Kenya Medical Training College

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Kenya Medical Training College

THEORY II

MIDWIFERY

COURSE OUTLINE- THEORY II

1. **PROLONGED PREGNANCY**
3. **ABNORMAL LABOUR:**
   - Prolonged labour
   - Obstructed labour
   - Precipitate labour
   - Trial of scar

3. **OBSTETRIC EMERGENCIES-INTRAPARTUM RELATED:**
   i. Ruptured uterus
   ii. Cord presentation
   iii. Cord prolapse
   iv. Vasa praevia
   v. Shoulder dystocia

4. **ASSISTED BIRTHS:**
   i. Caesarean section
   ii. Vacuum extraction
   iii. Forceps delivery
   iv. Symphysiotomy
5. **MALPOSITIONS AND MALPRESENTATIONS OF THE OCCIPUT;**
   i. Occipito posterior position
   ii. Breech presentation
   iii. Face presentation
   iv. Shoulder presentation
   v. Brow presentation
   vi. Compound presentation
   vii. Unstable lie

REFERENCE MATERIALS

- Myles textbook for Midwives, African edition
- National guidelines for Quality obstetrics and perinatal care
- Myles textbook for Midwives, 15th edition

SESSION OBJECTIVES

- By the end of the theory session, the KRCHN students will be able to:

1. Participate in the assessment, diagnosis, midwifery and follow up care of a mother with an abnormal labour pattern
2. Prepare and participate in the care of mothers undergoing various obstetric operations/procedures.
3. Assess, diagnose and specifically manage various obstetric emergencies
4. Describe and manage various malpositions and malpresentations of the occiput.

POST-TERM PREGNANCY

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Welcome

PROLONGED PREGNANCY

SYNONYMS:

- Post-term, postdatism, and postmaturity

DEFINITION

- Pregnancy equal to or more than 42 completed weeks(294 days from the first day of the last menstrual period, LMP).
- The expected date of delivery(EDD) is calculated on the basis of Naegele's rule, the assumption being that the cycle is 28 days and that ovulation occurs on the 14th day.

INCIDENCE

- The frequency or incidence of prolonged pregnancy is quoted as anything from 5-10%. Incidence in England is given at 4%.

ASSOCIATED RISKS OF PROLONGED PREGNANCY

- These are problems that the mother and/ or the foetus are likely to experience as a result of prolonged pregnancy
- Viewed from the perspective of the mother, foetus, and neonate with regard to morbidity and mortality

For the mother:

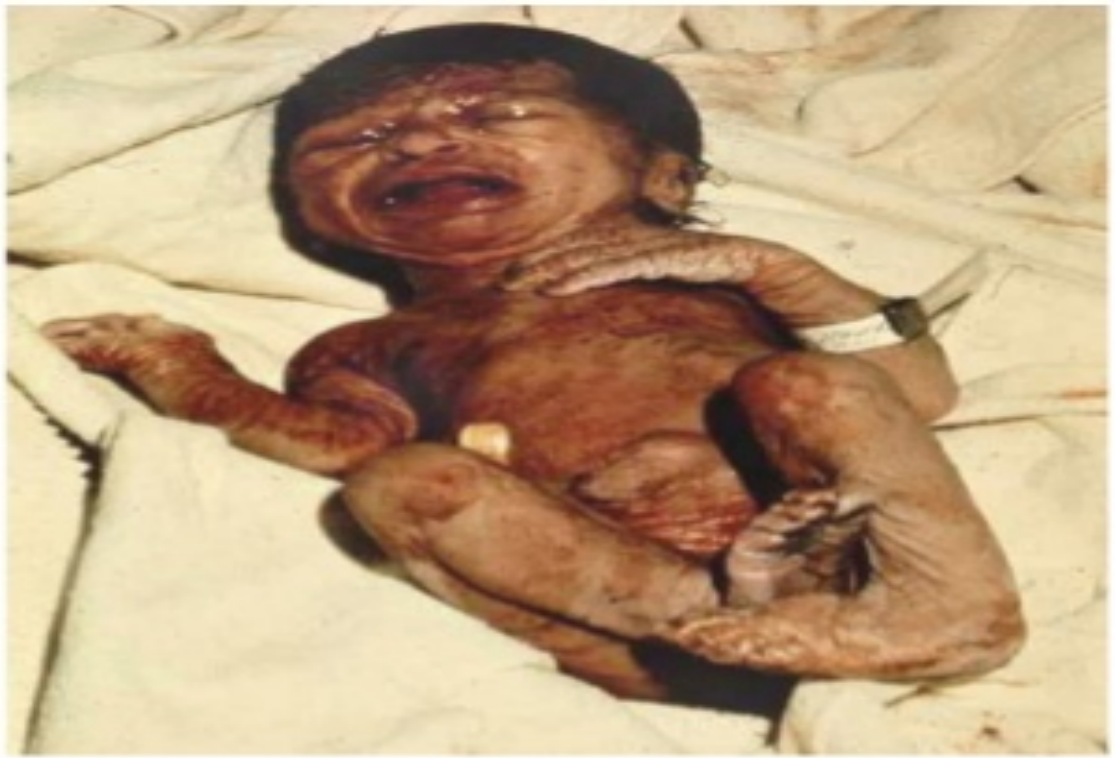
- Large for gestational age hence possible birth trauma.
- Macrosomic infant hence precipitating to shoulder dystocia & Genital tract trauma
- P.P.H and operative birth (increased chances of caesarean section)

- **FOR THE FOETUS:**
  - Decrease in liquor volume(oligohydramnios) hence possible neurological defects
  - Placental insufficiency(placental dysfuction)
  - Still birth & neonatal death
  - Fetal **dysmaturity** — Also called "**postmaturity syndrome**," this refers to a fetus whose growth in the uterus after the due date has been restricted, usually due to a problem with delivery of blood to the fetus through the placenta

Postmaturity Syndrome

Features include

- wrinkled, patchy, peeling skin;
- long, thin body suggesting wasting;
- advanced maturity i.e open-eyed, unusually alert,& appears old and worried.
- The nails are typically long.
- 10 % of pregnancies b/n 41 and 43 weeks. 33 % at 44 weeks
- Associated oligohydramnios increases the likelihood of postmaturity



Postmature infant delivered at 43 wks' gestation. Thick, viscous meconium coated the desquamating skin.

PREDISPOSING FACTORS TO POST-DATISM INCLUDE:

- ***Previous post-term pregnancy*** increases the risk of recurrence in subsequent pregnancies.
- ***High maternal BMI*** is associated with longer gestation and increased rate of induction of labour.
- ***Primigravidity***-
- ***Elevated pre-pregnancy weight*** and maternal weight gain both increase the risk of a post-term delivery.
- ***Advanced maternal age*** is also a strong risk factor for prolonged pregnancy.
- ***Congenital anomalies*** like anencephaly

SPECIFIC MGT OF PROLONGED PREGNANCY

Objective of management: to ensure optimum outcome for the mother and the baby

- Confirm the gestational age through ultrasound.
- Admit the mother at 41 wks and discuss the appropriate mgt plan.
- Perform a physical examination to ascertain viability & assess the adequacy of the pelvis as well as the Bishop score in order to serve as a guide on the best mode of delivery for the client.

- Initiate discussion regarding the management options of prolonged pregnancy. This should include:
  - Maternal and fetal risks
  - Options of management
  - Fetal surveillance is recommended after 41 and a half weeks the woman's expectations and preferred options.
  - Offer the woman a cervical examination and a membranes sweep.

- Increased antenatal surveillance including a non stress test (NST) and ultrasound estimation of amniotic fluid volume(AFV) to rule out oligohydramnios.
- A biophysical profile(AFV, Foetal breathing mvts, foetal mvts, foetal tone and NST)
- Membrane sweep: to attempt initiate the onset of labour physiologically. Sweeping membranes is designed to separate the membranes from their cervical attachment by introducing the examining fingers into the cervical OS and passing them circumferentially around the cervix.
- Active mgt: Induction of labour at 41 or 42 completed weeks

  (**Refer to your notes on induction of labour)**

ABNORMAL LABOUR

DEFINITION:

- A pathophysiological process in the conduct of labour (from 1st stage to 4th stage of labour).

FORMS OF ABNORMAL LABOUR:

1.PROLONGED LABOUR

Definition

- Prolonged labour is active labour with regular uterine contractions and progressive cervical dilatation, which lasts for **more than 18 hours** in primigravidas & **12 hrs** in multiparous women(WHO, 1994).

- Labour is prolonged when it exceeds the number of hours considered to be normal for a nulliparous or a multiparous woman
- Different terms are used for prolonged labour at different times or for different reasons.
- Dystocia is the term used for difficult or slow labour & thus includes both failure to progress & prolonged labour

CLASSIFICATION PER STAGE

✔ **Delay in latent phase of labour**

- The latent phase lasts from the onset of labour to Four centimetre dilatation of the cervical os.

- This is the period when structural changes occur in the cervix and it becomes softer and shorter(from 4cm to <0.5cm), its position more central in relation to the presenting part. This takes place in 8-10 hrs
- During this time, a woman needs support & encouragement from those caring for her, making sure there is adequate food and fluid intake

✔**Delay in active phase of labour & the use of the partogram**

- This is the period of time when the cervix dilates from 4cm-10cm with rotation and further descent of the presenting part

- This part is most contentious bcoz the expectation is that progress once labour is diagnosed is a cervical dilatation of 1cm/hr for a primigravida & 1.5 cm/hr for a multiparous

✔ **Delay in second stage of labour**

- The second stage of labour can be divided into passive(pelvic) phase & active(perineal) phase
- Delay in this stage may be due to malposition causing failure of the vertex to descend and rotate, ineffective contractions due to prolonged first stage, large foetus & large vertex or absence of desire to push when a mother has been given epidural analgesia as part of pain relief in labour
- A full bladder or a full rectum can also impede progress of 2nd stage of labour

The diagnostic criteria of abnormal labor

pattern	Nulliparous criteria	Multiparous criteria
Prolonged latent phase	Duration>16h	Duration>8h
Protracted active phase	Cervical dilation <1.2cm/h	Cervical dilation <1.5cm/h
Arrested active phase	Cessation of cervical dilation >2h	As same as nulliparous criteria
Prolonged active phase	Duration>8h	Duration>4h
Protracted descent	Descent<1cm/h	As same as nulliparous criteria
Arrested descent	Cessation of descent >1h	As same as nulliparous criteria
Prolonged second stage	Duration>2h	Duration>1h

DIAGNOSIS OF PROLONGED LABOUR

- Findings from history and physical examination or as interpreted from the partograph that is correctly charted will guide in the diagnosis of prolonged labour.

History

- At what time did the contractions begin?
- How frequent are the contractions?
- When did the membranes rupture?

Examination

- The frequency, duration and intensity of the contractions
- Determine the foetal position and identify any evidence of cephalopelvic disproportion and /or foetal malposition

- Evaluate foetal heart rate
- Determine whether the mother's bladder is full. Encourage the woman to empty the bladder frequently. If not able to pass urine then catheterize
- Inspect the external genitalia to determine the presence of liquid and /or blood
- Vaginal exam with sterile gloves every four hours (or at a different frequency when indicated.

CAUSES

- There are **7 cardinal Ps** with regard to causes of abnormal labour

1). <u>Patient:</u> certain factors in the patient may contribute to prolonged labour namely, a full bladder, dehydration, keto-acidoses, inadequate pain relief, anxiety and tension.

- An exhausted mother may not be prepared well for labour because of the metabolic changes
- Psychological causes, for instance;tension and fear of the unknown tend to prolong labour, most commonly in women who are primigravidae

2).<u>Power</u>: the contractions

- Uterine powers; although the uterus has prepared itself metabolically for labour, as labour continues, the smooth muscle uses up its metabolic reserves and becomes tired
- Excess contraction(hypertonia) makes the uterus too exhausted
- Hypotonia(contractions that are too mild)may result from an exausted uterus or because the receptors are not strong enough to signal enough contraction
- Atonic uterus: a uterus that is not contracting at all
- Inco-ordinate uterus: uterus that is not contracting uniformly

3). Passage

- Pelvic abnormalities (passage), where contracted pelvis and tumours of the pelvis cause poor progress in labour

4). **Passenger.** The passengers are:

- The foetus
- Placenta
- Amniotic fluid
- The cord

For the foetus;

- Conjoined twins
- Premature labour
- Post mature labour
- Foetal distress
- Malpresentation and malposition
- Macrosomia and microsomia

For the placenta:

- Abruptio placenta
- Placenta praevia
- Infections eg TB, syphilis affect the placenta

For the amniotic fluid;

- Amniotic fluid embolism. Occurs when the amniotic fluid enters the maternal circulation via the uterus or the placental site leading to maternal collapse
- Chorioamnionitis(infection to the amniotic fluid)
- Oligohydramnios and polyhydramnios

For the cord:

- Cord prolapse: where the cord lies in front of the presenting part and the membranes are ruptured
- A short cord causing placental separation
- Knotting of the cord
- Cord around the neck of the foetus

5). Place of delivery

- Delivery units/ hospitals must be easily accessible, affordable & available for the patient to facilitate normal labour and delivery
- They must also be equipped with all the necessary apparatus to handle an obstetric emergency including prompt referral systems

6). Person attending

- Lack of adequate skills, knowledge and competence can cause labour to be abnormal eg when a caregiver ruptures the membranes prematurely causing card prolapse can change labour from normal to abnormal
- Lack of knowledge on to interpret a partograph

7.The partograph

- This is a graphical presentation of the progress of labour. Lack of knowledge on how to chart and interpreted it may cause delay causing abnormal labour

Criteria for referral

- Refer all patients with prolonged labour to a comprehensive EOC facility if not available in your facility.

Referral process

- Explain the dangers of prolonged labour to the family
- Write a referral note and refer immediately to the hospital.
- A skilled health care provider must escort the woman and continue to monitor her condition.
- Monitor maternal vital signs 1/2 hourly
- Monitor foetal heart rate 1/2 hourly
- Measure the urine volume
- Ensure IV fluids (normal saline/RL) continue during transfer
- Broad-spectrum antibiotics should be started before departure.

LABORATORY INVESTIGATIONS

- Blood grouping and cross match two units
- Urine for albumin, sugar, acetone

SPECIFIC MGT OF PROLONGED LABOUR

- Inform the DR as soon as the condition is diagnosed/suspected
- Monitor maternal vital signs: Temperature 2-4 hourly, Pulse ½ hourly, Respirations 4 hourly
- Monitor foetal heart rate ½ hourly
- Measure the urine volume every 2-4 hours (encourage mother to void regularly)
- Insert an IV line & Start I.V fluids (5% dextrose/NS/RL)
- Start broad spectrum antibiotics
- Oxygen by mask
- <u>First choice antibiotics:</u>
  - IV Ampicillin 500mg 6 hourly for 3 days
  - IV Gentamicin 80 mg 8 hourly for 7 days
  - Followed by Amoxicillin 500mg oral 8 hourly for 7 days

Second choice line antibiotics

- IV second generation Cephalosporin
- IV amoxicillin/clavulanic acid 1.2g stat dose followed by oral preparation

Second stage

- Maternal expulsive efforts increase fetal risk by reducing the delivery of oxygen to the placenta. While spontaneous maternal "pushing" should be allowed, prolonged effort and holding the breath should not be encouraged. If malpresentation and obvious obstruction have been ruled out, labor should be augmented with oxytocin.
- If there is no descent after augmentation and:
  - If the head is not more than 1/5 above the symphysis pubis or the leading bony edge of the fetal head is at the 0 station, delivery should be by vacuum extraction or forceps

- If the head is between 1/5 and 3/5 above the symphysis pubis or the leading bony edge of the fetal head is between 0 station and -2 station, and birth is taking place in a facility where safe caesarean section is not possible, delivery should be by vacuum extraction and symphysiotomy
- If the service provider is not proficient in symphysiotomy, immediate referral is required for delivery by emergency caesarean section
- If the head is more than 3/5 above the symphysis pubis or the leading bony edge of the fetal head is above -2 station, delivery must be by caesarean section.
- If the woman arrived very late and the foetus is dead, do destructive obstetric procedure

Third Stage

- Perform active management of third stage of labour:
  - Cutting and clamping of the umbilical cord
  - Continuous downward Traction to deliver the placenta
  - Administration of an oxytocic agent- syntocinon.

Management of prolonged labour when there is uterine dysfunction

- ***Hypotonic dysfunction***
  - If the foetal heart rate is normal, the cervical Os is ≥4cm and there is no evidence of foetal malpresentation or CPD, perform ARM then wait for 1-2 hours for improvement of contractions.
  - If contractions do not pick up, start on 5 IU oxytocin in 500ml of physiologic solution such as Normal Saline, Ringer's lactate or 5% dextrose at a rate of 10 drops per minute.

- Increase the rate of oxytocin administration at 10 drops per minute every 30 minutes to maximum 60 drops per minute or until 3 contractions every 10 minutes each lasting 20-40 minutes are achieved.
- If the liquor is meconium stained, deliver by caesarean section if she is not fully dilated or there is evidence of Cephalo -Pelvic Disproportion (CPD).

2. OBSTRUCTED LABOUR

INTRODUCTION:

- Obstructed labour means that, in spite of strong uterine contractions, the foetus cannot descend because of mechanical factors. Obstruction usually occurs at the brim, but it may occur in the mid cavity or pelvic outlet.
- Labour is considered obstructed when the presenting part of the fetus cannot progress into the birth canal, despite strong uterine contractions
- Obstructed labour is mainly occurs due to **cephalpelvic disproportion** (CPD).

