

**KENYA MEDICAL TRAINING COLLEGE**

**DEPARTMENT OF NURSING**

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**ABNORMAL MIDWIFERY**

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# **OBSTETRICAL EMERGENCIES**

## **POST PARTUM HEAMORRHAGE (PPH)**

Def: It's the bleeding after delivery of the baby amounting to 500 mls or more per vaginally or 1 litre through ceaserian section or ay amount affecting the mother's condition.

### **TYPES OF PPH;**

There are two types of PPH;

1. Primary PPH
2. Secondary PPH

### **PRIMARY PPH**

Def: It's the bleeding after delivery of the baby amounting to 500 mls or more vaginal or 1 litre through ceaserian section or ay amount affecting the mother's condition occurring within 24 hours after birth

### **Causes of PPH**

There are four causes: (4Ts)

1. T- Tone (Atonic uterus)
2. T-Trauma (e.g. tear, ruptured uterus)
3. T-Tissue(Retained products of conception)
4. T-Thrombin (thrombocytopenia- clotting disorders)

### **Atonic uterus**

Def: This is a situation where the uterus fails to contract after delivery of the baby

NB/ The commonest cause of primary PPH

Predisposing factors to Atonic uterus

- a. Multiple pregnancy

This is as a result of over distension of the uterus

- b. Polyhydromnous

This is a condition where is excessive amniotic fluid in the uterus either or equal to 1500ml. this contributes to over distension of uterus leading to atonic uterus

- c. Big baby

This causes over distension of the uterus leading to uterus Atomy.

d. Prolonged labour

It exposes uterine muscles to fatigue reducing the ability to contract after the delivery of the baby causing uterine atony

e. Fibroids

It reduces the ability of the uterus to contract (being an abnormal growth/mass in the uterus) after the delivery of the baby

f. Full bladder

A full bladder competes for space with the contracting uterus which prevents the uterus from contracting fully thus causing atonic uterus.

g. Previous caesarean section CCS

The previous scar usually heals with a formation of fibrous tissues; the fibrosis reduces the ability of the uterus to contract leading to uterine atony.

h. Multiply parity

Every time you conceive the placental site changes for convenience.

Every previous placental site heals with fibrosis. The more placental sites the more the myometrium is replaced with fibrous tissue and this results in uterine atony after the delivery of the baby

i. Placenta previa

This is a placenta on the lower uterine segment; the ability of the uterus to contract and close the placental site of the lower uterine segment is low. It is as a result of fewer myometrium on the lower uterine segment leading to haemorrhage.

j. Placenta abruption

With placenta abruption there is a formation of retro-placental clot. Blood from the clot leaks or is absorbed into the myometrium, resulting in a retroplacental haematoma or uterine myometrium. This will lead to inability of myometrium to contract resulting in uterine atony.

k. Precipitate labour

This is abnormal short labour characterized by contractions with no retractions, after delivery of the baby the uterus fails to contract due to poor muscle co-ordination during labour to uterine atony.

l. Drugs

Use of drugs that affect the contractility of the uterus e.g. Anesthetic drug,  
Anticonvulsant e.g. MgSO<sub>4</sub>

m. Mismanagement of 3rd stage of labour

This includes even the failure or delay to administer syntocinon after the birth of the baby as required.

- n. Over massaging of the abdomen.

Massage brings muscle confusion.

o. Over use of oxygen will lead to failure of oxytonic to cause contraction of the uterus. Once the uterus is exposed to sintocinon several times the effectiveness of the drug goes down. The oxytocin receptors on the uterus fail to work effectively.

- p. Retained placenta

This is when retained products of conception e.g. placenta, clots, membranes have not been delivered. This is one of the most common causes of uterine atony.

### **Diagnosis of an Atonic uterus**

- a. Excess bleeding after the delivery of the body
- b. Uterus feels softly and boggy, distended.

### **NB**

All women with risk factors to atonic uterus should receive prophylactic management to the mother about an atonic uterus.

### **Management of postpartum hemorrhage with Atonic uterus**

1. Shout for help, Dr ABC
2. Reassure the mother.
3. Massage the uterus to expel clots
4. Empty bladder
5. Remove clots if any
6. Give oxytocin if not given or repeat 10ru
7. Fix an iv access preferably with large bore cannula gauge 16-18.
8. Collect blood sample for investigation, GXM, clotting time platelet count Hb
9. Start the mother on syntocinon 20- 40iu in 1000ml of normal saline and run at a rate of 60drops for the 1<sup>st</sup> one litre. Then 20 – 40 iu in 1000ml of normal saline to run at 40 drops per minute.
10. Administer misoprostal or cytotec 800mg start rectal for PPM (4table for mouth for induction)
11. administer ergometrine 0.2 mgs intravenously every 15 minutes to a maximum of 1 gram
12. Administer prostaglandin F2 1-2 mg start intramyometrial through abdomen to the endometrium.
13. Perform bi- manual compression of the uterus either internal or external.
  - With internal bi- manual compression one hand on the fundus and other on cervix

- With external bi-manual compression, one hand is on the abdomen targeting the posterior aspect of the uterus while the other hand is on the abdomen again targeting the uterus anteriorly. Pressure is applied to compress the uterus.
14. Balloon tamponade can be done.
  15. Perform an aortic compression
  16. A B-lych suture can be applied in theatre.
  17. If bleeding is more do total or subtotal hysterectomy

#### Supportive management

- ✓ Observe the mother closely 15 min for TPR, blood pressure putting more emphasis on pulse.
- ✓ Ensure that the mother is warm
- ✓ You can consider transfusion
- ✓ Observe infection prevention procedures.
- ✓ Encourage breastfeeding
- ✓ Administer broad spectrum antibiotic prophylactically.

### 3. TRAUMA

Def: This is injury to genital tract/reproductive organ following delivery of the baby leading to haemorrhage.

#### Predisposing factors

1. Perineal tear. (tight and rigid perineum)
2. Big baby
3. Cervical tear
4. Malpresentation e.g. breech
5. Malposition
6. Instrumental vaginal delivery e.g. vacuum delivery
7. Assisted vaginal delivery
8. Massage
9. External and internal cephalic version.
10. Mismanagement of labour (fail to support the perineum)

#### Classification of perineal tears

- A. 1<sup>ST</sup> Degree – it involves the vaginal mucosa
- B. 2<sup>nd</sup> degree – it involves the vaginal mucosa and muscles
- C. 3<sup>rd</sup> degree – involves vaginal mucosa and muscle and the anal sphincter
- D. 4<sup>th</sup> degree – vaginal mucosa, muscles and anal sphincter and anterior wall of the rectum.

#### Principles of repair to perineal tear

- i. Observe infection prevention technique
- ii. Use minimal suture

- iii. Achieve haemostasis
- iv. Pain management, adequate analgesics
- v. Prophylactic; PRN (where technique)
- vi. Good exposure/ view of the tear.
- vii. Type 3 and 4 repair in theatre

### **Management of PPH secondary to trauma**

1. Shout for help, DR, ABC
2. IV access, fix large bore cannula, 16-18 gauge
3. Investigations; GXM, blood clotting time
4. Keep mother warm
5. Observations, TPR BP.
6. Repair the tear
7. Observe principals of perineal repair.

### **Health education after repair.**

- Observe personal hygiene.
- Clean with warm saline water. remember not hot saline saturated water otherwise it may interfere with healing process.
- Delay sexual intercourse until healing takes place.
- Avoid saline
- Avoid constipation
- Remind the mother that the suture used if absorbable then there will be removal of stitches.

### **Thrombocytopenia'**

This is bleeding after delivery of the baby due to clotting disorders

### **Predisposing factors.**

- i. Intra uterine fetal death (IUFD)
- ii. Severe pre-eclampsia (PET)
- iii. Amniotic fluid embolism; if amniotic fluid goes to maternal circulation
- iv. Antipartum haemorrhage due to placenta abruption
- v. Drugs e.g. Heparin for treatment of coagulant disorders
- vi. Septicemia secondary to severe haemorrhage
- vii. Massive transfusion
- viii. Haemophilia

### **Diagnosis**

- i. Excessive bleeding
- ii. Low platelet count less than 150
- iii. Prolonged bedside clotting time above 11 minutes

## Management

- A. Dr ABC, shout for help
- B. Iv access
- C. Investigation
- D. Observation, temperature, blood pressure, pulse.
- E. Keep the mother warm

## Specific management

- i. Give fresh frozen plasma
- ii. Transfuse with most fresh blood
- iii. Give intrinsic factors or synthetic fibrinogen 0.8mg stat. Cryoprecipitate boasts the intrinsic factors
- iv. Give clotting factors (platelets)

## Complications

- anaemia
- Dic
- Sheehan's syndrome
- puerperal sepsis
- maternal death

## RETAINED PLACENTA

Definition- This is a condition where after the delivery of the baby the placenta fails to be delivered spontaneously within 30 minutes.

Occurs to 0.8- 1.2% of deliveries.

15 re- 20% of maternal death as a result of pph is due to retained placenta.

## Causes

- atonic uterus
- placenta separated but trapped in cervix
- abnormal placentation (accrete, increta, pancreta)

## Risk factors

- previous surgery or trauma
- uterine abnormality
- preterm deliveries

- poor skills placenta removal

### **Management**

- explain to the mother
- reassure
- manage uterus
- empty bladder
- Start sintocinon 10 units intramuscularly and 5 units intravenously.
- perform manual removal - skill
- administer antibiotics
- In case placenta cannot be delivered e.g. in placenta pancetta, reduce cord, ligate and retain
- Administer methotrixate to avoid malignancy.
- once out explore uterine cavity and perform placental examination
- Encourage breastfeeding.

### **Complications**

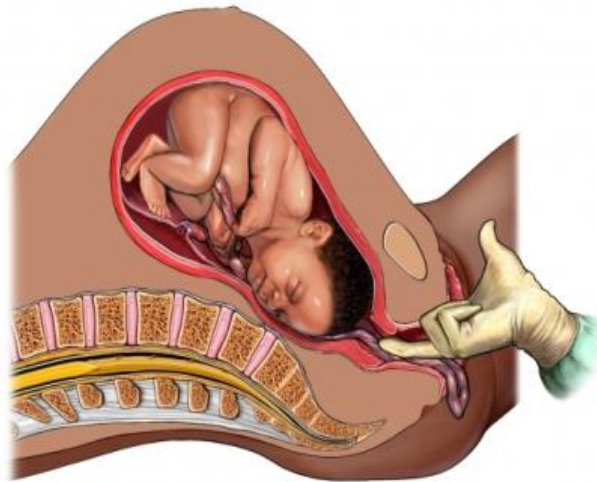
- *Haemorrhage*
- *Sepsis of*
- *Risk of cancer*
- *Maternal death*

### **CORD PROLAPSE**

Def: This is a condition where the cord is lying ahead of the presenting part and membranes are ruptured

Incidence: **1** in every **300** pregnancies is likely to complicate with cord prolapse.





**Cord presentation;** this is a condition where the cord is a head of presenting part and membranes are intact

**Occult cord presentation;** this is when the cord is on the side of the presenting part, neither the head/ buttocks nor the cord is leading.

## **PREDISPOSING FACTORS**

### **1. Long cord**

Any cord above 60 cm is considered long cord. It can always take advantage of its length and find itself ahead of the presenting part.

### **2. Polyhydramnios**

This is the presence of excessive amniotic fluid in the uterus. The risk for cord prolapse is high in case of spontaneous rupture of membranes. The force exerted by the gush of the amniotic fluid sweeps the cord and brings it ahead of the presenting part.

### **3. Premature rupture of membranes**

The head is rarely engaged and the cord can find space and lead the presenting part

### **4. A high presenting part**

There is room for cord to present when the mother goes into labour with head still high.

### **5. Malpresentation**

This is when there is an abnormal presentation e.g. shoulder presentation, breech e.t.c. abnormal presentations are associated with poor fitting presenting part to the pelvis. That situation creates space for the cord to find its way ahead of the presenting part.

## **6. Placenta previa**

The placenta is already on the lower uterine segment so the cord. This gives advantage of the cord to be ahead of the presenting part.

## **7. Contracted pelvis**

A contracted pelvis will not favour the presenting part to fit well. It may allow some space for the cord to present.

## **8. Multiple pregnancy**

There is more than one fetus in the uterus. The risk for cord prolapse increases from the one fetus to the other as they are being born. In case of twin pregnancy the second twin carries a greater risk.

## **9. low birth weight**

A low birth weight <2500 predisposes to cord presentation. this condition is almost similar to prematurity.

## **DIAGNOSIS**

- i. Visibility of a cord on vaginal inspection.
- ii. Palpation of a cord with ruptured membranes ahead of presenting part.
- iii. Suspect with abnormal fetal heart after rupture of membranes
- iv. ultra sound

## **MANAGEMENT**

### **NOTE:**

In the management of cord prolapsed with a live fetus we aim at quick delivery of the baby using the quickest method possible. Guidelines suggest that any cord prolapse occurring during first stage of labour the mode of delivery should be caesarian section. During second stage consider vaginal delivery unless contraindicated.

### **Factors determining cord prolapse management;**

- i. Whether the cord is pulsating or not*
- ii. Adequacy of the pelvis*
- iii. Stage of labour*
- iv. The level of health facility*

- During the management of cord prolapse, assess if the cord is outside the birth canal clean it with warm normal saline or hibitane and pack with clean gauze back into the birth canal.
- Reassure the mother and the relatives.
- If it occurred at home while undergoing home delivery thank the mother for making the decision to come to the hospital.
- Perform abdominal palpation to confirm the lie is of the fetus. It must be longitudinal. If it is transverse prepare for referral if in a basic obstetrical care facility or ceaserian section if in a comprehensive obstetrical care facility.
- Always relieve pressure of the cord. The fetus may not survive beyond 10 minutes with cord compression.

### Methods of relieving pressure off the cord pressure

1. *Knee chest position*
2. *Raise the foot of the bed – reverse tendelsburg position.*
3. *Counter pressure*
4. *Exaggerated sims position*
5. *Fill the bladder with N/S*
6. *Tocolytics; give mg50s, 4gm IV of 20% or sulbutamol.*

## MANAGEMENT IN A BASIC EMERGENCY MATERNAL AND NEWBORN CARE (BEMoNC) FACILITY.

### During first stage of labour

- It is an obstetric emergency. Do not start any partograph as per the guidelines.
- If the **cord is pulsating** and **pelvis is adequate** refer the mother to a comprehensive obstetrical care facility. This is according to the guidelines.
- If the **cord is pulsating** and **pelvis is not adequate** refer the mother to a comprehensive obstetrical care facility. Inform the mother and relatives about the delivery option which is caesarian section.

As you are referring the woman since the fetus is alive do the following:

- Establish intra venous access.
- Take blood samples

- Start the woman on intravenous fluids preferable normal saline.
- Put her on oxygen by mask
- Prevent any pressure to the cord by presenting part by taking the following measures;
- Position the mother in the either of the following positions as explained earlier to relieve pressure off the cord;
  1. **Reverse tendelberge position**
  2. **Exaggerated sim,s position**
  3. **Knee chest position**

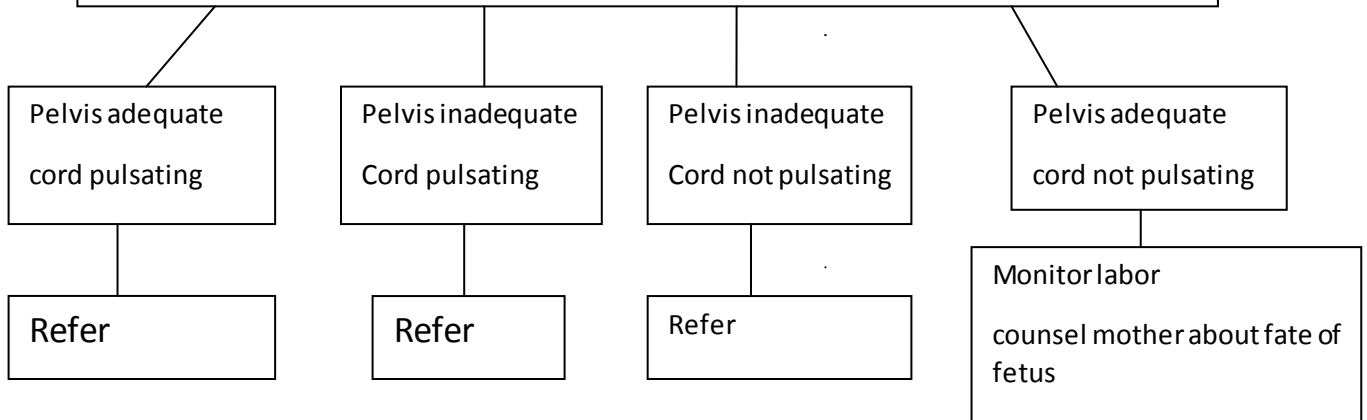
**OR** use the manourvers to relieve pain

1. **Fill bladder with normal saline approximately 500mls- 1000mls.**
2. **Apply counter pressure with your examination fingers in the vagina during every contraction.**
3. **Administer tocolytics magnesium sulphate or salbutamol**

**Note:** The cause for occlusion of cord vessels is either **physical compression** OR **low temperatures.**

- In case she approaches second stage allow her to push if the fetus is in longitudinal lie.
- Expect to receive an asphyxiated baby.
- If cord is **not pulsating**, **pelvis is adequate** and fetus in longitudinal lie, allow the mother to bear down. Counsel her to expect a dead fetus.
- If cord is **not pulsating** ad pelvis is **not adequate** refer the mother to a comprehensive care facility for further management to include destructive operation/ embryotomy.
- In case the fetus is dead and the mother has very strong uterine contractions with an inadequate pelvis you can administer **tocolytics** e.g. **magnesium sulphate 4gms of 20%** intravenously start dose as you refer.
- Always remember to carry with you a delivery pack during referral.
- Inform the referral hospital about the condition of the mother.

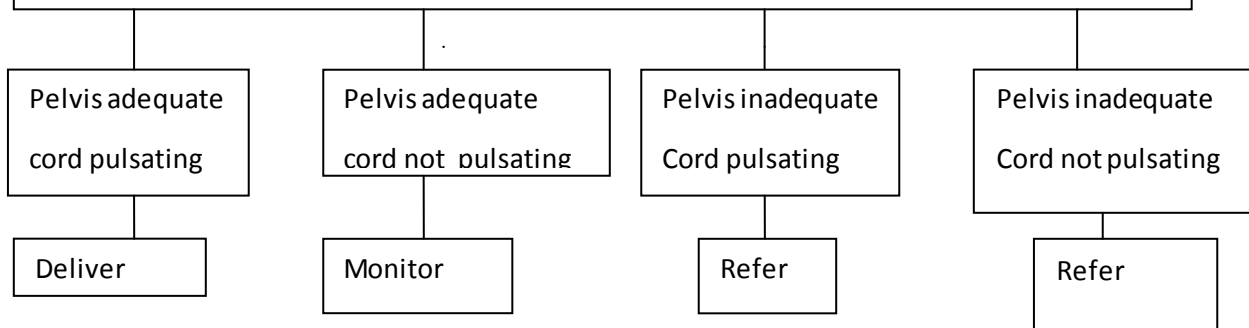
### Management of cord prolapsed in a basic health facility 1st stage of labour lie longitudinal.



### Management during second stage of labour in a BEMoNC.

- If the lie longitudinal, **fetal heart present, pelvis is adequate** and in **second stage of labour**, plan for a quick delivery and give an episiotomy. Assisted vaginal delivery (AVD) can be applied to fasten 2<sup>nd</sup> stage.. Prepare for resuscitation
- If fetal heart is present, pelvis is inadequate and lie is longitudinal refer the mother to a comprehensive care facility. Give normal saline or ringers lactate. Put the mother on oxygen.
- Carry with you a delivery and resuscitation pack.
- Monitor fetal heart rate ¼ hourly and inform the comprehensive facility to prepare for an obstetrical emergency.
- If the **pelvis is inadequate**, cord is **not pulsating**, inform the mother about the condition. Refer her to a comprehensive care facility for embotomy or decapitation.

### Management of cord prolapsed in a basic health facility 2<sup>nd</sup> stage of labour lie longitudinal.



## MANAGEMENT IN A COMPREHENSIVE OBSTETRIC AND NEWBORN CARE (CEMONC) HEALTH FACILITY

### During first stage of labour

- If cord is **pulsating, pelvis is adequate** and lie is longitudinal position the mother to relieve pressure off the cord and prepare for emergency ceaserian section. Give intravenous fluids, oxygen via mask, investigations can be done and monitor fetal heart rate vigilantly.
- In case the cord is **not pulsating, pelvis is adequate** and lie longitudinal counsel her and let her undergo normal labour aimed at vaginal delivery unless there is a contraindication.
- In case the cord is **not pulsating, pelvis is inadequate and lie** longitudinal or not counsel her and let her undergo embryotomy.

### During second stage of labour

- If **cord is pulsating** and **pelvis is adequate** give a generous episiotomy and urge the mother to push. Assisted vaginal delivery (AVD) can be applied to hasten second stage of labour. Prepare for resuscitation as you anticipate receiving an asphyxiated baby.
- If **cord is pulsating** and **pelvis is inadequate** prepare for emergency c/s. meanwhile administer oxygen via mask, relieve pressure off the cord and rehydrate the mother.
- If **cord not pulsating** and **pelvis is adequate** prepare the mother to accept a dead and deliver baby by spontaneous vaginal delivery unless contraindicated.
- If **cord not pulsating** and **pelvis is inadequate** prepare the mother to accept a dead and deliver baby by embryotomy/ decapitation.



A lecturer demonstrates a skill to students at MTC Msambweni,s skills labour

**NB:** It is approximated that 10 minutes is a long time for the baby to stand cord compression without much complications.

Prognosis of cord presentation is good in **breech** presentation as compared to **cephalic**.

## **COMPLICATIONS**

### **Complications of cord prolapse**

- Fetal distress
- Maternal distress
- Fetal death
- Maternal mortality
- Fetal hypoxia
- Asphyxia neonatorum
- Brain damage
- Still birth

## **UTERINE INVERSION**

### **Definition**

This is when the uterus turns inner side out i.e. inner side of the fundus into the vaginal canal.

