is filling the adnexas and pouch of Douglas.

Conclusion: Pelvis abscess.

LAPARATOMY AND DRAINAGE

In the operating room, the patient was placed on the operating table. General anaethesia was administered and maintained. She was then put in lithotomy position and vulvovaginal toilet was done. The bladder was then catheterized and about 100mls of clear urine was drained. Examination under anaethesia confirmed previous findings.

She was repositioned in supine position, abdomen was cleaned and draped.

Through a low midline incision, the abdomen was opened in layers. The parietal peritoneum was thickened. The gut was matted and adherent to the uterine fundus. By blunt separation of adherent tissues, a pocket of pus bounded by the uterus, the left fallopian tubes, Pouch of Douglas and omentum was identified.

The uterus was none gravid, both tubes were inflamed; fimbrial ends and ovaries were buried in adhesions and could not be visualized. The abscess was drained obtaining about 200 mls of pus.

The abdominal cavity and pelvis was washed with rifocin in warm saline. A corrugated drain was left in situ, and abdomen was closed in layers. General anaethesia was reversed.

POST OPERATIVE PERIOD

Post Operative period was uneventful. She continued with parenteral antibiotics for 3 days (crystalline penicillin 2 mu qds, metronidazole 500mgs tds and gentamycin 80mgs tds), and then she was switched to oral antibiotics of metronidazole 400mgs tds, doxycycline 100mg bid, and amoxicillin 500mgs tid for one week. The drain was no layer active on the second day and it was removed. The wound was healing well. She was discharged in stable condition on the fourth postoperative day for removal of stitches in the nearest clinic. She was also to be seen in the clinic after two weeks

POST OPERATIVE FOLLOW UP

She was seen in the gynaecological outpatient clinic after two weeks.the wound had healed well. The drain site was still slightly oozing. She was advised to clean the site with salt water.

DISCUSSION

The patient presented was a 30-year para 5 + 0 who was admitted with pelvic abscess. She was managed by use of antibiotics, and laparatomy and drainage of the abscess.

Pelvic infection is defined as infection of the uterus, uterine tubes, adjacent parametrium and overlying pelvic peritoneum[1].
The term pelvic inflammatory disease (PID) is used to describe the clinical features of sexually transmitted pelvic infection. It is often used synonymously with salpingitis. Pelvic inflammatory disease often complicates into a pelvic abscess as this patient had.
Pelvic abscess may also occur as a sequele of acute pelvic or postabortal infection [2].

The patient presented had a pelvic abscess, which constitutes 40% of all patients admitted with PID in the acute gynaecological ward at Kenyatta National Hospital.[3] Characteristic age incidence is 20-30 years, mostly primigravidas, many of whom will have been pregnant within the past one year. However in this case the patient was multiparous.

The patient presented with acute progressive lower abdominal pain and fever. Other symptoms which patients may present with include sensation of pelvic pressure, per vaginal discharge, dyspareunia and a fluctuant mass filling the cul-de-sac, and dissecting into the rectovaginal septum.[2]
Severe infections may give nausea, vomiting and fever. In acute phase, many patients will have pyrexia with temperatures greater than 38°c, but may be normal in the chronic phase. The patient had a temperature of 37°C at admission.

The blood counts in this patient showed slight leucocytosis which is characteristic of pelvic abscess,though the counts may be normal.
Endocervical swab for microscopy, culture and sensitivity, which may demonstrate gram-negative diplococcs in polymorphonuclear leucocytes. Also C-reactive proteins, interferon, and C- 125 levels may be elevated. Most of these tests are not available in the hospital and are generally more expensive.

Abdominal ultrasound was used to confirm the pelvic abscess but better still would have been a transvagial ultrasound which gives better resolution.

The abscess was managed by use of antibiotics and draining the abscess.
The choice of antibiotics will depended on the spectrum of antibiotic, and clinical data sensitivity locally. The drugs had both aerobic and anaerobic cover.
The patient admitted was put on intravenous metronidazole, gentamycin and crystalline penicillin (these were the only available drugs).

The drainage of the abscess in this patient was by laparatomy. Other surgical techniques include transvaginal ultrasound – guided aspiration. This has a less hospital stay and is cost effective. A drain should be left in the posterior vaginal fornix.[4,5] If this abscess is dissecting the rectovaginal septum and is fixed to the vaginal membrane, solpotomy drainage with dissection of saculations is indicated. This space should be actively drained with a large catheter, such as Cook's catheter and preferably irrigated with sterile saline solution every 4 hours until the space is obliterated.
In patients with recurrent infection with loss of reproductive function may be cured by total abdominal hysterectomy with bilateral salpingo- oophorectomy.
With the advent of Human immunodeficiency virus, many cases of tubo- ovarian abscesses and pelvic abscess have a direct causation relationship. The patient presented here was not screened.

Complications of pelvic abscess include chronic pelvic pain, dysmenorrhoea, and dyspareunia in 15-20% of patients. Infertility is also common due to destruction of the tube architecture. Subsequent ectopic pregnancies will also increase due to tubal damage.[4]

The differential diagnosis for pelvic abscess include:
Tub ovarian abscess, peri-appendiceal abscess, ectopic pregnancy, ovarian neoplasm, uterine leiomyoma, retroflexed and incarcerated uterus, endometriosis, circinomatosis and diverticulitis with perforation.[2]

With early treatment, such as for the patient presented here, the prognosis for the woman with a localized abscess is good. Antibiotic treatment is essential; drainage may be necessary. Rupture into the peritoneum is a serious complication and demands immediate abdominal exploration. The prognosis for fertility is very poor following this type of abscess.[2]

REFERENCE

1. Maclean A.B.
   Pelvic infections in: Dewhursts Textbook of obstetrics and gynaecology for postgraduates. Blackwell Science 6th ed. Page 3940-409,1999.