NOTE;

- Four to eight percent of all maternal deaths in the developing countries occur due to obstructed labour

DEFINITION OF CEPHALOPELVIC DISPROPORTION (CPD):

- This occurs when foetal head is large in comparison with the pelvis.
- Cephalopelvic disproportion may be due to a small pelvis with a normal sized head, or a normal pelvis with a large foetus or a combination of a large baby and small pelvis. This means it is difficult or impossible for the foetus to pass safely through the pelvis.

CLASSIFICATION OF CPD

- Cephalopelvic disproportion may be:
- ***Marginal CPD,*** which means that the problem may be overcome during labour. The relaxation of the pelvic joints and moulding of the foetal skull may enable vaginal delivery. Half of these patients will need an operative delivery.

- ***True CPD:*** This means the pelvis is small or abnormally shaped and/or foetus is unusually large or abnormal e.g. hydrocephalus. Operative delivery will be needed.

Factors associated with obstructed labour

The predisposing factors to obstructed labour include, but not limited to:

- Childhood malnutrition leading to contracted pelvis
- History of previous still birth, or previous prolonged labour
- Young age of mother (under 17 years)
- Female genital mutilation/cutting
- Some medical illnesses like diabetes mellitus
- Pelvic abnormalities following childhood illnesses like polio or pelvic injuries

Causes of obstructed labour

- Cephalopelvic disproportion
- Deep transverse arrest in opp
- Foetal macrosomia e.g. in poorly controlled diabetes mellitus in pregnancy
- Malpresentation e.g. brow, shoulder, face with mentoposterior, breech
- Foetal abnormalities e.g. hydrocephalus
- Multiple gestation with locked twins
- Abnormalities of the reproductive tract e.g. pelvic tumour, cervical or vaginal stenosis, tight perineum and FGM/FGC scar.
- Underdeveloped pelvis e.g. adolescent pregnancy

Diagnosis of obstructed labour

History

Relevant points to find out from the woman or her family are:

- Her age, parity, gravidity
- History of previous operative delivery
- History of previous stillbirth
- Duration of previous labour and outcome
- Duration of current labour
- Duration of ruptured membranes

Physical Examination

- *General examination*

The following may be observed:

- Signs of physical and mental exhaustion
- Dehydration- dry mouth,
- Acetone breath due to ketoacidosis.
- Fever
- Shock - rapid pulse, anuria or oliguria, cold extremities, pale complexion, low blood pressure.

NB: Shock may be due to a ruptured uterus or sepsis

Abdominal examination

- The foetal head may be palpable above the pelvic brim
- There may be frequent and strong uterine contractions
- The uterus may have gone into tetanic contractions and sits tightly moulded around the foetus
- **Bandl's ring** may be evident. This is when the border of upper and lower uterine segments **becomes visible** and/*or palpable during labour. It is usually seen as a depression across the abdomen at about the level of the umbilicus. This is a late sign of obstructed labour occurring mostly in primigravida.*
- The uterus may stop contracting especially in primigravidas

Vaginal examination

Signs of obstruction include:

- Oedema of the vulva present, especially if the woman has been pushing for a long time
- Foul smelling - meconium stained liquor
- Absence of amniotic fluid (fluid has already drained away)
- Catheterization will produce concentrated urine which may contain blood
- Hot and dry vagina
- Oedema of the cervix. -Incomplete dilatation of the cervix –hanging loosely like empty sleeve
- Large caput succedaneum can be felt
- May palpate a severely moulded head, or a shoulder presentation or prolapsed arm

Partograph reading

Features of obstructed labour on partograph reading:

Examination of the partograph may reveal:

- Foetal heart rate of more than 160/minute or less than 120/minute indicating foetal distress
- Foul smelling meconium-stained liquor
- Severe moulding, marked as {+++}
- Severe caput formation
- The rate of cervical dilatation slow or remains static in spite of strong contraction
- Maternal tachycardia and pyrexia
- Scanty urine with ketonuria.

SPECIFIC MANAGEMENT OF OBSTRUCTED LABOUR

a) Resuscitation of the Mother

- Obstructed labour is an obstetric emergency, therefore, prompt resuscitative measures ought to be put into place.
- Perform a rapid assessment of her airway, breathing and circulation and manage as appropriate.

b) Rehydrate the patient

- Aim to maintain normal plasma volume and to prevent or treat dehydration and ketosis. Put up an intravenous infusion; use a large bore needle or cannular.
- If the woman is in shock, give IV fluids e.g. normal saline. Run 1 litre in the first 15 minutes or as quickly as possible. If the woman is mainly starved and exhausted, give 1-2 litres of 5 or 10% dextrose in 6 hours.

c) Catheterize

- Insert an indwelling urinary catheter using aseptic technique and monitor urine output.

d) Give antibiotics

- If there are signs of infection, or the membranes have been ruptured for 18 hours or more, or the period of gestation is 37 weeks or less, give antibiotics as follows:
  - IV Ampicillin 2 g every 6 hours, and
  - Gentamicin 5 mg/body weight IV every 24 hours.
- If the woman is delivered by caesarean section, continue antibiotics and give Metronidazole 500 mg IV every 8 hours until the woman is fever-free for 48 hours.

(e.) Deliver the baby

In Cephalo -pelvic disproportion;

- If cephalo -pelvic disproportion is confirmed, delivery should be by emergency caesarean section
- If the fetus is dead: - delivery should be by craniotomy - if this is not possible, delivery should be by emergency caesarean section.

Obstruction:

- If the fetus is alive, the cervix is fully dilated and the fetal head is at 0 station {5 parts below the brim}, deliver by vacuum extraction
- If the fetus is alive and the cervix is fully dilated and there is evidence of or indication for symphysiotomy for relatively minor obstruction (if safe caesarean section is not possible) and the fetal head is at -2 station {3 parts below the brim}, then delivery should be by symphysiotomy and vacuum extraction.

- If the fetus is alive but the cervix is not fully dilated or if the fetal head is too high for vacuum extraction, referral should be made immediately for delivery by caesarean section
- If the fetus is dead: - delivery should be by craniotomy - if this is not possible, delivery should be by caesarean section. Destructive obstetric procedures such as craniotomy should be performed by a competent health provider using the appropriate equipment.

NB: Always consider the quickest and safest means to deliver the baby (e.g. emergency c/section, vacuum extraction)

REFERRAL PROCESS

- Explain the dangers of obstructed labour to the family
- Write a referral note and refer immediately to a hospital with comprehensive obstetric care.
- A skilled health care provider must escort the woman and continue to monitor her condition.
- Monitor maternal vital signs 1/2 hourly
- Monitor foetal heart rate 1/2 hourly
- Ensure IV fluids (5% dextrose) continue during transfer
- Start on intravenous antibiotics (Ampicillin 500mg and Gentamicin 80mg)

Complications of obstructed labour

Maternal complications

- Chorioamnionitis
- Uterine rupture
- Obstetric fistula
- Puerperal sepsis
- Neurological injury e.g. foot drop
- Spontaneous symphysiotomy and/or osteitis pubis hence long-term walking difficulty.

Foetal complications

- Intrauterine foetal death
- Foetal distress
- Foetal injury during birth
- Birth asphyxia
- Neonatal sepsis

END

3. PRECIPITATE LABOUR

Definition

- Refers to a delivery which results after an unusually rapid labour (**less than three hours**) and culminates in the rapid, spontaneous expulsion of the foetus. Delivery often occurs without the benefit of asepsis

Predisposing factors

- A multipara with relaxed pelvic or perineal floor muscles may have an extremely short period of expulsion.
- A multipara with unusually strong, forceful contractions. Two to three powerful contractions may cause the baby to appear with considerable rapidity.
- Inadequate warning of imminent birth due to absence of painful sensations during labor.

Danger of precipitate delivery

There are several misfortunes associated with precipitate delivery for both the mother and the infant. They are classified as maternal and neonatal.

Maternal.

- May cause lacerations of the cervix, vagina, and/or perineum. Rapid descent and delivery of an infant does not allow maternal tissues adequate time to stretch and accommodate the passage of the infant.
- There may be hemorrhaging originating from lacerations and/or hematomas of the cervix, vagina, or perineum. There may also be hemorrhaging from the uterus.
- Uterine atony may result from muscular exhaustion after unusually strong and rapid labor= PPH.
- There may be infection as a result of unsterile delivery leading to puerperal sepsis.

Neonatal.

- May cause intracranial hemorrhage resulting from a sudden change in pressure on the fetal head during rapid expulsion.
- May cause aspiration of amniotic fluid, if unattended to or immediately following delivery.
- There may be neonatal infection as a result of unsterile delivery.

NB: Precipitate labour tends to recur. Therefore, with future pregnancies the mother needs to be admitted early into hospital for safe delivery.

NURSING CARE TO PREPARE FOR ANTICIPATED PRECIPITATE BIRTH

a. **Assess Patient for an Impending Precipitous Delivery Situation**.

(1)Patient has previous obstetric history of rapid labor/delivery.

(2) Patient complains of a sudden, intense urge to push.

(3) Notable increase in bloody show.

(4) Sudden bulging of the perineum.

(5) Sudden crowning of the presenting part.

b. **Call for Help**. Do not leave the patient unattended.

c. **Obtain a Sterile Obstetric or Precipitate Delivery Pack, if Available**. The pack contains a variety of supplies to include towels, drapes, sanitary pads, e.t.c.

NURSING CARE AFTER A PRECIPITATE DELIVERY

- Assist the mother into a comfortable position with her legs extended.
- Provide a clean surface under the patient's buttocks.
- Check uterine fundus every 10 to 15 minutes during the first hour to assure contraction of myometrium and normal lochia flow.
- Gently massage the uterus if the fundus is soft or boggy.
- Avoid overstimulation as myometrium will fatigue and result in severe atony.

- Assess the amount of blood loss from the delivery. Normally, blood loss is less than 500 cc. Save all evidence of blood loss.
- Assess for intactness of the placenta.
- Provide for comfort and warmth of both patients. Promote fluids in the mother as tolerated.
- Encourage the mother to void to prevent bladder distention.
- Make notations about the birth to include:
  - Fetal position and presentation.
  - Presence of nuchal cord and method of reduction.
  - Color, character, and amount of amniotic fluid.
  - Time of delivery.

- Sex of infant.
- APGAR scores; need for stimulation or resuscitation.
- Approximate time of placental expulsion, appearance, and completeness.
- Maternal condition (affect, amount of bleeding, and status of uterine contraction).
- Any unusual occurrences during the delivery.

TRIAL OF SCAR

DEFINITION;

TRIAL OF SCAR

- Is the attempt to deliver vaginally (via S.V.D) after a previous caesarean section.
- Also referred to as vaginal birth after caesarean section **(VBAC).**

Note!

TRIAL OF LABOUR IS DEFINED AS:

- A test of labour conducted where there is a minor or moderate degree of Cephalopelvic Disproportion (CPD).

INDICATIONS FOR TRIAL OF LABOUR

- Borderline obstruction with a favourable outcome.

After adequate supervision, it is established that the presenting part is capable of flexing adequately to pass through the pelvic brim

- When the progress of labour is sufficient, as observed both in the descent of the presenting part and by dilatation of the cervix

Conditions for trial of scar

i. Only one previous C/S which must be LUSCS
ii. Non-recurring indication for previous C/S; foetal distress, cord prolapse, malpresentation, placenta praevia etc.
iii. No post-operative sepsis after previous C/S
iv. Parity <5, where previous delivery was via SVD
v. Cephalic presentation
vi. Estimated foetal weight ≤3500g
vii. Adequate pelvis with true conjugate diameter 10.5cm
viii. No other indication for C/S
ix. Facilities for blood transfusion available
x. Ready theatre, available immediately

CRITERIA FOR TRIAL OF SCAR

- After adequate supervision, it is established that the presenting part is capable of flexing adequately to pass thru the pelvic brim
- All the facilities for assisted birth are readily available
- Progress of labour is sufficient, both in descent of the presenting part and the dilatation of the cervix
- Time limits as to the duration of the trial are set

Predictors of decreased chances of success OF TRIAL OF SCAR

- Maternal obesity & Increased inter-pregnancy weight gain
- Short maternal stature
- Fetal Macrosomia
- Increase maternal age>40yrs
- Recurring indications e.g. CPD, previous failed second stage
- Gestational age >41wks
- Pre-conceptional or gestational diabetes mellitus

Factors associated with Increased rate of uterine rupture in trial of scar.

- A previous classical incision
- Single layer closure
- Induction of labour
- Use of prostaglandins
- Short inter-pregnancy interval
- Infection at prior C/S

CONTRAINDICATING FACTORS TO TRIAL OF SCAR

- Grossly contracted pelvis
- Medical or obstetrical complications
- Malpresentations, for example, breech
- Elderly primigravida
- Cases where trial of labour failed before
- Cases of two or more previous caesarean Sections
- Where the reason for the first scar is likely to be repeated, for example, in cephalopelvic disproportion
- Two previous caesarean section scars, regardless of the causes

- Where the previous scar wound did not heal with the first intension
- Where pregnancy occurs within six months of a caesarean section (short inter-pregnancy duration).
- Where there is over-distension due to multiple pregnancy or polyhydramnios
- Grandmultiparty because of laxity of the uterine muscles hence easy rupture.

SPECIFIC MGT OF TRIAL OF SCAR

Explain the situation to the mother and prepare her for possible operative intervention.

Assess patient carefully on admission to ascertain the following:

- Whether the mother is in established labour
- Presentation of foetus
- Check for flexion of the head
- State of foetal heart; that is, rate, rhythm and volume
- General condition of mother physically and emotionally
- Confine the mother to bed to prevent early rupture of membranes
- Close observations of temperature and blood pressure every four hours

- Observe foetal heart rate and maternal pulse quarterly to half hourly
- You should always observe for signs of foetal and maternal distress.
- Accurately observe and record for onset, strength, frequency and duration of the contractions.
- Closely observe the descent of the head every one to two hours per abdominal palpation by the same midwife if possible.
- Encourage the mother to pass urine every two hours and test for acetone to exclude acidosis

- A vaginal examination should be done every four hours to assess the level of the presenting part, the degree moulding and flexion, the dilation of the cervix (whether progressive or not), the consistency of the cervix and the presence or absence of caput.
- You should also check whether the membranes are intact or ruptured.
- Encourage adequate hydration by giving intravenous 5% dextrose/NS/RL
- early labour to promote rest, and reduce anxiety

- Early ANC (first half of pregnancy)
- Review history
- Obstetric U/S scan in first half of pregnancy
- Counsel patient on the risks and benefits of undergoing trial of scar
- Pelvic assessment at 36 weeks; clinical/radiological
- Estimate weight of baby
- Admit in early labour
- IV line and GXM
- Consent for emergency C/S
- Partograph (pulse, BP, FHR, contractions, descent, cervical dilatation, colour of liquor, PV bleed)

END

OBSTETRIC EMERGENCIES

Kenya Medical Training College

Broad objective:

- By the end of this session, the KRCHN student will be able to describe and manage various obstetric emergencies to include;
  i. Ruptured uterus
  ii. Cord presentation/cord prolapse
  iii. Vasa praevia
  iv. Shoulder dystocia
  v. Amniotic fluid embolism
  vi. Acute inversion of the uterus

DEFINITION OF OBSTETRIC EMERGENCIES

- Obstetrical emergencies are life-threatening medical conditions that occur in pregnancy or during or after labor and delivery
- They cause damage and death to mothers and babies. They require quick, decisive and effective action from the staff immediately available.
- There are a number of illnesses and disorders of pregnancy that can threaten the well-being of both mother and child.
- Obstetric emergencies can be classified into emergencies occurring during:
  - Pregnancy
  - Labour
  - Post-partumly

Classification of obstetric emergencies:-

i) Obstetrical emergencies of pregnancy/major disorders of prenancy

- Ectopic pregnancy
- Placenta abruption
- Placenta praevia **APH**
- Pre-eclampsia/ eclampsia
- PROM

ii) Obstetrical emergencies during labor and delivery (intrapartum period)