Incidence 1/:1200

### **Predisposing factors**

- Mismanagement of 3<sup>rd</sup> stage of labour
- Excessive fundal pressure
- Short cord
- Precipitate labour
- Polyhydrominous
- Prolonged labour
- Fundal myoma
- Ante partum use of magnesium sulphate
- Primiparity
- Fundal placentation
- Abnormal placentation
- History of uterine inversion.

### **Classification**

It is according to **time of onset** and **severity**.

### **Classification according to time of onset**

1. Acute inversion
2. Sub- acute inversion
3. Chronic inversion

#### **1. Acute inversion**

- Occurs after birth and before the cervical ring closes
- Usually within 24 hours after delivery.

#### **2. Sub acute inversion**

- Occurs after cervical ring has closed
- Occurs after 24 hours after birth of the baby to 4 weeks

#### **3. Chronic inversion**

- Occurs after 4 weeks after delivery.
- It is associated with disease e.g. CA.

### **Classification according to severity**

#### **1. Incomplete/ 1<sup>st</sup> degree**

Uterine inverts but lies in the uterine cavity.

#### **2. Complete uterine inversion/ 2<sup>nd</sup> degree**

Fundus of the uterus goes beyond the external OS of the cervix. It is in the vaginal canal but not beyond the hymen. It's palpable on vaginal examination.

#### **3. Prolapsed uterine inversion/ 3<sup>rd</sup> degree**

Inverted uterus goes beyond the vaginal introits.

#### **4. Total uterine inversion/ 4<sup>th</sup> degree**

Involves vaginal walls and the uterus both seen at the vulva. Associated with CA cervix and Puerperal sepsis.



## Diagnosis

- a) Visible in case of uterine prolapse.
- b) Palpated inverted uterus
- c) Haemorrhage
- d) Felt in the vagina in case of complete inversion
- e) Severe hypotension with other signs of shock
- f) Fundus missing on abdominal palpation
- g) Ultra sound can be done

### 3.5 Management.

The principles of management of uterine inversion are;

- Treatment of shock/ stabilizing the mother from hemorrhage.
- Replacement of the uterus
  - This is an obstetric emergency.
  - Call for help
  - Reassure the mother
  - Fix two large bore cannulars
  - Resuscitate with intravenous fluids
  - Administer oxygen
  - Take blood for GXM and order for fresh blood
  - Elevate the foot of the bed
  - Sedate the mother with pethidine.
  - Take vital signs ¼ hourly
  - Clean the uterus with hibitane or warm normal saline and pack with gauze.
  - Discontinue uterotonic therapy.
  - If the uterus is inverted and contracted at the same time making replacement difficult halothane can be administered.
  - Replace the uterus immediately manual (**Johnsons manouvre**) or inflate with normal saline (**hydrostatic manouvre**)
  - Administer syntocinon immediately after correction has been done.
  - The mother should be started on broad spectrum antibiotics
  - If the maneuvers were unsuccessful consider surgical interventions to include laparotomy and OR hysterectomy.
  - In case the uterus is replaced and the woman is still bleeding manage as PPH.
  - A pap smear can be taken to rule out cancer
  - Subsequent pregnancies are also at risk so let the woman attend clinic early and give history of uterine inversion.

## **Complications**

1. Primary post partum haemorrhage
2. Infection
3. Anaemia
4. Shock
5. Gangrene formation
6. Paralytic ileus
7. Infertility

## **RUPTURED UTERUS**

### **Definition:**

This is a tear in the wall of the uterus.

It is one of the serious obstetrical emergency though can be prevented.

### **Types**

- Complete rupture
- Incomplete rupture
- Dehiscence

#### **I. Complete rupture**

This is when the tear involves all the three layers of the uterus i.e. endometrium, myometrium, and perimetrium and sometimes plus peritoneum.

#### **II. Incomplete rupture**

This is the tear which involves endometrium and myometrium.

#### **III. Dehiscence**

This is when there is a tear involving the endometrium. In most cases this may go undiagnosed.

### **Predisposing factors**

1. Polyhydrominous

2. Multiple pregnancy
3. Pregnancy occurring within 6 months after a CS (fresh scar)
4. Obstetric manipulation e.g. external cephalic version
5. Previous classical scar in labour
6. Malpresentation
7. Ignored labour.

#### **4.4 Causes of ruptured uterus**

1. Obstructed labour – shirodikar stitch in labour, cervical dystocia
  - 1.2 Excessive use of oxytocin, especially in previous scar
2. Intra-uterine manipulation
3. Forceps deliveries and vacuum extraction
4. Multiparity
5. Trauma e.g. in accidents
6. Perforation of pregnant uterus leading to rupture during subsequent pregnancy

#### **4.5 Signs and symptoms.**

The signs are categorized in to two i.e. early and late signs and signs indicting rupture has occurred.

##### **4.5.1 Early signs**

- Scar pain and tenderness in previous scar mother
- Fresh per vaginal bleeding
- Cervix does not open despite effective contractions
- Increased pulse rate
- Previous strong contractions cease abruptly
- Presenting part is high despite strong contractions
- Early rupture of membranes
- Cervix appears like an “empty sleeve”
- Fetal heart deceleration

##### **4.5.2 Late signs**

- Dehydration
- Ketosis (excessive metabolism of protein)
- Severe pain
- Poor urinary output and could be blood stained

- Uterus is moulded around the fetus
- Formation of a bundles ring
- Contraction which do not relax in between contraction
- Vagina hot and dry
- Presenting part is high, wedged and immobile
- Excessive moulding
- Capput succedaneum
- Mother is exhausted and appeals for help

#### **4.5.3 Signs indicating rupture**

- Feeling of a sharp pain during rupture
- Mother feels something has given way fetal parts palpable in the abdomen
- Sudden collapse
- Contractions cease
- Fetal heart rate disappears.
- Fetal parts easily palpated of the abdomen and outside the uterus.

#### **4.6 Management**

- Call for help and resuscitate mother
- Elevate the feet of the mother
- Start on IV infusion of N/S
- Inform theatre and prepare for emergency CS
- Prepare the mother for C/S
- Inform and reassure her and relatives
- Take blood for GXM and at least 2 units ready
- Repair or hysterectomy done depending on the degree of tears
- Counsel her not to conceive before 2 years are over if no hysterectomy was done
- If hysterectomy was done counsel her not to expect another baby or menses.
- ct management of postnatal mother

#### **4.7 COMPLICATIONS**

##### **4.7.1 Complications to the mother**

1. Peritonitis

2. septicemia
3. urinary tract infection
4. renal failure
5. paralytic ileus
6. Anaemia
7. Amniotic fluid embolism

#### **4.7.2 Complications to the baby**

1. Birth asphyxia
2. still birth
3. neonatal death

#### **4.8 Prevention**

- encourage women to attend clinic
- discourage the community on use of herbs
- All mothers with risk factors to be referred to hospital
- Monitor labour by use of partograph
- Early recognition of signs of obstruction and rupture of uterus
- Diagnosis of contracted pelvis

## **5.0 AMNIOTIC FLUID EMBOLISM (AFE)**

### **5.1 Definition.**

This is a rare but potential catastrophic condition which occurs when amniotic fluid enters the maternal circulation via the uterus or placental site forming an embolus which obstructs one of the pulmonary arterioles or alveolar capillaries. Be on the lookout, you may lose a woman who was health and with no signs of pending complication.

Remember amniotic fluid is rich in thromboplastin

### **5.2 Pathophysiology**

The body responds in two phases:-

1. Initial phase
2. Secondary phase

### **Initial phase (pulmonary phase)**

There is going to be pulmonary vasospasms causing

- a) Hypoxia
- b) Hypertension
- c) Cardiopulmonary collapse
- 50% of patients die during this phase

### **Secondary phase (hemorrhagic phase)**

This phase will be characterized by:

- a) Left ventricular failure
- b) Pulmonary oedema
- c) Coagulatory disorder which will be followed by massive hemorrhage.

## **5.3 Predisposing factors**

- Placental abruption
- Perforation or ruptured uterus
- Precipitate labour
- Intra-uterine fetal manipulations
- Caesarian section
- Trauma
- Termination of pregnancy
- Manual removal of retained placenta
- Obstetrical procedures e.g. amniotic transfusion, internal podalic version etc.
- Over stimulation of the uterus by use of oxytocic drugs or prostaglandins
- Advanced age
- Associated with male fetus

## **5.4 Signs and symptoms**

- Cardiopulmonary arrest
- Sudden onset of maternal respiratory distress syndrome
- Turtumus laboured breathing
- Maternal hypotension (sudden with loss of diastolic pressure)
- Uterine atony

- Collapse then followed by convulsions (seizures) with cyanosis
- Blood coagulation disorder
- Severe chest pain
- Pulmonary oedema
- Fetal bradycardia

### **5.5 Management - Emergency action**

- Any of the above is indicative of an acute emergency as the mother is likely in a state of collapse.
- Shout for help from a senior person.
- Start resuscitation immediately
- Establish intravenous access.
- Rehydrate the mother with normal saline or ringers lactate
- Aim at early delivery of the baby if still inside
- Provide intensive care (nurse in ICU)
- Prop up the mother and administer oxygen
- Take blood for grouping and cross match
- Contact the anaesthetist in case of GA and cardiac problem
- Administer aminophylline and hydrocortisone slowly to reduce bronchospasms
- Transfuse with fresh blood slowly and administer fibrinogen
- Specific management of the condition is life support and high level of oxygen is required
- Mothers who survive are likely to suffer a degree of neurological impairment
- In case the baby is born continue with immediate management.
- Apply AMSTL for third stage of labour.

### **5.6 Complications**

#### **5.6.1 to the mother**

1. Disseminated intravascular coagulation (DIC)
2. Uterine atony
3. Acute renal failure
4. Hemorrhage
5. Anaemia
6. Maternal death

#### **5.6.2 to the baby**

1. Still birth



**A lecturer explains to students how to perform a skill. Mtc Msambweni**

## **MATERNAL DISTRESS**

### **6.1 Definition**

It is a condition where there is **stress** and **strain** of labour and it has proved to be so much for the mother.

### **6.2 Mothers at risk**

- Starvation
- Excessive pain
- Mother with severe anaemia
- Mother with malposition or malpresentation
- Women with TB
- Women on trial of labour
- Women severe or advanced HIV
- Women with pet/ eclampsia
- Women on induction of labour
- Women with DM

### **6.3 Signs and symptoms**



- General weakness – women looks ill
- Ketone in urine (early sign).
- Restless – does not relax in between contractions
- Beads of sweat on upper lip or face
- All signs of dehydration
- Increased pulse rate, 90-120 b/min
- Increased respiration rate - >24b/minutes
- Vomiting - dark coloured vomitus
- Mother becomes anxious of the bowels with gas
- Elevated temperature 37.5.
- Hypotonic uterine contractions.
- Appeal for help.

#### **6.4 Management during labour**

- Call for medical help.
- Reassure the mother and the partner.
- Sedate the mother to provide adequate rest.
- Rehydrate with normal saline.
- Relieve pain if any.
- If in a health centre and the mother in 1<sup>st</sup> stage of labour refer the mother to the main hospital.
- If in 2<sup>nd</sup> stage of labour give normal saline or ringer,s lactate, rule out CPD, give a generous episiotomy and deliver the baby
- If in the hospital and the mother is exhausted and in 1<sup>st</sup> stage prepare for c/s
- If in 2<sup>nd</sup> stage rule out malposition, malpresentation, CPD, abnormal lie and give a generous episiotomy and deliver.
- Assisted vaginal delivery (AVD) can be done to fasten 2<sup>nd</sup> stage of labour.

#### **Third stage**

- Apply AMSTL
- Continue rehydration.
- Check for uterine contraction.
- Observe the mother for pph secondary to inadequate uterine contraction.

#### **6.5 Complications**

- Prolonged labour and its associated complications
- Ketoacidosis
- Fetal distress
- Birth asphyxia

#### **6.6 Prevention**

- Identify mothers at risk
- Rehydrate mothers in labour
- Sedate the mother during labour to relieve pain and ensure adequate rest
- Health educate the mother on nutrition during pregnancy during ANC visits.

## **FETAL COMPROMISE- NRFH**

### **Definition**

This is when the fetus suffers from lack of oxygen and becomes hypoxic

### **Causes**

1. Antenatal causes
2. intra partum causes (mother in labour)

#### **1- Antenatal causes**

1. Pre-eclampsia
2. Eclampsia
3. Diabetes mellitus
4. Malaria
5. Tb
6. HIV/AIDS
7. Cardiac disease
8. Anemia
9. Ante partum haemorrhage
10. Sickle cell disease
11. Congenital abnormality
12. Oligohydromnious
13. Cord accidents

#### **2- Intrapartum causes**

- a) Prolonged labour
- b) Precipitate labour
- c) Obstructed labour
- d) abnormal uterine action
- e) Big baby
- f) Maternal distress

- g) Shoulder dystocia
- h) Cord accidents
- i) Malpresentation
- j) Malposition
- k) Ante-partum haemorrhage

### **Diagnosis**

The following parameters can be used by the health worker to arrive at a diagnosis of fetal distress.

- Fetal heart rate
- Passage of meconium
- Fetal movement

### **Fetal heart rate**

- Tachycardia – FHR > 160b/min
- Bradycardia FHR <120b/min
- Fetal heart rate deceleration after a contraction followed by a delayed recovery over 20 minutes (late deceleration)
- Irregular fetal heart rate
- Abnormal range/ deviation of fetal heart rate.

### **Meconium**

- Meconium stained liquor in cephalic presentation  
Note – light green meconium is not diagnostic

### **Fetal movement**

- Abnormal fetal movement

## **MANAGEMENT**

- Tell the mother the condition of the baby and possible complications
- Reassure her.

### **Antenatal**

- Increase the frequency of visits
- Book in high risk clinic
- Obstetric scan can be done

- Try to prolong pregnancy
- Manage the predisposing condition effectively e.g. preeclampsia
- Put the mother of FKC. In case of reduced fetal kicks she should come to the hospital.
- If the cause is a cord accident e.g. a true knot in case it is still loose do not allow the mother to go into labour. Delivery will be by elective caesarean section.
- Let her receive all other routine antenatal care services

### **During labour**

- Change the position of the mother. It may improve circulation and correct fetal condition.
- If the mother was on syntocinon drip stop it until FHR returns normal
- Observe the fetal heart rate ¼ hourly and record
- If the contractions are too strong knock them off with tocolytics.
- Rehydrate the mother with normal saline or ringers lactate.
- Can administer oxygen by mask
- If in a health centre and mother is in 1<sup>st</sup> stage refer to the main hospital
- If you have rehydrated, the mother with 1 litre in 30 min and FHR remains abnormal prepare the mother for c/s
- If in 2<sup>nd</sup> stage rule out CPD, malpresentation, malposition, abnormal lie and quicken 2<sup>nd</sup> stage of labour by giving a generous episiotomy.
- Assisted vaginal delivery with vacuum can be done.
- Prepare for resuscitation
- Inform the nursery to expect an asphyxiated baby
- If after birth the newborn score is less than 7 observe the baby in nursery for 24 hours
- If membranes had ruptured early administer antibiotics prophylactically to prevent puerperal infection.
- Explain and counsel grieving parents if the baby has passed away

### **Precautions to avoid complications**

- Advocate for clinic attendance
- R/O predisposing factors during antenatal period and labour
- Manage any maternal cause of fetal distress appropriately
- Remind mothers to observe fetal movements during pregnancy and report any abnormality.
- Monitor FHR ¼ hourly in case of meconium stained liquor
- Use partograph in the management of labour
- Test urine for acetone during labour and correct dehydration

- Prepare for quick delivery
- Prepare for resuscitation

### **Follow up**

- If the baby is born with fetal distress regular check- up and prolonged follow up for 5 years is recommended
- Advice mother and partner on delivery of subsequent babies

### **Complication**

- Still birth
- Asphyxia neonatorum
- Brain damage

## **SHOULDER DISTOCIA**

**Definition:** Shoulder dystocia is a condition peculiar in second stage of labour when baby's head is delivered through vagina but shoulders fail to be delivered or anterior shoulder get stuck under the symphysis pubis.

### **PREDISPOSING FACTORS**

- Diabetic women
- Women higher body mass index (BMI)
- Previous history of shoulder dystocia
- Big baby
- suspect with history of difficult deliveries

### **CLINICAL PRESENTATION/DIAGNOSIS**

1. Failure of shoulders to be delivered after delivery of the fetal head
2. Turtle sign – involves appearance and retraction of fetal head
3. Hyperemia of the head
4. Chick closely light to the shoulder
5. Exaggerated chicks

### **MANAGEMENT**

**Note:** Quick interventions are required or life of the fetus will be lost with a delay or more than 10 minutes.

- This is an obstetric emergency.
- Shout for help – “*shoulder dystocia*”
- Evaluate for need of an episiotomy.
- MCRoberts maneuver – thigh hyperflexion and abduction or rotation of the legs. This widens the pelvis and flattens the spine in the lower back (lumbar spine). This helps in increment of anterior posterior diameter of pelvis. This maneuver is uncomfortable so you need to inform the mother about it.
- Rubins maneuver – Apply pressure on the lower uterine segment above symphysis pubis targeting posterior aspect of anterior shoulder with pressure towards fetal chest. This is to dislodge the stuck shoulder then apply traction.
- Jacquemiers maneuver – Raising the head slowly, put two fingers behind the humerus of the posterior arm. Deliver hand anteriorly sweeping abdomen and face as though performing *reverse salute*.
- Wood’s cock’s crew maneuver – Apply pressure behind the anterior shoulder with two fingers, put other two fingers in front of the posterior shoulder. Perform internal rotation of the shoulder by rotating the shoulder 180° for the shoulder that was posterior to become anterior. The anterior shoulder can be delivered by applying pressure from behind the humerus.
- Roll of the mother to all 4s, from the level of the waist to go down, legs abducted a bit then with next contraction or without contraction that position is associated with increment of anterior posterior diameter of the pelvic outlet; perform delivery of the posterior shoulder. If it fails, try again internal rotation, most likely most of shoulder dystocia fails. Request mother to go back to the lithotomy position.
- Salvage maneuver – This involves posterior arm sling, # of clerical and Zaveili Maneuver, symphysiotomy.  
Here you make sure the baby is born but they are also associated with trauma.
  - (i) Posterior arm sling – Get a cannula e.g. Na tube put it under axilla until you get unto axilla and tract. Support the baby and pull the baby slightly until you get the mid upper arm, release the sling and deliver the anterior and posterior arm.  
If no sling;

- Use two fingers, locate the axilla, put two fingers until mid upper arm and deliver the anterior and posterior shoulder. Risk you are likely to have a hip dislocation.
- (ii) Fracture clavicle – Locate the center of the clavicle and press, it might break or bend now the arm will collapse and allow you to deliver the anterior shoulder.
  - (iii) Zavelli maneuver – There you will have mother to be done caesarian section. Give the mother tocolytics e.g. MgSO<sub>4</sub> grasp the head of the fetus, reposition it and direct it back into the birth canal and deliver through caesarian section.
  - (iv) Symphysiotomy – Put a catheter to the mother urethra for identification Apply local anesthesia, do an incision to the symphysis pubis to increase the anterior posterior diameter of the pelvic outlet and deliver the baby.  
 Counsel the mother about chronic pain associated with symphysiotomy.

Mnemonic **HELPPERS** can be used to simply remember the steps in the management of shoulder dystocia. It should be done stepwise.

H – **H**elp

E – **E**pisiotomy – Evaluate need for episiotomy

L – **L**egs (Mac Robert's)

P – **P**ressure (Rubin's maneuver)

P – **P**osterior arm delivery (Jacquier's maneuver)

E – **E**nter maneuver- (Wood's cork screw)

R – **R**oll the mother to all fours

S – **S**alvage maneuvers (arm sling, fracture clavicle, Zavanella and symphysiotomy)

### **Complications**

#### **Maternal**

- Trauma – Due to the Maneuvers and episiotomy or symphysiotomy
- Puerperal sepsis

#### **Fetus**

- Trauma – Due to # clavicle

- Erb's palsy.
- birth asphyxia
- Fetal death

## **ABNORMAL LABOUR**

### **MALPOSITIONS AND MALPRESENTATIONS**

#### **BREECH PRESENTATION**

**Def:** This is when the fetus buttocks lie on the lower uterine segment after 34 weeks gestation.

#### **TYPES OF BREECH**

1. Complete breech- this is where fetus is presenting with buttocks with things and legs flexed adapting a complete normal flexed attitude
2. Frank breech- this where the baby is presenting with buttocks things flexed and legs extended
3. Footling breech- this is where the fetus presents with the buttocks, with the thighs and legs extended.
4. Breech with knee presentation –A fetus that presenting with buttocks with thighs that is extended and legs flexed.

#### **Causes**

The causes are unknown

#### **Predisposing factors**

##### **1. Prematurity**

Before 34 weeks a fetus can present in cephalic or breech presentation hence causing breech presentation

##### **2. Multiple pregnancy**



Multiple pregnancy may cause inconveniences to the fetuses as they may try to fight for space. One or both may adopt breech presentation.

### **3. Intra uterine fetal death (IUFD)**

Once the fetus loses life, it loses tone, hence falling into the lower uterine segment and can easily depend on the mother's position.

### **4. Placenta previa**

The placenta occupies space hence not favoring the head in the lower uterine segment.

### **5. Polyhydromnious**

The baby is always in motions even at term.

**6. Fetal congenital abnormalities** e.g. hydrocephalus turning may be difficult.

### **7. Contracted pelvis**

Contracted pelvis isn't favorable for cephalic presentation.

### **8. Oligohydromnous**

Less amniotic fluid makes it difficult for the fetus to turn to head down first even before 34 weeks gestation.