2. Susan M.R., George D.W., Hemsel D.L.
   Sexually Transmitted Diseases and Pelvic infections in: Current and gynaecologic, Diagnosis and Treatment. 8th ed. 38: 754-784,1994.

3. Formula J.N.
   Bacterial Sensitivity pattern in Septic abortion, Septic and pelvic abscess in Kenyatta National Hospital. M.Med Thesis. University of Nairobi, 1981.

4. Mendez L.E., Bhoola S.M., Horowitz I.R.
   Bilateral Tubo-ovarian abscess. Infectious diseases in obstetrics and gynaecology 6(3): 138-140,1998.

5. Corsi P.J., Jjohnson S.C., Gonic B. et al.
   Transvaginal guided aspiration of pelvic abscess infection disease. *J. Obstet. Gynaecol.* 7(5): 216-21,1999.

GYNAECOLOGY CASE 2

SEXUAL ASSAULT OF AN ADOLESCENT GIRL

NAME	:	**M.N.**
AGE	:	**17 YEARS**
IP/NO.	:	**0894503**
WARD	:	**1 D.**
D.O.A.	:	**25.3.03**
D.O.D	:	**26.3.03**

PRESENTING COMPLAINT

She presented through casualty with history of having been sexually assaulted 9 hours earlier.

HISTORY OF PRESENTING COMPLAINT

She was assaulted by a group of men who attacked her at around 2 p.m. She was hit in the head, gagged, blindfolded and then raped in turns. She could not remember how many they were. She was also robbed of all her personal belongings.

She had just traveled from her rural home to visit her aunt in Nairobi and was looking for the house in one of the suburbs when she was accosted.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 0 + 0. Her LMP was on 20/5/03. Her menarche was at 15 years. Her menses were irregular lasting 3-6 days and coming any time between 20 and 35 days and occasionally missed by a month. She had no history of family planning use. She had no prior sexual experience.

PAST MEDICAL HISTORY

She had never been admitted before. She had never experience any major illnesses in the past.

FAMILY AND SOCIAL HISTORY

She was a form one student in a school in Kakamega district. She lived with her parents in Kakamega. She never drank alcohol or smoked cigarettes. There was no family history of chronic illness.

PHYSICAL EXAMINATION

She was a young teenage girl in fair general condition. She was in emotional distress, crying, her clothes were torn and soiled in dirt and blood. Her blood pressure was 120/70mmHg, pulse was 85/minute, and her respiratory rate was 24 per minute and temperature was 36.2^{0}C.

CENTRAL NERVOUS SYSTEM

She was well oriented in time, space and person. There was no neurological deficit.

RESPIRATORY AND CARDIOVASCULAR SYSTEM

These were all normal.

MUSCULO-SKELETAL SYSTEM

She had a swollen scalp and bleeding upper lip. She also had multiple facial and limb bruises and swellings. She had no fractures.

ABDOMINAL EXAMINATION

The lower abdomen was tender. There were no masses and no organomegally.

VAGINAL EXAMINATION

The external genitalia was bruised and soiled in blood and other body secretions. The vaginal wall was bruised and had dark blood. There was no active bleeding.

DIAGNOSIS

A diagnosis of sexual assault in a 17-year-old girl was made.

MANAGEMENT

The patient and her aunt were informed of the investigations to be done and the treatment she was to receive and the subsequent follow up including counseling. The aunt consented to the investigation and treatment.

INVESTIGATIONS DONE

ELISA for HIV – Negative.
VDRL - Negative.
PDT - Negative.
High vaginal swab was not done.

TREATMENT

She was started on antiretrovirals: Combivir I BD and stockrin 600 mg OD for 28 days.
She was given antiletanus toxoid and emergency contraception of postinor II start. Hepatitis B and C immunoglobulins were ordered, but were unavailable.

She was also put on metronidazole 500mg TID, doxyclycline 100mg BID and ponstan 500mg TID for seven days.

She was discharged on the second day through the high risk clinic for counseling and follow up.

FOLLOW-UP

She was seen after six in the gynaecological outpatient clinic. By then she did have any complaints. She had also received counselling twice at the patient support centre. A repeat HIV test done was negative. She was to continue with the counseling sessions. She was to be done another HIV test after six months.

DISCUSSION

The patient M.N. presented above came with complaints of sexual assault. She was put on antibiotics, antiretrovirals and emergency contraception.

The patient M.N was sexually assaulted which is defined as the use of physical force, deception, intimidation or the threat of bodily harm; lack of consent or inability to give consent because the survivor is very young or very old, impaired by alcohol or drug use, unconsciousness or mentally or physically impaired; oral, vaginal or rectal penetration with a penis, finger or object.[1]
The attackers of this patient did have forceful vaginal penetrative sex.

The National women study in the USA revealed that 13% or one of 8 adult women are survivors of at least one completed rape during their lifetime. Most rapes occurr during childhood and adolescence. Indeed it is said 'rape in America is a tragedy of the youth'.[2] Victims are reluctant to report rapes to authorities because of embarrassment, fear of retribution, feeling of guilt or simply lack of knowledge of their rights.[3] This scenerio is true all over the world. The patient presented was an adolescent, who was new in town.
However sexual assault happens to people of all ages and races in all socioeconomic groups. The perpetrator may be a stranger but he or she is not uncommonly an individual well known to the individual and may be a close relative.[2]

The laws of Kenya state that any person who unlawfully and carnally knows a girl below 14 years is guilty of felony and is liable to imprisonment for 14 years with hard labour together with corporal punishment. There has been great debate about the inadequacies of this law. This also applies for rape of none minors.[6] Hopefully, the current law reform will address this issue.