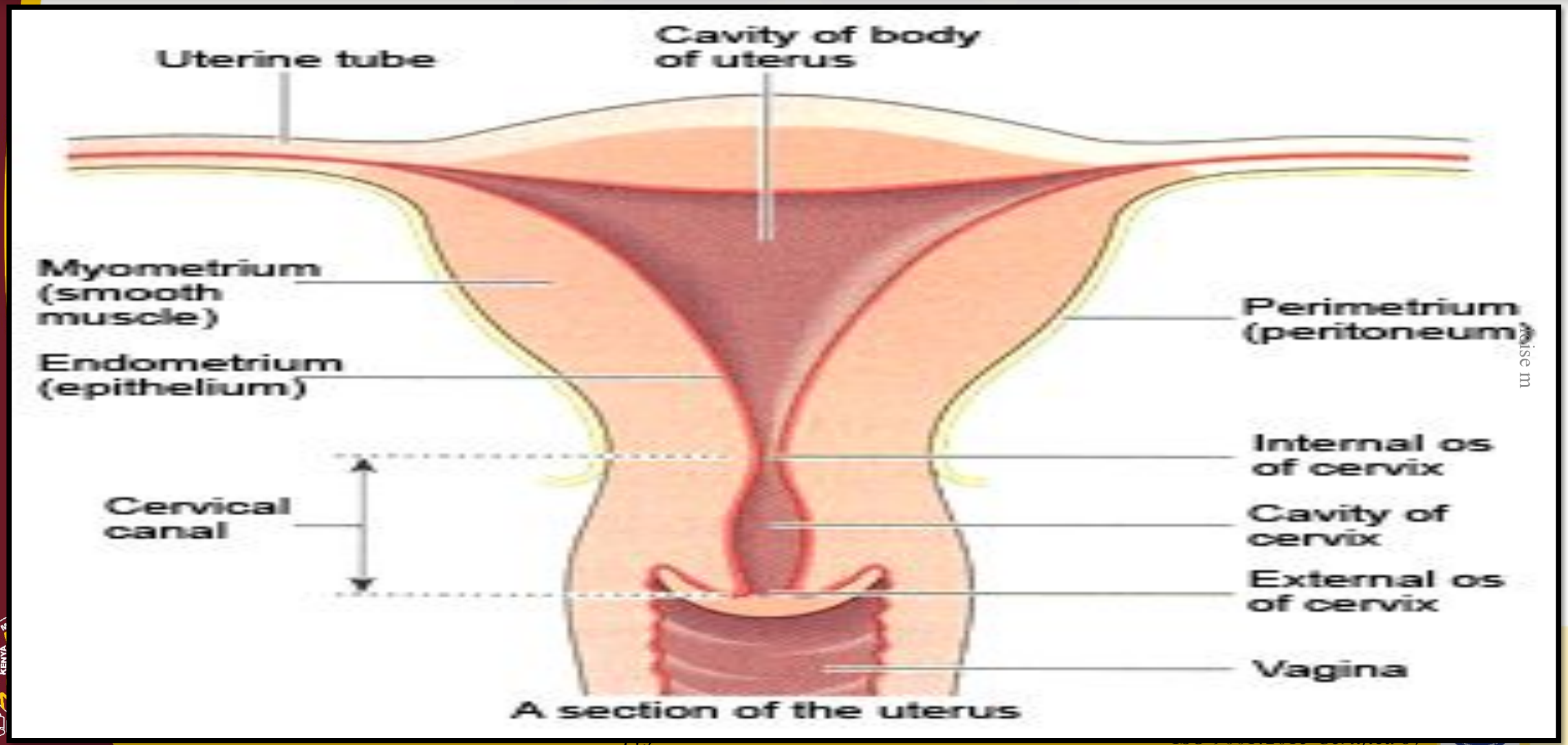
- Amniotic fluid embolism
- Rupture of the uterus
- Cord presentation & prolapse
- Shoulder dystocia
- Vasa praevia
- Placenta accreta= Retained placenta.
- Obstetric shock*
- Acute inversion of the uterus

iii) Obstetrical emergencies postpartum

- PPH

INTRAPARTUM EMERGENCIES

1. RUPTURE OF THE UTERUS



INTRODUCTION:

- This is a serious complication, which should not occur in today's obstetric care where there is good prenatal and intra partum care
- This is one of the most serious complications in midwifery & obstetrics. It is often fatal for the foetus & may also be responsible for the death of the mother

DEFINITION OF UTERINE RUPTURE:

- Rupture of the uterus is defined as a complete separation or tear in the wall of the uterus with or without expulsion of the foetus.
- It may be complete when the visceral peritoneum is involved or incomplete when the visceral peritoneum is intact.
- In complete uterine rupture, the uterus communicates directly with the peritoneal cavity and bleeding occurs into the peritoneal cavity. In incomplete rupture, bleeding occurs behind the visceral peritoneum.

CLASSIFICATION OF UTERINE RUPTURE

- Rupture of the uterus is defined as being complete or incomplete:-

Complete rupture of the uterus

- Also known as **intraperitoneal** uterine rupture.
- This is a tear in the wall of the uterus, which involves the endometrium, myometrium and perimetrium/peritoneum
- This involves a tear in the wall of the uterus, with or without expulsion of the foetus

Incomplete or Extra Peritoneal

- This is the tearing of the uterus, which involves the endometrium and myometrium, BUT the peritoneum is spared.
- Tears can occur parentally, during labour or delivery and may endanger the lives of both mother and foetus

CAUSES & PREDISPOSING FACTORS

These include those factors that contribute to over distension of the uterus such as:

- Neglected obstructed labour
- Previous operations on the uterus (e.g. caesarean section, myomectomy, previous uterine rupture)
- Use of oxytocin especially where the mother is of high parity.
- Use of prostaglandins to induce labour espacially where in presence of an existing scar
- Obstetric manoeuvre on the uterus (e.g. external cephalic version, breech extraction, internal podalic version)
- Harmful obstetric practices e.g. Application of fundal pressure

- High parity- because of laxity of the uterine muscles
- Multiple pregnancies- due to over-stretching of the uterus
- Large foetus/ fetal macrosomia- due to ove-stretching of the uterus
- Extension of severe cervical laceration upwards into the lower uterine segment- usually the result of trauma during an assisted birth
- Trauma as a result of blast injury or accident, though rare.

Diagnosis of ruptured uterus

- A patient with ruptured uterus may present with hemorrhagic or neurogenic shock from bleeding or vasovagal stimulation, respectively.
- Resuscitate and manage maternal shock expeditiously as per guidelines. It is important to note that even though rupture of the uterus is more commonly associated with labour, it can occur before onset labour or even long before term pregnancy especially when the uterus has been scarred.

History

- During history taking, explore the presence of risk factors
- Suspect rupture of the uterus if the following signs and symptoms are present:
  - Shock (Signs of hypovolemia and shock include: tachycardia, hypotension, cold clammy extremities, sweating, restlessness and confusion).
  - Abdominal distension/free fluid (Paracentesis may be positive in the presence of haemoperitoneum but its absence does not rule out ruptured uterus.
  - Abnormal uterine contour (Bandl's ring)= obstructed labour.
  - Tender abdomen and especially tenderness over the lower segment of the uterus and abdominal distension.
  - Easily palpable fetal parts or dislodged presenting part

- Absent fetal movements and fetal heart sounds
- Rapid maternal pulse (Suspect rupture if the fetus suddenly becomes distressed and the mother's pulse starts rising).
- Speculum vaginal examination may reveal vaginal bleeding. (Digital vaginal examination must be avoided unless placenta previa has been ruled out).

Investigations

- Blood for grouping and cross matching
- Urinalysis for Haematuria, protein, sugar and acetone.

Clinical features of ruptured uterus

Signs of ruptured uterus include:

- Rupture may be gradual with vaginal bleeding
- Pain and tenderness at the central region/abdomen are present or pain over previous c/s scar
- Abnormalities of the foetal heart rate & pattern
- Maternal tachycardia & Poor progress in labour
- Diagnosis is difficult; therefore close monitoring is very important

Early Signs of Scar Rupture

- Early signs of scar rupture include a **constant lower abnormal pain**. This pain worsens during a contraction. There is fresh vaginal bleeding, which may be mistaken for show.
- Contractions may continue but **the cervical os fails to dilate**. Pulse rate is raised due to shock and tends to increase slowly.
- Vigilant observation is required for a mother with a uterine scar showing the above signs so that she can be sectioned before rupture occurs.
- Epidural analgesia masks the early signs, and is therefore contraindicated in the mother with a caesarean scar.

Early Signs of Scar Rupture ctd

- In the advanced stage, the mother complains of **severe and drastic pain**, which is continuous and does not correspond to the uterine action. When the scar rupture contraction ceases, the mother rapidly becomes shocked. Rupture through a scar has less chance of infection than a rupture due to obstructed labour.
- The presenting part **does not descend** to the pelvic brim in spite of strong contraction.
- The cervical **os dilates slowly** and hangs loosely like an empty sleeve and the membranes rupture early or the bag of water is elongated like a sausage

The Late Signs of Scar Rupture

- Mother is dehydrated, shows ketosis and is in severe pain
- Rapid pulse and pyrexia of over 38°C
- Poor urinary output, concentrated with ketosis and often blood stained
- Uterus gets moulded round the foetus
- Strong uterine contraction, which does not relax between contractions

The Late Signs of Scar Rupture ctd

- A Bundle's ring
- On vaginal examination, the vagina is hot and dry
- Presenting part is high, wedged and immovable
- There is over lapping of foetal bones and big caput succedaneum
- The mother is exhausted before the rupture, and she will probably cry out during the rupture and complain of a sharp pain in the lower abdomen
- She feels something has given way and soon presents with shock

Rupture Secondary to Manipulation

- The general condition of the mother will change, and this could be discovered when the hand is still in the uterus.
- After any difficult manipulation, the uterus must be explored to rule out injury or rupture. Caesarean section is preferred to difficult manipulation

Rupture Secondary to use of Oxytocic Drugs

- This is common when close monitoring is not done. There is less danger when these drugs are used as a dilute in an intravenous drip. The risk is much greater in multipara where many cases of rupture have followed unmonitored use of oxytocic drugs

The specific management of a ruptured uterus

a) Emergency Treatment

- Start resuscitation.
- Set up IV line with a wide bore branula and start Ringer's lactate solution or normal saline
- Give oxygen by face mask
- Transfuse at least 2 units of blood
- Catheterize for continuous bladder drainage
- Provide loading dose of parenteral antibiotics
- Monitor vital signs

b) Definitive management

- Surgery- immediate caesarean section in an attempt to deliver a live baby
- Perform/organize for the quickest and safest operative procedure (e.g. repair with or without tubal ligation, or subtotal hysterectomy)
- Choice between the options to perform a hysterectomy or to repair the rupture depends on the extent of the trauma and the mother's condition
- Continue with IV fluids
- Broad-spectrum parenteral antibiotics
- Continuous bladder drainage (keep bladder catheter for 10-14 days)

c) ***Precautions to take in order to avoid complications***

- Resuscitate patient adequately before surgery
- Cross match enough blood
- Administer parenteral broad spectrum antibiotics
- If the uterus was repaired and tubal ligation was not performed for desired for future fertility, counsel the patient on need for both future antenatal care and delivery by elective caesarean section in a level 4 or above health care facility. If hysterectomy was done, counsel woman on consequences (amenorrhea, infertility).

d) ***Follow up***

- Postpartum care: Review within one week, and as may be appropriate.

Complications of ruptured uterus

- Paralytic ileus
- Peritonitis
- Septicaemia
- Urinary tract infection
- Renal failure
- The foetus may experience complications such as birth asphyxia, stillbirths in complete rupture and neonatal death.

Prevention of Uterus Rupture

- Prevention is possible through good antenatal care after a thorough history taking.
- Refer high risk patients with previous scars and contracted pelvis for assessment.
- Vigilant observations in labour, especially in trial and induction of labour are necessary. You should be able to recognise,at an early stage, signs of obstructed labour and ruptured uterus.
- Maternal education is important in case of risk factors such as a previous scar.
- The community should be educated on pregnancy and childbirth complications. They should be advised on the need to deliver in a hospital rather than at home.

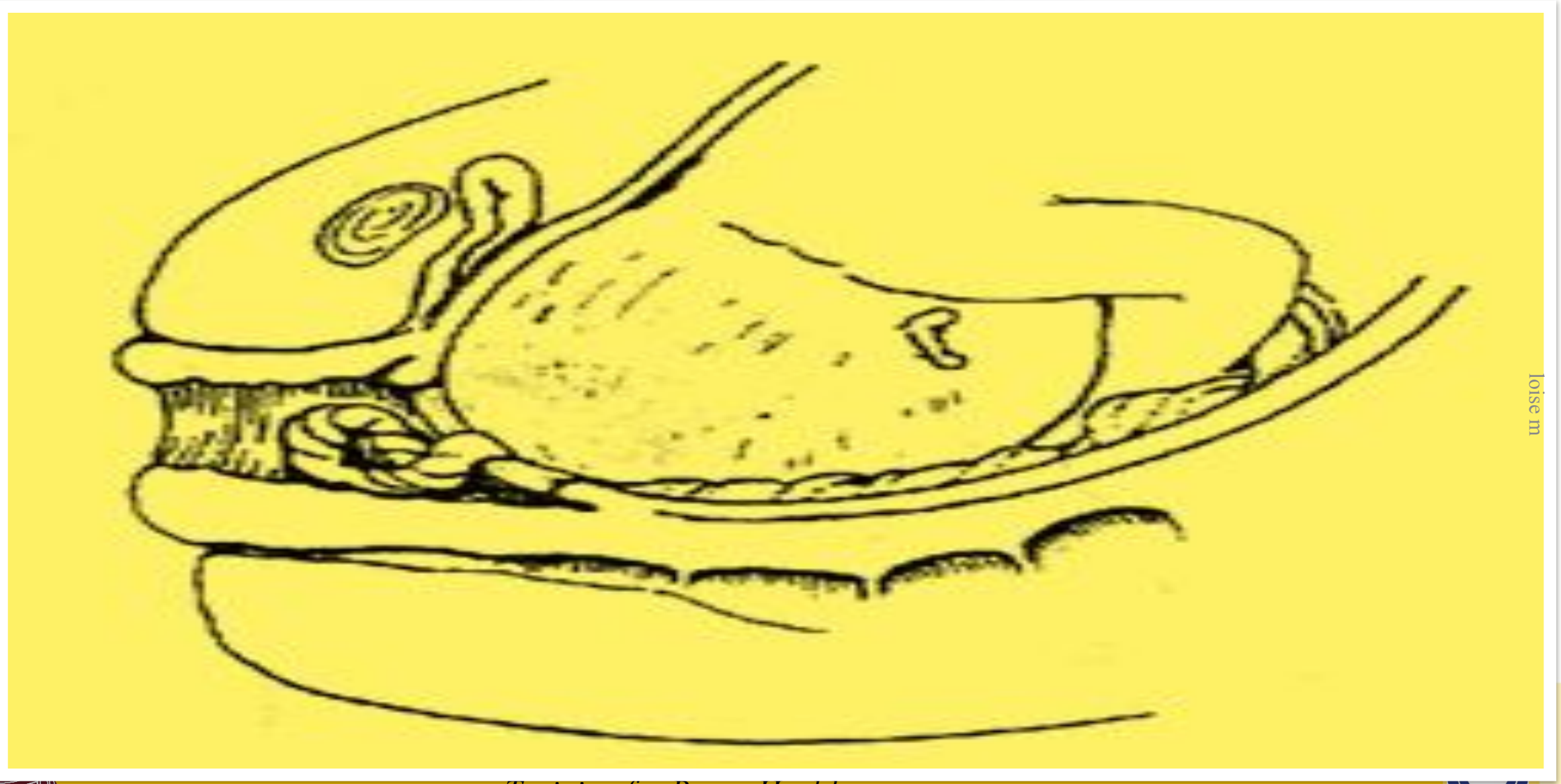
END

2. CORD PRESENTATION

DESCRIPTION:

- This is a condition where the cord lies in front of the presenting part **BEFORE** the membranes have ruptured
- This is diagnosed on vaginal examination when the cord is felt behind intact membranes.
- A **soft** pulsating mass is felt behind intact membranes, either directly in front of the presenting part or slightly laterally, thereby signifying cord presentation.

CORD PRESENTATION



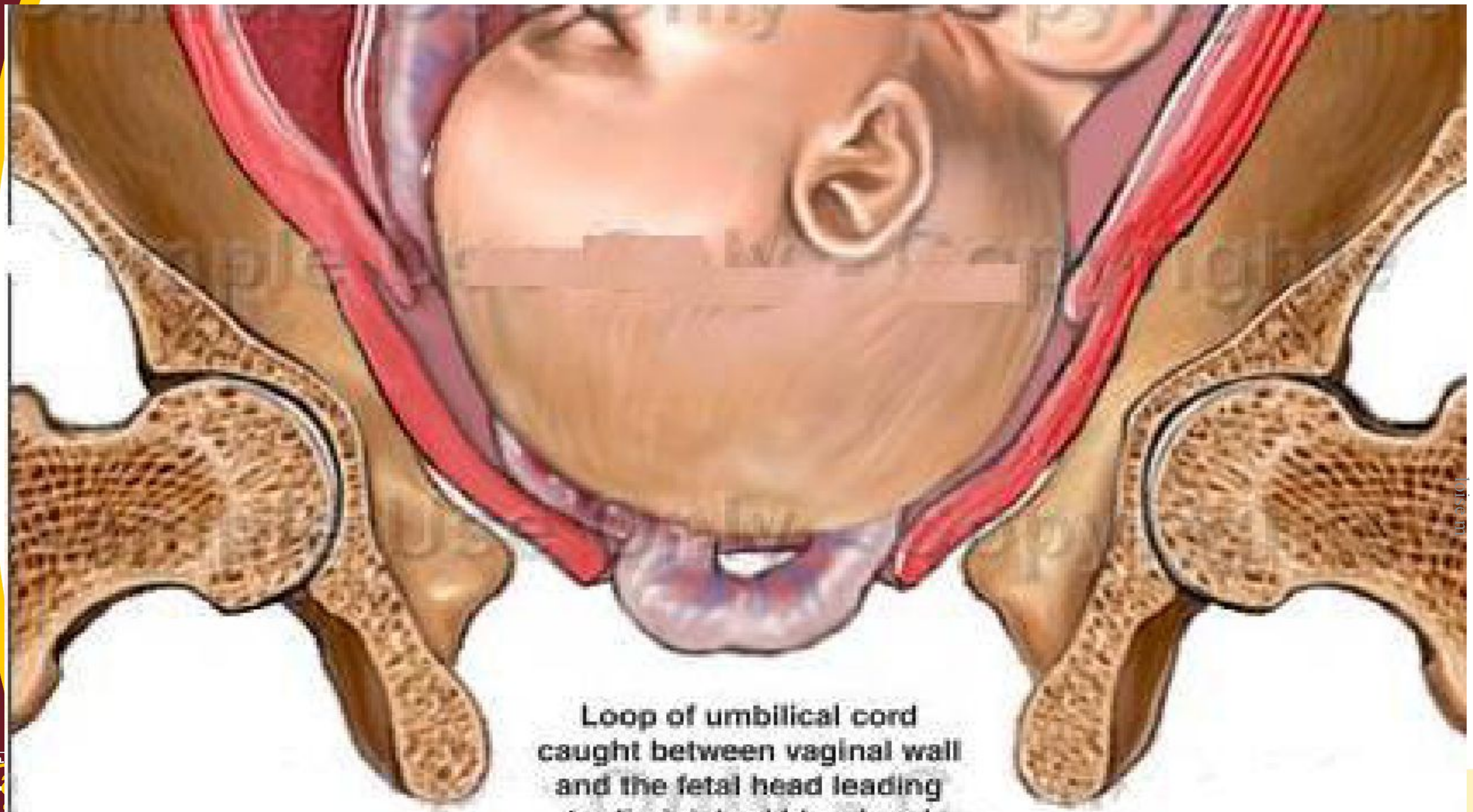
Specific Mgt of cord presentation

- Under no circumstance should the membranes be ruptured.
- The midwife should discontinue the vaginal examination in order to reduce the risk of rupturing the membranes
- Continuous electronic foetal heart monitoring should be commenced or the foetal heart rate should be auscultated as continously as possible
- Help the mother adopt a position that will reduce the likelihood of cord compression i.e. knee-chest position, exaggerated sim's position or Trendelenburg position
- Emergency caesarean section is performed