Students practice the skill for breech delivery in skills lab

## **DIAGNOSIS**

### **ANTENATALLY**

#### **Physical examination**

**i. Palpation**-hard and round mass in the fundus and soft and irregular mass in the lower uterine segment.

**ii. History taking**-the mother experiencing a hard mass balloting in the epigastrium and kicks on the bladder.

**iii. Auscultation**-fetal heart rate heard above the umbilicus level.

**iv. Ultra sound**-fetal buttocks are seen at the lower uterine segment.

**v. X-ray**-It demonstrates fetal skeleton with skull at the fundus.

## **DURING LABOUR**

### **Physical examination**

It entails the following;

i) Abdominal palpation- palpation of hard regular mass at the fundus and soft irregular mass at the lower uterine segment.

ii) History taking

Previous history of breech.

iii) Auscultation

Auscultation of fetal heart above the umbilicus.

iv) Ultra-sound

v) X-ray

vi) On digital vaginal examination during labour the following can be elicited,

- Palpation of a soft irregular mass
- Palpation of fetal ischial -tuberosity in frank breech
- Palpation of testes in male fetus
- Grasping of the examining finger by anal sphincter
- Fresh meconium on examining finger - doesn't mean fetal distress
- Palpation of a foot or visibility of a foot or buttock on inspection

### **Positions in Breech**

1. Presentation - buttocks

## **2. Presenting part - sacrum**

### **3. Positions**

- \*Right sacral lateral (RSL)
- \*Left sacral lateral (LSL)
- \*Left sacral anterior (LSA)
- \*Right sacral anterior (RSA)
- \*Direct sacral anterior (DSA)
- \*Direct sacral position (DSP)
- \*Right sacral posterior (RSP)
- \*Left sacral posterior (LSP)

### **Management of breech antenataly**

1. Triage and investigation
2. History taking
3. Physical examination
4. Weighing; blood pressure
5. PMTCT
6. Net provision
7. Intermittent prophylactic treatment with sulphurdoxine pyremethimine
8. Iron supplements
9. Deworming
10. Immunization with tetanus toxoid
11. Antenatal profile
12. Advice mother on individual birth plan
13. Nutritional advice
14. Tell her that her baby is in breech.
15. Advice mother if getting services from a basic emergency obstetrical and newborn care health facility her delivery should be in a hospital that can offer

comprehensive obstetrical care. If in a rural set up she can be educated about maternal shelters available in most hospitals.

16. Book for next visit

### **Management during first stage of labour' (basic emergency obstetric and newborn care facility)**

In a basic health care health facility follow the **national guidelines** in management breech in labour i.e. not unless in second stage, delivery should be by caesarian section. Refer to a comprehensive care facility for CS.

*Breech in 1<sup>st</sup> stage = ceaserian section ✓*

- i) Receive the mother and assess her
- ii) Explain the condition to the mother
- iii) Reassure her and relatives to allay anxiety
- iv) Refer to a comprehensive care facility as per guidelines. Carry with you a delivery pack in case she delivers while on transit. No partograph.

### **Management during first stage of labour in a comprehensive facility**

- i) Admit
- ii) Explain to the mother about the condition
- iii) Reassure the woman and her partner to allay anxiety
- iv) Take proper history
- v) Perform physical examination and no partograph
- vi) Prepare for emergency ceaserian section.
- vii) Inform other relevant departments about the presence of that woman in the hospital



### **Management of breech during 2<sup>nd</sup> stage of labour**

- Admit
- Explain condition to the mother.
- Reassure the mother and relatives to allay anxiety.
- Prepare an assistant for the delivery.
- Prepare for resuscitation.
- Prepare delivery pack.
- Position the woman preferable in lithotomy and at the edge of the delivery couch.
- Monitor fetal heart rate after every contraction.
- Encourage mother to push with each contraction.
- Support the woman with IV fluid to prevent dehydration preferable normal saline.
- Assistant can back rub to relieve pain to the mother
- Observe “**HANDS OFF BREECH**”
- Evaluate the need for episiotomy.
- Support the perineum with a pad when buttocks are engaging.
- Allow the buttocks to be born.
- Assist delivery of legs if not spontaneously delivered.

- Allow the buttocks to reconstitute.
- Pull the cord slightly to avoid tension.
- Allow body to deliver itself.
- Deliver the hands one after the other. This is easily done when the hands are flexed.
- Absence of elbows at the chest and visibility of axilla demonstrate extended arms, apply **louse manoeuvre**.

### **LOUSET MANOEUVRE**

It is a manoeuvre used in the delivery of extended arms in breech presentation. It involves a combination of both **traction** and **rotational** movements.



**Students from msambweni mtc practise the skill for delivery of a baby with extended hands in breech - louse manoeuvre**

Steps:

- Cover the fetus with a clean warm towel.
- Hold of the fetus by the iliac crest thumbs on the sacrum and fingers supporting the symphysis pubis and the hands encircling the waist.
- Apply traction to deliver the hands up to mid upper arm.
- Rotate the fetus 180 degrees for the arm that is posterior to become anterior.

- Deliver the arm that is now anterior by applying pressure on the humerus from anterior downwards.
- Repeat the same to the hand that is posterior to become anterior.
- Apply the same procedure to the hand and deliver it.
- Turn the fetal back upper most
- Allow baby to hang with its weight to bring the head down.
- Deliver head by use of **Mauriceau-smellie-veit manoeuvre** OR **Burns Marshall's manoeuvre**
- Deliver the baby on the mother's abdomen

### **BURNS MARSHALL MANOEUVRE**

A manoeuvre use to deliver the head to a fetus in breech presentation with head flexed.

Steps:

- Get hold of the baby with one hand by the ankle with its middle finger in between the legs and the other hand supporting the perineum.
- Apply steady traction.
- While on **steady traction** move the fetus upwards and towards **mother's abdomen.**
- Deliver the chin, face and sinciput.
- Allow the mother to relax.
- Clear the airway.
- With the next contraction deliver the vault and the baby onto the maternal abdomen.
- Continue with care of newborn.

### **MARICEOUS- SMELLIE – VEIT MANOEUVRE**

A manoeuvre use to deliver the head to a fetus in breech presentation. It is mostly used to avoid unforeseen complications and for extended head.

**Steps:**

- The fetus is laid astride the arm with limbs lying on both sides with second and fourth fingers supporting the mandible while middle finger lying along the nasal palate.
- The other hand placed at the back of the fetus with second and third fingers supporting the shoulders while the middle finger applies pressure on the occiput to gently flex the fetal head towards chest.
- While on the position apply traction to deliver the head.
- Summersault the baby on to the maternal abdomen.
- Continue with care of the newborn.

### **THIRD STAGE OF LABOUR**

- Apply AMSTL just like in any other labour.
- Confirm there are no tears sustained especially at the level of cervix.

### **MECHANISM OF LABOUR IN BREECH PRESENTATION**

**Presentation- Breech**

**Lie- longitudinal**

**Presenting part- Sacrum**

**Position- LSA**

#### **1. Descent with compaction**

Descent takes place with increasing compaction leading to increase traction of the fetal limb.

#### **2. Internal rotation of buttocks**

The anterior buttock touches the pelvic floor first and rotates forward 1/8 of a circle along the right side of the pelvis to lie underneath the symphysis pubis.

#### **3. Lateral flexion**

With lateral flexion the anterior buttocks escape under the symphysis pubis, the posterior buttock sweeps the perineum.

#### **4. Restitution**



The anterior buttocks turn slightly to the mother's right side. This is to correct the twist made to the abdomen during the internal rotation of the buttocks.

### **5. Internal rotation of the shoulders**

Shoulders enter the pelvis in the same left oblique diameter as the buttocks. The anterior shoulder touches the pelvic floor first and rotates 1/8 along the right side of the pelvis to lie under the symphysis pubis. The anterior shoulder is born followed by the posterior shoulder.

### **6. Internal rotation of the head**

The head enters the pelvic with the sagittal suture in the transverse diameter of the brim. The occiput rotates anteriorly along the left side of the pelvis to lie under the symphysis pubis.

### **7. External rotation of the body**

At all most simultaneously with the shoulders the body turns externally so that the back is upper most.

### **8. Delivery of the head**

The chin, face, and occiput sweeps the perineum and the head is born in a flexed attitude.



Health workers demonstrate delivery of a baby in breech presentation

## **COMPLICATIONS**

### **Maternal**

- prolonged labour

- trauma
- increased incidence to caesarian section

### **Fetal**

- Erb's palsy
- fetal distress
- trapped head
- fractures
- dislocation of shoulder
- trauma to internal organs
- damage to adrenals
- spinal cord damage
- inter-cranial haemorrhage
- fetal hypoxia
- premature separation of placenta
- cord prolapse
- fetal death

### **OCCIPITO - POSTERIOR POSITION – OPP**

This is when the occiput of the fetus is pointing posterior.

There are three positions namely:

- Left occipito posterior - LOP
- Right occipito posterior - ROP
- Direct occipito posterior – DOP

### **PREDISPOSING FACTORS**

- Abnormal shaped pelvis
- Fetal abnormalities
- Poor uterine contractions

## DIAGNOSIS

### Antenatal

- saucer shaped abdomen
- impression of full bladder
- occiput and sinciput at same level
- clear fetal heart rate and at midline
- multiple fetal heart rate
- failure to palpate fetal back
- multiple fetal movements
- breech easily palpable
- obstetric scan can reveal OPP

### During labour

#### I. On history

- urge to push early
- prolonged labour
- severe back pain
- early rupture of membranes

#### II. On physical examination

- ill fitting presenting part
- poor descent
- saucer shaped abdomen
- impression of full bladder
- clear fetal heart heard over a wider area
- multiple fetal limbs
- fetal back difficult to palpate

#### III. On digital vaginal examination

- occiput pointing posteriorly
- anterior fontanelle palpated inferiorly
- pinna of the ear pointing posteriorly
- sinciput and occiput at same level

## OUTCOME OF OPP

1. Prolonged labour/ long internal rotation/ Normal labour

2. Persistent OPP/ Short internal rotation/ face to pubis
3. deep transverse arrest
4. face presentation
5. brow presentation

## **MECHANISM OF LABOUR IN OPP**

Presentation- cephalic

Lie- longitudinal

Presenting part- vertex

Position- ROP

## **MECHANISM**

### **1. Descent with flexion**

With each contraction there is head with increasing flexion for the chin to touch the chest.

### **2. Internal rotation of the head**

When the occiput touches the pelvic floor there is internal rotation of the head rotates  $\frac{3}{8}$  of a circle along the right side of the pelvis for the occiput to lie under the symphysis pubis. This is long internal rotation giving rise to prolonged labour

### **3. Internal rotation of shoulders**

The shoulder follow suit with  $\frac{2}{8}$  internal rotation for the anterior shoulder that was on the right side of the pelvis to lie on the left side of the pelvis. This creates a twist at the neck.

### **4. Crowning**

With increasing contraction the vault distends the vulva and crowning is said to be taking place. The vault becomes visible.

### **5. Extension**

The occiput, face and chin is born is born by extension of the fetal head.

### **6. Restitution**

The occiput moves to the right side of the mother by 1/8 of a circle to undo the twist of the neck created internally. With the undoing of the twist restitution is said to take place.

### **7. Internal rotation of the shoulders**

There is internal rotation of the shoulders along the left side of the pelvis forward for the anterior shoulder to lie under the symphysis pubis. Shoulders are aligned along with the anterior posterior diameter of the pelvis.

### **8. External rotation of the head**

The internal rotation of the shoulders makes the head to move by a further 1/8 of a circle alongside the right side of the mother.

### **9. Birth of the baby**

With the next contraction the baby is born by lateral flexion.

## **MANAGEMENT**

### **Antenatal**

- Encourage the mother to start ANC early.
- triage
- history taking
- physical examination
- antenatal profile
- provision of net
- IPT with SP
- tetanus toxoid administration
- mebendazole administration
- IFAS provision
- emtct
- health education – IBP and danger signs
- book for next visit

- reassure the mother

## **DURING LABOUR**

- admit and reassure
- triage

Take height and weight.

- History taking

Take proper history of the woman.

- Physical examination

Perform a thorough head to toe examination.

- Partograph

Monitor labour by use of partograph.

- Bladder care

Ensure the bladder is empty to allow for smooth descent of the presenting part.

- Pain management

Perform strong pain management as this mother experiences strong back ache.

- nutritional support

Rehydrate the mother well. This because we expect prolonged labour and hydration.

- health education

Insist that the mother should not bear down before full cervical dilation.

- exercise/ Lamaze

Allow the mother to change position and perform exercises as this may aid in the rotation of the head and reduce the duration of labour.

- support

Ensure you are available for the woman. The birth partner can also be present to offer support.

- infection prevention

Throughout the duration of labour ensure infection prevention measures are observed.

- prepare for second stage

Make sure you prepare for second stage. anticipate the possibility of baby being born with poor score and require resuscitation.

### **SHORT INTERNAL ROTATION**

- The sinciput is leading and touches the pelvic floor first.
- The sinciput rotates 1/8 of a circle to lie under the symphysis pubis.
- The occiput lies under the curve of the sacrum.
- The baby is born as face to pubis.

### **Steps in delivery of head in face to pubis.**

The head will be delivered by lateral flexion.

- Support the head by the sinciput to maintain flexion and for the vault to be delivered while also supporting the perineum.
- Once the vault is delivered hold the head by the bi-temporal with one hand.
- Extend the head
- Clear airway and rule out cord round the neck.
- Allow for restitution.
- Allow the head to turn a further 1/8.
- Hold the head by the parietals and deliver the shoulders by upward and downward traction.
- With lateral flexion deliver the baby onto the mother's abdomen.

### **COMPLICATIONS**

- Maternal distress

- fetal compromise
- Prolonged labour
- trauma – button hole tear
- birth asphyxia
- deep transverse arrest

## **FACE PRESENTATION**

### **Description**

- When the attitude of the fetal head is one of full extension, the occiput is touching the fetal spine.
- Majority develop during labour from vertex presentation with the occiput posterior, this is termed as secondary face presentation.
- If it presents before labour though less common is termed as primary face presentation.

### **There are six positions in face presentation:**

- Right and left mento anterior
- Right and left mento lateral
- Right and left mento posterior.

### **Causes**

- Anterior obliquity of the uterus
- Contracted pelvis
- Polyhydromnious
- Congenital abnormalities.
- Prematurity
- Multiple gestation.

### **Diagnosis**

- Vaginal examination.



- Ultra sound.

#### Differential diagnosis

- Breech
- Brow

#### Possible course and outcome

- ✓ Prolonged labour
- ✓ Mento anterior positions
- ✓ Mento posterior position
- ✓ Persistent mento posterior position
- ✓ Reversal of face to brow or vertex.

#### **MECHANISM DURING LABOUR**

- Descent
- Extension
- Internal rotation of the chin
- Flexion
- Restitution
- Internal rotation of the shoulders
- External rotation of the head
- Lateral flexion of the body.

#### **MANAGEMENT**

- Inform the doctor
- Re assure the woman
- Continue with vigilant maternal and fetal observation
- Confirm position on VE before continuing with management.
- If mento anterior and pelvis is adequate ct management.

- If mento posterior wait for rotation if it will occur. If not cs
- If mento posterior prepare for CS
- Care not to injure and eyes through VE.
- When membranes rupture rule out cord prolapse.
- Oxytocin may be used.
- Ct with general management of labour.
- If any position with a contracted pelvis prepare for cs.
- If presenting part is high despite good uterine contractions still prepare for cs.

### **COMPLICATIONS**

- Prolonged labour
- Facial bruising
- Obstructed labour
- Cerebral hemorrhage
- Maternal trauma.

### **BROW PRESENTATION**

- Fetal head is partially extended with the frontal bone, which is bordered by the anterior fontanella and the orbital ridge lying at the pelvic brim.
- The presenting diameter is mento vertical.
- The fetal head is midway between vertex and face.

#### **Diagnosis**

- The same as for face presentation except that the brow is usually temporary.

#### **Diagnosis**

- The diagnosis is not possible before onset of labour.

- On abdominal palpation, high head and appears big and does not descent despite good uterine contractions.
- On vaginal examination, the head is high and may be difficult to reach, the anterior fontanel is felt at one side of the pelvis and orbital ridge and root of the nose on the other side of the pelvis. The fetus may also present with a large caput.

### **Management**

- The mother can be monitored for spontaneous delivery and delivery is possible in case of big pelvis and small fetus.
- Explain the condition to the woman and reassure.
- Closely monitor descent, fhr, position, cervical dilatation, contractions.
- Oxytocin use is contraindicated.
- In case these parameters are not favorable prepare for CS.

### **Complications**

- As for face presentation and obstructed labour is more likely.

### **FACE PRESENTATION.**

- This is when the fetus presents with cephalic but face.
- The attitude of the head is of **complete flexion**.
- The occiput of the head is in contact with the maternal spine.
- There is primary and secondary face presentation
- The leading part is **mentum** or **chin**
- The presenting diameters are sub- mentobregmatic 9.5 cms and bitemporal 8.2 cms

### **POSITIONS**

- right, left or direct mento anterior
- right, left or direct mento posterior

### **PREDISPOSING FACTORS**

- congenital abnormalities
- contracted pelvis

- anterior uterine of the uterus obliquity
- polyhydromnious

### **DIAGNOSIS**

- fetus suckling presenting part
- no sutures
- no fontanelles
- fetal parts easily palpable
- clear fetal heart rate unless mento posterior

### **DURING LABOUR**

- high head
- soft and irregular presenting part
- orbital ridge, eyes, nose and mouth palpable

### **MANAGEMENT DURING ANTENATAL PERIOD**

- As of normal pregnancy

### **MANAGEMENT DURING LABOUR**

- As of normal labour
- reassure the mother
- inform the doctor about the condition
- vigilant observations especially fhr.
- rule cord prolapse with rupture of membranes

### **MECHANISM OF LABOUR**

1. Descend
2. Extension
3. Internal rotation of the head
4. Flexion
5. Restitution
6. Internal rotation of the shoulders
7. External rotation of the head
8. Lateral flexion

### **POSSIBLE COURSE AND OUTCOMES OF LABOUR**

- Prolonged labour

- mentoanterior positions
- mentoposterior positions
- Persistent mento posterior position
- reversal of face presentations

### **MANAGEMENT DURING PUERPERIUM**

- As of normal puerperium

### **COMPLICATIONS**

- Obstructed labour
- Cerebral haemorrhage
- Maternal trauma
- Facial bruising
- Cord prolapse

### **PROLONGED LABOUR**

**Defination– Prolonged labour** is said to be taking place when delivery does not occur after 12hrs of established labour.

### **CAUSES**

The condition is caused by a combination of factors referred to as 3P's.

1. Passenger- fetus.
2. Passage- pelvis.
3. Power- contractions.

### **CAUSES IN 1<sup>ST</sup> STAGE**

- i. Poor uterine action- hypotonic, uncoordinated e.t.c.
- ii. Pelvic abnormalities.
- iii. Big baby.
- iv. Malposition especially OPP.
- v. Mal-presentation.
- vi. Cervical dystocia and sternosis

- vii. Full bladder.
- viii. Drugs (sedatives and anesthesia)
- ix. Immobility (restricting the mother in bed)
- x. Psychological (fear and excitement).
- xi. Formation of a contraction ring.

### **CAUSES IN 2<sup>ND</sup> STAGE**

- i. Rigid perineum.
- ii. Big baby.
- iii. Malposition.
- iv. Mal-presentation.
- v. Full bladder.
- vi. Poor maternal effort.
- vii. Hypotonic contraction.
- viii. Cord round neck hence baby being held.

### **SIGNS & SYMPTOMS**

- i. Labour taking more than 12hrs of established phase.
- ii. Early rapture of membranes.
- iii. Mother exhausted.
- iv. Signs of maternal dehydration.
  - Increased pulse rate.
  - Sweat on face and upper lip.
- v. Uterine contractions become hypotonic with time.MK
- vi. Uterus becomes tender on palpation.
- vii. Foetal distress.
- viii. Pain radiating on the back and to the thighs.

### **MNX**

- Continue management of the mother as normal labor.

- Inform mother of condition.
- Reassure her all the time.
- Encourage her to empty bladder 2-4 hourly.
- Let her adopt most comfortable position or change position.
- Re-hydrate mother with N/S unless hypoglycemic then give 10% dextrose.
- Continue taking vital signs 2 – 4 hourly.
- If it is poor uterine contractions & pelvis adequate, baby in normal presentation and position, start mother on Syntocinon infusion 2 – 5 i.u in 10% dextrose unless contraindicated.
- Maintain input output chart of fluids.
- Administer buscopan in case of thick cervix.
- Test urine for ketones to exclude maternal dehydration.
- Observe FHR  $1/4$  to  $1/2$  hourly.
- Observe contractions at 15 – 30 minutes interval.
- If mother is in 2<sup>nd</sup> stage R/O pelvic contraction, mal-presentation and mal-position before telling her to push.
- Prepare to give episiotomy in case of rigid perineum.
- In case of early rupture of membranes, cover the mother with broad spectrum antibiotics.
- If there is signs of obstruction, foetal distress, cervical dystocia, mal-presentation or no improvement prepare mother for caesarian section.

## **COMPLICATIONS TO MOTHER**

- i. Rectocele
- ii. Cystocele
- iii. Vesico- vaginal fistula.
- iv. Stress incontinence.
- v. Ruptured uterus.

- vi. Trauma and injuries.
- vii. Prolapsed uterus.
- viii. Infection (puerperal sepsis)
- ix. PPH.
- x. Risk of inverted uterus
- xi. Increased chances of caesarian section.

### **COMPLICATIONS TO FOETUS**

- i. Foetal distress.
- ii. Severe asphyxia neonatorum.
- iii. Intra cranial damage (cerebral palsy)
- iv. Intracranial hemorrhage.
- v. Cerebral palsy in long term

### **PREVENTION**

- i. Identify mothers at risk e.g. CPP, malpresentation, malposition.
- ii. Take nutritional history on admission during labour
- iii. Encourage bladder emptying during management of labour.
- iv. Monitor labour by use of pantograph.
- v. Re-hydrate mothers during labour.
- vi. Encourage ambulation during labour when membranes still intact.

### **OBSTRUCTED LABOUR**

**Definition** – labour is said to be obstructed when there is no advancement or descend of the presenting part despite good uterine contractions.

**N/B:** The problem is mainly on the passenger and passage and not the power.

### **DIAGNOSIS**

- i. Suggestive in short women



- ii. History of contracted pelvis (CPD)
- iii. During pregnancy when pelvic assessment is done at 36wks through vaginal examination, ultra sound, abdominal palpation.
- iv. During labor through palpation (big head compared to pelvis), vaginal examination, X-ray of pelvis.