This patient suffered vaginal bruising though there were no obvious tears. The most common injuries from sexual assault are vaginal laceration resulting in bleeding and pain as suffered by this patient. Intraperitoneal extension of a vaginal laceration or damage to the anal mucosa is rare.[4]

The sequelae of rape to victims such as M.N are many and varied. Following the act, the women or girl have many concerns including pregnancy, STI (including human immunodeficiency virus (HIV) infection), being blamed for the assault, having their name made public and having their family and friends find out about the assault.

During the rape process, victims like M.N loose control over their her live over the duration of the rape. In the submission period the patient experiences anxiety and fear. When the attack is life threatening, shock with associated physical and physiological symptoms may occur. Two phases of rape-victim syndrome have been identified.[7]

The immediate or acute phase lasts from hours to days and may be associated with paralysis of the individuals' usual coping mechanisms. Outwardly, the victim may demonstrate manifestation ranging from complete loss of emotional control to a very well controlled behaviour pattern. The actual reaction may depend on a number of factors, including the relationship of the victim to the attacker, whether force was used and the length of time the victim was held against his or her will. Generally the victim appears disorganized and may complain of both physical and emotional symptoms. Physical complains include specific injuries or general complaints of soreness, eating problems, headaches and sleep disturbances. Behaviour patterns may include fear, mood swings, irritability, guilt, anger, depression and difficulties in concentration. Frequently the victims will experience flashbacks.

The second phase of the rape trauma syndrome involves long-term adjustment and is designated the reorganization phase. During this time flashbacks and nightmares may continue, but phobias also develop. If a major complication such as contraction of a sexual transmitted disease including HIV, or a pregnancy occurs, resolution may be more difficult.[3, 8]

On arrival to hospital the patient had her gynaecological history taken, assessment of the physical injuries suffered, obtained blood and other specimens for forensic and pathological tests, providing prophylaxis against infection and pregnancy, and providing counseling and followup. These are the usual responsibilities of a physician providing immediate treatment for sexual assault.[1,3,8]

The patient presented was investigated for HIV, and syphilis, was given antiretrovirals and antibiotics. She also received emergency contraception. She was also to receive long-term counseling sessions and follow up.

REFERENCE

1. Berek J. S.
   Sexuality, sexual dysfunction and sexual assault in: Novak's Gynecology, 13th edition: 11:295-321, 2001.

2. Kilpatrick D.G., Edmunds C.N., Seymour A.K.
   Rape in America, New York. National victim center, 1992.

3. Droegemueller W, Herbst A.L., Mishel D.R., Stenchever M.A
   Rape, incest And Abuse in: Comprehensive gynecology. 12:319-328,1987.

4. Hampton H.L.
   Care of the woman who has been raped.
   N. Engl. J. Med.: 332: 234-237, 1995.

5. Linden J.A.
   Sexual assault. *Emerg. Med. clin. North, Am.* 17: 685-697. 1999
6. Republic of Kenya. Offences against morality in the laws of Kenya, penal code, cap 63, chapter XV.

7. Burgess A.W., Holmstrom L.L.
   Rape: victims of crisis. In Bowie, Md., R.J. Brady co., 1994.

8. Dunn S.F.M., Gilchrist V.J.
   Sexual assault. *Prim. Care*: 20: 359-373,1993.

GYNAECOLOGY CASE 3

SYSTOMATIC UTERINE FIBROIDS -TOTAL ABDOMINAL HYSTERECTOMY

NAME	:	**M. M.**
AGE	:	**34 YEARS**
IP/NO.	:	**0903424**
PARITY	:	**4 + 0**
D.O.A.	:	**4/8/03**
D.O.D.	:	**25/8/03**
WARD	:	**1B**

PRESENTING COMPLAINT

The patient presented with lower abdominal pains and a progressive abdominal mass for six months.

HISTORY OF PRESENTING ILLNESS

She was initially admitted through ward 1D due to severe abdominal pains for two days. She also had noticed a progressively growing mass for several months. She also had heavy, prolonged menstrual flow. The patient was transferred to the cold gynecological ward for operation after a diagnosis of symptomatic uterine fibroids was made.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

She was para 4 plus 0. All her deliveries were by spontaneous vertex delivery and last delivery was in 1994 and all are alive and well. She attained her menarche at 14 years and her periods were irregular, heavy and prolonged

occurring every 20 to 30 days and lasting 5 to 8 days, since about 6 months ago. Her LMP was 19th August 2003 lasted 7 days and was very heavy. She was depo provera infection between 1995 and 1998. Since then she has been using safe day method and barriers.

PAST MEDICAL AND SURGICAL HISTORY

She had no previous history of admission or any major illness.

FAMILY AND SOCIAL HISTORY

She is a married businesswoman. She did not drink alcohol or smoked cigarettes. There is no family history of chronic illness.

PHYSICAL EXAMINATION

She was in a good general condition. She was not pale, not jaundiced and not febrile. She had neither lymphadenopathy or oedema. Her blood pressure was 150/65 mmHg, Pulse was 94 per minute, respiratory rate was 18 /minute and temperature was 36.3°C.