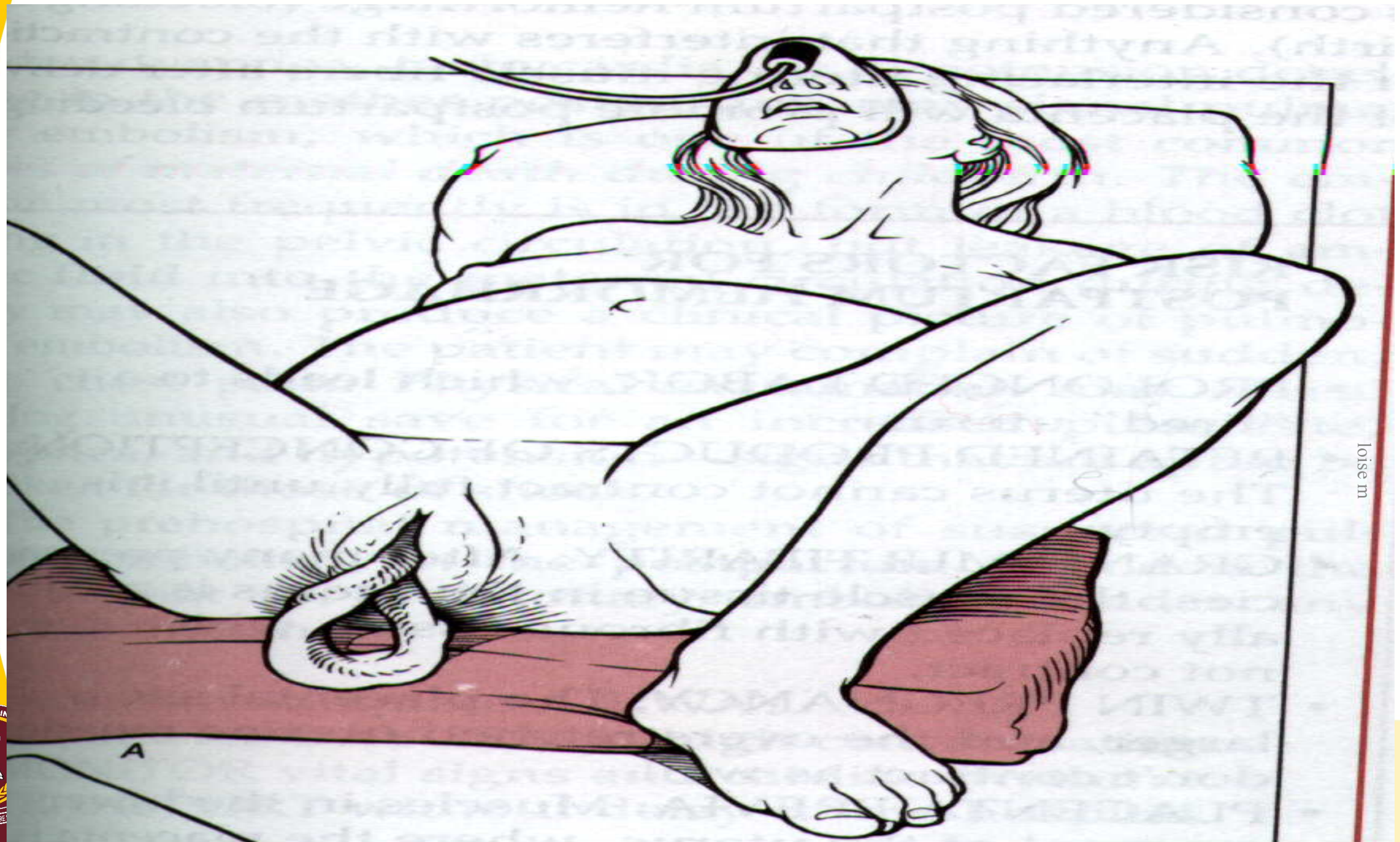
3. CORD PROLAPSE

DEFINITION

- Cord prolapse is a term used when the fatal umbilical cord lies/ is felt in front or beside the presenting part **AFTER** the membranes have spontaneously ruptured.
- The fetal cord may be **visualized** outside the vagina on inspection, either pulsating or not pulsating, after spontaneous rupture of the membranes.
- Following spontaneous rupture of the membranes, a vaginal examination should always be performed to rule out cord prolapse



Loop of umbilical cord caught between vaginal wall and the fetal head leading to diminished blood and oxygen supply.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Classification of cord prolapse

1. **Overt umbilical cord prolapse**: descent of the umbilical cord past the presenting fetal part. In this case, the cord is through the cervix and into or beyond the vagina. This is the most common type of cord prolapse.

2. **Occult umbilical prolapse**: descent of the umbilical cord alongside the presenting fetal part, but has not advanced past the presenting fetal part.

3. **Funic (cord) presentation**: presence of the umbilical cord between the presenting fetal part and fetal membranes. In this case, the cord has not passed the opening of the cervix. In funic presentation, the membranes are not yet ruptured.

Diagnosis of cord presentation and cord prolapse is made on:

- Vaginal examination by palpating a soft mass under the intact membranes (cord presentation)
- Vaginal examination after spontaneous rupture of the membranes reveals a loop of the cord in the birth canal (cord prolapse), in front of the presenting part or beside the presenting part. The cord may be felt in the vagina or in the cervical OS or a loop of cord may be visible at the vulva.
- There is fatal bradycardia and variable prolonged decelerations of the fetal heart rate due to cord compression. This is usually the first sign of a cord prolapse.

Predisposing factors to cord prolapse

Any situation where the presenting part is neither well applied to the lower uterine segment nor well down in the pelvis may make it possible for a loop of cord to slip down in front of the presenting part. Such situations include:-

- Premature rupture of the amniotic sac
- Polyhydramnios (with a large volume of amniotic fluid volume, the cord may be forced out with the more forceful gush of fore-waters.
- Long umbilical cord
- Foetal malpresentation
- Multiple gestation
- Multiparity/ high parity - presenting part may not be engaged when the membranes rupture & malpresentation is more common

Differential Diagnosis

- Foetal membranes
- Footling breech or compound presentations.

Causes of Cord Prolapse

Note:

- Any condition in which the presenting part does not fit well into the lower uterine segment will permit the umbilical cord to slip down in front of the presenting part, for example, malpresentation and malposition, breech presentation, face and brow presentation, shoulder presentation resulting from transverse lie and occipito posterior position.

Causes of Cord Prolapse ctd

- Contracted pelvis: because the membranes may rupture before the head has engaged.
- Fetal malpresentations and malposition e.g breech presentation & O.P.P
- Certain placental and cord conditions like low implantation of the placenta, Marginal insertion of the cord and a long cord.
- High head: the membranes rupture spontaneously when the foetal still high
- Prematurity: there is more room between the small foetal head and the maternal pelvis.
- Polyhydramnios: the cord is likely to be swept down in a gush of liquor when the membranes rupture spontaneously.

Specific Management of Cord Prolapse

Emergency Treatment / immediate action

- The aim of management is to deliver the foetus as quickly as possible before hypoxia and death occurs due to cord compression.
- Immediately the diagnosis is made, the time should be noted & urgent assistance gathered immediately
- Inform the DR as soon as cord prolapse is noted & note the time when the prolapse is also noted
- Explain the findings and the emergency measures to the mother so as to obtain her consent for emergency caesarean section

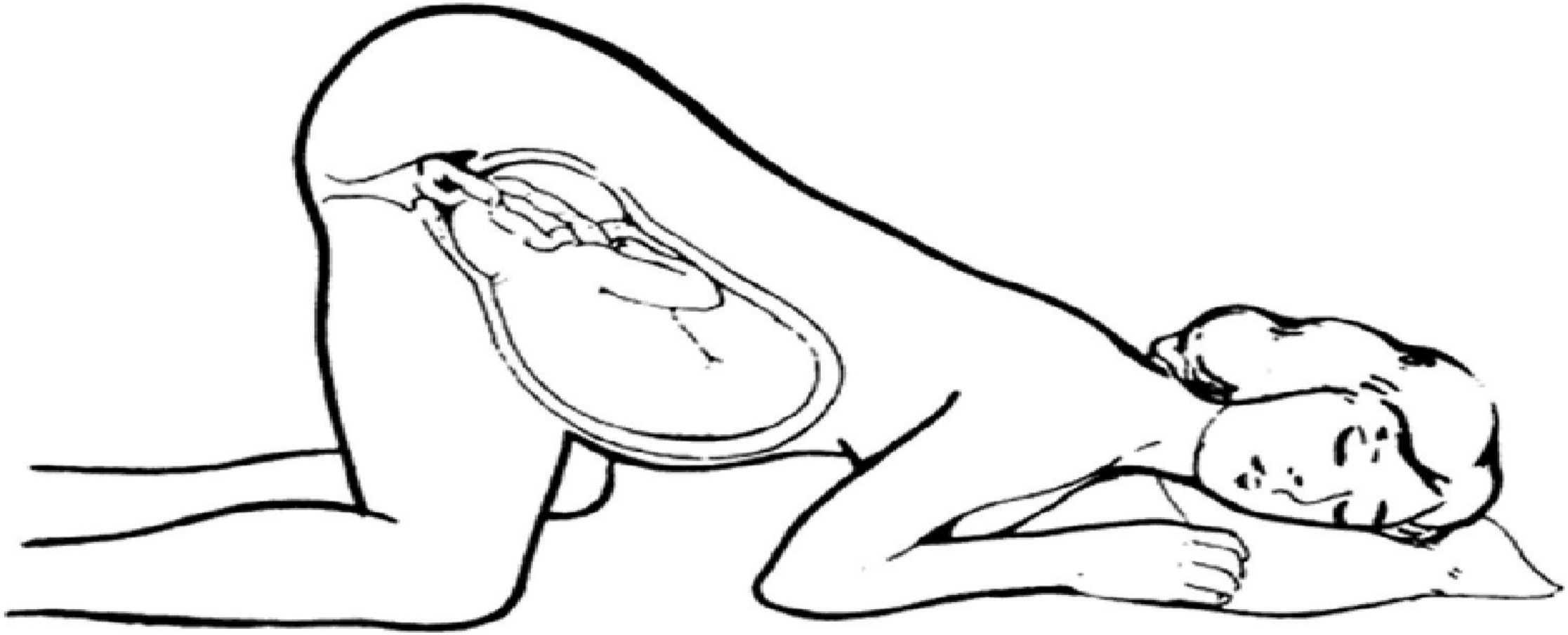
- If oxytocin infusion was on progress, it should be stopped
  - Give oxygen to the mother by mask at a rate of 4 litres/min to improve fetal oxygenation
  - Establish IV line with DNS/NS alternating with ringer's lactate
  - Monitor the foetal heart appropriately, every 5 minutes

Relieving pressure on the cord

- If the cord lies outside the vagina, it should be gently replaced to prevent spasm, to maintain temperature & prevent drying.
- Remove pressure on the cord by elevating the buttocks or putting patient in knee chest hence cause the fetus to gravitate towards the diaphragm.
- **Knee- chest position** helps the fetus to gravitate towards the diaphragm hence relieving pressure off the cord.
- Alternatively, the foot of the bed should also be raised **(Trendelenburg position)** to relieve compression of the cord

- Alternatively, the mother can be helped to lie on her left side, with a pillow elevating her hips (**exaggerated sims' position).**
- Keep your fingers in the vagina & hold the presenting part off the umbilical cord, especially during a contraction to prevent compression of the cord hence fetal hypoxia.

Knee chest position



- Alternatively, **urinary bladder filling** is also an effective technique for managing cord prolapse. A self retaining Foleys catheter is used to instill at least 500-700 mls of sterile saline into the bladder & clamped. Full bladder relieves pressure off the cord by elevating the presenting part 2cm above the ischial spines until delivery by caesarean section.
- Counsel mother on the condition of the foetus.
- Salbutamol or terbutaline can be given to decrease the contractions for tocolysis.

If the cord is pulsating and patient is in first stage of labour:

- Gently Replace the cord into the vagina.
- Transfer the mother to a healthcare facility capable of providing comprehensive emergency obstetric care for urgent caesarean section.
- Carry a delivery kit during transfer and maintain knee chest position during transfer.
- In the comprehensive Emergency Obstetric Care facility, deliver by emergency caesarean section if the baby is alive and the patient is not in perineal phase of second stage of labour.

If the cord is pulsating and patient is in perineal phase of second stage of labour:

- Rule out cephalopelvic disproportion and other malpresentations
- If in doubt about pelvic capacity, perform emergency caesarean section
- If pelvis and presentation are normal & patient is in the perineal phase of 2nd stage, deliver by assisted vacuum extraction (hasten 2nd stage by giving an episiotomy).

If the cord is not pulsating and patient is in first or second stage of labour:

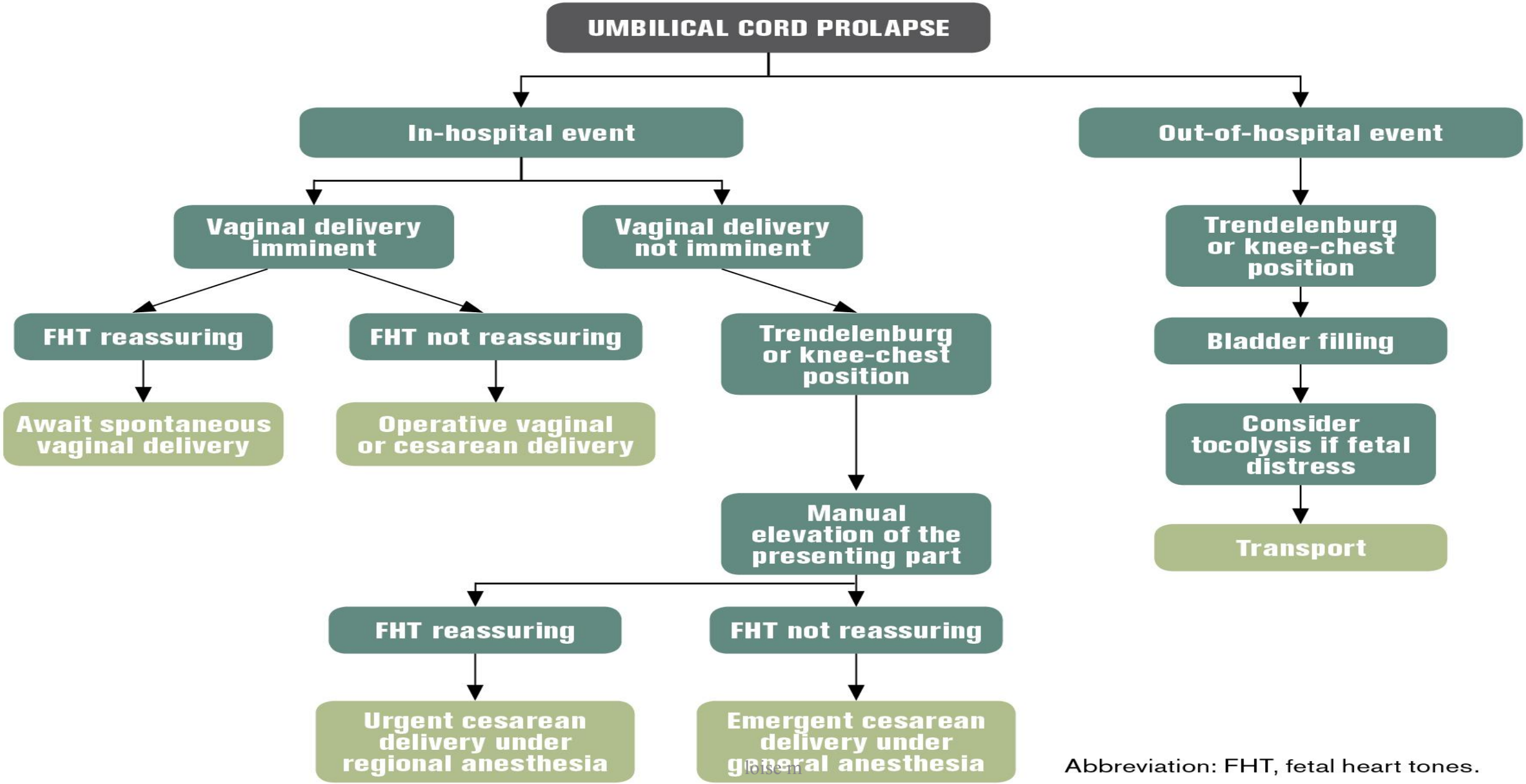
- Rule out any contraindication to vaginal delivery (e.g. CPD, mal-presentation)
- Allow normal labour to progress & she delivers a fresh still birth.