## **CAUSES**

The cause may be maternal or fetal or both. These include:

- i. Cephalo- pelvic disproportion.
- ii. Mal-presentation
- iii. malposition
- iv. Foetal abnormalities.
- v. Pelvic tumors, fibroid on lower uterine segment.
- vi. Deep transverse arrest (baby in OPP).
- vii. Contracted/ deformed pelvis
- viii. Abnormal lie (transverse)
- ix. Cervical dystocia.
- x. Vaginal sternosis
- xi. Circumcision scar.

## **SIGNS AND SYMPTOMS**

The severity of the signs and symptoms increase with time. There are early and late signs.

### **1. Early signs**

#### **On physical examination**

- i. History of prolonged labour
- ii. The presenting part fails to enter the pelvic bottom despite good contractions.

- iii. Mother having a full bladder.
- iv. A large bag of membranes.
- v. A full rectum.

**On vaginal examination.**

- i. Cervix dilates slowly.
- ii. Cervix thick and edematous.
- iii. Cervix hangs loose like an empty sleeve (coz presenting part isn't well applied into the cervix).
- iv. Membranes if still intact may be "sausage shaped".
- v. Early rupture of membranes.

**2. Late signs**

**On physical examinations**

- i. Signs of dehydration
- ii. Pulse rate above 90.
- iii. Temperature above 37.2<sup>0</sup>c
- iv. Maternal ketosis.
- v. Oliguria
- vi. Signs of fetal distress

**On abdominal palpation**

- i. Uterine doesn't relax in between contractions.
- ii. Tender abdomen.
- iii. The contractions may cease for a while due to uterine muscle exhaustion before returning with renewed vigor.
- iv. Contractions become hypertonic.
- v. It becomes molded around the foetus
- vi. Bundles ring can be seen. It can be palpated. It rises nearer the umbilicus as lower uterine segment becomes longer and thinner.

**On vaginal examination**

- i. The vagina is hot and dry.
- ii. Formation of large Caput.
- iii. Evidence of excessive moulding.

### **MNX**

- As a skilled midwife, aim at detecting obstructed labor before onset of labor by doing a pelvic assessment.
- Detect CPD, mal-presentation with large baby early.
- Formulate an appropriate IBP for the mother.
- If mother is in labor, admit and prepare for c/s.
- Take blood for grouping and cross match
- Alert theatre staffs
- Fix an intravenous infusion for rehydration preferable normal saline.
- Fix an indwelling catheter and monitor input output.
- Start the mother on antibiotics prophylactically
- If mother is in 2<sup>nd</sup> stage and obstruction is in the mid cavity of the pelvis, forceps may be used to rotate the head or vacuum extraction may be done.
- If due to transverse arrest symphysiotomy may be done to increase the transverse diameter of pelvis.
- If baby is dead and obstructed, counsel the matter and embryology may be done i.e. craniotomy, viscerectomy, decapitation or cleidotomy
- Post operatively the mother is managed like any other post operative mother. Let the catheter remain in situ for 10 -14 days. Monitor signs of complications.

### **COMPLICATIONS**

#### **Maternal**

- i. Ruptured uterus.
- ii. Fistula formation
- iii. Post partumhaemorrhage

- iv. Foot drop
- v. Puerperal sepsis
- vi. Infertility
- vii. Maternal death

### **Foetal**

- i. Asphyxia neonatorum
- ii. Intra-cranial hemorrhage
- iii. Respiratory distress syndrome
- iv. Still birth

### **Prevention**

- i. Good nutrition
- ii. ANC so that obstructed labour can be anticipated from mothers history
- iii. Monitoring labor by skilled staff for affected referral
- iv. Uses of pantograph
- v. Referring to maternal shelter

## **PRECIPITATE LABOUR**

Definition - Is abnormal rapid progress of labor and delivery. Labour that results in rapid expulsion of the foetus delivery may be attained within 3 hrs from the onset of labour.

### **CHARACTERISTICS**

- i. Uterine contractions are strong and frequent from the beginning.
- ii. Resistance from the pelvic tissue is low.
- iii. Common to multiparous women

### **RISK FACTORS**

- Multiparity
- Large pelvis

- History of previous precipitate labour
- Strong contractions
- Well positioned fetus
- Poor administration of oxytocic drugs.

## **COMPLICATIONS**

### **Maternal**

- i. Tears
- ii. Retained placenta
- iii. Inverted uterus
- iv. Shock and collapse due to sudden relieve of pressure
- v. PPH
- vi. Amniotic fluid embolism
- vii. Baby born at a wrong place

### **Foetal**

- i. Foetal hypoxia
- ii. Cerebral damage
- iii. Asphyxia neonatonum
- iv. Injury as baby may be born in wrong place to the cerebral column, femur and clavicle.
- v. Pneumothorax

### **Challenges**

- Too quick labor and delivery.
- The staff might think the mother is still in 1<sup>st</sup> stage of labor.
- Contractions are too painful and you might think of a c/s.
- Might take you unaware and no time even to be accompanied by a birth partner.
- Might not have time to practice the birth technique that was taught.
- Might not reach the hospital to deliver.

- Might not have time for the midwife to prepare.
- Psychologically might make the mother feel discouraged and think that can't cope with labor and delivery.
- Precipitate labour tends to recur thus admit mother early in subsequent pregnancy.

## **TRIAL OF LABOUR**

Definition: This is a test which is carried out during labour in cases of mild or moderate CPD since it is difficult to decide whether normal delivery is possible or not.

## **OUTCOME**

Depend on four factors:-

- i. Power (contractions)
- ii. Passenger (foetus)
- iii. Passage (pelvis)
- iv. Flexion of the foetal head

### **Power**

Uterine contractions must be effective strong to force or push out the baby through the pelvis.

### **Passenger**

- Degree of moulding:

The degree of molding of the foetal head will determine its passage through the pelvis.

If the fetus is a post date, moulding will not be adequate and the presenting diameters will not change and the mother will not attain vaginal delivery.

➤ Flexion of fetal head:

The more flexed the fetal head, the more chances the mother is going to attain a vaginal delivery. This is as a result of reduction to the presenting diameters.

### **Passage**

It will be determined by the “give” of pelvic joints and relaxation of pelvic floor muscles. If there is give of the pelvic joints, it will make them wide and increase the pelvic diameters. The normal increase of pelvic diameter is 1cm.

**NOTE:** These factors are not predictable until labor is established. Judgment is withheld as to whether c/s is necessary or the mother make through NSVD. This will be until the amount of progress of labor made over a period of time has been assessed.

### **Indications**

- i. Mild CPD
- ii. Moderate CPD

### **Contraindications**

- i. Gross pelvic contraction
- ii. Abnormal lie
- iii. Elderly primigrarida
- iv. Obstetrical and medical conditions to include PET, DM, hypertension, cardiac disease.
- v. Cases of previous failed trial of labor.
- vi. Presence of any malpresentation or malposition.
- vii. Cases of previous scar with the following:
  - classical scar
  - breech presentation

- no vaginal delivery
- Reason for previous caesarean section was CPD.

### **Advantages**

- i. Prevents unnecessary elective c/s in case of minor degree of disposition.
- ii. It prevents premature induction of labor in case of suspected disproportion.

### **Disadvantages**

- i. It may fall in the mother will naturally be demoralized, disappointed, create psychological trauma and may consider herself to be abnormal.
- ii. Intrauterine infection usually due to repeated number of VE'S

### **Factors which influence prognosis**

#### **i. Membranes**

In trial of labor early rupture of membranes prejudices the outlook of the mother and baby. It may complicate with cord prolapse, malpresentation, abnormal lie and intra uterine infection.

#### **ii. Foetal head**

Poor moulding will make the head not be able to pass through a border line pelvis. If malposition occurs in the case of labor, the prognosis of trial of labor is poor.

#### **iii. Maternal/Foetal distress**

Any onset of material distress will put to an end the trial of labor. Any foetal distress from either cord prolapse or any other cause will necessitate termination of trial of labor.

### **MNX**

- A woman usually a primigravida is allowed to go to term coz onset of labor is likely to result in efficient uterine contractions and the mature foetus is able to withstand the stress of labor.



- Once CPD (mild or moderate) has been diagnosed let the mother know it and should be admitted like any other.
- Do abdominal exam on admission to include the presentation of which must be vertex and position should be left occipito anterior. The head will not be engaged but its level in relation to the pelvic brim must be assured.
- The degree of flexion of the head and amount of overlap must be noted through V.E.
- The FHR is carefully monitored, recorded, interpreted and reported.

### **During 1<sup>st</sup> stage**

- Take consent
- Continue with observations (maternal and foetal)
- Take blood for grouping and cross match for possible c/s
- Restrain anything per oral
- Administer IV 10% dextrose for energy.
- Monitor contractions  $1/2$  hourly and note frequency, duration and strength.
- Report any abnormality to uterine contraction.
- Monitor any meconium stained liquor which might suggest FD.
- Mother might be prepared for c/s.
- Any abnormal up or down of FHR is reported.
- Note any excessive moulding of the foetal skull

### **Signs of good trial of labor**

- Descent of the presenting part into the pelvis.
- Progressive cervical dilation.
- Progressive uterine contractions i.e. mild, moderate, strong.

### **Signs of failed trial of labor**

- No descent of presenting part.

- Slow or no dilation of cervical os.
- Disordered uterine action e.g. in-coordinated uterine action.
- Signs of maternal and foetal distress.

**N/B:** when these signs are noted, stop trial of labor and prepare mother for c/s.

### **Conditions to report**

- i. Rapture of membranes.
- ii. Color of amniotic fluid.
- iii. Period of labor in hrs.
- iv. Unsatisfactory advance when contractions are good e.g. head still high despite good uterine contractions.
- v. Early signs of FD & MD.
- vi. Any change of vertex presentation to either brow or face.

### **TRIAL OF SCAR**

- Is a test of labor carried out in cases of mother having had one previous c/s scar.
- It should be conducted in health facilities where theatre facilities are available in case it fails.

### **MNX**

- Admit mother
- Explain the condition and reassure her
- Take history of the previous scar e.g. when and why it was done.
- Do physical examination to confirm the presence of the scar.
- Palpate the abdomen to get the lie, presentation and position.
- Do a V.E. to confirm the mother is in labor and also to rule out CPD. If pelvis is adequate allow the mother to go into spontaneous delivery.
- During labor, closely monitor maternal condition, foetal condition and progress of labor. <sup>1</sup>/<sub>2</sub>hourly.

- If mother is in pain and anxious, analgesics and sedatives may be given.
- Withhold food and start on IV infusion of 10% dextrose.
- Let mother be prepared for c/s incase it fails.
- Observe and check for any tenderness on scar.
- Note any P.V bleeding
- In case it fails explain to mother what is going to happen and take her for c/s
- On 4<sup>th</sup> ANC visit R/0 CPD.
- Tell mother to avoid issues of external cephalic version.

### **Warning signs**

- i. Pain and tenderness on scar especially on palpation.
- ii. P.V bleeding however slight it is.
- iii. Blood in urine.

### **Contraindications**

- i. CPD
- ii. More than one scar minus a vaginal delivery
- iii. Classical c/s scar

## **CEPHALOPELVIC DISPROPORTION (CPD)**

This is a disparity between the foetal head and the maternal pelvis. It is reached when the foetal head has been declared big to fit through the maternal pelvis.

### **CAUSES**

- i. Big baby – heredity
  - D.M mothers
  - Past mature baby
  - Multi paras women (later births are big)

- Feeding habits
- Congenital abnormality e.g. hydrocephalus.
- ii. Abnormal foetal position and presentation
  - OPP
  - Face
  - Brow
- iii. Abnormal strapped pelvis
  - Previous accidents
  - Small/Contracted pelvis
  - Congenital dislocation of hip
  - Childhood diseases e.g. osteomyelitis, rickets, TB

### **Pre-disposing factors**

- i. Diet
- ii. Accidents
- iii. Illness pertaining to bone problems

### **Signs and symptoms**

- i. History

Based on the history of accident from mother e.g. history of prolonged labor, difficult labor, history of accident, history of not having good diet.

- ii. P.E

Short woman

Shoesize < 3" below.

- iii. V.E.

- Overlap of foetal head over the pelvic brim.
- Prominent promontory of sacrum.
- Prominent ischial spines

- Reduced pubic arch

### **Degrees of disproportion**

1. Minor degree
2. Moderate degree
3. Major degree

#### **MINOR DEGREE**

The head doesn't engage or pass through the pelvic brim. It may be possible to push it through the brim.

The anterior parietal bone is in level with the anterior border of the symphysis pubis.

#### **MODERATE DEGREE**

The head slightly overlaps the anterior edge of symphysis pubis and the head can't be made to engage at the pelvic brim.

#### **MAJOR DEGREE**

This is pronounced as bulging of the head over the anterior edge of symphysis pubis.

### **Diagnosis**

- Is diagnosed in established labor
- Can't be diagnosed before 36wks of gestation.
  - i. It maybe suspected in woman with pendulous abdomen
  - ii. Through V.E, the degree of overlap of the head over the pelvic brim at the symphysis pubis.
  - iii. Through internal pelvic assessment (adequacy) – promoting of sacrum not tipped, well curved hallow of sacrum, non prominentischial spines and intertuberous diameter accommodating four knuckles.
  - iv. X-ray pelvimentry (to look for pelvic diameters)

v. It may be suspected in short primi gravid women

### **MNX**

- Admit mother
- Assess pelvis for adequacy and degree of disproportion.
- Take observations both maternal and foetal.
- If in a health center refer to hospital
- Mothers with minor degree of CPD are prescribed trial of labor with the aim of achieving normal vaginal delivery since there is molding and pelvic joints and muscles are relaxed and vaginal delivery is likely to occur.
- In moderate CPD you can expect a spontaneous vertex delivery but it depends with molding, degree of pelvic joints and muscles relaxation
- Since mid wife isn't completely sure that the mother will deliver by SVD, give trial of labor and be vigilant with maternal and foetal vitals.
- If trial of labor fails prepare the mother for c/s.
- In major degree of CPP, the mother isn't given trial of labor but taken to c/s
- During the trial of labor the foetal condition is assessed continuously  $1/4$  hourly (should be present)
- Record and report any meconium stained liquor (indicate FD)
- Note the descent of the foetal head since it is an indication of good progress of labor.
- On V.E. assess the degree of molding not only caput formation and report.
- Assess maternal vitals and uterine contractions
- Administer analgesics
- Provide other n/c e.g. back rubbing, ambulation, re-hydration, diet bladder emptying.
- Prepare to receive an asphyxiated baby and have resuscitation tray ready.

### **ABNORMAL UTERINE ACTION**

Definition – this is dysfunction of uterine muscles caused by neuromuscular disharmony which manifest itself as follows:-

- i. Hypotonic uterine action
- ii. Uncoordinated uterine action
- iii. Cervical dystocia
  - Uterine action is said to be inefficient when the contraction don't efficiently dilate the cervix.
  - Progress of labor becomes slow and labor prolonged.
  - The parts of uterus don't function in harmony in each other.

### **HYPOTONIC UTERINE ACTION**

- Contractions weak, short and frequent
- Results to slow dilation of cervix or no dilation.
- Can either be primary or secondary.
- In primary occurs from onset of labor and secondary occurs previously following normal labor.
- Cause of hypotonic primary contractions is not known and commonly found in primi's
- The cause for secondary hypotonic uterine action.
  - Over distortion of uterus.
  - Maternal dehydration.
  - CPD.
  - Drugs i.e. anesthesia  $MgSO_4$
  - Mal-presentation
  - Hypoplasia (uterus not well developed)
  - Full bladder/rectum.
  - Anemia
  - Myoma

## **Effects of hypotonic uterine action**

- i. Prolonged labor
- ii. Fetal distress
- iii. Maternal distress.
- iv. High risk of infection.
- v. Primary PPH.

## **MNX**

- Reassure mother
- Perform a V.E two exclude disproportion / mal-presentation of which might require c/s.
- In absence of CPD, stimulate good uterine contractions by giving enema, emptying bladder, rupturing membranes and starting syntocinon drip with multi paraous 2.5-3 I-U in N/S. Primi 51-U in N/S.
- Do vigilant Observations both material and foetal.
- In case of maternal distress/ foetal distress before full cervical dilation terminates labor by c/s.
- Bear in mind the possibility of primary PPH and if the mother was on syntocinon drip, let it run for 1hr after 3<sup>rd</sup> stage of labor.
- See if the other management as normal labor.

## **In-Coordinated uterine contraction**

Found in four varieties:-

- a) Hypotonic lower uterine segment
- b) Collic uterus
- c) Constriction ring
- d) False labor

In each of these types, there is alteration in the uterine polarity and often an increase in resting period.



The cervix dilates slowly despite frequent painful contractions.

### **Hypertonic uterine contractions**

- The two uterine poles don't function rhythmically fundal dominance is lost and contractions start or last longer in the lower uterus.
- Cervix fails to dilate due to this, woman become distressed and experience pain particularly at the back which is continuous.

### **Constriction ring dystocia**

- Localized spasms of a ring muscle fibre which usually occur at the junction of the upper and lower uterine segment.
- Rare stimulation but may arise in stage of labor.

### **CAUSES**

- i. Hypertonic colic uterine action.
- ii. Mishandling of uterus.
- iii. Infra uterine manipulation e.g. internal cephalic version.
- iv. Improper use of syntocinon.
- v. No advance in presenting part.
- vi. Constriction ring may be felt on exam.

### **MNX**

- Rule out CPD.
- Do vigilant maternal and foetal observations if no CPD.
- Start mother on 10% dextrose with 5 1.u of syntocinon.
- Analgesics e.g. pethidine if the mother is less than 5cm.
- Monitor input/output.
- Give buscopan 40mg 1m and 40mg 1v.
- Terminate labor by c/s in case of MD and FD.

## **INDUCTION OF LABOUR**

Definition: This is when uterine contractions are started artificially to bring about onset of labour.

### **Predisposing factors**

#### 1. Severe pre – eclampsia and eclampsia

In cases of disease progression the life of the mother may become threatened. If the woman fits the pregnancy is supposed to be terminated within 12 hrs. Induction of labour may be indicated.

#### 2. Post datism

In this case the fetus has overstayed in the uterus. Complications may arise with further stay e.g. hypoxia, difficult labour e.t.c. The best option becomes induction of labour to discontinue the pregnancy.

#### 3. Diabetes mellitus

Pregnancy can interfere with control of diabetes mellitus. Where the condition is threatening maternal mortality pregnancy can be terminated through induction.

#### 4. Request

Although not very common the woman can request termination of pregnancy upon prior discussion with the doctor. she should be term and viable reasons why she feels pregnancy should be terminated.

#### 5. Rhesus incompatibility

In this situation the baby is at risk. The woman is at an equal risk of sensitivity. If pregnancy reaches term it is advisable to terminate it and remove exposure to risks if the pregnancy is allowed to progress.

#### 6. Infra uterine fetal death

Where the death of the fetus has occurred in the uterus, there will be urgent need to remove the dead fetus. The continued stay of the fetus in the uterus may lead to a macerated fetus. Once the fetus is macerated then increased risk of complications e.g. amniotic fluid embolism, coagulation disorders and eventually puerperal sepsis may occur.

#### 7. Loss of babies at term

Women with history of losing babies at term may require close monitoring of their pregnancy and prescribed induction of labour. This can be an intervention to the management of the bad obstetric history they are experiencing.

#### 8. chronic hypertension

The mother may have pre-conceptional hypertension. If her condition is becoming unmanageable as a result of pregnancy then induction of labour can be considered to reduce the risk of her life being threatened.

#### 9. premature rupture of membranes

Once the membranes rupture spontaneously without labour it is important to terminate labour. This will be to prevent serious complications from occurring to include hypoxia, infections e.t.c.

#### 10. severe intra uterine growth restriction

Once it is realized that the growth of the fetus in the uterus is getting compromised as the pregnancy progresses it may be important to consider terminating the pregnancy. This may allow delivery of a live baby that may have been lost if it continued to stay in the uterus.

### **Contraindication**

- Contracted Pelvis
- Malpresentation
- Previous Scar
- Prematurity
- Abnormal Lie
- Abnormal fetal heart rate
- Maternal cardiac disease
- Major degree of placenta previa
- Acute genital herpes infection
- Vas previa
- Invasive cervical carcinoma

- Cephalo pelvic disproportion - CPD

### **Types of induction of labour:**

1. Medical induction
2. Surgical induction

### **Surgical induction**

This involves procedures to include:

- Membranous sweep

This is when the midwife inserts fingers into the birth canal and to the cervix. The midwife tries to separate the membranes from the sides of the uterus near the cervix. This promotes production of hormones that bring about onset of labour.

- Amniotomy

This is the artificial rupture of membrane to release amniotic fluid.

- Extra amniotic saline infusion (EASI)

A foileys catheter is inserted into the cervix and the distal end dilated with at least 30 mls of normal saline. the remaining part of the catheter pulled and secured with the inner aspect of the thigh. This applies pressure to the cervix and promotes production of prostaglandins that bring about onset of labour.

### **Medical induction**

This is when drugs are used to bring about onset of uterine contraction to deliver the baby.

Drugs commonly used include:

- Misoprostal - Cytotec
- Oxytocin – Sytocinon

### **Misoprostal**

Insert quarter tablet, 50mgs of misoprostal endo- cervical 6hrly for 24 hours. After 24 hours if no contractions are established consider a failed induction. in case the mother is draining vaginally it can be administered sublingual 25 mgs 6hrly for 24 hrs.

### **Oxytocin**

Start the woman on sintocinon drip of 5 i.u. in 500 mls of normal saline to run at 10 drops per minute.

Increase the drop by 10 every 30 minutes to a maximum of 60 drops per minute.

if no established contractions by the end of the 60 drops increase the dose of sintocinon by 2.5 i.u. and now you are starting with 7.5 i.u. at 10 drops per minute. Increase the number of drops by 10 every 30 minutes to a maximum of 60 drops.

if the contractions are not established add the amount of sintocinon by 2.5 i.u. now start at 10iu at 10 drops per minute and increase by 10 drops per minute to a maximum of 60 drops. If no established contractions consider as failed induction of labour.

### **BISHOP'S SCORE**

To predict the success rate of the induction of labour the woman has to be evaluated. The evaluation is done using the bishop's score.

The higher the score the higher the chances of success.