ABDOMINAL EXAMINATION

The abdomen was distended and moving with respiration.
On palpation there was a tender suprapubic mass corresponding to 20 weeks. It was firm, irregular, but mobile. There was no organomegally.

PELVIC EXAMINATION

She had normal looking external genitalia. The vagina wall was smooth,warm and moist.
The cervix was 2cm long, smooth, firm, in posterior position and the os was closed. The uterus was moving with the cervix and corresponded to 20 weeks. There were no masses in the adnexa and the cul-de-sac was empty. There was no blood on examining fingers.

DIAGNOSIS

A diagnosis of symptomatic uterine fibroids was made.

MANAGEMENT

Investigations were carried out in the acute gynaecological ward before transfer to the cold gynaecological ward.
Once in the cold ward preparation was made for total abdominal hysterectomy to which she gave informed consent.
Blood was taken for grouping and cross matching and 2 units were kept ready for theatre. She was operated on the 21/8/03.

INVESTIGATION

Haemogram:

HB	-	12.9 g%
WBC	-	4.3 X 10^9/L
RBC	-	5.1 X10^{12}/L
HCT	-	37.5 %
MCV	-	68 fl.
Platelets	-	145 x 10^9/L

Urea and electrolytes.

Na^+	-	142 mmol/L
K^+	-	4.0 mml/L
Urea	-	4.8 umoL/L

Blood group – 0 positive.

Pelvic ultrasound – multiple uterine fibroids.

TOTAL ABDOMINAL HYSTERECTOMY

In theatre general anaesthesia was induced and in lithotomy position, she was catheterized and pelvic examination was done. Earlier findings were confirmed. The vagina was painted with methylene blue. The patient was then put in supine position and the abdomen was scrubbed using savlon and iodine. She was then draped with sterile towels. The abdomen was opened through a pflannenstiel incision in layers.

The uterus was found to have multiple fibroids and a size of 18 weeks. The ovaries, Fallopian tubes, gut, kidneys and liver were grossly normal. The gut was packed a way from the operating field. Stepwise hysterectomy was then done as described in the introductory pages. Haemostasis was achieved and

abdomen was closed in layers, after correct instrument and swab count. She lost 1750 mls of blood and was transfused one pint.

POST OPERATIVE MANAGEMENT

The patient was reversed from anesthesia and taken to recovery room in good condition.

While in the ward. She continued with intravenous fluids and intravenous antibiotics for two days. She was discharged home on the fourth day on analgesics and oral antibiotics to be seen in two weeks time in gynaecological outpatient clinic.
However, she was lost to follow up, as she never turned up.

DISCUSSION:

This was a 34 year old, para 4 plus 0 lady who presented with symptomatic uterine fibroids for which a total abdominal hysterectomy was done.

Fibroids are benign smooth muscle tumours of the uterus. They are also composed of smooth muscle cell and a variable amount of connective tissue. The term leiomyoma is a reasonably accurate one that emphasizes the origin of this tumour from smooth muscle cells and the predominance of the smooth muscle components.[1,2,3]

This was a patient in her reproductive age which is a common time for leiomyoma formation. Leiomyomas are present in 20-25% of reproductive age women, but for unknown reason, leiomyoma are 3-9 times more frequent in black than white women. Indeed by the fifth decade as many as 50% of black women will have leiomyomata.[3] In a study done at Kenyatta National Hospital, uterine fibroids accounted for 66.8% of the hysterectomies done and two thirds of patients with uterine fibroids were aged 26-40 years.[4]

The aetiology of leiomyoma is unknown. Leiomyomas are not detectable before puberty and being hormonally responsive, normally grow only during the reproductive years. Estrogens are thought to play a role in their growth as increased estrogen receptors have been found in myomas compared to the surrounding tissue. Human placental lactogen and human growth hormone has also been implicated. Leiomyomas have been found to decrease or even disappear during menopause.[3,5]

The patient presented with with vaginal bleeding. This is usually due to the location of the fibroid where fibroids which disrupt blood flow within the uterus cause bleeding. Uterine leiomyomas originate in the myometrium and are

classified by anatomic location. Submucous leiomyomas lie just beneath the endometrium and tend to compress it as they grow toward the uterine lumen. Their impact on the endometrium and its blood supply most often leads to irregular uterine bleeding. Leiomyomata may also develop pedicles and protrude fully into the uterine cavity. Occasionally they may even pass through the cervical canal while still attached to the uterine corpus by a long stalk. When this occurs leiomyomas are subject to torsion or infection. Intramural or interstitial leiomyomas lie within the uterine wall, giving it a variable consistency. Subserous or subperitoneal leiomyomata may lie just at the serosal surface of the uterus or may bulge outward from the myometrium. The subserous leiomyomata may also become pedunculated. If such a tumour acquires an extrauterine blood supply from the omental vessels, its pedicle my atrophy and resorb; the tumour is then said to be parasitic.
Sub serous tumors arising laterally may extend between the two peritoneal layers of the broad ligament to become interligamentary leiomyomas.[3]
Symptoms of leiomyoma are present in only 35-50% of patients. Thus, most leiomyoma do not produce symptoms and even large ones may remain undetected, particularly in the obese patient. Symptoms depend on their location, size, and state of preservation and whether or not the patient is pregnant. Abnormal uterine bleeding, as was present in this patient, is by far and away the most common and most important clinical manifestation of leiomyomas, being present in up to 30% of patients.

Pain as this patient had usually results from vascular compromise, which may lead to degeneration, infection, or torsion or myometrial contraction to expel a subserosal myoma from the uterine cavity. In this, the cause of pain was not obvious intra operatively.