TABLE 2 Step-by-step management for UCP based on anticipated time to cesarean

	In-hospital event (<30 min until delivery)	Out-of-hospital event (>30 min until delivery)
Elevate the presenting part	Manually with 2 fingers or entire hand Consider knee-chest position	Initially elevate manually; consider bladder filling (if equipment available) with 500 mL saline Consider knee-chest position
Get help	Because provider is committed to elevating head, needs help for next steps	Because provider is committed to elevating head, needs help for next steps
Verify FHT present and viable gestational age	Monitoring may already be in place Delivering a previable or demised fetus via cesarean provides no benefit	Fetascope or Doppler Delivering a previable or demised fetus via cesarean provides no benefit
Cesarean	Get staff to prepare for emergent cesarean: notify anesthesia, pediatrics, and/or staff per routine system Consent patient during transport to OR	Call for emergent transport to hospital Notify hospital of impending arrival and need for preparations for surgical delivery on arrival Consent patient during transport
Tocolytics	If cesarean is happening quickly likely not needed	Terbutaline 0.25 mg SQ
Presence of cord out of the vagina	Replace cord into vaginal vault using wet gauze	Replace cord into vaginal vault using wet gauze
Once in delivery suite	Verify FHT, ideally get tracing to see if regional anesthesia is an option	Verify FHT (rule out demise in transit). If present, consider tracing to see if regional anesthesia is an option
When to cease elevation of the presenting part	Just before the uterine incision	If the bladder has been filled, release the clamp once the fascia has been entered

Abbreviations: FHT, fetal heart tones; OR, operating room; SQ, subcutaneous; UCP, umbilical cord prolapse

FIGURE 2 Management of umbilical cord prolapse



Abbreviation: FHT, fetal heart tones.

Subsequent Management

- Postpartum and neonatal care as appropriate
- Counsel mother on infant feeding and care, diet, family planning and sexual relationships
- Provide supportive counselling if baby is dead.

Precautions to take in order to avoid complications

Apply any of the following principles prior to definitive management:

- Avoid iatrogenic cord prolapse (correct skill for artificial rupture of membranes –ARM)
- Avoid amniotomy unless the fetal head is well engaged.
- Remove pressure from the cord
- Keep the cord warm
- Refer promptly
- Deliver quickly
- Always be prepared for neonatal resuscitation

END

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4. VASA PRAEVIA

DESCRIPTION

- This condition occurs when there is a velamentous insertion of a fetal blood vessel from the cord **lying over the cervical os, in front of the presenting part.**
- This endangers the life of the foetus, due to the risk of rupture of the blood vessels.
- Vasa praevia occurs when fetal vessels from a velamentous insertion of the cord or to a succenturiate lobe cross the area of the internal Cervical OS to the placenta

- Vasa praevia may be diagnosed antenatally using ultrasound
- Vasa praevia can be felt on vaginal examination when the membranes are still intact. A speculum examination should be undertaken if this is suspected

Ruptured vasa praevia

- When the membranes rupture in a case of vasa praevia, a foetal vessel may also rupture. This leads to **fetal exsanguination** (pure fetal blood loss to a degree sufficient to cause death) of the foetus unless birth occurs within minutes

DIAGNOSIS

- Fresh vaginal bleeding, especially if it commences at the same time as rupture of the membranes
- Fetal compromise dispropotionate to blood loss may be suggestive of vasa praevia

Specific Management of Vasa Praevia

- Call for urgent medical assistance
- Inform the doctor immediately.
- Monitor the foetal heartbeat continuously and, if the foetus is alive, administer oxygen to the mother 4-6L/min and prepare her for an emergency caesarean section.
- Be prepared for neonatal resuscitation
- A paediatrician should be present at the time of delivery of the baby.
- The baby's haemoglobin level should be estimated and transfusion commenced immediately after delivery.

NB: There is high mortality rate associated with this condition

END

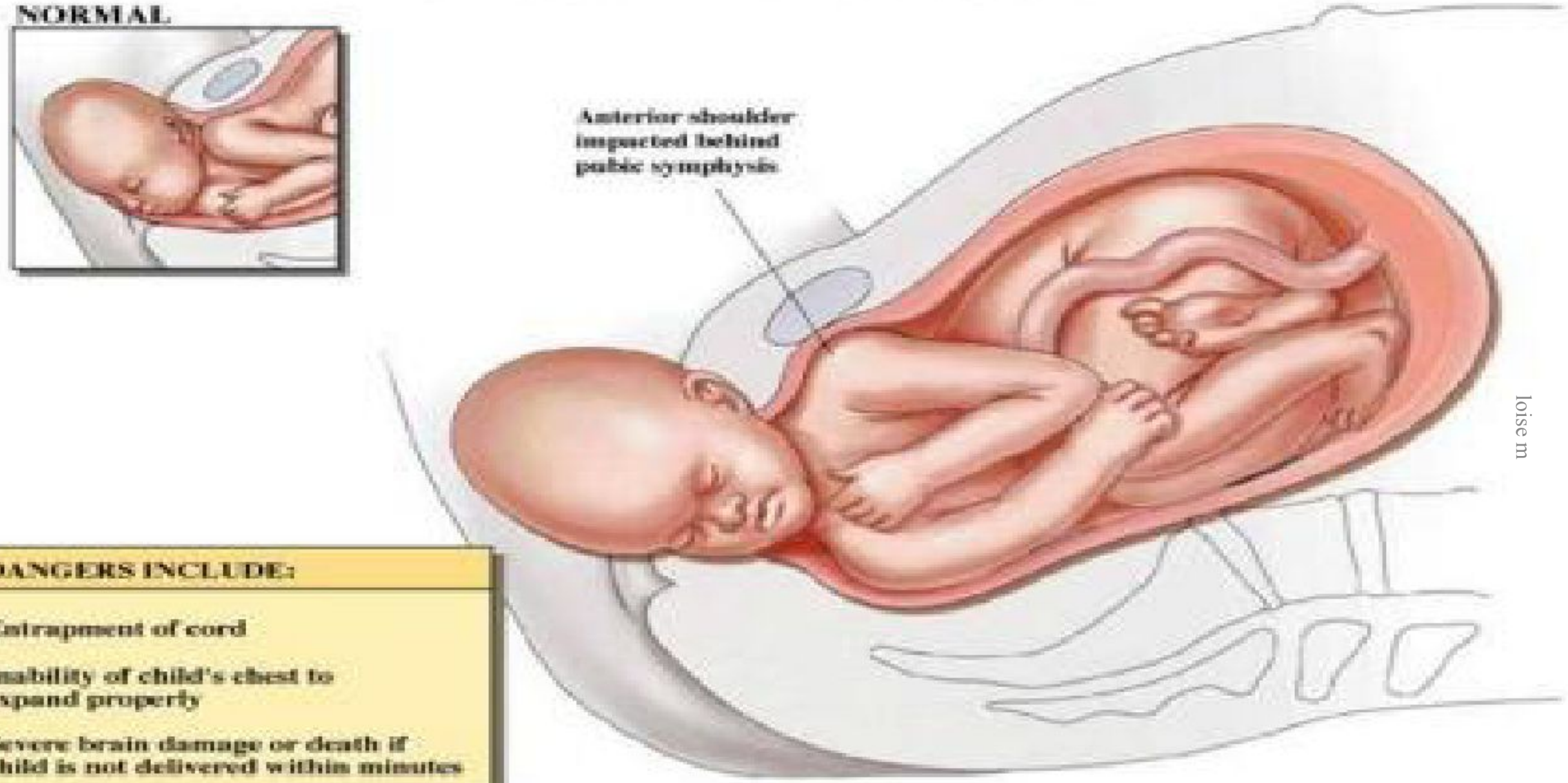
5. SHOULDER DYSTOCIA

DEFINITION: This describes the **Impaction** of the anterior shoulder against the symphysis pubis **after delivery of the fetal head.**

Shoulder dystocia is said to have occurred when there is:

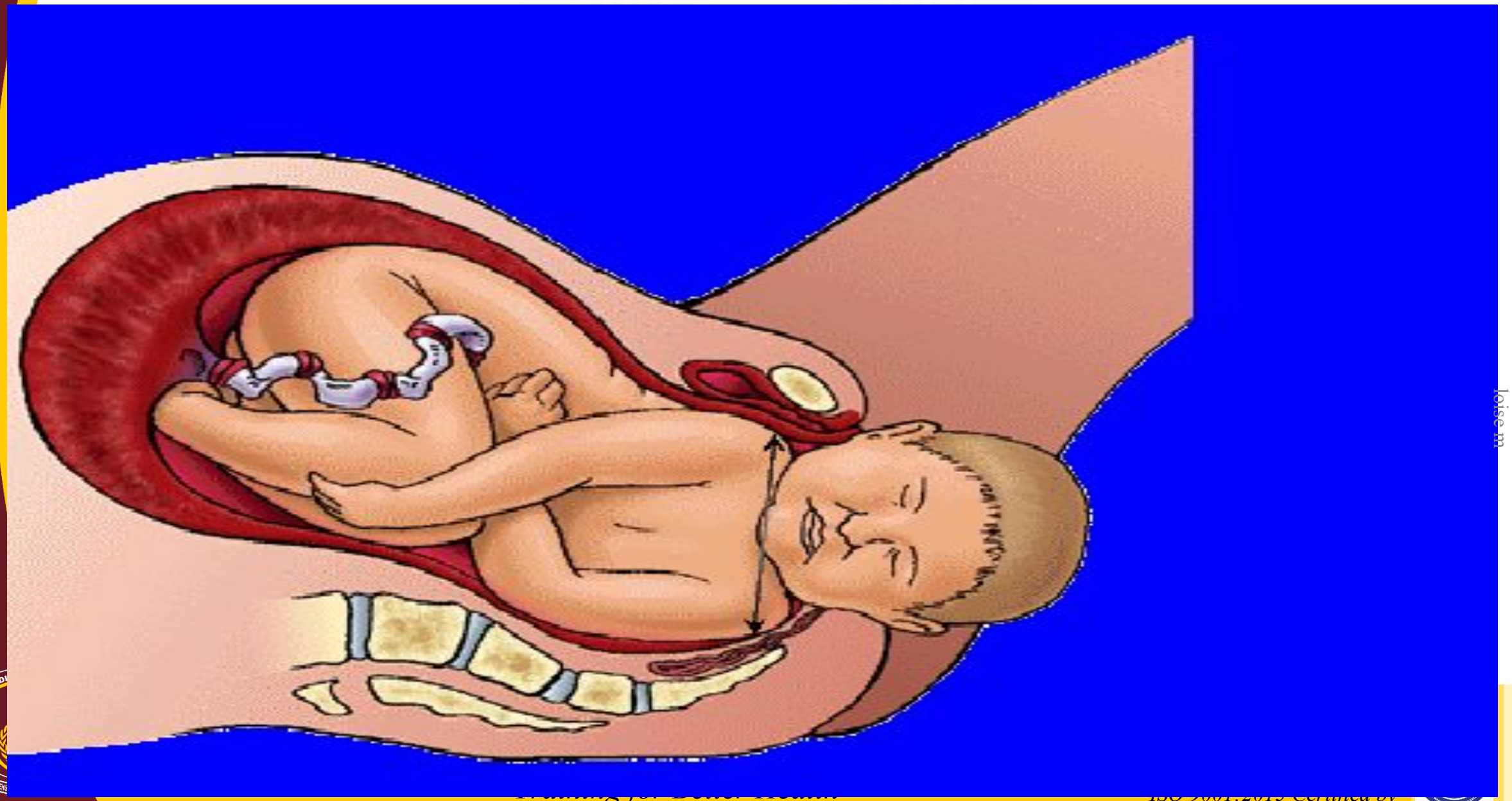
- Failure of the shoulders to rotate spontaneously into anterior, posterior diameter of the pelvis outlet after delivery of the head
- The anterior shoulder becomes trapped behind or on the symphysis pubis while the posterior shoulder may be in the hollow of the sacrum or high above the sacral promontory

SHOULDER DYSTOCIA



- Usually the shoulders enter the pelvis in an oblique diameter and as labour progresses, the shoulders descend and the bisacromial diameter rotates into the anteroposterior diameter of pelvis.
- Shoulder dystocia occurs when the shoulders attempt to enter the pelvis with the bisacromial diameter in the anteroposterior diameter of the inlet instead of the oblique diameter.
- Only very rarely do both shoulders impact above the brim. Usually the posterior shoulder can negotiate past the sacral promontory but the anterior one gets impacted against the pubic symphysis

Shoulder dystocia



INCIDENCE

- Shoulder dystocia is not a common emergency. The incidence is reported as varying between 0.37% and 1.1%

PREDISPOSING FACTORS

Maternal:

- Abnormal pelvic anatomy
- Gestational diabetes/ maternal obesity
- Post-dates pregnancy
- High parity
- Maternal age > 35 yrs
- Previous shoulder dystocia
- Short stature= contracted pelvis
- High pre pregnancy weight and increased weight gain (BMI >25)= maternal obesity

Fetal;

Suspected macrosomia

Labor related ;

- Assisted vaginal delivery (forceps or vacuum)
- Protracted/prolonged active phase of first-stage labor
- Protracted second-stage labour
- Prior shoulder dystocia

DIAGNOSIS

The following signs are indicative of possible shoulder dystocia:

- The shoulders fail to deliver spontaneously shortly after the foetal head.
- The fetal head retracts against perineum ***("turtle sign")***
- The face of the baby becomes erythematous, red and puffy - indicative of facial flushing.
- Gentle traction does not effect delivery

Warning signs of shoulder dystocia in labour

- There is slow advance of the head and **failure of the head to rotate externally following restitution** (this confirms the diagnosis)
- There is **Slow crowning** of the head during delivery
- There are difficulties in extension of the face during delivery of the head
- There is slow restitution of the occiput to the lateral position
- Recoil of the head back against the perineum (**turtle's sign**)

- Two main signs of shoulder dystocia are:
  - Baby's body does not emerge with standard moderate traction & maternal pushing after delivery of baby's head
  - "Turtle Sign" –head suddenly retracts back against mother's perineum after it emerges from vagina

SPECIFIC MANAGEMENT OF SHOULDER DYSTOCIA

- Shoulder dystocia **is an obstetrical emergency**, with foetal demise occurring within about 5 minutes if the neonate is not delivered, due to compression of the umbilical cord within the birth canal, hence hypoxia.
- Shoulder dystocia is a frightening experience for the mother, her partner and for the midwife. The midwife should keep calm & try to explain to the mother as much as possible to ensure full cooperation for the manoeuvres that will be needed to complete the birth
- Start the mother on oxygen via a face mask at a rate of 4-6 litres/minute
- She should have an Intravenous line in situ with dextrose running

- Ensure that there is a ready working neonatal resuscitative equipment
- Prepare for resuscitation of the mother also.
- The approach to the specific management of shoulder dystocia can further be classified into **non- invasive procedures** versus the **invasive procedures**, with the former being the priority management approach thus, the principle of using the simplest manoeuvres first should be applied.