	Points				Sub score
	0	1	2	3	
Cervical dilation	Closed	1 -2 cms	3 -4 cms	5- 6 cmc	
Consistency of the cervix	firm	medium	soft		
Cervical effacement	0- 30 %	40 – 50%	60 -70%	80%	
Position of the cervix	posterior	mid	Anterior		
Station of the presenting part	-3	-2	-1,0	+1,+2	
	Bishop's score				

### **Pre - procedure management**

- Admit
- Explain to the mother the need for induction of labour

- Let the mother stay nil per oral for at least six hours before induction.
- The mother should sign consent for surgery in case of any complication.
- Blood for grouping and cross match is taken.
- The woman is fixed two large bow cannulas.

### **Management of the woman during induction of labour**

- Admit the mother
- Explain the procedure and the indication and reassure
- Take proper history
- Perform physical examination
- Bladder care- empty bladder after every two hours- test urine for ketone, protein and albumin
- Adequate nutrition- rehydrate the woman with normal saline
- Ambulation- in case membranes have been ruptured allow the mother to stay with a pad and do not ambulate
- Support – ensure the mother is supported by either staying with the birth partner or a birth companion.
- Pain management – use the pharmacological and non – pharmacological methods of relief of pain.
- Partograph – start the woman on a partograph to monitor labour if she is in established phase.
- Infection prevention- observe infection prevention all the management of labour.
- Since complications can arise inform other departments e.g. theatre, newborn unit, laboratory e.t.c.
- in case rupture of membranes happened six hours ago and mother has not delivered, start her on broad spectrum antibiotics prophylactically, preferable parenteral cephalosporin's 2 grams start as bolus.
- Monitor and regulate syntocinon dosage and fluid as prescribed.
- Discontinue the syntocinon drip if the mother has strong contractions

- Prepare for delivery if you anticipate normal labour and delivery.

### **Complications**

- Fluid intoxication
- Failed induction
- Cord prolapsed
- Abnormal uterine contractions
- fetal hypoxia
- Amniotic fluid embolism
- Ruptured uterus
- Puerperal sepsis

## **OBSTETRICAL OPERATIONS/ PROCEDURES**

### **CAESARIAN SECTION - CS**

A procedure carried out where fetus, placenta and membranes are delivered through an incision made through the abdominal wall and uterus.

It is usually done on lower uterine segment because it is less muscular, inactive and heals faster and has low incidence of uterine rupture in subsequent pregnancies.

It is one of the services offered by comprehensive emergency obstetrical and newborn care facilities (cemonc) in prevention of maternal and newborn deaths.

#### **Types of C/S**

- 1. Elective c/s**
- 2. Emergency c/s**

## **Elective caesarian section**

Operation is planned. Problem is identified antenatally prior to onset of labour

### **Definite indications for Emergency caesarian section.**

- Cephalo pelvic disproportion
- Major degree of placenta praevia.
- High order multiple pregnancy.

### **Possible indications include**

- Breech presentation
- DM
- APH
- Medical conditions that warrant exclusion of maternal effort
- Moderate/severe PET
- IUGR
- Certain fetal abnormalities e.g. hydrocephalus.
- IUFD
- Client's choice
- Presence of active genital warts

### **Emergency c/s**

It is done when adverse condition develops during pregnancy or labour. It is done to save lives of either mother or baby or both.

### **Indications.**

- APH
- Uterine rupture
- Severe PET/Eclampsia in labour
- Failure to progress in labour and fetal compromise if delivery isn't imminent.



- Maternal distress.
- Fetal distress
- Cervical dystocia
- Malpresentation
- CPD diagnosed in labour
- Presence of active genital warts
- Retained twin
- Cord prolapse in 1<sup>nd</sup> stage

### **Methods of c/s**

- Bikini incision (lower uterine segment)
- Classical/vertical incision.

### **BIKINI INCISION**

It is commonly used method. it is associated with less muscularity thus less *activity, hemorrhage* and *faster healing*.

Abdomen is opened below umbilicus; incision follows the following anatomical layers

Skin - fat layer- rectus sheath- muscle (rectus abdominis)- abdominal peritoneum- uterine peritoneum- uterine muscle

### **Advantages.**

- Minimal bleeding
- Good healing
- Less muscular
- Less active
- Scar not likely to rupture in subsequent pregnancies
- Trial of scar can be done.

- Cosmetic

### **Challenges**

- Requires a more experienced doctor
- Injury of urinary bladder.

### **Classical incision**

It is incision of the uterus transversely on upper uterine segment. It is longitudinal and made at midline of uterus. It is done only when;

- Implantation of placenta on lower uterine anterior wall of uterus.
- Fetal shoulders have impacted on maternal pelvis.

### **Disadvantages**

1. Excessive bleeding
2. Contra indicated for trial of scar.

### **Pre-operative preparation for Elective- C/S**

- Admit 2 days prior for adequate preparation if elective.
- Reassure the mother and relatives.
- Take maternal observations to obtain baseline data.
- Monitor FHR and rule out complications.
- Obtained informed signed consent.
- Inform theatre and other departments to include laboratory. At least two units of blood should be ready.
- Change the woman to theatre gown.
- Put an identification band to the woman
- Remove jewellery and put in safe place
- Do investigation e.g. urinalysis, GXM, Hb level, clotting and rhesus factors.
- In case of eclampsia do urea and electrolytes.

- Starve 6-8 hrs prior to operation or nil per oral from time the decision for caesarian section was reached in case of emergency.
- Fix IV line for administration of drugs and fluids.
- Preload the woman with at least two liters of fluids preferable normal saline or ringers lactate.
- Start the woman of profillactic antibiotics e.g. 2 gms ceftriaxone start.
- Shave only the incision site where necessary. it can still be done in theatre wherever is convenient.
- Delay catheterization and can be done in theatre just prior to the procedure.
- Explain to the mother what is expected of her during post natal care.
- Always ensure the indication for the caesarian section is still present.
- Prepare to receive the baby.

### **Post operative care.**

- Ensure the mother is conscious upon receiving.
- Confirm from the theatre notes what has been done to the patient.
- Read and understand the post operative care for the patient.
- Inspect incision site for bleeding.
- Monitor vitals  $\frac{1}{4}$  hourly for first 1 hrs then  $\frac{1}{2}$  hrly next 1 hr then 4 hourly if caesarian section was done under GA. In case it was under spinal anesthesia observe vital signs  $\frac{1}{2}$  hrly until effects of anesthesia wear off.
- Nurse in left-lateral position to reduce risk of airway obstruction.
- Administer antibiotics as prescribed to prevent infection.
- Administer analgesics as prescribed to relieve pain e.g. pethidine.
- Administer antiemetics as prescribed.
- Initiate ambulation as early as possible to promote quick healing and reduce risk for DVT.

- NPO till bowel sound resume for the one who had general anesthesia. In the meantime continue with intravenous fluids. In case it was done under spinal anesthesia oral feeding can commence immediately unless she was subjected to additional anesthesia.
- Administer fluids as prescribed for the first 24 hrs.
- Remove catheter after 6 hrs if under spinal anesthesia or when able to ambulate if caesarian section was done under general anesthesia or 14 days in case of obstructed labour or fear of injury to the bladder.
- Ensure adequate rest.
- Teach on exercises e.g. breathing deeply and let her perform.
- Monitor input- output for risk of circulatory overload
- Let mother report any complication e.g. haematuria, fever, bleeding from incision site.
- Initiate breastfeeding as early as possible.
- COD on third day POD and ROS on 7<sup>th</sup> day POD.
- Discharge through Mch/fp and GOPC.
- Heath educate on hygiene and wound care.

## **Complications**

- PPH.
- Pulmonary embolism due to GA effects
- DVT related to immobility
- Infection
- RDS due to GA
- Rupture 2<sup>o</sup> scar.
- Gaping.
- Paralytic ileus.
- Stress.

## **CERVICAL CEALAGE**

It's passing of a support tape/stitch around cervix to close it.

### **Indications**

- Cervical incompetency
- Cervical tear

### **Causes of cervix incompetence**

- Congenital
- Uterine abnormality
- Exposure to drugs.
- Trauma from D&C
- Laceration sustained during last labour.

### **Contraindication to stitch.**

- PV bleeding
- Infection
- Contractions.

### **Types of cervical stitches**

- (1) **Mc Donald.** Not permanent. Removed between 30- 37 weeks gestation for SVD.
- (2) **Shirodikar.** Mostly permanent. Delivery this ceaserian section. It's at internal OS.
- (3) **Abdominal stitch.** Done beyond internet OS mostly permanent.
- (4) **Herner.** Done when incompetency is diagnosed in late pregnancy.
- (5) **Last.** Done prior to pregnancy incase where adhesive cervix trauma or anatomical effect is permanent.

### **Procedure.**

- McDonald stitch should be inserted at 14 – 16 weeks after last abortion.
- Lithotomy position is used.
- Vagina and cervix are washed under direct vision after passage of Sims speculum.
- Can be done under G.A or L.A.
- Traction in opposite direction with ring placed on the direction and posterior cervical lips.
- A suture is passed round the cervix and taking bites in all 4 quadrants of cervix.

### **Post procedure**

- Strict bed rest.
- AB after 24hrs.
- Monitor for signs of labour
- Watch for signs of premature labour.
- Advice for regular
- Admit at 37 weeks.
- Counsel to avoid strenuous Activity.

### **Risks.**

- Haemorrhage
- Cervical infection
- Premature labour
- Cervical displacement
- PROM
- Cervical rapture
- Injury to cervix or bladder.
- Chorio-amnionitis
- Cervical dystocia

## **AMNIOCENTESIS.**

Definition: It is the trans- abdominal insertion of a fine needle into the amniotic fluid cavity under continuous U/S guidance to aspirate amniotic fluid.

It is usually done after 15 weeks gestation.

### **Indications.**

- Detect genetic/chromosome problems
- Detect sex of baby.
- Detect rheumatic heart disease
- Detect neural defects.
- Bilirubin levels in case of rhesus incompatibilities

### **Indications in late pregnancy.**

1. Assess fetal lung maturity
2. Polyhydrominous
3. Assess level of bilirubin increase of RH incompatibility
4. Infections

### **Procedure**

- ✓ Explain procedure
- ✓ Tell indications
- ✓ Reassure
- ✓ U/S is done and placenta localized and pool of amniotic fluid
- ✓ Advice women to empty bladder
- ✓ Aseptically clean, dry and swab skin with antiseptic solution
- ✓ The needle is inserted through abdomen wall into uterine cavity
- ✓ Local anaesthesia given and 15ms of amniotic fluid aspirated
- ✓ If RH incompatibility is present antihaemoglobin is given

- ✓ Contents are examined
- ✓ Mother is advised to rest for the first 24hrs and reduce physical exercise

### **Side effect/ minor disorders.**

- ✓ Anxiety
- ✓ Nausea
- ✓ Tachycardia
- ✓ Muscle cramps on abdomen

### **Risk factors to mother**

- ✓ PPROM
- ✓ Rhesus incompatibility
- ✓ APH
- ✓ AFE (amniotic fluid embolism)
- ✓ Infection
- ✓ Preterm labour
- ✓ Onset of labour

### **Risk factors associated to baby**

- Trauma
- Abortion
- Prematurity
- Fatal death

### **Complications**

- Leakage of amniotic fluid at site Induce miscarriage
- Infection if not done aseptically
- Spontaneous rupture of membranes



## **EMBRYOTOMY**

It is a destructive operation designed to reduce part of fetus and allow for vaginal delivery, usually done on dead and grossly abnormal fetus and consist of 4 procedures

### **1. Craniotomy**

Includes introduction of forceps into the fetal skull to release CSF and brain tissues thus skull reduces in size as the bones collapse and the diameter reduces; The child can be born.

#### **Indications**

- **Impacted shoulder presentation**
- Delayed second stage and dead baby
- Fetus and gross abnormality
- Double headed monster
- Locked twins
- Impacted breech
- Hydrocephaly (LUFH)

#### **Procedure**

Assistant presses on the abdomen downwards on the head

A perforation is carefully passed on the skull through a suture or fontanelle.

The opening is enlarged closing the handle. Delivery completed by obstetric forceps.

With breech, drain hydrocephaly by passing a straight metal cannula upto the spinal cord.

### **2. Decapitation**

Cutting is done to separate the head from the trunk and is indicated in case of impacted shoulder presentation and fetus is dead and in case of locked twins and double headed monster.

It is gently positioned by the fetus neck where the hook is pressed using the left hand while the right hand guards the maternal tissues from trauma.

By combination of swinging and gentle traction the hand is cut and body delivered by pulling the arm.

### **3. Cleidoctomy**

It involves cutting of the clavicle bone of shoulders to reduce the width of the shoulders in case of excessively large babies, CPD impacted shoulders.

The instrument used is a cleidoctomy scissors.

### **4. Evisceration**

Done to reduce bulk in the abdomen mostly in case of abdominal mass.

## **MANAGEMENT OF A MOTHER IN LABOUR UNDERGOING EMBRYOTOMY**

- Explain procedure
- Psychological preparation of the mother according to procedure.
- Correct dehydration and ketoacidosis with IV fluids
- Bladder care and shave pubic hair
- Prepare for c/s in case preparation fails
- Nurse mother in a single room away from babies
- Suppress lactation by advising on tight brassier.
- Observe lochia
- Daily exam of the mother
- Do HB before discharge
- Discharge the GOPC.

## **PERINEAL TEARS**

Are lacerations or trauma involving the perineum and vulva following delivery.  
Can be prevented by giving an episiotomy.

### **Classifications**

1<sup>st</sup> Degree - involves vagina muscles and skin of perineum (fourchette only)

2<sup>nd</sup> degree – involves fourchette and perineal muscle

3<sup>rd</sup> degree - 2<sup>nd</sup> degree + anal sphincter muscle

4<sup>th</sup> degree – all above extend to rectal mucosa.

### **PREDISPOSING FACTORS.**

- ✓ Rigid perineum especially in primigravida
- ✓ Previous tears
- ✓ Malposition in which large diameters extend perineum
- ✓ Large babies
- ✓ Android pelvis i.e. narrow pelvic arch
- ✓ Instrumental deliveries
- ✓ Delivery of after coming head in breech delivery.

### **Principals of repair**

1. use minimal suture material
2. Aim at achieving haemostasis
3. Minimal knots
4. Relieve pain
5. Avoid creating dead space
6. Infection prevention
7. Prophylactic antibiotics administration

8. Maintain anatomical structure.

### **Management**

- Follow principals of perineal tear repair
- 1<sup>st</sup> and 2<sup>nd</sup> degree are repaired under LA in labour ward while 3<sup>rd</sup> and 4<sup>th</sup> degree are repaired under GA in theatre to prevent infection and permanent damage.

### **Post repair care.**

- Provide balanced diet
- Give suppositories to soften stool
- advice to clean with warm saline water
- Give antibiotics
- Advice to maintain good personal hygiene
- Advice delay of sexual intercourse till healing takes place
- Avoid saline sits
- Avoid very hot water or too much salt s may interfere with healing process.
- If absorbable suture was used inform the mother that there will be removal of stitches.
- in case the wound opens, leave it for 3months before 2<sup>nd</sup> repair
- Debridement may be done in case of severe infection and necrosis.
- If repair is successful, subsequent delivers should be normal.

### **Complication of tears**

- ✓ Burning sensation of mituration

- ✓ Incontinence
- ✓ Infections bleeding
- ✓ Fistula

## **SYMPHYSIOTOMY**

A surgical procedure in which the symphysis pubis is incised to widen the pelvis allowing increase in anterior- posterior when there is a mechanical problem

It is a surgical incision to separate symphysis pubis to enlarge the pelvic let out to aid delivery.

It results in a temporally increase of the pelvis diameter up to 2cm by surgically divided the ligaments of symphysis public under local anaesthesia

Procedure is carried out in combination and vagina extraction

### **Indications**

- ✓ Tripped head of a breech presentation
- ✓ Shoulder dystocia which does it deserve routine manouvre
- ✓ Obstructed labour at full cervix dilatation when there is no option for c/s

### **Advantages**

No scar to uterus hence no risk of uterine rapture

### **Demerits**

- Uterine and bladder injury due to abduction of thighs more than 45° from midline
- Infection
- Pain

- Long term waking difficulties

**NB:** should be carried out only when there is no other safe alternative

The procedure should be repeated during subsequent deliveries due to gait problems and continuous pain

### **Post operative care**

- ✓ Analgesics to relieve pain
- ✓ Apply elastic strapping from one iliac crest to the other to stabilize the symphysis pubis / reduce pain
- ✓ Leave strapping in situ for 10 days. < 5days (likely hood of oedema)
- ✓ Encourage woman to drink plenty of fluids to ensure good urinary output
- ✓ Encourage bed rest for 4 days after discharge
- ✓ Offer total nursing care
- ✓ Encourage to start walking assistance if needed to.
- ✓ Insert urinary catheter to empty bladder.

### **Contraindications**

Dead fetus

Incomplete dilatation of cervix

Malposition

Non – longitudinal lie

## **ABNORMAL PREGNANCY**



## **INTRA-UTERINE GROWTH RETARDATION (IUGR)**

### **Content**

- Define IUGR
- Describe pre-disposing factors
- Classification IUGR
- Describe Diagnosis of IUGR
- Describe the Management of IUGR
- Describe Complications OF IUGR
- Describe Preventive measures to IUGR.

Definition. This refers to a condition where there is poor growth of the fetus while in the uterus. The baby is weighing less than 90% of expected normal weight per gestational age.

This is usually followed by normal fetal growth potential during the 1<sup>st</sup> and 2<sup>nd</sup> trimester but during the 3<sup>rd</sup> trimester, the growth becomes severely reduced by unfavorable extra fetal and fetal factors

### **PRE-DISPOSING FACTORS**

- i. Maternal factors**
  - PET
  - Uncontrolled diabetes mellitus
  - Chronic hypertension

- Maternal malnutrition
- High altitudes
- Recurrent malaria infection
- Anaemia
- HIV, TB, SCD
- Young and elderly mothers

### **Risk factors**

- Alcohol abuse
- Clotting disorders
- Drug addiction
- Kidney disease
- Poor nutrition
- Smoking
- Poor socio- economic status

#### **ii. Fetal factors**

- Congenital malformation e.g. esophageal atresia
- Genetic disorder e.g. down's syndrome
- Fetal infection e.g. herpes simplex, rubella
- Multiple pregnancy

#### **iii. Placental factors**

- Placental abruption
- Abnormal placentation.
- Abdominal cord insertion
- Chorioamnionitis
- Single umbilical artery
- Too small placenta
- Oligohydromnous

### **Classification**

- **Symmetric**
- **Asymmetric**

### **Diagnosis**

Note- Ensure the gestational age is established.

- Fundal height that does not coincide with gestational age.



- Reduced maternal weight
- Reduced amount of amniotic fluid- amniotic fluid index
- Bi parietal diameter
- Head circumference
- Abdominal circumference
- Reduced femur length.

## **INVESTIGATIONS**

- Ultrasound
- Alpha fetal protein to rule out fetal abnormalities
- Amniocentesis
- Specific investigation
- Human placenta lactogen (if reduced) to check for placental sufficiency

## **Management**

- Antenatally
- Management of this condition is individualized for each woman
- Ensure adequate rest
- Book the woman most frequently
- Educate the mother on FKC.
- Observe fetal conditions every visit
- Serial u/sounds can be done
- If there is evidence of symmetrical type, amniocentesis can be done.
- If condition cannot allow home management admit.
- Ensure the mother stays in hospital for management
- Monitor pregnancy by checking fetal heart, f. size, amount of liquor, maternal weight and girth
- Teach and give fetal kick chart to monitor fetal movements
- Make a definite decision on when and how to deliver the baby
- In the management, include, pediatrician, obstetrician etc
- During delivery choose the best method of delivery
- If the fetus is in greater danger, deliver by elective c/s
- Some can be delivered by induction – do bishops score
- Fetal maturity should be weighed against severity of IUGR before induction
- Before induction, do a bishop score (when the cervix is well effaced, well dilated, soft, cervix is anteriorly) the induction will be good if the presenting part will be attached

## **COMPLICATIONS**

- Neonatal asphyxia
- Hypoglycemia

- cerebral haemorrhage
- Intra-uterine fetal hypoxia
- Prematurity with its complications
- IUFD
- Delayed milestone

## **PREVENTION**

- Most genetic factors are not preventable
- Prenatal women should avoid close contact in infected individuals with rubella, cytomegalovirus e.tc.
- Non prenatal women should be tested for rubella and if susceptible should be immunized.
- Pregnant women should avoid alcohol and smoking
- Good management of hypertension, PET and chronic renal disease
- Correct maternal anaemia
- Ensure adequate maternal nutrition

## **INTRA UTERINE FETAL DEATH (IUFD)**

### **Objectives**

- Define IUFD
- Describe the Causes of IUFD
- Describe the Diagnosis of IUFD
- Describe management of IUFD
- Describe Complications
- Describe Preventive measures

### **Definition**

It is the death of the fetus that occurs for no apparent reason in a normal uncomplicated pregnancy in 20 weeks gestation and the fetus weighs 350 gms and above.

## Causes

- Maternal
- fetal
- placental

### Maternal

- prolonged pregnancy
- maternal conditions e.g. poorly controlled diabetes mellitus, severe anaemia, acute severe maternal hypertension, pet, sickle cell disease, malaria
- acute or severe maternal hypotension
- uterine rupture
- massage
- External cephalic version
- Trauma on the abdomen
- Obesity
- Advanced maternal age
- History of IUFD
- Smoking
- Alcoholism
- Infections
- Rhesus incompatibility
- Maternal death

### fetal causes

- Multiple pregnancy e.g. monozygous twins
- Congenital abnormality
- Genetic abnormalities e.g. down syndrome
- infections
- Intra uterine growth retardation
- Prem
- Retained second twin.

## **Placental causes**

- Placental abnormalities
- Cord accidents
- Placenta abruption, previa

## **Diagnosis**

- History taking- mother complains of no fetal movements
- Fetal heart rate absent on fetal scope, Doppler and uls.
- Abdominal palpation- fundus not increasing in size, baby on lower side of the abdomen and in transverse lie.
- X- ray- demonstrates overlapping skull bones, oedema of the skull and gas bubbles, hyper-flexion of the spine.
- Maternal weight decreases.
- Breast softening
- Brownish vaginal discharge
- Pregnancy test becomes negative with time.
- Mother complains of feeling baby moving with change of position

## **Management**

Let the mother know of the condition.