The patient presented here had multiple intramural fibroids. This is where the fibroid is found within the substance of the myometrium in the uterus. Most of the fibroids are located in the body of the uterus and only 2% are cervical.[5]

As the fibroid grows secondary changes may occur such as atrophy,haline degeneration, cystic liquefaction, septic degeneration, calcification, carneous degeneration, myomatous degeneration, and malignant transformation as the leiomyoma grows.[3,6]

Pressure may be produced on the pelvic veins, causing edema, varicose veins and may cause or exacerbate hemorrhoids. A large tumour filling the abdomen may cause dyspnoea. Preassure on the bladder may cause increased frequency of micturition or incontinence of urine. Infertility and spontaneous abortions are also associated with uterine leiomyomas. [1,2,3,6]

Conditions that should be differentiated from uterine fibroids are: pregnancy, ovarian masses, endometriosis, uterine adenomyosis, myometrial hypertrophy, uterine sub involution, congenital abnormalities, adherent adnexa to omentum or bowel, adenocarcinoma of the uterine tube, and uterine sarcomas. Medical conditions that cause bleeding should also be excluded.

Diagnosis of leiomyomas is mainly clinical. The uterine masses in this patient were palpated abdominally and by bimanual palpation. A pelvic ultrasound assisted in establishing the diagnosis, as well as excluding pregnancy as a cause of the uterine enlargement. Anaemia is common due to excessive uterine bleeding,however this was not the case in this patient. Occasionally erythrocytosis may be encountered. This is due production of erythropoietin by the tumour or due to compression of the ureters thus inducing kidney erythropoietin production. Leukocytosis, fever and an elevated sedimentation rate may be present with acute degeneration or infection.[2,3,6]

Patient M.M was managed by abdominal hysterectomy with the sparing of the ovaries. The choice of treatment depends on the patient's age, parity , pregnancy state, desire for future fertility, general health and symptoms, size, location and state of preservation of leiomyoma. Myomas do not require treatment, if they are symptomless or if the patient is postmenopausal. Surgery is indicated for acute torsion, intestinal obstruction caused by pedunculated or parasitic myoma, and when the tumour is large and causing symptoms. Myomectomy is done for infertility. Small myomas with uterine size below 14 weeks can be removed by vaginal hysterectomy or laparascopically assisted total vaginal hysterectomy. Larger tumours are removed by total abdominal hysterectomy as our patient presented here.[2,3]

Ovaries are preserved in young women, but removed in women after the age of 45-50 years.

Medical therapies are available as adjuncts to surgical treatment. Effective medical treatment likely to result in the permanent cure for leiomyomata is not available[1].

Anti progestin therapy with mifeprostone (RU 486) for 3 months has been shown decrease leiomyomata volume by 49% .[7]

Gestrinome (a synthetic dericative of ethynyl-nor-testosterone) properties induces repression of leiomyomata.

GnRH analogues bind to GnRH receptors and result in biphasic response: a temporary increase in the level of gonadotrophins and gonadol steroids (agonist phase), this is then followed by chronic suppression of gonadotrophins and gonadol steroids.[1] GnRH analogues treatment remits in 'medical oophorectomy' and 'medical menopause' and is associated with symptoms of profound hypogonadal state (hot flashes, insomnia, mood lability, headaches, vaginal dryness). The side effects and effect on fibroid symptomatology lasts as long as the treatment is continued.

GnRH agonists, progestational agents, danazol may be used to induce amenorrhoea in patients with symptomatic leiomyomata and iron deficiency anaemia unresponsive to oral iron therapy[1].

Transcatheter uterine artery embolization has been shown to cause regression of uterine fibroids[8]

Other surgical measures include D and C and excision of pedunculated myomas.

Complications of abdominal hysterectomy include injuries to the urinary tract and gut, haemorrhage, postoperative wound infection, dehiscence, pelvic abscess, and vaginal vault prolapse.[1]

The patient M.M had a favourable outcome both intra operatively and post operatively. Her prognosis in terms of quality of life are good.

REFERENCE:

1. Thomas J.D., Rock J.A.
   Leiomyomata uterio and myomectomy in:
   Te Linde's operative Gynaecolgy. 8th ed Lippincott-Raven, Philadelphia;
   32:731-765,1992

2. Whitfield R.C.
   Benigh Tumours of the uterus in Dewhurst's Textbook of obstetrics and
   Gynaecology for Postgraduates.

3. Wexter A.S., Pernoll M.L
   Benigh Disordes of the uterine corpus in: Current obstetric and Cynaecologic
   Dianosis and treatment, 8th ed. 36: 731-743.
4. Wanjala S.M.H.
   M.med Thesis in Obstetrics and Gynaecology University of Nairobi, 1980.
5. Tindal V.R.
   Tumours of the Corpus nteri in: Jeffcoates Principles of Gynaecology.

6. Vollenhoven B.J., Lawrence A.S., Healy D.L.
   Uterine fibroids: A clinical review.
   Br. J. Obstet. Gynaecol., 103:494-496, 1996.
7. Murphy A.K.L., Morales A.
   Regression of uterine leidmyomata in response to the antiprogesterone
   R4486. *J. Clin. Endocrinol. Met*, 1993; 76: 513.

8. Bradhey E.A., Forman R.G.
   Transcatheter uterine artery Embolization to treat large uterine fibroids.
   Br. J. Obstet. Gynaecol., 105:235-240, 1998.