1. Non invasive procedures

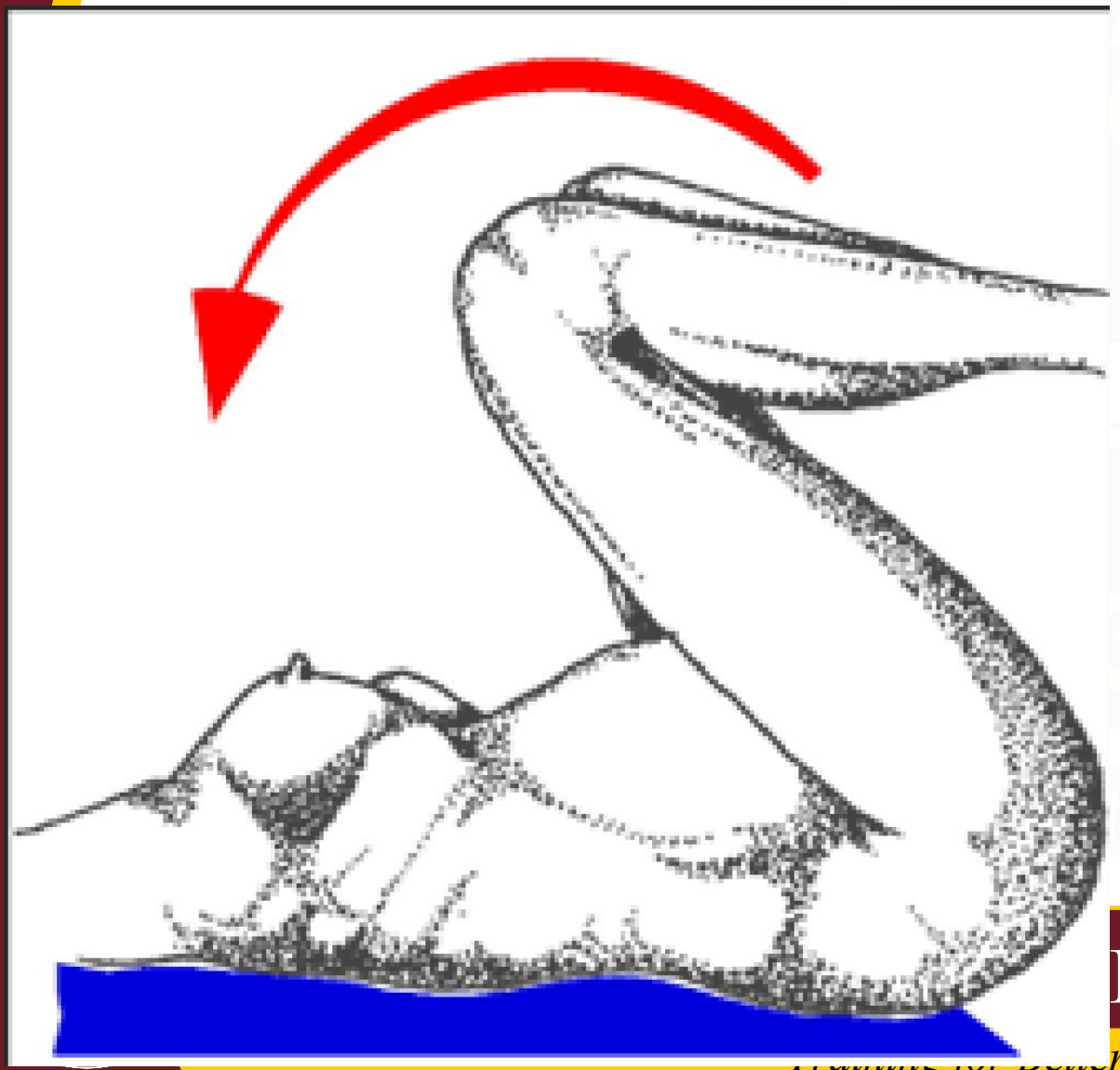
a) Change in maternal position

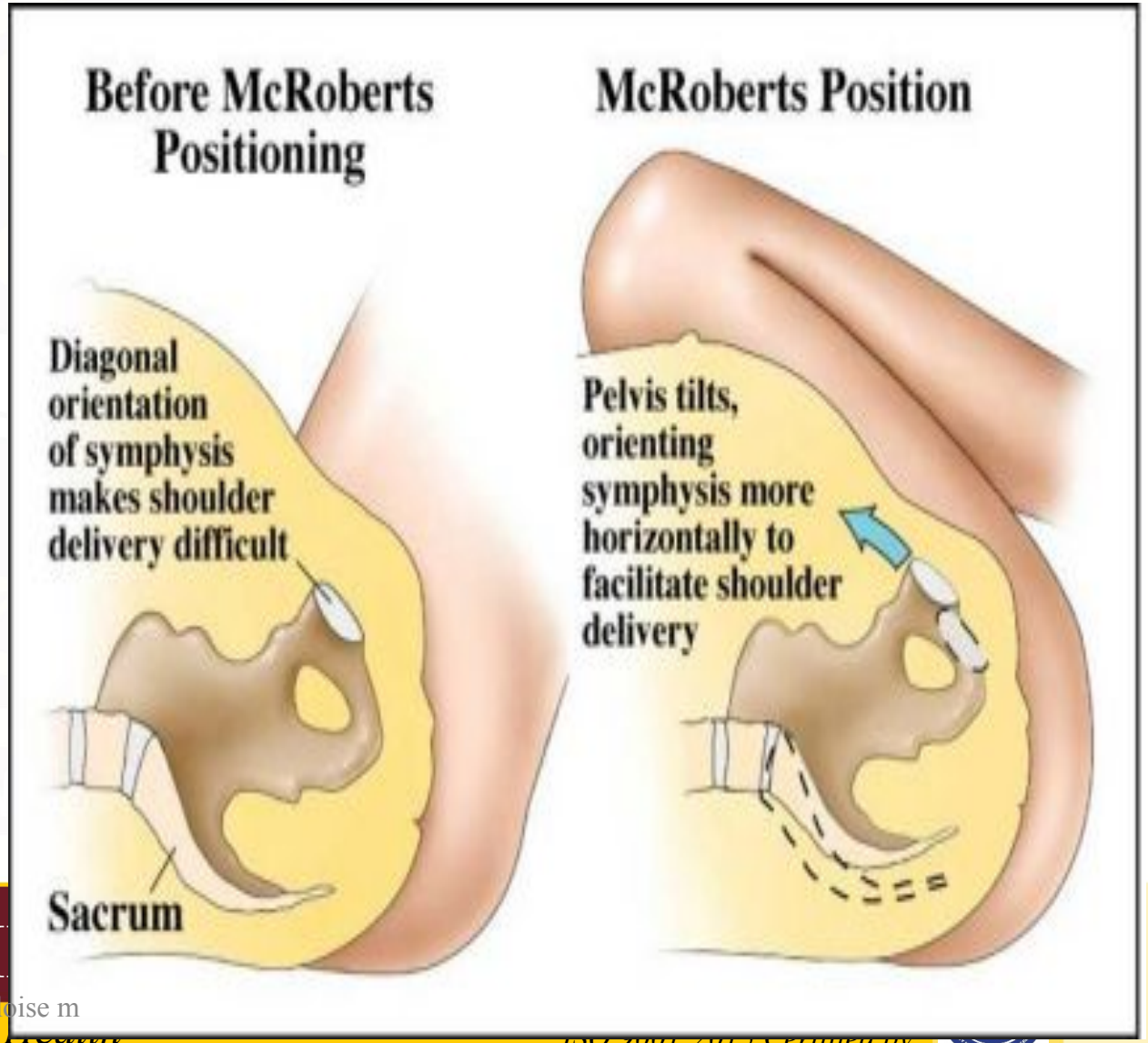
- Any change in maternal position may be useful to help release the fetal shoulders as shoulder dystocia is a mechanical obstruction.

b) The McRoberts Manoeuvre

- Call for two assistants to help and move the patient's buttocks immediately to the edge of the bed.
- Then help the woman to lie flat and to bring her knees up to her chest as far as possible
- This maneuver will rotate the angle of the symphysis pubis superiorly and use the weight of the mother's leg to create gentle pressure on her abdomen, releasing the impaction of the anterior shoulder.

Mc Roberts maneuver

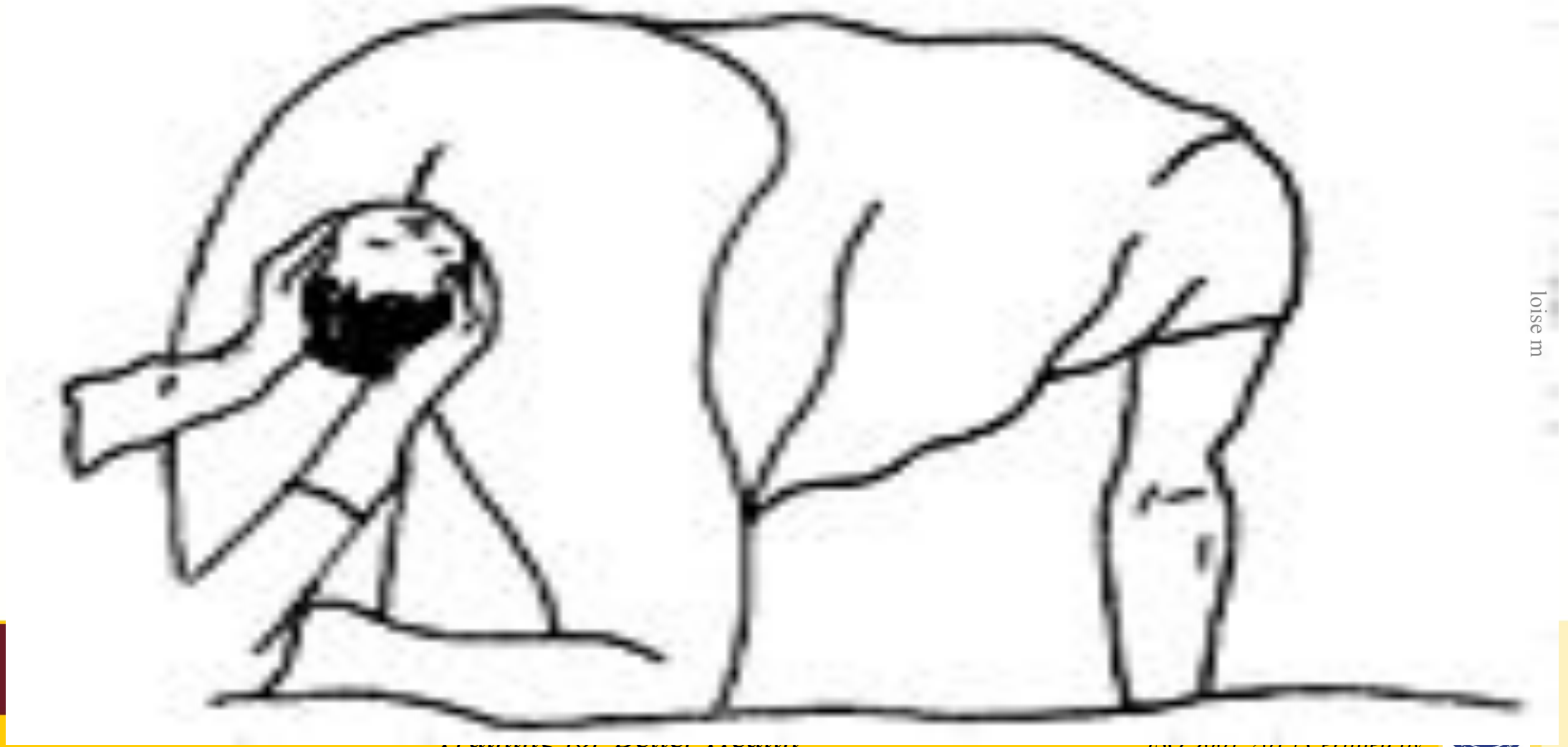




c) All fours position (Gaskin Maneuver)

- The all fours position (also known as Gaskin maneuver) is achieved by assisting the mother onto the hands and knees, the act of turning the mother may be the most useful aspect of this maneuver
- The patient rolls from her existing position to the all-fours position. This usually increases the pelvic diameters. Often, the shoulder will dislodge during the act of turning.
- In addition, once the position change is completed, gravitational forces may aid in the dis-impaction of the fetal shoulders.

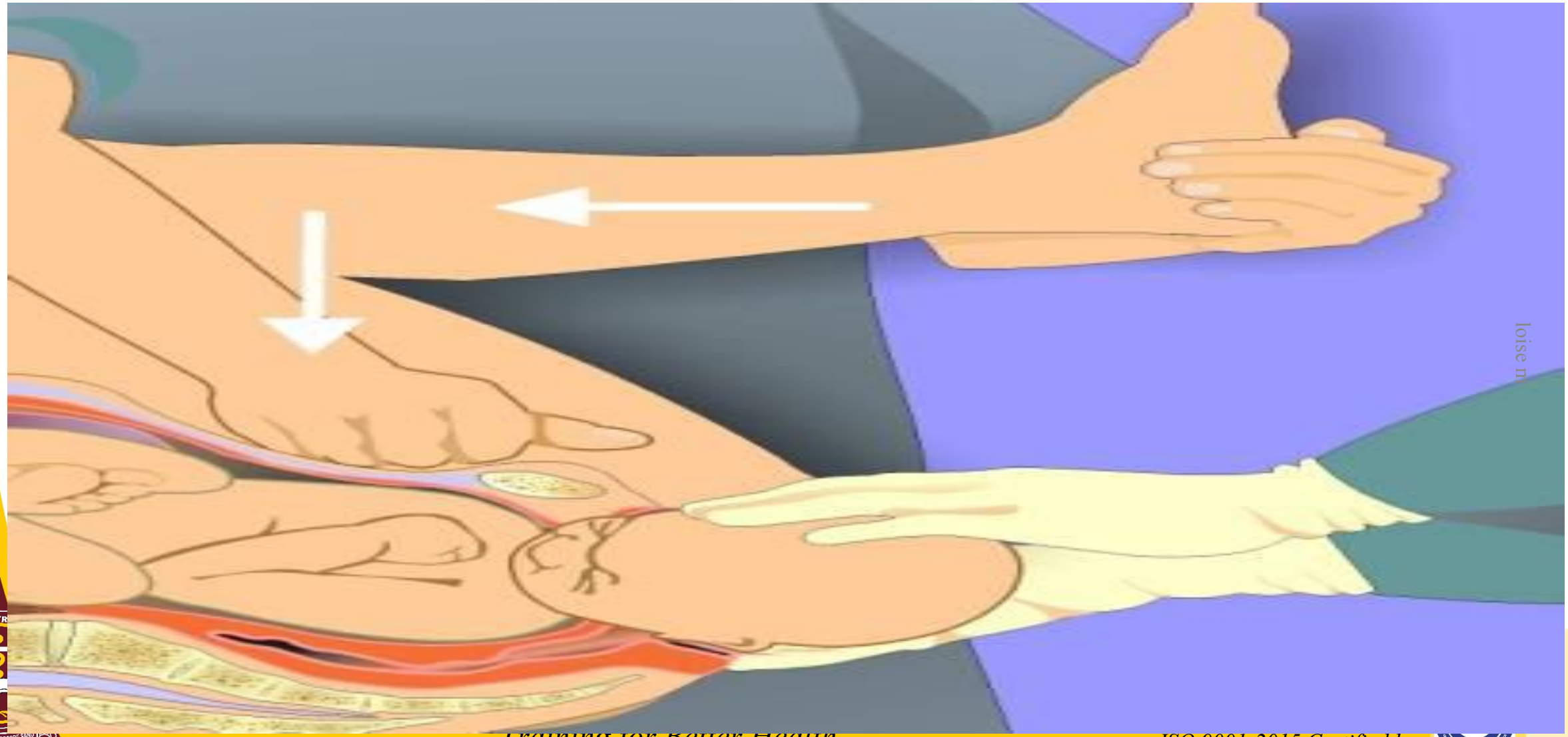
Gaskin maneuver



d) Supra pubic pressure

- Pressure should be exerted on the fetal shoulder on the side of the fetal back and towards the fetal chest, just above the symphysis pubis.
- This maneuver may help to adduct the shoulders and push the anterior shoulder forward and under the symphysis pubis into the larger oblique or transverse diameter of the pelvis

Application of supra- pubic pressure



2. Manipulative Procedures

- Where the non-invasive procedures have not been successful, direct manipulation of the fetus must now be attempted.
- These maneuvers attempt to manipulate the fetus to rotate the anterior shoulder into an oblique plane and under the maternal symphysis pubis.

a) Positioning of the mother

- The McRoberts position can be used or the mother be placed in lithotomy position with the buttocks well over the end of the bed so that there is restriction of the sacrum.

b) Episiotomy

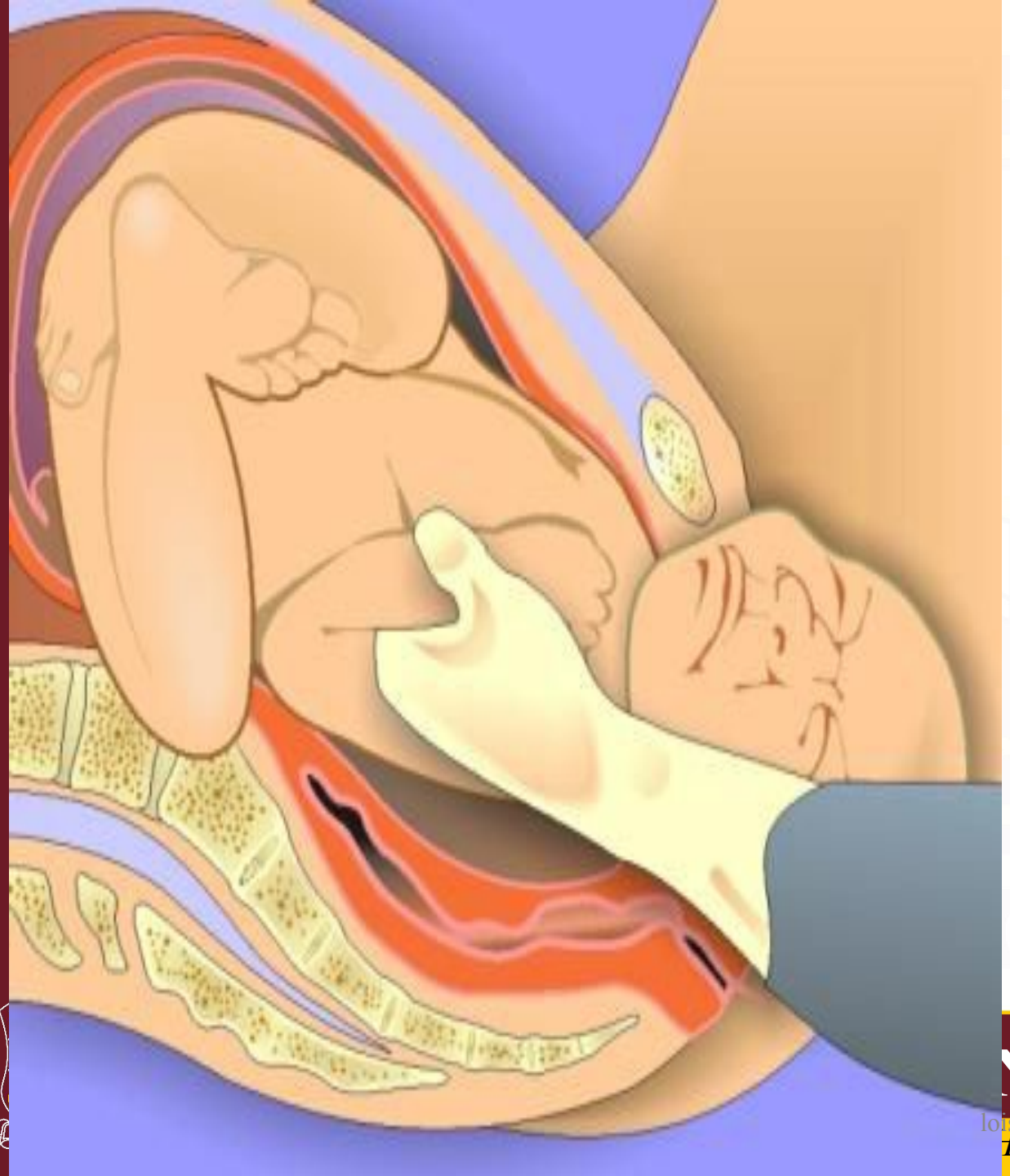
- The problem facing midwife is an obstruction at the pelvic inlet which is a bony dystocia, not an obstruction caused by soft tissue. Although the episiotomy will not help to release the shoulders , the midwife should consider the need to perform one.