Take a good detailed history.

If not sure of the diagnosis book after 2- 4 weeks

Admit the mother and reassure her

Do abdominal palpation to confirm with the above findings

Send the mother for u/s and will reveal,

- Abnormal fetal head
- Overlapping fetal skull
- Edematous skull

Arrange for early induction of labour

If in labour manage as normal labour and avoid rupture of membranes.

If not in labour, plan for induction and before induction check blood clotting time.

Start the woman on antibiotics prophylactically

Woman to avoid sex 4- 6 weeks

Advise the woman on family planning

Give psychological and emotional support to the woman

### **Prevention**

- Discourage massage
- Give SP for malaria prevention
- Early diagnosis of anaemia and treatment
- Encourage ANC visits
- Screen and manage conditions/ diseases antenatally e.g. venereal diseases.

### **Complications**

- Puerperal sepsis
- DIC
- Amniotic embolism
- PPH
- psychological

## **PYELONEPHRITIS IN PREGNANCY**

Definition: This is an ascending UTI that has reached the pelvis of the kidney. It occurs mostly common between 16 – 20 week of gestation.

It is inflammation of kidney cortex and medulla.

### **Predisposing factors**

- Pregnancy

- Previous history of sexual transmitted infection.
- Poor hygiene
- Stasis of urine
- Primiparity
- Other conditions e.g. HIV/AIDS

### **Risk factors**

- Structural abnormalities of kidney/ urinary tract
- constitutional factors e.g. DM, HIV/AIDS/TB
- multiple sexual partners
- unprotected sexual intercourse
- failure to attend clinic
- poor personal hygiene

### **Clinical presentation**

- Pyrexia
- Tachycardia
- Nausea and vomiting
- Dysuria
- Dull headache
- Cloudy urine
- desire to pass urine frequently
- suprapubic pain – pain and tenderness on franks
- foul smelling urine

### **Causative organisms**

- e. coli
- pseudomonas fecalis
- viruses
- streptococcus fecalis

- normal flora of skin

### **Diagnosis**

- History
- Physical examination
- Urine dipstick
- Mid stream specimen of urine
- HVS for culture and sensitivity

### **Management**

Admit

Monitor vital signs

Rehydrate the mother with i.v. fluids due to fever and nausea and vomiting

Start the mother on antibiotics

- *Recommended treatment should go up to delivery after onset of treatment.*
- *Ceftriaxone i.v. 1gm od for 10 – 14 days*

*Or*

- *Erythromycin 500mgs/Ampicillin/ amoxyl 500 QID plus flagyl 400mgs for 10- 14 days*
- *Nitrofurantion*
- *iv fluids*

Closely monitor input output monitoring.

If the cause is sexual tract infection involve the partner in management

Administer oral laxatives and antispasmodics.

Monitor onset of labour.

Repeat tests for urine 2 weeks after completion of treatment then motherly till onset of labour.

Encourage the mother to take a balanced diet rich in protein.

Health educate on hygiene, exercises, rest, diet, etc.

Continue with general nursing care.

Continue with management of the woman as an antenatal.

### **Complications**

- Renal failure
- Abortions
- Premature labour
- Puerperal sepsis
- Shock
- DVT
- Acute respiratory distress syndrome

### **TWIN PREGNANCY**

Definition: It's the presence of more than one fetus in the uterus at the same time.

Types

1. Monozygotic
2. Dizygotic

#### **Monozygotic twins**

Develop from fusion of one ovum and one spermatozoa. After fertilization it splits into two.

#### **Characteristics of monozygotic twins**

- *Identical*



- *Same sex*
- *Same gene*
- *Same blood group*
- *Same physical features*
- *Share the same placenta and chorion*
- *Share the same circulatory system*
- *Finger and palm prints are identical*
- *Congenital malformations are identical*

### **Dizygotic twins**

Develop from fertilization of two different ova and two different sperms.

#### **Characteristics**

- *They are not alike. Are two different persons.*
- *May or may not be of the same sex*
- *Physical and mental characteristic are different.*
- *Its genetical and runs in family*
- *Has separate placenta and chorion*
- *Do not share the same circulation system*
- *Common to elderly or multiporous women*

#### **Diagnosis of twin pregnancy.**

Diagnosis can be done through,

1. *History taking*
2. *Physical examination*
3. *Laboratory findings*
4. *Ultrasonic examination*

**Note: a combination of findings may be required for one to make a diagnosis.**

### **1. History**

- History of multiple pregnancy
- Bleeding
- Exaggerated problems of pregnancy
- Exaggerated pressure symptoms
- Multiple and constant fetal movements
- Excessive weight gain

### **2. Physical examination**

#### *I. Inspection*

- Uterus may be big, round and broad.
- Fetal movements seen over a wider area.
- A fresh striae gravidarum may be present.

#### *II. Abdominal palpation*

- Multiple fetal parts
- Small head per gestation
- Fundal height greater than expected
- Palpation of fundus above level of umbilicus after delivery of first baby.

#### *III. Auscultation*

- Two fetal heart rates. (2 fetal hearts heard at the same time taken by 2 midwives at a distance of 10 cms or more apart and with a difference of 10 beats.)

#### *IV. Vaginal examination*

- Palpation of a fetal part or an intact amniotic sac after delivery of the first baby.

### **3. Laboratory findings**

- Raised alpha- fetal protein level
- Increased HCGH
- Elevated glucose level in blood
- Elevated anemia level

### **4. Ultrasonic examination**

- demonstration of 2 fetal sacs in early pregnancy
- demonstration of 2 fetal skeletons

### **Possible presentations**

- Vertex/ vertex
- Vertex/ breech
- Breech/ vertex
- Breech/ breech
- Vertex/ transverse
- Vertex / transverse
- Breech/ transvers

## **MANAGEMENT ANTENATALLY**

- Take history of the mother
- Reassure
- Follow FANC guidelines
- Early diagnosis of twins is important in order to prevent problems or manage associated with twin pregnancy.
- Book the mother for ANC and high risk clinic for close observations.
- Her management should be multidisciplinary e.g. midwives, radiographers, e.t.c.
- Prepare and assist in carrying out investigations like BP and rhesus factor, urinalysis.
- Repeated abdominal obstetrical scans can be done to rule out presence of any congenital abnormalities.
- Administer drugs such as iron supplements to prevent anaemia.
- Educate on the importance of extra rest at home to prevent complications such as early rupture of membranes, premature labour e.t.c.
- Reduce pressure activities after 28 weeks of gestation.
- Avoid strenuous activities e.g. walking long distances
- Advise the mother on hygiene to prevent infections
- Educate on danger signs during pregnancy
- Avoid un prescribed drugs
- Advise the woman to avoid alcohol and smoking.
- Counsel her on exaggerated minor disorders of pregnancy.
- Counsel her to expect two babies and about their care – parenting.
- Advise her on hospital delivery. let her consider delivering in a comprehensive care facility.

➤ Ct with general management of an antenatal woman.

- *History*
- *Physical exam*
- *Height and weight measurement*
- *Antenatal profile*
- *Deforming*
- *ifas*
- *IPT with sp*
- *Tetanus toxoid administration*
- *Provision of net*
- *EMTCT services*
- *Health education*
- *Book for next visit*

### **Management during first stage of labour.**

- Admit and reassure the mother about the twin pregnancy and possible complications.
- Fix two large bore cannulas.
- Take blood sample for investigations e.g. grouping and cross match.
- Rehydrate the mother with normal saline
- Do physical examination- palpate to confirm lie and presentation

*If first twin is breech delivery is by caesarian section*

*Or*

*If both fetus are presenting with cephalic delivery is by caesarian section.*

*Or*

*If the woman is a primi and in first stage of labour delivery is by caesarian section.*

- Closely monitor the labour by use of partograph
- Encourage the mother to empty her bladder every 2 hours. Test urine for ketone, albumin e.t.c.
- Encourage ambulation if membranes are still intact. if on bed to avoid adopting the right lateral position.
- In case of mild contractions rupture membranes and administer syntocinon.
- Avoid sedation.
- Manage pain appropriately e.g. paracetamol 500 mgs – 1gram start, back rubbing, e.t.c.
- Observe infection prevention throughout labour
- Insist the woman breathe through the mouth with every contraction
- The birth partner can be present to provide support
- Teach the mother on what is expected of her during second stage of labour e.g. push with every contraction
- Prepare two delivery packs
- Prepare for second stage of labour

## Management during second stage of labour

- Confirm second stage through vaginal examination
- Inform other staffs
- Monitor fetal heart closely
- Prepare for resuscitation
- Encourage mother to push with every contraction
- Deliver the first baby and hand over to the assistant for further management
- Let first twin be labeled as *first twin*.

### *Withhold administration of syntocinon*

- Palpate the abdomen to ascertain the lie and presentation and engagement of the second twin.
- If there is an abnormal lie perform either *internal podalic or external cephalic version*.

*With internal podalic version done when membranes are ruptured. Insert one hand and grasp the fetus by the feet at the level of the ankle. Pull the legs towards the lower uterine segment and deliver as breech presentation.*

*For external cephalic version done when membranes are intact. Palpate the abdomen to locate the head and the buttocks. Apply downward traction to the fetal occiput following the direction of the cord. Direct the fetal head to the pelvis. The other hand will be directed the buttocks to the fundus.*

- Check FHR
- Perform vaginal examination to check if membranes are ruptured or intact. If intact rupture membranes.

- Assess contractions - in case contractions are reduced as it is common after delivery of the first baby augmented with syntocinon.
- Encourage the mother to push with every contraction
- Second twin must be delivered within 45 minutes or otherwise if signs of maternal or fetal distress appear prepare the woman for emergency caesarian section.
- Once second twin is delivered on maternal abdomen, and clamping and cutting of the cord done hand over to the assistant and baby labeled *second twin*.
- *Congratulate the mother.*
- *continue with immediate care of the baby*

### **Third stage of labour**

- palpate the abdomen to rule out other undiagnosed fetus. The fundus should be palpated below the level of the umbilicus.
- Continue with Active Management of Third Stage of Labour (AMSTL) as per guidelines.
- Give syntocinon. If mother was on syntocinon drip let it run for the next 1 hr.

### ***Serves as Prophylactic management for pph.***

- While supporting the uterus hold the two cords simultaneously and deliver the placenta.
- Examine placenta
- strengthen AMSTL
- Massage the abdomen after every 15 minutes
- Advise the mother to empty bladder immediately then after every 2 hours
- Perform a thorough 1<sup>st</sup> examination of the fetus to rule out congenital abnormalities.
- Continue management of the baby depending on the condition.



### **Management postnatally.**

- Just like any postnatal mother
- Reassure her about caring for two babies.
- Let the mother take balanced diet to boost her nutritional status
- Give health messages
- Management might be directed by children's, condition.
- Follow targeted post partum care strategy and policy.
- Advise on long term methods of family planning for women with desired family size.

### **Babies after delivery**

- If light for dates check sugars
- If asphyxiated resuscitate
- If premature manage as case of prematurity.
- for congenital abnormalities refer appropriately
- otherwise continue with routine management of the baby.

### **Complications/ effects associated with twin pregnancy**

- Exaggeration of minor disorders e.g. vomiting, high levels of HCG hormone.
- Anaemia due to high fetal demand (iron, folic, vit B12 deficiency)
- Polyhydromnious in monochorionic.
- Congenital disorders e.g. congenital cardiac diseases, down syndrome e.t.c.
- Increased pressure symptoms
- Predisposes to conditions like Pre- eclampsia is common
- Premature labour due to over distention of abdomen.
- Premature rupture of membranes due to pressure in the uterus

- Retained twin due to relaxation of the uterus
- Prematurity due to premature labour
- Cord prolapsed with second twin
- Intra uterine growth restriction associated with competition for nutrition
- PPH due to uterus exhaustion especially atonic uterus.
- Prolonged labour – due to malpresentation and poor uterine action
- psychological effect (positive/ negative)

## **RHESUS INCOMPATIBILITY**

Rhesus factor is a protein bound in red blood cells. When you have that protein you are termed as **rhesus positive**. When you don't have it you are considered **rhesus negative**. Naturally majority of the population is rhesus positive.

When the woman is rhesus negative there is likelihood that the husband could be rhesus positive.

Risk develops when the woman is rhesus negative and is carrying a baby who happens to be rhesus positive.

### **Risk factors**

- Abortion
- Miscarriage
- Ante partum hemorrhage
- Amniocentesis
- Trauma
- Chorionic villi aspiration

### **Diagnosis**

- Serum bilirubin level
- Rhesus factor
- Hemolytic process
- Antibodies (direct and indirect coombs)

## Prevention

Always aim at prevention.

- Prenatally take a blood sample from the mother and check if the mother has developed antibodies against rhesus positive blood.
- Antenatally test the husband to confirm whether rhesus positive or negative. if the husband is rhesus positive then the mother is at risk. in case the rhesus factor of the husband remains unknown consider the woman at risk since the greater population is usually rhesus positive.
- Administer anti- D profilactically at 28- 32 weeks gestation. This is due to the higher risk of fetal and maternal blood mixing associated to the events of the placenta at this time.
- Administer anti- D profilactically at 36 – 40 weeks gestation. It is advisable an **indirect coombs** test is done before administration to rule out sensitivity.
- A great risk is associated with delivery process. Ensure anti- D is administered within 72 weeks after the birth of the baby. However it is advisable a **direct coombs** can be done before administration for confirm presence of maternal antibodies. A blood sample can be taken to confirm the rhesus factor of the newborn, if negative the mother carries no risk so administration of the anti D can be withdrawn.

## Care of baby after birth

- Continue monitoring the baby.
- Blood works can be done to include:
  - hb level
  - bilirubin level
- Rule out asphyxia neonatorum
- Rule out kernicterus associated with high bilirubin levels.

## Complications

- Abortions
- Miscarriages
- Anaemia
- Jaundice
- Birth asphyxia

- Infertility
- Hydrops fetalis
- IUFD
- Still birth

## **PREMATURE RUPTURE OF MEMBRANES**

Definition: This is a condition occurring during pregnancy where there is rupture of the membrane at least 1 hour before onset of labour.

It can occur before at term and poses less risk to the fetus. If it occurs before 37 complete weeks of gestation it is called preterm premature rupture of membranes (PPROM).

### **Classification**

#### *1. Premature rupture of membranes (PROM)*

This is a condition occurring during pregnancy where there is rupture of the membrane at least 1 hour before onset of labour.

#### *2. Preterm premature rupture of membranes (PPROM)*

Membranes have ruptured before 37 complete weeks gestation.

#### *3. Prolonged premature rupture of membranes (Prolonged PROM)*

Membranes have ruptured and 24 hours have elapsed without onset of labour.

#### *4. Pre- viable premature rupture of membranes (Pre- viable PROM)*

Membranes have ruptured when the baby can not survive once born.

### **Risk factors**

- ✓ Infections

- ✓ Polyhydromnious
- ✓ multiple pregnancy
- ✓ cervical incompetence
- ✓ previous history of prom
- ✓ Psychological problems
- ✓ Amniocentesis
- ✓ being underweight
- ✓ low socioeconomic status
- ✓ Illicit drug use and smoking
- ✓ Any condition that increase Bp e.g. PET

### **Diagnosis**

#### **1. Take proper history from mother**

#### **2. On speculum exam**

Fluid is seen coming from cervix or forming a pool in the posterior fornix

A gush of fluid after mother cough

#### **3. Nitrazine test**

Nitrazine paper or speculum blade attached to fluid color is yellow - blue alkalinity

#### **4. Ferning test**

Spread some fluid on a slide and let it dry on microscope amniotic fluid forms crystals

#### **5. Abdominal U/S** reveals Oligohydromnious

#### **6. Abdominal palpation** reveals decreased fundal height

#### **7. Do litmus test**

#### **8. Give a pad and later examine presence of amniotic fluid**

### **Differential diagnosis**

- Urinary incontinence.
- Sweating associated with pregnancy.

- Normal vaginal discharge during pregnancy.
- Increasing cervical discharge.
- Semen.
- Douch.
- Loss of mucus plug.
- Vesico- vaginal fistula.

## **MANAGEMENT**

- Admit.
- Reassure.
- Provide adequate rest
- Do a speculum to confirm a pool of fluid.
- Avoid digital vaginal to decrease risk of infection.
- Monitor FHR closely
- Administer antibiotics to treat existing infection or prophylactically.
- If mother is below 37weeks hospitalize.
- Abdominal scan to assess fetal growth and complications of oligohydromnious e.g. hypoxia.
- Do weekly RWBC to R/O infection
- In case of signs of labour, administer drugs like salbutamol 4mg to prolong pregnancy.
- Administer dexamethasone for lung maturity.
- If membranes ruptured before 24weeks, fetus is likely to succumb to problem of oligohydromnious or preterm birth: Termination of pregnancy is done
- If pregnant more than 32weeks gestation, fetus appears compromised e.g. hypoxia, intervene, labour is confirmed let it progress OR induce OR c/s

- Monitor vital especially FHR
- Observe amniotic fluid to R/o meconium
- In case of infection or IUFD induction is done
- Encourage personal hygiene i.e. change of pads
- If prom happens after 37weeks start the mother on antibiotics, manage for induction of labour and don't wait for spontaneous labour

### **Prevention**

- antenatal profile
- rest
- management of condition e.g. pet, hypertension
- early diagnosis and treatment of UTI
- avoid smoking and illicit drugs

### **Complications to the mother**

- Infections
- Amniotic fluid embolism
- Psychological problems

### **To the fetus**

- Malpresentation
- Prematurity
- Cord compression
- Cord prolapse
- Ophthalmia neonatorum
- IUF hypoxia
- IUFD

## **PRE ECLAMPSIA**

### **Definition**

It is a condition occurring during pregnancy >20 weeks gestation characterized by high blood pressure and protein in urine.

## **AETIOLOGY**

It is associated with

- Toxicity produced by placenta for the first time
- Over distension of the abdomen
- Immunological changes as the fetus is developing

The three events make the condition affect multi system and multi organ. The blood vessels become Leakey. Fluids now tend to shift from intravascular to extra vascular space.

## **Predisposing Factors**

1. Primigravida
2. previous positive family or personal history of pet
3. Medical conditions e.g. diabetes, mellitus, hypertension, renal disease, URTI in advanced stage
4. elderly primigravida >35 years
5. young primigravida <18 years of age
6. Obstretical conditions such as multiple pregnancy hydatidiform mole, hydropsfetalis, Polyhydromnious.
7. Obese mothers

## **Classification**

### *a) Mild pet*

Bp 140/90mmhg, protein ++ and gestation >20 weeks

### *b) Severe pet*

Bp 160/110mmhg, protein +++ or blood pressure as for mild but with any sign of severity ad gestation >20 weeks

### *c) Eclampsia*

High blood pressure, protein in urine, gestation >20 weeks and presence of fits.

## **Signs of severity in PET**

- a) Sudden sharp rise in Bp*
- b) Diminished urinary output*
- c) Hypereflexia*



- d) Clonus
- e) Blurred vision
- f) Increase in proteinuria
- g) Severe and persistent frontal headache
- h) Nausea & vomiting
- i) Epigastric pain

### **Effects of PET to pregnancy**

1. Placenta abruption
2. Intrauterine growth restriction
3. Prematurity
4. Intra uterine fetal hypoxia
5. Low birth weight
6. Damage to vital organs e.g. kidney, eye brain heart etc.
7. Intra uterine fetal death

### **Effects of PET to the woman**

1. brain hypoxia
2. cerebral vascular accident
3. brain herniation
4. cerebral oedema
5. head injury
6. temporary blindness
7. pulmonary oedema
8. liver oedema
9. liver failure
10. liver rupture
11. kidney failure

## 12. HELLP syndrome

**NOTE:** All women at risk of developing pet can receive **aspirin** throughout pregnancy to reduce the chances of developing pet.

### **Mild pet**

It is a condition occurring during pregnancy >20 weeks gestation characterized by high blood pressure of 140/90mmgh and protein in urine ++.

### **Management of mild PET**

- a) Book the mother in high risk clinic
- b) Schedule her on 2 weekly visits to the clinic
- c) Take Bp and record
- d) take weight and height
- e) perform physical examination
- f) Test urine for protein
- g) Take fetal heart (between 120-160)
- h) Measure the abdomen in order to detect abnormal fundal height.
- i) Prescribe to the mother some mild sedatives e.g. phenobarbitone (30-60mg) to assist her acquire enough rest
- j) Advice the mother on high protein diet
- k) Advice the mother on rest at home
- l) Advice the mother on fetal activity and any reduced activity she should come to the clinic. Teach the mother on maintenance of fetal kick count chart.
- m) Advice the mother on signs of severe PET e.g. severe headache, epigastric pain. if she notices any she should come to the clinic.
- n) Advice the mother to come for admission when pregnancy reaches 38 weeks gestation
- o) Give the mother antihypertensive aldomet 250- 750mgs three times or twice a day and nifedipine 20 mgs twice a day.
- p) On return to the clinic check the following:
  - a. *protein in urine*
  - b. *blood pressure*
  - c. *fetal well being*
  - d. *drug compliance*
  - e. *rule out signs of severity*
- q) ensure the mother receives the other routine antenatal care services e.g.
  - physical examination
  - provision of treated net
  - deworming
  - antenatal profile

- administration of tetanus toxoid
- administration of haematenics - ifas
- emtct
- administration of sulfadoxine pymerathymine - sp
- health education
- book for next visit

## **SEVERE PET**

This is a condition occurring during pregnancy >20 weeks gestation characterized by high blood pressure of 160/110mmgh and protein in urine +++.

### **Principles of management**

- a) Control of blood pressure
- b) Prevention of convulsions
- c) delivery option

### **Management of severe PET**

- a) Admit the mother in a quiet room in a facility capable to offer comprehensive emergency obstetrical and newborn care (if in a health centre refer)
- b) Ensure mother gets enough bed rest with a 24 hour nursing coverage.
- c) Reassure the mother
- d) call for help from senior member present
- e) Give the mother some sedatives e.g. phenobarbitone 30-60mg
- f) The aim of management is to prevent convulsion, control Bp and prevent maternal and fetal death.
- g) Management of blood pressure.
  - Administer intravenous hydrallazine 5mgs as bolus slowly over 5 minutes. Repeat the dose every 30 minutes to a maximum of 20mgs. Aim at achieving a diastolic blood pressure of 90mmgh.
  - Once the diastolic is 90mmgh administer oral aldomet 250 – 750 mgs and nifedipine to prevent rebound high blood pressure.
  - Other drugs to include labetalol can be administered.