TRANSLOCATED IUCD – REMOVAL BY D AND C UNDER GENERAL ANAESTHESIA

NAME : H.W
AGE : 48 YEARS
IPNO. : 0914199
PARITY : 4+0
D.O.A. : 13.10.03
D.O.D : 13.10.03

PRESENTING COMPLAINT

She was admitted with complaints of failed attempt at removal of IUCD.

PRESENTING HISTORY

She had presented at the family welfare clinic for removal of the IUCD. She associated the IUCD with recurrent low backache. Attempts to remove it at the clinic failed as the threads got severed. The lippes IUCD was inserted in 1983, several months after her last delivery.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 4 plus O. Her last delivery was in 1983. All her deliveries had been by spontaneous vaginal delivery. Her last monthly period was sometimes in May 2003. This lasted one day and over the past one year had been having irregular

periods with episodes of 2 to 3 months amenorrhoea. Her menarche was at 16 years. She had used the IUCD for 20 years.

PASTMEDICAL HISTORY

She was admitted at Nazareth Hospital in 1998 and had laparatomy for low abdominal pains.

FAMILY AND SOCIAL HISTORY

She was divorced since 15 years previously and lived in Mathare. She was a primary school teacher. She has been living with all her children till they grew up. She lived with her last born daughter while the rest of her children are in their own with their spouses. She neither drank alcohol or smoked cigarettes. There was no family history of chronic illness.

PHYSICAL EXAMINATION

She was in good general condition, was not pale, afebrile and not jaundiced. Her blood pressure was 130/80mmHg, pulse was 82/minutes, temperature was $35.9^{0}C$ and respiratory rate was 20/minutes.

RESPIRATORY, CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS

These were all normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. She had an old sub umbilical midline incision scar. There were no areas of tenderness. There was no organomegally, and no other palpable masses.

VAGINAL EXAMINATION

The external gentalia was normal. The cervix was normal size, closed and no threads were felt. The uterus was normal size, and anterverted. The pouch of Douglas and adnexas were free. A speculum examination confirmed the missing threads.

DIAGNOSIS

A diagnosis of translocated IUCD in a perimenopausal lady was made.

INVESTIGATIONS

FBC

HB: 13.0g/dl

WBC-5.3x10^9/L

RBC-4.96x10^{12}/L

PLATELETS – 252x10^{12}/L

Urea and electrolytes

-Na^+ - 152mmol/L

- K^+- 4.58mmol/L

Creatinine – 88. UMol/L

Abdominal XR – Lippes loop IUCD in the pelvis.
Abdominal U/sound – Lippes loop in the intrauterine cavity.

MANAGEMENT

The patient was prepared and scheduled for removal of the IUCD under general anaesthesia. The intended management was explained to the patient and an informed consent was obtained. She was to be done as a day case. She was admitted in the morning of the day of operation, having been instructed not to feed. She was shaved and given premedication of atropine 0.6 mg and pethidine 100 mg. She was then wheeled to theatre.

OPERATION

Once in the operating table, she was induced with general anesthesia and then placed in lithotomy position, cleaned and draped. The bladder was then drained with a metallic catheter. An auvard speculum was inserted into the vagina to expose the cervix. The cervix was cleaned with antiseptic solution and then grasped with a tenaculum forceps anteriorly. The uterus was then sounded and found to be six centimetres deep and anteverted. It was then dilated with Hegars dilators up to size 9. A small metallic curette was then inserted into the uterus and rotated. Curetting was done a few times before the IUCD was pulled out. Vulvaginal toilet was then done. Then general anesthesia was reversed.

She was taken to the ward where she remained stable and was discharged in the evening of the same day.

DISCUSSION

The patient presented here was admitted with a diagnosis of translocated IUCD. Dilatation and curettage wad done under general anesthesia where the IUCD was successfully removed.

The intrauterine contraceptive device (IUCD) is made of plastic or metal or a combination of these materials. [1]
The patient presented had lippes loop, which was inserted in the early 1980s. Lippes loop was withdrawn from the market in 1985. This was made essentially of plastic material.

The patient had a translocation of the Lippes loop. Ttranslocation occurs when the loop perforates the uterine wall, when the threads retract or fall off and when it rotates within the uterus. Translocation into the peritoneal cavity could cause intestinal perforations, fistula or adhesions.[7] Translocation could also be due to spontaneous migration through the uterine wall, malposition or rotation at insertion, small IUCD for the size of the uterine cavity or myoma.[7] In the patient presented, the coil was still in the uterine cavity though the threads had come off in attempts to remove.
Numerous complications have been described with use of various intrauterine devices. For most part, however, common side effects have not been serious, and the serious side effects are not common.

The earliest adverse effects are those associated with insertion. These include clinically apparent or silent uterine perforation, either while sounding the uterus or during insertion of the device, and abortion of an unsuspected pregnancy.

The frequency of these complications depends on operator skills and precautions taken to avoid interrupting a pregnancy. The incidence of perforations with the

copper T38A is 0.6 per 1000 insertions and with the progetasert the incidence is 1.1 per 1000 insertions.[6]

If the IUCD translocated into the peritoneal cavity it may be removed by laparascopy or laparatomy especially for copper containing devices, which produce intense inflamtion.[6]

If the threads are presumed to have retracted into the uterine cavity, gentle probing of the uterine cavity with a Randall stone clamp or a rod with a terminal hook will retrieve the strings. If the device is not felt on gentle probing of the uterine cavity, sonography is done to ascertain if the device is in the uterine cavity. If the findings are negative or inconclusive, a plain x-ray of the abdomen and pelvis are taken with a sound inserted into the uterine cavity or after insertion of a tracer IUCD. Hysterography and hysteroscopy are yet other alternatives to assist in localization of translocated IUCD.