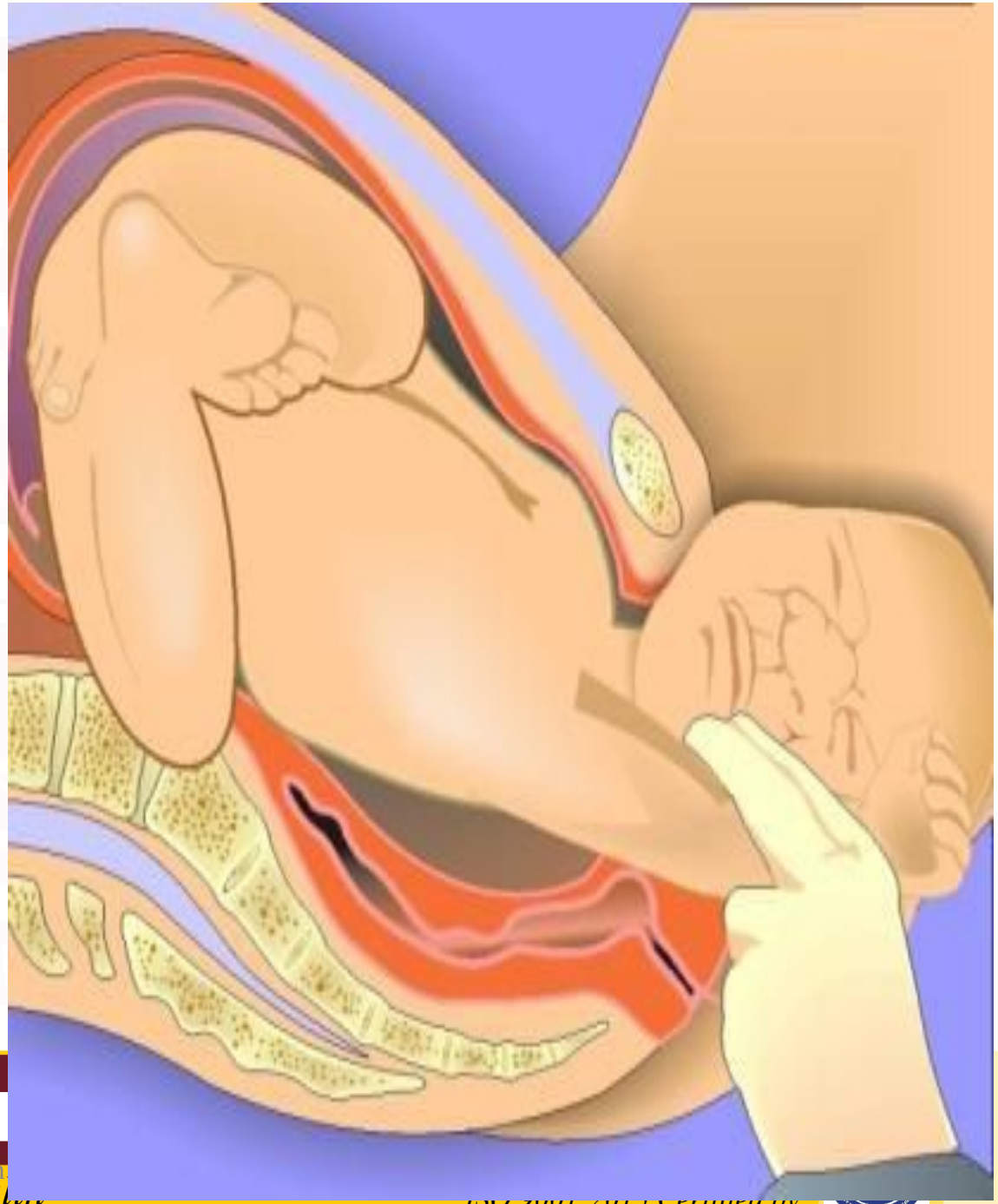
c) Rubin's maneuver

- The midwife identifies the posterior shoulder on vaginal examination, then tries to push the posterior shoulder in the direction of the fetal chest, thus rotating the anterior shoulder away from the symphysis pubis. By adducting the shoulder this maneuver reduces the 12cm bisacromial diameter.

d) Delivery of the posterior arm

- Removing the posterior arm from the birth canal also shortens the bisacromial diameter, allowing the fetus to drop into the sacral hollow, thus freeing the impaction.
- The midwife inserts her hand into the vagina, making use of the space crated by the hollow of the sacrum
- Then, two fingers splint the humerus of the posterior arm, flex the elbow and sweep the forearm over the chest to deliver the hand
- The elbow then should be flexed and the forearm delivered in a sweeping motion over the fetal anterior chest wall. Grasping and pulling directly on the fetal arm may fracture the Humerus.





e) Wood's maneuver

- The midwife inserts her hands into the vagina and identify the fetal chest. Then by exerting pressure onto the posterior shoulder forward and make it anterior. Its important to hold both the hands and the head together to facilitate rotation and reduce the risk of injury. Rotation is by rotary pressure on the shoulders.
- Although this maneuver does abduct the shoulders, it will rotate the shoulders into a more favorable diameter and enable the midwife to complete the birth.

- f) **Reverse woodscrew maneuver** When this fails, the Reverse woodscrew maneuver may be applied; In this instance the posterior shoulder is approached from behind and rotated In the opposite direction from Rubin or woodscrew maneuver

- A common management algorithm is **ALARMER**; which stands for:
- **A**sk for help. This involves requesting the help of an obstetrician, a paediatrician for subsequent resuscitation of the infant and anaesthesia in case if surgical intervention.
- **L**eg hyper flexion (**McRoberts manoeuvre**)
- **A**nterior shoulder disimpaction (apply suprapubic pressure)
- **R**ubin manoeuvre
- **M**anual delivery of posterior arm
- **E**pisiotomy
- **R**oll over on all fours (**Gaskin Manoeuvre**)

- Also commonly used is the **HELPERR** Mnemonic. This is a clinical tool that offers a structured framework for coping with shoulder dystocia. These manoeuvre are designed to do one of three things:
  - Increase the functional size of the bony pelvis through flattening of the lumbar lordosis and cephalad rotation of the symphysis (i.e., the McRoberts manoeuvre);
  - Decrease the bisacromial diameter (i.e., the breadth of the shoulders) of the foetus through application of suprapubic pressure (i.e., internal pressure on the posterior aspect of the impacted shoulder);
  - Change the relationship of the bisacromial diameter within the bony pelvis through internal rotation manoeuvre.

THE HELPERR MNEMONIC

- ✔H Call for help.
- ✔E Evaluate for episiotomy.
- ✔L Legs (the McRoberts maneuver)
- ✔P Suprapubic pressure
- ✔E Enter maneuvers (internal rotation)
- ✔R Roll the patient and try again.
- ✔R Remove the posterior arm.

MANOEUVRES OF LAST RESORT FOR SHOULDER DYSTOCIA

Deliberate clavicle fracture

- Direct upward pressure on the mid-portion of the fetal clavicle; reduces the shoulder-to-shoulder distance.

Zavanelli maneuver

- Cephalic replacement followed by cesarean delivery; involves rotating the fetal head into a direct occiput anterior position, then flexing and pushing the vertex back into the birth canal, while holding continuous upward pressure until cesarean delivery is accomplished.

- Tocolysis may be a helpful adjunct to this procedure, although it has not been proved to enhance success over cases in which it was not used.
- An operating team, anesthesiologist, and physicians capable of performing a cesarean delivery must be present, and this maneuver should never be attempted if a nuchal cord (a loop of umbilical cord around the fetal neck) previously has been clamped and cut.

Use of General anesthesia

- Musculoskeletal or uterine relaxation with halothane (Fluothane) or another general anesthetic may bring about enough uterine relaxation to affect delivery. Oral or intravenous nitroglycerin may be used as an alternative to general anesthesia.

ABDOMINAL SURGERY WITH HYSTEROTOMY

- General anesthesia is induced and cesarean incision performed, after which the surgeon rotates the infant transabdominally through the hysterotomy incision, allowing the shoulders to rotate, much like a woods corkscrew maneuver. Vaginal extraction is then accomplished by another physician.

SYMPHYSIOTOMY

- Intentional division of the fibrous cartilage of the symphysis pubis under local anesthesia has been used more widely in developing countries. It should be used only when all other maneuvers have failed and capability of cesarean delivery is unavailable

COMPLICATIONS OF SHOULDER DYSTOCIA:

Classified into maternal and fetal complications

Maternal

- Postpartum hemorrhage –commonest (11%)
- Rectovaginal fistula becoz of a difficult delivery.
- Symphyseal separation or diathesis, with or without transient femoral neuropathy
- Third- or fourth-degree episiotomy or tear with anal sphincter damage
- Uterine rupture
- Soft tissue injuries

Fetal

- Brachial plexus palsy- commonest 3-15% especially erb's palsy & klumpke's paralysis
- Clavicle fracture
- Fetal death
- Fetal hypoxia, with or without permanent neurologic damage
- Fracture of the Humerus

Prevention

- If shoulder dystocia is anticipated on the basis of risk factors, preparatory tasks can be accomplished before delivery. Key personnel can be alerted, and the patient and her family can be educated about the steps that will be taken in the event of a difficult delivery.
- The patient's bladder should be emptied, and the delivery room cleared of unnecessary clutter to make room for additional personnel and equipment.
- Glycaemia control and weight control for at risk patients is also helpful in preventing foetal macrosomia. Patients may also be encouraged to deliver in alternative positions that favour increased pelvic diameters.

END

Shoulder Dystocia Emergency Management

Avoid the 3' Ps'
- *pushing*
- *pulling*
- *pivoting*

Help: initiate emergency code
Get appropriate assistance

↓

Evaluate need for episiotomy

↓

McRoberts manoeuvre

↓

Suprapubic pressure
Rubin 1 manoeuvre

↓

YES | SUCCESSFUL | NO

↓

Enter the pelvis
- Rubin 2 manoeuvre
- Add wood screw
- Reverse wood screw

↓

Deliver posterior arm

Single practitioner or mobile patient
- **All fours position**
  (± delivery of posterior arm)
- **Lateral position**

In extreme situations and dependent on birth setting, try —
a) Intentional fracture of clavicles
b) Symphysiotomy
c) Zavanelli manoeuvre

Documentation of events:
Define the severity of the shoulder dystocia (relative to the manoeuvres required).
Document events, management and their timing.

Be prepared for sequelae:

Mother:	Postpartum haemorrhage
	Perineal trauma
	Psychological trauma
Baby:	Birth trauma
	Hypoxia

Assisted births

GENERAL OBJECTIVE:

- By the end of this session, the student nurse should be able to describe and manage the various methods of delivery Inco-operated when the mother is unable to give birth without medical or surgical assistance.

SPECIFIC OBJECTIVES:

To describe and manage clients undergoing the following procedures/operations:

- Caesarean section
- Vacuum extraction
- Forceps delivery
- symphysiotomy

CAESAREAN SECTION

DEFINITION:

- A Caesarean section is a surgical procedure in which one or more incisions are made through a mother's abdomen (laparotomy) and uterus (hysterotomy) to deliver one or more babies, or, rarely, to remove a dead foetus and the products of conception (placenta & the membranes) thru an incision on the abdominal wall & the uterus.
- Surgical delivery of a previable foetus using Caesarean section procedures is termed **hysterotomy.**

INDICATIONS OF A C/S

- These may be divided into maternal, foetal or combined.

A) Maternal Indications

- Previous uterine scar
- Previous Lower Uterine Segment C/S due to a recurring reason e.g. contracted pelvis or a previous scar with a concomitant obstetric complication
- History of two (2) or more previous C/S
- After High vertical /classical C/S
- Previous ruptured uterus
- Previous myomectomy
- Severe Pre-eclampsia (PET) or eclampsia with unfavourable cervix

- Life-threatening antepartum haemorrhage (APH) or Placenta praevia type IIb-IV
- Contracted pelvis (congenital, fracture)
- Following repair of obstetric fistula (VVF, RVF)
- Medical illness; severe heart or respiratory disease, severe hypertension, cerebral aneurysm, musculoskeletal disorders, severe neurological disorders (C/S is then safer than vaginal delivery).
- Prolonged labour, uterine inertia, cervical dystocia and failed induction
- Pelvic tumours obstructing labour (fibroids, entrapped ovarian tumour, genital warts)
- Invasive carcinoma of the cervix
- Infections: (HIV, active Herpes Simplex Virus II, Human Papilloma Virus, Hepatitis B Virus)

Relative indications

C/ Section may also be considered in the following conditions

- Postdatism
- Elderly primigravida
- Prior infertility
- Bad obstetric history

B) Foetal

- Foetal distress /Poor biophysical profile score
- Malpresentation and malposition;
- Cord presentation and/or cord prolapse
- Multiple pregnancy: (1st non-cephalic, retained 2nd twin, extreme prematurity, discordant foetal growth, single amniotic sac, conjoined twins, >2 foetuses)
- Foetal Macrosomia: estimated weight > 4000g
- Foetal anomalies: (e.g. hydrocephalus, sacral tumour, Conjoined twins)
- Others: (e.g. Intrauterine Growth Retardation, oligohydramnios)

C) Feto-maternal

- Failure to progress in labour
- Perimortem C/ Section
- Lack of competency by service provider in assisted delivery techniques

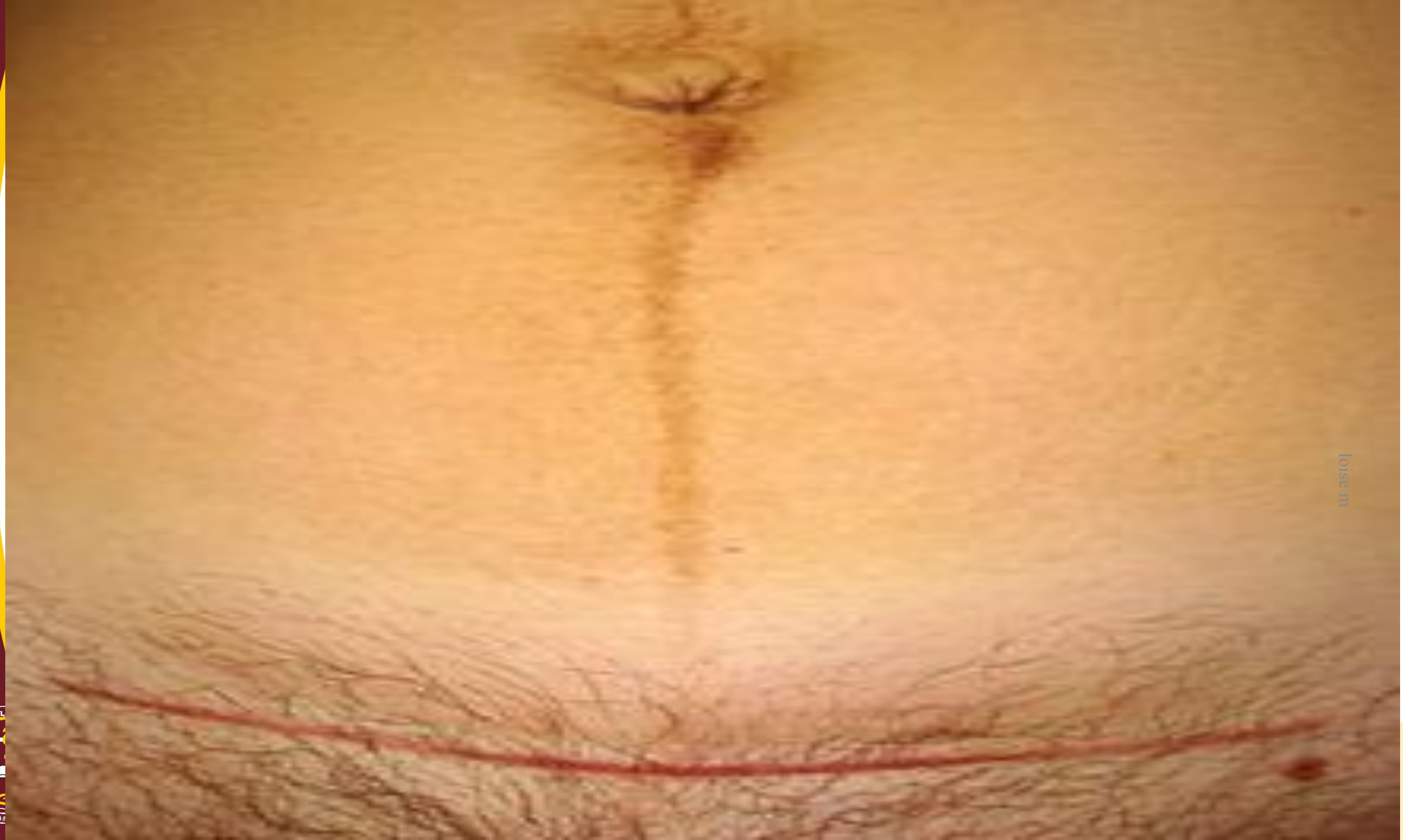
Classification of C/Section

- Caesarean section can be classified into two. These classifications are based on
  1) **Type**/ site where incision is made
  2) The **timing**/ the prevailing circumstances where the operation is required.