Example of how hydrallazine administration,

Time	Bp reading	dose	Remarks
10 am	160/120	5mgs	Check bp before next dose
10.30 am	150/110	5mgs	Monitor bp
11 00 am	140/90	Don't give	Start oral antihypertensive. monitor bp
11.30 am	-	-	-

Know how to prepare hydralazine and administer.

**Step 1:** Dilute hydralazine with 2 mls of water for injection.

**Step 2:** Use 20 mls syringe. Add 18 mls of the same diluent to the 2 mls to get a bigger volume of 20 ml.

**Step 3:** Divide 20 the mls into 4 parts. 5 mls is equal to 5 mgs.

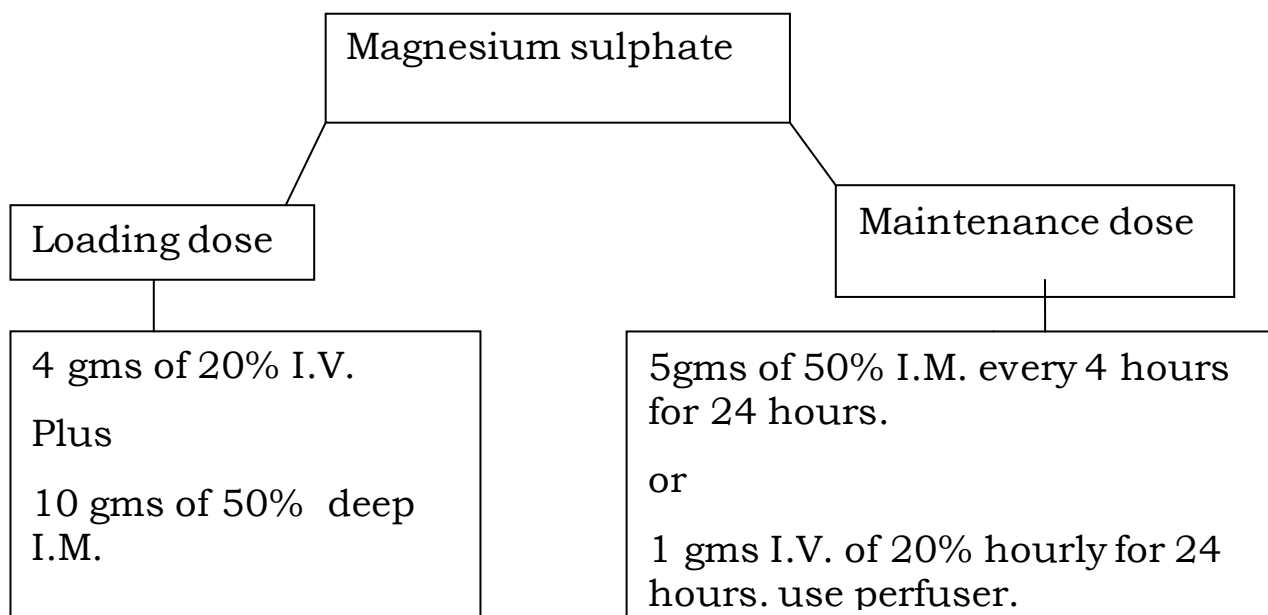
**step 4:** Administer 5 mgs every 30 minutes until bp falls

h) prevention of fits

- the drug of choice is *magnesium sulphate* – mgso<sub>4</sub>
- comes in two concentrations 20% and 50%
- administer loadig dose and maintenance dose
- **Loading dose** - 4 gms of 20% intravenously slowly over 10 – 15 minutes plus 10gms of 50% deep intra muscularly (administer 5 gms on each buttock). Add 1- 2 mls of lignocain to each 5 gms (2 mls if you have 1% or 1 ml if administering 2% lignocain).

**NOTE;** in case you miss intravenous access administer only the 10gns of 50% intramuscularly as loading dose.

- **Maintenance dose** – administer 5 gms of 50% mgso<sub>4</sub> every 4 hours for 24 hrs. Or 1gm 20% mgso<sub>4</sub> per hour intravenously of for 24 hours. **Note-** For the intravenous route ensure you use a pump.
- In case the woman fits in the course of treatment administer as bolus 2 – 4gms of 20% mgso<sub>4</sub> according to body weight ( <70 kgs give 2gms and > 70 kgs give 4 gms)



- monitor signs of magnesium toxicity that include
  - *diminished urinary output*
  - *dark urine*
  - *rapid pulse rate*
  - *reduced respiratory rate*
  - *increased fetal heart rate*
  - *clonus sign*
  - *absence of deep tendon reflex*
- In case of evidence of toxicity stop mgso4 and administer intravenous 1 gms of 10% **calcium gluconate** which is 10 mls slowly over 10 minutes.

**i) fluid management**

- Manage the woman dry to prevent complications.
  - Restrict fluid intake to 1ml/kg bwt/ hour **OR** 80mls per hour **OR** 1 ltr in 24 hours.
  - Strictly monitor input output. Retention of 1lts of fluids can be dangerous.
- j) Monitor blood pressure and fetal heart rate 4 hourly. Increase the frequency depending on the condition.
- k) Fix a catheter to monitor/maintain input and output.
- l) Advise the mother to take a balanced diet
- m) Give the mother a fetal kick chart to monitor fetal movements and keep record as the fetus may die in the uterus.
- n) Do daily weighing.
- o) Advise the mother to maintain personal hygiene
- p) Do daily abdominal palpation
- q) Continue general care for antenatal mothers
- r) investigations – this include
- *grouping and cross-match*
  - *bilirubin level*
  - *liver enzymes*
  - *clotting time*

- *clotting factors*
  - *hemoglobin*
- s) Perform a daily head to toe examination.
- t) Observe signs of onset of labour and impending eclampsia.
- u) If the condition is unstable aim at delivering the baby as fast as possible.
- v) Mode of delivery will be determined by condition of the patient which may be induction of labour or caesarian section

### **Management during induction**

- Strictly monitor input and output
- Administer the prescribed sedatives
- Prepare resuscitative blood and equipments
- Prepare the delivery room which is supposed to be warm
- Maintain observations on the partograph to early detect maternal and fetal distress.
- When the mother progresses well and reaches 2<sup>nd</sup> stage give a generous episiotomy and possible vacuum extraction to fasten 2<sup>nd</sup> stage of labour.
- After delivery syntocinon drip should run for at least 1 hour, to help effective uterine contraction to prevent primary post partum haemorrhage
- Diazepam and hydrallazine drips are continued for the next 24 hours.
- When the baby is born, after the immediate resuscitation in h/w refer the baby to baby care unit

### **Management during puerperium**

- Puerperal pet is also common. Provide specific and basic care during puerperium until discharge this include:-
- Close observation of Bp
- Maintenance of sedation
- Nurse the mother in a quiet room
- Maintain fluid input and output chart.
- Test urine for albumin daily
- Maintain personal hygiene
- If the mother improves discharge through MCH/FP for follow up
- If the Bp is high discharge through medical clinic for follow up

### **Complications of severe PET**

1. Eclampsia
2. Placenta abruption

3. Cerebral haemorrhage
4. Cerebral oedema
5. Cerebral hypoxia
6. Pulmonary oedema
7. Brain herniation
8. Acute renal failure
9. Intra uterine growth restriction
10. Intra uterine death
11. Neonatal death
12. Prematurity
13. Impaired liver function- HELLP syndrome
14. Visual disturbances to include temporary blindness.

## **ECLAMPSIA**

This is a condition in pregnancy >20 weeks gestation characterized by high blood pressure, protein in urine, and presence of fits.

### **Varieties**

1. Anti-parturient eclampsia – mother develops fits before onset of labour. This usually has 20% of the cases
2. Intra-parturient eclampsia – mother fitting with onset of labour. This usually has 45% of the cases
3. Post-parturient eclampsia – fits take place after delivery of the baby within 1<sup>st</sup> 24 hours. Usually prevalence is almost 35% of all cases.

## **AETIOLOGY**

The onset is almost sudden with very high blood pressure especially the diastolic

- In rare occasions eclampsia may occur in the absence of warning signs.
- These include:-
  - a) Nausea and vomiting
  - b) Blurred vision
  - c) Severe frontal headache
  - d) epigastric pain
  - e) drowsiness
  - f) sharp rising blood pressure

## **STAGES OF AN ECLAMPTIC FIT**

The eclamptic fit is classified into 4 stages

- a) *Premonitory stage*
- b) *Tonic stage*
- c) *Chlonic stage*
- d) *Coma*

### **Premonitory stage**

It lasts about 10-20 seconds and patient may fall unconscious, rolls her eyes and the head drawn on one side and may have twitching of the muscles of the face and hands.

### **Tonic stage**

Lasts about 10-20 seconds, muscles go into spasm and become rigid, the teeth and fists are clenched, eyes staring in one direction and the feet are inverted with the toes flexed and the patient gets respiratory arrest.

### **Chronic stage**

It last for about 60-90 seconds, muscles relax and contract alternatively. There is great jerking movements and the patient may be thrown out of bed if not protected and taken care of. The alternate opening and closing of the jaws may make the patient bite the tongue. There is increased frothy saliva which may be blood stained indicating trauma to the tongue.

The face is congested and horrible distorted, breathing will be noisy and forceful. Convulsions will subside gradually.

### **Coma**

- Patient soon goes into coma or deep sleep, she becomes deeply unconscious and breathing continues to be noisy and rapid.
- Coma stage may be followed by one or two fits before the patients recovers.

### **Differential diagnosis**

- Cerebral malaria
- Epilepsy



- Meningitis

### **Effects of eclamptic fit to the pregnancy**

1. *Placental abruption*
2. *Onset of labour*
3. *Intra uterine fetal hypoxia*
4. *Intrauterine fetal death*
5. *Post partum haemorrhage*

### **Management during a fit**

1. Call for help
2. Reassure relatives
3. Ensure clear airway
4. Do not leave woman alone
5. Guard the mother to protect her from injury and remove harmful objects near her
6. Do not restrain the mother.
7. Ensure privacy
8. Turn the mother's head on one side for drainage of saliva and suction
9. Administer oxygen if necessary by facemask
10. Start the woman on magnesium sulphate, MgSO<sub>4</sub>, dosage as for severe pre-eclampsia.
11. Monitor for signs of magnesium toxicity.
12. If the woman is on magnesium sulphate and is still convulsing administer diazepam, start with 5mgs slowly as a bolus up to 10 mgs and closely monitor maternal respiratory rate. do not withhold mgso<sub>4</sub> administration.
13. Control administration of fluids. **Manage the woman dry.**
14. Record frequency, duration and parts affected by convulsions
15. Delivery of the baby should be within **12 hours maximum.**

### **If in a health centre**

1. Transfer the patient in a hospital after sedating heavily
2. Carry with you oxygen, delivery pack containing sterile gloves, forceps, mouth guard, syringes and needles, patients notes and record

### **If in a hospital**

1. Aim at delivery the fetus as quickly as possible since the fetus is already in great danger. do not take more than 12 hours before the baby is delivered with whatever option.
2. Prepare a quiet room with all resuscitative drugs and equipment
3. Position the patient with the head tilted on one side and maintain a clear airway
4. Sanction the mouth if necessary
5. Administer hydralazine to control Bp
6. Administer MgSO<sub>4</sub> as prescribed.
7. Give antibiotics prolapylactical e.g. ampicillin 500mgs QID
8. The mother might be into labour spontaneously following the fits, if not induction of labour is commenced assisted by vacuum extraction during 2<sup>nd</sup> stage.
9. Have an indwelling catheter in situ (in place)
10. Continue checking vital signs including Bp and fetal heart rate if baby is still alive.
11. Perform physical examination to assess improvement of oedema
12. Continue maintaining personal hygiene to prevent infection
13. When labour progress well & baby us delivered receive baby in warm room and after the initial resuscitation in labour ward transfer baby to baby care unit for further management.

### **Management after delivery**

1. Continue with magnesium sulphate dose.
2. Monitor Bp closely
3. Maintain heavy sedation for the first 48 hours
4. Nurse in a quiet room to prevent occurrence of another fit
5. Maintain input, output chart to assess improvement of kidneys
6. maintain personal hygiene
7. In case of impaired vision or temporary blindness reassure the mother.
8. When condition improves discharge through MCH/FP clinic but when Bp persists to be high discharge through medical clinic for follow up.
9. Note in the discharge summary that the mother had pet.

### **Complications**

1. Cerebral haemorrhage
2. Cerebral hypoxia
3. Cerebral oedema
4. Acute renal failure
5. Liver damage
6. Pulmonary oedema
7. Inhalation pneumonia
8. Congenital cardiac failure

9. Permanent hypertension
10. head injury
11. Still birth
12. Neonatal death
13. maternal death

## **ANTE-PARTUM HAEMORRHAGE – APH**

Definition - This is bleeding from the birth canal during pregnancy after 20<sup>th</sup> week of gestation and before labour.

This places the life of mother and the fetus at great risk.

### **Effects on Fetus**

- (i) Fetal compromise
- (ii) Still birth
- (iii) neonatal death

### **Effects on mother**

- (i) Shock
- (ii) Anaemia
- (iii) Disseminated Intravascular Coagulation
- (iv) Increased risk to caesarian section
- (v) Maternal death

### **Predisposing factors**

- a) Any conditions increasing blood pressure e.g. PET
- b) Following external cephalic version
- c) Trauma
- d) Polyhydramnios
- e) Anaemia especially folic acid deficiency
- f) Multiparity
- g) Infection
- h) Shock
- i) Ruptured uterus

## **Classifications of APH**

- j) Extra placental bleeding – This is the bleeding from the sides and not on the placental surface (bleeding not associated with placenta)
- ii) Placental bleeding – It is the bleeding from the placental surface i.e. due to placenta previa or abruption

## **Management of APH (MILD)**

- Admit mother in a quiet room and provide complete bed rest.
- Provide mother with pads and preserve all soaked pads for doctors assessment
- At about 37 weeks gestation do surfactant test to confirm lung maturity of the unborn baby
- Take blood for extra and Hb level
- Administer sedatives e.g. phenobarbitone to enhance complete rest and relaxation
- Maintain nutritional status by giving a diet rich in proteins, iron plenty of vitamins, carbohydrates and fluids
- Maintain personal hygiene by performing a daily bed bath, vulva toilet & treat pressure areas
- Do T,P,R and Bp  $\frac{1}{4}$  hourly
- Prepare to receive the newborn i.e.
  - (i) Prepare resuscitative drugs and equipment
  - (ii) A warm room or incubator
  - (iii) After resuscitation refer to baby care unit for further management

## **Management of severe APH**

- Resuscitate the mother if she is in shock
- Take blood GXM and order blood Hb level
- Set up an intravenous infusion as soon as possible to treat shock
- Give sedatives or analgesics if necessary
- Administer oxygen by mask to increase oxygen concentration both the maternal and fetal circulation
- Insert an indwelling catheter to monitor the woman's output
- If in a dispensary, refer mother to a hospital

## **PLACENTA PRAVIA**

It is bleeding from separation of a placenta that is partially or wholly implanted in the lower uterine segment.

It places mother and fetus at high risk and leads to obstetric emergency.

## Degrees of placenta previa

### Type 1 - 1<sup>st</sup> degree

- The majority of the placenta is on the upper segment. Part of the placenta is on the lower uterine margin. Also referred to as *lateral placenta previa*.
- Blood loss is usually mild and the mother and fetus are in good condition

### Type 2 - 2<sup>nd</sup> degree

- The placenta is partially located in the lower segment near the internal cervical OS. Also referred to as **marginal placenta praevia**.
- Blood loss moderate although maternal and fetal condition can vary. Fetal hypoxia is more likely to present than maternal shock

### Type 3 - 3<sup>rd</sup> degree

- The placenta is located over the internal cervical OS but not centrally.
- It is also referred to as **complete placenta praevia**.
- Bleeding is likely to be severe in late pregnancy and vaginal delivery is impossible because the placenta precedes the fetus

### Type 4 - 4<sup>th</sup> degree

- Placenta is located centrally over the internal cervical OS. Also referred to as **total placenta praevia**.

## Predisposing factors to placenta praevia

### 1. Multiparity.

This is as a result of the fertilized ovum searching of a new site for implantation. the more the number previous pregnancies the higher the risk of the present pregnancy taking place at the lower uterine segment.

### 2. Multiple pregnancy.

In this case the pregnancy is carrying more than one fetus. Two scenarios may contribute to the placenta appearing on the lower uterine segment. The size of

the placenta may be bigger OR the each fetus may be having its own placenta. This increases the chances of the placenta utilizing the lower uterine segment.

### **3. Abnormalities of placenta e.g. bi-patitite**

A placental abnormality like **placenta bi- patitite** where the placenta is split to two or three as in **placenta tri- patitite** the one part may attach on the lower uterine segment.

### **4. Presence of fibroids**

The area within the uterus where a fibroid is present may not offer a good site for implantation. If the fibroid is fundal there are higher chances for the placenta to be previa. The more the fibroids et higher the risk.

### **5. Previous history of surgery**

In case the woman had any surgery that involved the uterus e.g. myomectomy, ceaserian section e.t.c. the site heals with formation of fibrous tissue. This may discourage implantation leading to placenta previa if the incision is fundal. If it so happens that placenta still attaches itself to a place like this the risk of *retained placenta* develops.

### **6. Age especially under 20 uterus not well developed**

The uterine cavity is not well developed. This increases the chances of the uterus encroaching the lower segment.

### **7. Smoking**

Smoking predisposes the body to many conditions placenta previa being among them.

## **Clinical features of placenta praevia**

- Bleeding is painless
- Bleeding usually occurs at rest or sleep
- Onset is gradual.
- Blood is bright red in colour
- Blood flows with a trickle
- Positive history of intermittent bleeding during pregnancy
- Abdomen not tender on palpation.
- Presenting part is high
- Malpresentation are common i.e. Oblique
- Fetal parts easily palpable.
- FHR is usually present
- Lower uterine pole feels empty OR a soft mass can be felt on palpation.
- The amount of blood loss corresponds to mother's condition.

## **Diagnosis**

- Clinical features
- Abdominal scan
- Speculum examination

### **Management of placenta praevia**

- Management will depend on the following:
  - Amount of blood loss
  - Maturity of fetus
  - Condition of mother and fetus.
  - Stage of pregnancy
- Admit the mother and offer complete bed rest until bleeding stops
- if in a health facility that cannot offer emergency obstetrical and newborn care refer the woman to such a facility.
- 3 days after bleeding stops do speculum examination after bleeding stops to rule out accidental causes
- Check the Hb level of the mother
- Placental function is monitored by means of fetal kick chart and antenatal
- Ultra sound and scans are done to observe the position of the placenta in relation to the cervical OS as the lower segment grows.
- NOTE:** *Majority of placentas that were on the lower uterine segment usually migrate by 28 week of gestation.*
- in case the pregnancy is going to be discontinued preterm consider administering steroids to the mother, dexamethasone to ensure lung maturity.
- if the mother is rhesus negative and you suspect rhesus iso-immunization, the woman should receive rhesus immune globulins. Not unless it is confirmed the husband is rhesus negative.
- Closely monitor fetal well being.
- Blood should be taken for full count, cross matching and clotting studies
- An intravenous infusion should be in progress and several units of blood may be transfused with woman's consent
- An anaesthetist will be present in helping the woman to make a decision on use of general or regional anesthesia
- Midwife should comfort and encourage the mother since she may feel anxious in preparation for theatre
- Patient should be mentally and physically supported.
- After delivery of the baby attempt to prevent pph
- Mother should be given prophylactic antibiotics.
- Start the woman on haematinics
- Record on her mother booklet that she had aph.

## **Complication of placenta praevia**

- Haemorrhage
- Anesthetic and surgical complications
- intra uterine fetal growth restriction.
- Retained placenta
- Placenta accrete
- Air embolism
- Fetal hypoxia
- Fetal death
- Maternal death

## **PLACENTA ABRUPTION**

It is bleeding during pregnancy due to premature separation of a normally situated placenta occurring after 20<sup>th</sup> week of pregnancy and prior to 3<sup>rd</sup> stage of labour.

It is characterized by formation of *retro- placental clot*

### **Predisposing factors to placenta abruption**

- Trauma
- Obstretical manouvours
- Uterine massage
- Drugs
- Short cord
- Polyhydrominous
- Severe anaemia
- Pet
- Cardiac disease
- Hypertension
- Renal disease

### **Types of placenta abruption**

i) Revealed accidental haemorrhage

- Its most common
- Blood escape through uterus the cervix and vagina
- Bleeding may be slight or severe
- There is low urine output with proteinuria

ii) Concealed accidental haemorrhage



- Most severe but least common
- No vagina bleeding
- Formation of retro-placental clot between the uterine walls and placenta

### iii) Combined accidental haemorrhage

- Presence of both revealed or concealed haemorrhage
- The patient may be in shock

### **Clinical features of placental abruption**

- Amount of bleeding may not equal to mothers condition.
- Bleeding accompanied with pain.
- Patient looks ill and anxious
- Mother is in shock i.e. weak pulse
- Abdomen tender on palpation and guarding.
- Fetal parts are difficult to palpate
- Fetal heart sounds are absent in severe cases
- There might be history of trauma or fall
- Low urine output
- Raised fundal height
- Blood is dark red with clots
- Bleeding is in gushes
- Mother may be edematous
- Malpresentation is not common.