In the patient presented both ultrasound and x-ray were done and confirmed the presence of IUCD in the uterus.

Once the IUCD has been confirmed to be in the uterine cavity the usual method of removal is by dilation and curettage as for the patient presented here.

Inert intrauterine devices such as lippes loop in the presented here can be left in indefinitely although they may cause endometrial erosion and bleeding.

Intrauterine contraceptive devices are highly effective. Properties and profiles are many and varied. These are futher discussed.

The intrauterine contraceptive device is the second most commonly used modern contraceptive method in Kenya. Unlike oral contraceptives, the effects of IUCD are limited to the uterus. [2] It is one of the safest and cost effective methods of family planning. The IUCD are especially useful in large-scale family planning

because they are cheap, and give long-term protection. The method is independent of coitus and fertility is almost always restored immediately after the device is removed.[1]

IUCDs are classified into the medicated and none medicated. The medicated IUCDS are impregnated with pharmacologically active agent that gradually dissolves when placed in the uterus. The non-medicated include lippes loop and the dackon shield that was withdrawn from the world market in 1974. The medicated IUCDs include copper T, Copper 7, multiload, nova-T and progestasert.[1, 2,3]

The US food and drug administration (FDA) has approved three IUCDs for use there. These are copper T380A (paragard) progesterone releasing T (progestasert) and the levonorgestresl releasing T (Mirena). The copper T 380A has bands of copper on the cross arms of the T in addition to copper wire around the stem, providing a total surface area of 380mm of copper, almost double the surface area of copper of earlier copper devices. The copper T380A is approved for up to 10 years of continuous use. The progestasert must be replaced every year. The mirena is approved in the united states for 5 years, although studies through 7 years show no loss of efficacy.[4,5]

The mechanisms by which these devices effect contraception have not been defined precisely. They cause the formation of "biologic form" within the uterine cavity that contains strands of fibrin, phagocytic cells, and proteolytic enzymes. Copper IUCDS continuously release a small amount of the metal producing an even greater inflammatory response. All IUCDS stimulate the production of prostaglandins within the uterus, consistent with smooth muscle contraction and inflammation. The altered intrauterine environment interferes with sperm passage through the uterus preventing fertilization. IUCDS are not abortifacients. Other mechanism include disruption of endometrial maturation with

progesterone releasing devices alteration of normal tubal cilia action and even disruption of the oocyte maturation.[1, 4]

The markers threads on the IUCD enable the patient to feel them and ascertain the presence of the IUCD in position. These threads also enable removal of the IUCD when the time comes.[1, 4] In the patient presented, the IUCD was lost after attempted removal caused the threads to come off. Removal was therefore by dilation and curettage under general anesthesia.

Efficacy with copper T 380A device is high with a failure rate of less than 1% per year with prolonged use. In contrast progestasert T has a failure rate of about 1-1.5% with 25% of pregnancies being ectopic.[1, 4, 5]

Most practitioners insert IUCDS during menstrual periods because the cervical canal is fully patent then and the patient is less likely to be pregnant. Furthermore the endometrial cavity may be more distensible at this time of the cycle and uterine cramps if they occur as a result of insertion, will be less noticeable. However insertion can be accomplished at any other time if this is desired or is more convenient for the patient.[1]

Patient satisfaction on use is good and when complication such as perforationscan be easily managed once the diagnosis is made.

REFERENCE

1. DeCherney A.H Pernoll M.L
   Contraception and family planning in: Current Obstetrics and Gynecologic Diagnosis And Treatment: 33:670-688.1894

2. Mumia J. A. Kamau K.R
   Intrauterine contraceptive device
   Manual of clinical family planning practice 10:113-121, 1988

3. Dutta D.C.
   Contraception in Textbook of Gynaecology
   2nd Ed 28:422-429, 1997

4. Berek J.S
   Family planning in: Novak's Gynecology. 10:21-293, 2001

5. Sivin I, Stern J
   Health during prolonged use of levonorgestrel 20mcg/d and copper T 380A intrauterine contraceptive devices. A multicentre study. *Fertil. Sterile.* 61:70-77, 1994

6. Cunningham F.G. Et al
   Family planning in: Williams obstetrics, 21st ed. 58:1517 – 1562, 2001

7. Gentile G.P Siegler A.M. The misplaced or missing IUCD-Review *Obstet, Gynaecol. Survey*, 1987, 32:627

GYNAECOLOGY CASE 5

BATHOLINS ABSCESS – MARSUPULAZION:

NAME	**:**	**M.W.**
IP/NO.	**:**	**0903934**
AGE	**:**	**27 YEARS**
D.O.A.	**:**	**22/8/03**
D.O.D	**:**	**27/8/03**

PRESENTING COMPLAINT

She came with a painful swelling of the left labia for four days.

HISTORY OF PRESENTING COMPLAINT

She was well till four days prior to admission when she developed a progressive painful swelling of the left labia. There was no vaginal bleeding or discharge and there was no dysuria or frequency.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

She was para 2 plus 0. Her previous deliveries were by spontaneous vertex delivery. Her last delivery was in 1999. Her last menstrual period was on 10/8/03. The menses were regular occurring every 28 days and lasting four days. She was on depo provera injection between 1999 and 2002 and on pills since then to date.

FAMILY AND SOCIAL HISTORY

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

PAST MEDICAL HISTORY

She had been admitted only for delivery. She had not suffered any major illnesses.

PHYSICAL EXAMINATION

GENERAL EXAMINATION

She was in fair general condition, not pale, not jaundiced and not edematous. Her blood pressure was 130/70 mmHg, pulse rate was 82/minute, respiratory rate was 22/minute and temperature was 36.70°C.

ABDOMINAL EXAMINATION

The abdominal was of normal fullness. There were no areas of tenderness and there was no masses or organomegally.

VAGINAL EXAMINATION

There was a swelling of the left labia. The swelling was shiny, tense and very tender. The right labia and clitoris were normal. On digital examination, the cervix was posterior, firm and the uterus was of normal size and mobile. The Pouch of Douglas and adnexa were normal. There was no vaginal discharge or bleeding.

DIAGNOSIS

A diagnosis of left side Bartholins abscess was made.

INVESTIGATIONS

PCV - 43%

U/E - Na+ -140 mmoL/L

K+ - 47 mmoL/L

Cr - 74 umol/L.

MANAGEMENT

She was prepared for marsupulization under general anesthesia. She was told about the mode of treatment and written consent was obtained. She was prepared for surgery on 26th August 2003. She was starved from midnight. She was shaved and was premedicated half hour before theatre with atropine 0.6mg. start and pethidine 50mg. Start.

In theatre, she was put in supine position and general anesthesia induced. She was then repositioned in lithotomy position, cleaned and draped. Examination revealed left side Batholins abscess. A linear incision was made at the junction of the mucus epithelium and the kenatinised epithelium.

About 20 mls of pus was drained. The edges of the abscess were then marsupulised using chromic catgut 2/0. General anaethesia was then reversed and patient left theatre in fair condition. She was discharged home the next day on amoxil, flagyl, brufen and advised on sitz baths twice daily for a week and perineal hygiene

FOLLOW UP

She was seen two weeks later in the gynecology outpatient clinic and was found to be well healed and was discharged from follow up.

DISCUSSION:

This is a presentation of a 27 year old lady who is para 2 + 0 presenting with acute Batholins abscess for which marsupulization was done.

A normal Batholin's gland cannot be palpated. Approximately 2% of adult women develop enlargements of one or both glands, of which there are 3 common causes. The most common cause is cystic dilatation of the gland. Symptomatic enlargement of the Batholins gland may be secondary to adenitis or abscess formation. Mechanical obstruction of the duct usually precedes overt infection.[2]

The patient presented with acute onset symptoms of pain. Pain is usually caused by inlammation and the pressure of the contents inside the abscess. The main causative agent for acute Bartholinitis is gonococcus and to a lesser extend, escherichia coli, staphylococcus, streptococcus, or chlamydia trachomatis or mixed types.[3, 4,5]
Acute symptoms resulting from infection are pain, tenderness and dyspareunia. The surrounding tissues become edematous and inflamed and a fluctuant mass is usually palpable.[4]
Occasionally the gland may form a cyst as a result of blockage of the duct.

The patient presented here was in her reproductive age which constitutes the commonest time when this abscess develops. Bartholin's abscess constitutes 1-7% of acute gynecological admissions at Kenyatta National Hospital.[7]
The condition appears most commonly during the reproductive years. Eighty three percent of the patients are between 20 and 50 years of age.[1]

The patient was managed by draining the abscess. Many methods have been used for treatment of Batholin's gland with varying results. The aim of treatment

is principally to preserve the gland and prevent recurrence. Simple incision and drainage may provide temporary relief. However, the opening tends to become obstructed and recurrent cystic dilation and infection may result. The recurrence rate after simple incision and drainage is 68-75%. [4]

The classic and widely practiced method of treatment of a Batholins abscess is to develop a fistulous tract by marsupulizing the gland as was done in this psatient. Another mode of treatment is by insertion of a Ward catheter.[1, 4,7]

In marspulization, a wedge shaped vertical incision is made on the vaginal wall at the center of the cyst. The cyst is drained and then everted and sutured using delayed absorbable sutures. Sitz baths from the third postoperative day is recommended.

The patient M.W. was treated using this procedure. Recurrence following marsupulazation is 10-15%. [4]

Definitive treatment is excision of the cyst, but cannot be done during infection as it would lead to spread infection and hemorrhage.

In rare instances, Batholins glands may be a site of adenocarcinoma.

REFERENCES:

1. Health J.
   Methods of treatment for cysts and abscess of the Batholins gland.
   Brit. J. Obstet. Gynaecol, 95:321-322, 1988.

2. Droegemuller W., Herbst A.L., Mishell D.R., Stencherer M.A.
   Infections of the lower genital tract in comprehensive gynecology 21: 567- 613, 1987.

3. Cunningham F.G., MacDonald P.c., Leveno K.J. et. al. Anatomy of the reproductive tract of women and vulval abnormalities in: Williams obstetrics 19th ed. Appleton and Lange, 3: 59 and 22: 529, 1993.

4. Decherney A. H., Pernol M.L.
   Benign disorders of the vulva and vagina in: current obstetrics and gynecologic diagnosis and treatment, 8th ed. Appleton and Lange, 34: 689-712.1994

5. Scott J.S.
   Benign disease of the vagina and vulva in: Dewhurst's Textbook of obstetrics and Gynecology for postgraduates. 4th ed 46:719-20, 1988.

6. Mumia S.A.
   Bartholin's Abscess at Kenyatta National Hospital.
   M.Med Thesis, University of Nairobi, 1981.

7. Yavetz H., Lessing J.B., Jaffa A.J.
   Fistulization: An effective treatment for Bartholin's abscess and cysts.
   Acta Obstet Gynaecol. 16:476, 1960.