### **Management of placenta abruption**

- If in a health centre refer mother to hospital
- Start on intravenous therapy prior to transfusion
- Admit mother in a delivery site
- This is an obstetric emergency.
- Prepare the mother for emergency caesarian section.
- Midwife should comfort and encourage the mother by attending to her needs
- Give a suitable analgesic e.g. pethidine 100-150mg to alleviate pain
- Give plasma expanders if blood is not ready for transfusion
- The woman should lie on her side in order to prevent vena cava and compression by the gravid status.
- If bleeding is much, or in shock resuscitate by rapid collection of hypovolaemia
- Take vital signs  $\frac{1}{4}$  hourly
- Insert an indwelling catheter to assess urinary output
- Urine should be tested for protein

- Record fluid intake accurately
- If bleeding continues and comprised fetal heart rate is present, caesarian section may be required
- Midwife should give the woman psychological support because of her shocked
- Rupture of membranes is beneficial as can assist in minimizing haemorrhage. In case this is done the woman can be started on oxytocin infusion to hasten labour.
- Perform a speculum examination if bleeding is from uterus
- Continue with abdominal palpations transfuse mother
- Prepare to do resuscitation for the asphyxiated baby and transfer the baby to baby care unit. I case the baby is not alive counsel the mother to expect a dead fetus.
- Assess cervical dilation if mother is in labour and deliver baby if condition allows
- Examination under anesthesia is done in theatre
- Check blood clotting time.
- In case of blood clotting disorders then consider managing also as a case of DIC.

### **Complications of placenta abruption**

- Blood coagulatory disorder
- PPH
- Acute renal failure
- Anterior pituitary necrosis/shehaan,s syndrome
- Anaemia
- Puerperal sepsis
- Amniotic fluid embolism
- Intra uterine fetal hypoxia
- Intra uterine fetal growth restriction

### **Similarities of placenta praevia and abruption**

1. Both affect the placenta
2. both appear after 20<sup>th</sup> week gestation

### **Characteristical differences between placenta praevia and placenta abruption**

<b>Placenta praevia</b>	<b>Placenta abruption</b>
Bleeding is form placental site due to premature separation of the placenta which lies wholly or	Bleeding from early separation of placenta which lies normally in the fundus.

partly lies in lower uterine segment	
Painless.	Painful
Can even at occur at rest or asleep	Can be positive history of trauma or fall
Positive history intermittent bleeding	No history of intermittent bleeding
Blood is bright red	Blood is dark red
Bleeding may be continuous and in a trickle	Bleeding may be in gashes
No signs of pre-eclampsia may be present	Signs of pre-eclampsia may be present
Fetus may be alive	Fetus is usually dead
Uterus is soft and non tender	Uterus is hard and tender and guarding
Fetal parts are easily palpable	Fetal parts are not palpable
Uterine size correspond to gestation	Uterine size may be larger does not correspond to gestation.
Urinary output is normal	Urinary output is low
Fetal movements are normal	Fetal movements decreases
All bleeding seen	May be concealed
FHR can easily be heard if alive	FHR not easily heard if alive
Presenting part is high	Presenting part may be engaged
Blood loss equals to mothers condition	Blood loss may not be equals mothers condition
Malpresentation are common	Malpresentations not common.

### **General management of APH**

- If in a health centre always refer all pregnant women bleeding to the hospital
- Ensure there is running IV fluid of saline before transferring the patient
- A health worker should accompany the woman to the hospital
- Always admit the patient even if bleeding is not apparent or severe
- Take careful history, any associated pain, history of bleeding earlier in pregnancy or history of trauma
- Note the amount and character of bleeding.
- The specific management will depend on
  - o Onset of spontaneous labour
  - o Condition of the fetus
  - o Cause of APH and severity
  - o Gestation
  - o If the bleeding is continuous or not

### **Management of mild APH**

- Admit patient in the ward
- Provide complete bed rest and observe her closely
- Prepare and assist in taking investigation in view to prolonged pregnancy e.g. blood group and cross match
- Do a speculum examination
- Preserve soiled pads for assessment
- Order a placentography (x-ray to visual placental position)
- Before 37 weeks gestation you can do a surfactant test to confirm fetal lung maturity
- Prepare the patient for examination under anesthesia
- Administer drugs e.g. sedatives phenobarbitone 30-60 mgs to ensure complete rest and relaxation
- Maintain nutritional status of the mother by giving a diet rich in protein, iron, vitamins and fluids
- Maintain hygiene by performing bed bath daily
- Mouth wash 6 hours
- Vulva toiled PRN and treat pressure areas
- Take vital signs observations and report any abnormality
- The doctor will determine mode of delivery.
- During delivery prepare to receive the new bon that is;
  - a) Resuscitate drugs and equipments
  - b) A warm room
  - c) An incubator ready
  - d) Inform newborn care unit just in case you might need to refer the newborn for further management.

### **Management of severe APH**

- Admit the mother
- Call for help
- Inform other departments
- reassure the mother and relatives
- Prepare for resuscitation.
- Prepare an observation tray
- Ensure a clear airway and give oxygen by mask
- Monitor vital signs and FHR ¼ hourly
- Keep the patient warm
- Take blood for grouping and cross match and transfuse patient
- Start IV fluids, N/S
- Put in indwelling or self retaining catheter
- Monitor input output by maintaining a correct fluid chart
- Test urine for albumin, acetone and sugar
- If the patient is for examination and anesthesia and possible caesarian section prepare her.
- Prepare her for emergency caesarian section or hysterectomy.
- Prepare to receive an asphyxiated baby.

### **Maternal complications.**

- Shock
- Renal failure
- Sheehan's syndrome
- Coagulation disorders
- Anaemia
- Sepsis
- maternal death

### **Baby**

- Intra uterine growth restriction
- Prematurity
- Fetal hypoxia
- Intra uterine fetal death
- Asphyxia neonatorum
- Still birth
- Neonatal death

## **TWIN PREGNANCY**

**Definition:** This is when there is presence of more than one fetus in the uterus

### **Causes**

The cause is unknown.

### **Predisposing factors/women at risk**

1. Personal history
2. Family history
3. Multiparity
4. People who used fertility drugs

### **Presentation**

1. Cephalic/ Breech presentation
2. Breech/cephalic presentation
3. Cephalic/cephalic presentation
4. Breech/breech presentation

### **Diagnosis**

On physical examination

- a) Inspection- Over distended abdomen
  - Abdomen is oval and not global
  - Visibility of multiple fetal movements of the abdomen at term
- b) Palpation- Multiple fetal poles
  - Higher fundal height as compared to gestation
  - Multiple fetal parts are palpation
  - 1<sup>st</sup> palpation of fundal height above the umbilicus after delivery of 1<sup>st</sup> twin, query and diagnose 2 twin
  - Reduce fetal head side compared to gestation age
- c) Auscultation- follow rule of 10.
  - 2 fetal heart rate distance of 10cm apart and taken the same time at difference 10 beats per min
- d) Investigations- increased level of H.C.G hormone query multiple pregnancy
  - Increased level of AFP <Alpha fetal protein present in the body of human being during pregnancy fetal congenital abnormalities
- e) History – Personal history of previous multiple pregnancies
  - Family history of previous multiple pregnancies
  - History of exaggerated pressure symptoms
  - History of exaggerated minor disorders
- f) Radiography – Demonstration of two amniotic sacs from the eight week of gestation
  - Visibility of more than one twin in the uterus on the 12<sup>th</sup> week (U/LS)

- Visibility of more than one skeleton by X-ray from the 16<sup>th</sup> week

## **Effects of multiple pregnancy**

### **Maternal**

- Anaemia
- Polyhydromonous
- PPH
- Increased minor disorders
- Pre- mature labour
- PET
- Gestational disbetics
- Hyperemia gravidarum

### **fetus**

- Congenital abnormalities
- Prematurity
- IUGR
- **IUFD**
- Intrauterine fetal transfusion

Types of multiple pregnancy

1. *Monozygotic*
2. *Dizygotic*

### **Monozygotic**

Are babies as a result of fertilization of one sperm one ovum.

Separation to form 2 babies occur very early during embryology.

### **Characteristics**

1. Same physical characteristics
2. Same mental characteristics
3. Same blood group
4. Same sex
5. Share fetal circulation
6. Share same amniotic sac
7. The same figure prints

8. Very prone to congenital abnormalities

### **Dyzygotic**

Result from fertilization of different ovum with different sperms

1. Different physical characteristics
2. Different or same mental characteristics
3. Same sex or different sex
4. Same or different blood groups
5. Do not share the same circulations
6. Do not share the amniotic sac
7. Lower risk to congenital abnormalities
8. Different ova different sperm

### **Management antenataly for the twin**

1. Registration & triage
2. Taking height & weight
3. History taking
4. Physical examination
5. Antenatal profile
6. PMTCT
7. Deworming
8. IFAS
9. provision of net
10. Tetanus toxoid
11. Provision of SP
12. Health education
13. Book for next visit

### **Specific management**

1. Administration of IFAS
2. Nutrition
3. Strengthen individual birth plan
4. Increase the frequency of visiting to 2 wkly

### **Management during labour**

1. Admit
2. Reassure
3. Taking history
4. Performing physical examinations



5. Start partograph
6. Pain management
7. Empty bladder
8. Maintain nutritional status – rehydrate
9. Offer support

### **Specific management**

1. IV line
  - Investigations
  - IV fluids
2. Record 1<sup>st</sup> heard fetal heart rate. Partograph will have one line
3. Record both fetal heart rate
  - one with a red pen
  - One with a black pen
  - Partograph will have two lines

### **Management during second stage**

1. Inform the mother
2. Position the mother
3. Prepare an assistant
4. Prepare the equipment
5. Prepare yourself
6. Encourage the mother to push for every contraction
7. Prepare the environment
8. Take fetal heart rate after every contraction
9. Monitor contractions

### **Delivery of the first twin**

1. Perform ve and confirm the presentation, ruptures membranes if not ruptured
2. If presentation cephalic support the perineum and encourage the mother to push with every contraction
3. Raise the head slightly and clear the air way and check for cord around the neck
4. Allow the baby to restitute
5. Hold the baby's head by the temporal and do a downward fraction to deliver the anterior shoulder up to the mid upper arm, then upward fraction to deliver posterior shoulder up to the mid arm.

6. Deliver the baby by lateral flexion onto the mother's abdomen
7. Wipe the baby, clear airway, clamp and cut the cord and show the sex of the baby to the mother and hand over the baby to the assistance for immediate management which include,
  - Keep the baby warm
  - Administer vitamin K
  - Administer tetracycline
  - If the mother PMTC is R, give nevirapine depending unto the weight of the baby
  - Score the baby at 5 and 10 minutes, back to breastfeed
  - Label the baby as first twin and inspect

***NOTE: Withhold administration of syntocinon***

### **Delivery of second twin**

1. Palpate the mother's abdomen to confirm second twin. The fundus will be above the umbilicus.  
Also palpate to confirm the lie and presentation if in transverse perform external cephalic version, rotate the baby follow its face until engagement take place.
2. Do V.E, rupture the membranes,
3. In case contractions have done down administer 5 I.U cyntocinon IV in 500ml pf NIS to run 10 drops per minute.
4. Deliver the baby using the normal procedure as mentioned above.
5. Label as *second twin*.
6. In case the fetus is in transverse lie perform either *podalic or cephalic* version.

#### ***Podallic version***

Insert your hand inside the vagina canal unto the uterus get hold of the fetal legs by the pedals. Pull down the legs and deliver baby as breech. Wipe the baby, clamp and cut the cord and hand over the assistant follow the above procedure and label as second twin.

#### ***Cephalic version***

- One hand applies traction on the fetal head abdominally through the occiput directing it into the pelvis.
- The other hand applies an upward traction of the buttocks to position them at the fundus. Baby if born cephalic.

### **Third stage of labour**

7. Palpate to rule out another twin, if not administer 10 I.U cyntocinon and deliver the placental at once with (CCT) controlled cord traction (amstl).
8. Start 20 I.U cyntocinon IV on 500ml normal saline to run for one hour.

*prophylactic management of pph*

### Peurperium

- Thorough first examination of the baby should be done to rule out congenital abnormalities.
- Just like for any other mother.
- Strengthen family planning education
- Counsel on parenting

### **Essential hypertension**

This is where there is elevation of blood pressure over 140/90 mmhg present in two or more occasions prior to 20 week gestation which is not due to pathogenically condition e.g. renal disease like chronic nephritis.

NB- essential hypertension should not be confused with high BP in PET as PET usually occurs after 20 week of gestation accompanied by protein in urine.

### ATIELOGY

80 % of the essential hypertension cases will give a positive history personal history or family history of hypertension.

Other causes could be stress situations e.g. divorce, or unwanted pregnancy.

### Parthophysiology

- High blood pressure can lead to mother developing PET with all its signs and symptoms.

- May lead to cerebral haemorrhage causing vascular accidents which can cause death to the mother.
- It may affect the life of the fetus in the uterus and the fetus may be born as a light for dates.
- This may also cause placental abruption.

### **Predisposing factors**

- Family history of hypertension
- Any history of toxæmia in the previous pregnancies.

### **Effects of essential hypertension to the pregnancy**

- Increased maternal morbidity e.g. placental abruption, PET.
- High BP may cause acute renal failure leading to oliguria and final coma.

To the fetus

- Intra uterine growth retardation.
- Intra uterine fetal death
- Prematurity.

### **Affects of pregnancy on essential hypertension.**

The blood pressure may increase during pregnancy and after 20 weeks and signs of PET may appear.

### **Signs and symptoms**

- Persistent frontal headache
- Oedema of lower limbs in severe cases
- High systolic pressure of 140 and a diastolic of above 90
- Visual disturbance due to retinopathy and diplopia

### **Management**

#### Objective

- Is to control the blood pressure and prevent PET from occurring.

- To obtain a good supply of oxygen to the fetus especially during placental formation period.

**Note:**

If the fetus fails to grow adequately and the mother's condition deteriorates induction of labour can be done even before term.

Management will depend on the severity of the essential hypertension.

**Management of mild essential hypertension**

In this category the blood pressure is usually not above 150/90 . if this bop is recorded during the antenatal visit the midwife should refer the mother to the obstetrician for evaluation and investigation.

The mother can be managed as an outpatient for it is possible for her to get enough rest at home. This can be achieved with administration of a mild sedative to make her rest and allay anxiety. She should attend weeks ANC clinic.

During each visit the mother should be monitored blood pressure and physical examination done.

Advice the mother on diet i.e. high protein and low fat and salt.

Advice the mother on fetal kick count at home

Can report to the clinic in case of any abnormality e.g. reduced fetal movements.

Weekly investigations of urine for urinalysis, culture and sensitivity, renal function, blood for urea and electrolyte can be done

**Management of severe hypertension**

Admit the mother to the antenatal room in quiet place.

Reassure the mother

Observe vital signs 4 hourly

Provide a balanced diet high in protein with low sodium

Weigh the mother daily

Do physical examination daily to rule out oedema and IUGR

Monitor input and output

Put the mother on drugs e.g. antihypertensive

Encourage rest

Continue with general nursing care

Do surfactant test at 36- 37 weeks to confirm fetal lung maturity and with appositive test<sup>6</sup> the mother can be prescribed induction of labour.

Prepare to receive a baby with a poor score.

Assist second stage with a generous episiotomy.

### **Management during puerperium**

- ✓ Continue 4 hourly observation especially BP.
- ✓ Continue with daily physical examination and assess for oedema.
- ✓ Ct with sedatives for rest.
- ✓ Ct a balanced diet.
- ✓ Maintain good personal h7ygiene.
- ✓ Keep the baby warm.
- ✓ Ct with general care of a mother in puerperium.
- ✓ If the condition improves discharge the mother through MCH/FP and if the high BP persists through medical clinic.

### **Complications**

- PET
- Renal failure
- Cerebral haemorrhage
- IUGR
- Still birth
- IUFD
- neonatal death

## **INFECTION PREVENTION.**

Infection prevention is one of the key components in provision of care. Transmission of infection despite provision of skilled service in order to save life can be the cause of morbidity and mortality. **REMEMBER** sepsis is the second leading cause of maternal mortality worldwide.

### **Sources of infection in maternal care.**

- Repeated vaginal examinations
- Improper waste disposal
- Dirty delivery couch
- Improper cord care
- Dirty baby care unit
- Relatives
- Not washing hands
- Unsterilized equipments

### **Ways of preventing infection.**

1. Hand washing with soap and water.



Hand washing is very key. It eliminates most of the micro organisms. Hand washing is a skill of which all health service providers should appreciate. Before attending to the next patient it is advisable one should be able to wash their hands with soap and water. Always follow the steps of proper hand washing. Hand scrub can be done in case of performing surgical operations.

**NOTE** - where a health service provider is using sanitizer instead of hand wash then after **every four** clients with the sanitizer hand washing should be done.

2. Aseptic technique

3. Proper waste segregation and disposal

All waste should be disposed where it belongs. Use the following chart for more information.

Type of Container	Red bucket	Yellow bucket	Black bucket	white bucket	Purple bucket	Bed pan	Sharp container
<b>Description of waste</b>	Body tissues	Highly Infectious	General waste	Food	Radio-active material	Stool	Sharps
<b>Example of waste</b>	Extracted tooth, amputated limb,	Used gloves, used vaginal pack, hair, used brannular, used swab, used NG tube.	Glove wrapper, Fluid bottles, fluid giving set,	Banana peels, remaining ugali, chapatti, muhogo, fish.	x- ray films. Ct scan films	Human stool	Used needle, surgical blade,

4. High level disinfection and sterilization

- High level disinfection

This is the standard process where once equipments are used and contaminated they should undergo a process of preparation to make them sterile again.

Step one – Prepare three buckets for chlorine, soapy water and clean water

Step two – Reconstitute chlorine at 0.5 % concentration

Step three – Immense used equipments in chlorine for 10 minutes



Step four – Remove equipments from chlorine and dip equipments in soapy water.

Step five – Rinse equipments in clean water.

- Sterilization
  - Put the equipments in an autoclave
  - Plastic equipments are put in cidex for 20 minutes. Thereafter rinse with distilled water or normal saline and pack them in a sterile container.
  - Strenuous solution can be used.

***NOTE: all sterile equipments have a shelf life of 14 days.***

6. Health education



Health workers demonstrate the skill for vacuum extraction using kiwi set.

## **TO BE COMPLETED**

- 1. cervical dystocia**
- 2. emtct**
- 3. diabetes in pregnancy**

4. **anaemia in pregnancy**
5. **cardiac disease in pregnancy**
6. **assisted vaginal delivery – avd.**
7. **asthma in pregnancy**

#### **CARDIAC DISEASE IN PREGNANCY –**

It refers to disorders that affect the heart muscles, valves or blood vessels.

Also referred to as impairment of the heart.

This condition impairs the ability of the heart to supply tissue with oxygen.

#### Predisposing factors

- ✓ Anaemia
- ✓ Smoking
- ✓ Alcohol
- ✓ Obesity
- ✓ hypertension
- ✓ obesity
- ✓ hyperlipidaemia
- ✓ Upper respiratory tract infection
- ✓ Urinary tract infection
- ✓ Diabetes mellitus
- ✓ Lack of exercise
- ✓ Age
- ✓ Pregnancy

#### Common causes

- Congenital abnormalities
- Rheumatic heart disease

- Cardiomyopathies
- Coronary artery disease
- Endocarditis
- Ischaemic heart disease

### Classification

- ✓ *Grade 1*
- ✓ *Grade 2*
- ✓ *Grade 3*
- ✓ *Grade 4*

#### **Grade 1**

The woman presents with *no signs and symptoms* of cardiac disease. The woman only has a foci.

The woman gets to know about the condition from the health worker upon routine physical examination at the clinic.

#### **Grade 2**

The woman presents with signs and symptoms of cardiac disease only after *performing strenuous work*.

#### **Grade 3**

The woman presents with signs and symptoms of cardiac disease after just *performing normal duties*.

#### **Grade 4**

The woman presents with signs and symptoms of cardiac disease *even at rest*.

### Diagnosis

- *History*

- *Chest x - ray*
- *ECG*
- *Echocardiogram*
- *Clotting studies*
- *Full blood count*

### **Effects to the pregnancy**

- Premature labour
- Recto placental bleeding
- Premature rupture of membranes
- Prolonged labour

### **Effects to the fetus**

- Spontaneous abortion
- Fetal hypoxia
- Intra uterine growth restriction - IUGR
- Prematurity
- Intra uterine fetal death - IUFD
- Inheritance of the condition

### **Pre-conception advice and care**

Advice any woman with a known cardiac disease to seek medical advice from the cardiologist before conception.

Counseling on maternal and fetal risks should be done before conception. This allows the woman to make a choice for conception.

General health advice should be given by the midwife with regards to diet, weight, exercise, rest, prevention of anaemia, avoidance of tobacco alcohol and drugs.

Surgical intervention can be done by the cardiologist e.g. mitral valvotomy.

### **Antenatal care**

## Aims

- ✓ Maintain state of hemodynamic state
- ✓ Prevent complications
- ✓ minimize additional load
- ✓ monitor for deterioration
  
- ✓ Provide physical and psychological support

## **Management antenatally**

- Pregnant woman with heart disease should be managed in a comprehensive emergency obstetrical and newborn care facility.
- Management is by multidisciplinary team.
- Grade 1 and 2 of the heart disease can be managed in an outpatient and book for hospital delivery.
- Let the mother be booked at high risk joint clinic run by a cardiologist and obstetrician every 2 weekly until 30 weeks gestation then weekly thereafter till delivery.
- On each visit grading of the disease is done.
- Evaluate fetal condition during each visit.
- Do an abdominal ultra sound to confirm gestational age and congenital abnormalities.
- Assess for fetal growth and amniotic fluid volume
- Monitor fetal heart rate
- Teach the mother on fetal kick chart to rule out fetal compromise.
- Advice the mother on adequate rest.
- Counsel and monitor on weight gain.
- Let the mother report any signs of infection early.
- Advice on diet.
- Handle any dental condition appropriately.

- Prophylactic antibiotics in case of risk of endocarditis.
- include routine antenatal care management i.e.
  - *height and weight measurement*
  - *history taking*
  - *physical examination*
  - *antenatal profile*
  - *provision of insecticide treated net*
  - *administration of sp*
  - *administration of mebendazole*
  - *administration of ifas*
  - *administration of tetanus toxoid*
  - *emtct*
  - *health education – ibp & danger signs and her cardiac condition.*
  - *book for next visit – for the cardiac disease increase the frequency.*

### **Management during first stage of labour**

- Admit the mother in a cardiac bed
- Reassure the mother
- Take proper history
- Perform physical examination
- Monitor labour by use of partograph
- Manage pain
- Observe infection prevention

- Provide support
- Breathe through the mouth during a contraction
- Empty bladder 2 hourly and test urine
- Administer antihypertensive
- Administer diuretics
- Prepare for second stage of labour