Types of Caesarean Section

Based on type of uterine incision ;

- Lower uterine segment c/section (bikini line incision), which is the operation of choice. The lower segment of the uterus forms after 32 weeks gestation & is less muscular than the upper segment of the uterus. It also heals better.
- Classical section
- Extraperitonial caesarean section
- Caesarean hysterectomy



Low transverse incision

Low vertical incision

Classical incision

loise m

Advantages of lower segment section are;

- Blood loss is minimal
- Incision is easy to repair & heals better
- It is associated with reduced incidence of dehiscence of the uterine scar in subsequent pregnancy.
- The risk of rupture during labour is lessened as the lower uterine segment has less uterine activity
- The operation is associated with lower incidence of postoperative infection

Classical Caesarean Section

- Also known as **vertical incision**
- The incision is made directly into the wall of the body of the uterus. The procedure is rarely performed
- Its indications are:
  - Gestation of less than 32 weeks (i.e before the lower segment has formed)
  - Placenta previa which is Anteriorly situated
  - An hour glass contraction (constriction ring)
  - Presence of a large fetus with the shoulder impacted in the maternal pelvis
- It is always performed through a midline incision

Extra Peritoneal Caesarean Section Procedure

- Access to the lower uterine segment is secured by appropriate dissection of tissues around the bladder to by pass the peritoneal cavity and the baby is extracted.
- As the peritoneal cavity is not disturbed there is no risk of introducing infection from infected liquor or infection from the uterus

Caesarean Section Hysterectomy

This is also known as Porro's Operation.

- The removal of the uterus follows after caesarean section, due to other conditions of the uterus; such as placenta accreta, multiple fibroids, tumours of the uterus and so on.
- On rare occasions and in conjuction with other gynaecological disorders this operation may be used for sterilisation purposes

Elective Caesarean Section

- **Based on timing of the operation, C Section maybe:**
  - Elective C/S (planned procedure) or
  - Emergency C/S

The decision to deliver by caesarean section is made during pregnancy before the onset of labour

Some reasons for this decision are absolute while others depend on combination of factors and the opinion of the obstetrician

Definite indications of an elective c/section are;

- CPD
- Major degree of placenta praevia
- High order multiple pregnancy with three or more foetuses

Other possible indications of an elective c/s are;

- Breech presentation
- Moderate to severe pre-eclampsia
- A medical condition that warrants the exclusion of maternal effort
- DM
- Intrauterine growth restriction
- APH
- Certain foetal abnormalities e.g. hydrocephalus

- If the indication for c/s pertains specifically to one pregnancy, such as placenta praevia, vaginal delivery may be expected on subsequent occasions
- Certain conditions warrant repeated c/s. CPD due to contracted pelvis will recur & a uterus which has been scared twice or more carries a greater risk of uterine rupture

Emergency caesarean section

- This is carried out when adverse conditions develop during pregnancy or labour
- The psychological preparation of the mother for the operation is of paramount importance. You should be prepared to deal with the different feelings of different mothers.

Definite Indications of an emergency caesarean section

- APH
- Cord prolapse
- Uterine rupture
- CPD diagnosed in labour
- Fulminating PET
- Eclampsia
- Failure to progress in the first or second stage of labour
- Foetal compromise/distress if delivery is not imminent

Pre-Operative Care For Elective Caesarean Section

The following are characteristic of pre-operative care during an elective caesarean section:

- The doctor explains the procedure to the mother and her partner and consent is obtained.
- Physical examination is carried out to make sure the mother is fit for general anaesthesia
- Blood for haemoglobin, cross match and two pints of blood are kept ready.
- Antacid therapy. It is a common practice for women with any risk factors to receive antacid therapy throughout labour & if not given, it should be administered immediately a decision for c/s is made. In order to minimize the secretion of gastric acid the anaesthetist may also prescribe preparations such as ranitidine

- Mother is admitted and not fed overnight
- A bath is taken in the morning.
- Pubic shave is also done
- Bowel care. If c/s is elective, two glycerine suppositories are administered on the evening b4 operation in order to empty the rectum
- A retention catheter is inserted to ensure an empty bladder throughout the operation.
- An intravenous infusion is started as per prescription.
- Valuables are kept safely.
- Nail polish, dentures, glasses or contact lenses are removed.

- Theatre gown, leggings and scarf are put on the mother.
- Pre-operative medication is usually administered half an hour before the operation (1m atropine and analgesic).
- Foetal heart, foetal position, and presentation are determined.
- Maternal observations are recorded: pulse, respiration, blood pressure and temperature.
- A urinalysis is carried out for albumin

Post Operative Care

- This is the same care given to any woman who has undergone a major abdominal operation.
- Observations. Bp & pulse are recorded every ¼ hour in the immediate recovery period
- Temperature is recorded every 2 hrs
- Inspect the wound every ½ hour to detect any bloodloss
- Inspect the lochia. Drainage should be small initially
- Nurse the pt in the left lateral/recovery position until she is fully conscious since the risk of airway obstruction or regurgitation & silent aspiration of the stomach contents are still present

- Analgesia is prescribed & is given as required
- Fluids are introduced gradually followed by a light diet
- The mother should breast feed as soon as her condition permits. If for any reason she cannot breast feed, the breast should manually be expressed from the third day to prevent engorgement of the breasts.
- Four hourly vulva swabbing should be taken if the patient is confined to bed
- Prophylactic antibiotics should be administered to prevent infections

Care in the postnatal ward

- When mother & baby are transferred to the postnatal ward, check BP, pulse & temp every 4hrs
- Ct intravenous infusion
- The urinary catheter remains in situ until the woman is ambulant
- Observe the lochia & the wound every 4 hrs initially

- Ensure that the mother has adequate rest
- Encourage the woman to move her legs & perform legs & breathing exercises
- The physiotherapist should teach chest physiotherapy
- Prophylactic low dose heparin is often prescribed

- Monitor urinary output carefully both b4 & after removal of catheter. Women may have difficulty in micturition initially & the bladder may be incompletely emptied. Any haematuria must be reported to the doctor
- Give appropriate analgesia as frequently as possible. Intramuscular opiates are given within the 1st 48hrs & thereafter oral analgesics
- Observe the mother when breastfeeding & assist where necessary

Complications of C/S

Maternal Complications

- *Immediate:*
  - Anaesthetic - difficult intubation, Mendelson's syndrome, hypotension, spinal headache
  - Haemorrhage – lacerations, uterine atony, placenta praevia or accreta
  - Complications of blood transfusion
  - GI and urinary tract injuries
  - Death (risk of death is 7x that of vaginal delivery)
- *Late*
  - General post-op. complications; atelectasis, pneumonia, paralytic ileus, UTI, thromboembolism
  - Infection (endometritis, wound infection)
  - Intestinal obstruction (adhesions especially after classical)

- Uterine scar dehiscence /rupture in subsequent pregnancy (10x more likely in classical than LUSCS)
- Chronic abdominal pain

- ***Fetal Complications***
  - Prematurity
  - Respiratory depression
  - Intracranial haemorrhage (due to small incision)

END

VACUUM EXTRACTION (VENTOUSE DELIVERY)

INTRODUCTION

- Younge invented the basic idea for the vacuum extractor in 1706 when he used a glass suction cup. In 1849, Simpson designed the instrument, but at the time it was hardly used.
- In 1774, Mostron introduced the modern vacuum extractor.
- There are opinions about the value in assisting Vaginal delivery by this method and it is rarely used these days. However, it is still useful in some remote areas, where referral to a well equipped hospital may take longer.

DEFINITION:

- **Ventouse** is a vacuum device used to assist the delivery of a baby when the second stage of labour has not progressed adequately. It is an alternative to a forceps delivery and caesarean section. It cannot be used when the baby is in the breech position or for premature births.
- This technique is also called **vacuum-assisted vaginal delivery** or **vacuum extraction** (VE). The use of VE is generally safe, but it can occasionally have negative effects on either the mother and the child
- The ventouse or vacuum extractor consists of a cup which is attached to the foetal scalp by suction, & the means of providing the vacuum

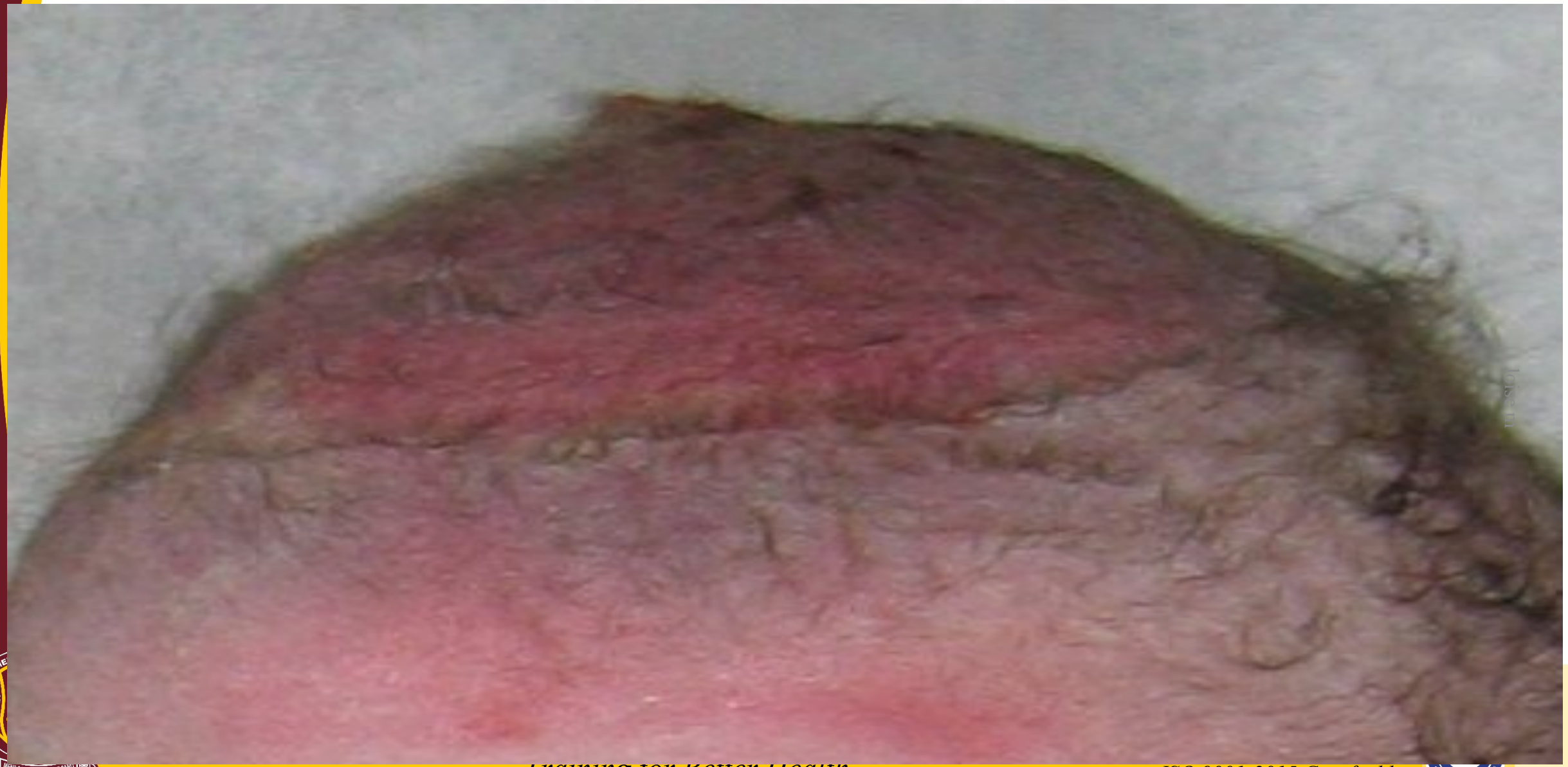
Advantages of vacuum extraction

- It does not add to the presenting diameters
- If correctly positioned brings about flexion of the head & natural rotation
- An episiotomy may not be required.
- The mother still takes an active role in the birth.
- No special anesthesia is required.
- The force applied to the baby can be less than that of a forceps delivery, and leaves no marks on the face.
- There is less potential for maternal trauma compared to forceps and caesarean section.

Disadvantages of vacuum extraction

- The operator may be too hasty in applying traction b4 the suction has been built up, so that the cup comes off
- The baby will be left with a temporary lump on its head, known as a chignon
- There is a possibility of cephalohematoma formation thus it is associated with more trauma to baby than forceps.
- Cannot be used for preterm delivery, face presentation, aftercoming head of a breech or when the mother is unable to assist the delivery with expulsive effort.

Chignon



The vacuum Extractor

- Modern extractors are constructed of varied materials including polyethylene or silastic and stainless steel. Several features are found in all VE designs. These include:
  - A mushroom shaped vacuum cup of varied composition and depth
  - A cup including a fixed internal vacuum grid or guard
  - A combined vacuum pump / handle or a vacuum port to permit a vacuum hose attachment
  - A handle, wire or chain for traction

PREREQUISITES FOR VACUUM EXTRACTION

- Informed consent is required for any surgical procedure, including an instrumental delivery
- The clinician must be competent in the use of the vacuum extractor and knowledgeable of the VE indications. Most importantly, they must be prepared to reconsider or abandon any operation that proves difficult
- The pregnancy should be term, the foetus alive or FSB (foetal heart stopped during labour) and in vertex presentation
- The patient should have an empty bladder either by catheterization or spontaneous voiding

PRE-REQUISITES CNTD’

- Full cervical dilation as confirmed via vaginal examination
- Ruptured membranes
- An engaged foetal head
- No suspicion of cephalopelvic disproportion.

Indications for vacuum delivery:

Maternal indications

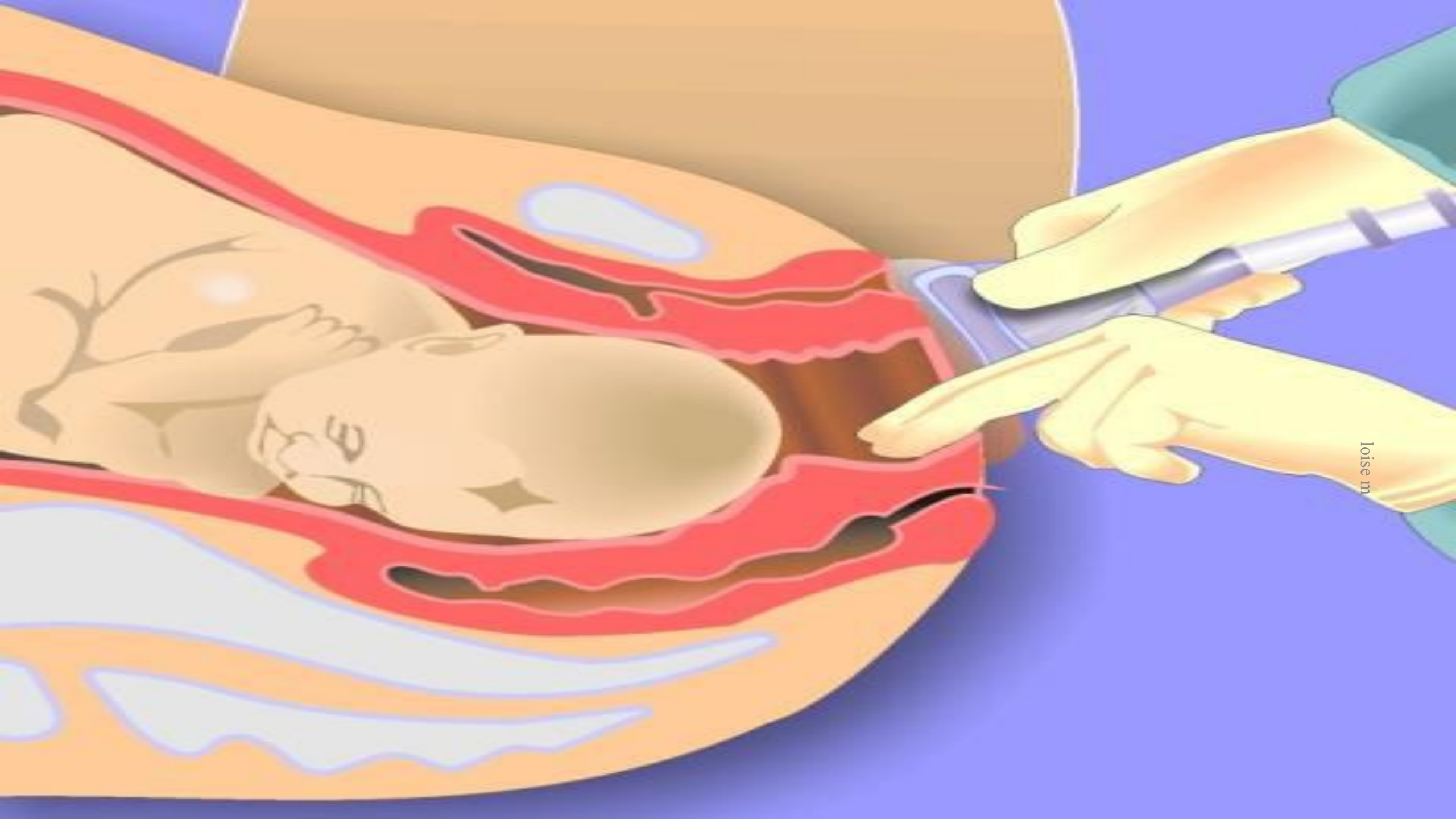
- Prolonged second stage of labour (In general, second stages of more than 2 hours without epidural anaesthesia and 3 hours which are the acceptable measures for nulliparas
- Shortening of the second stage of labour: This may be necessary in case of Maternal illness (e.g. cardio-respiratory, neuromuscular, cerebrovascular when voluntary expulsive efforts are contraindicated); Haemorrhage; Severe Pre eclampsia.
- Presumed foetal jeopardy/foetal distress in 2nd stage of labour: That is in case of Foetal compromise necessitating immediate delivery in 2nd stage or Non-reassuring FHR tracing.

Contraindications to Vacuum Extraction

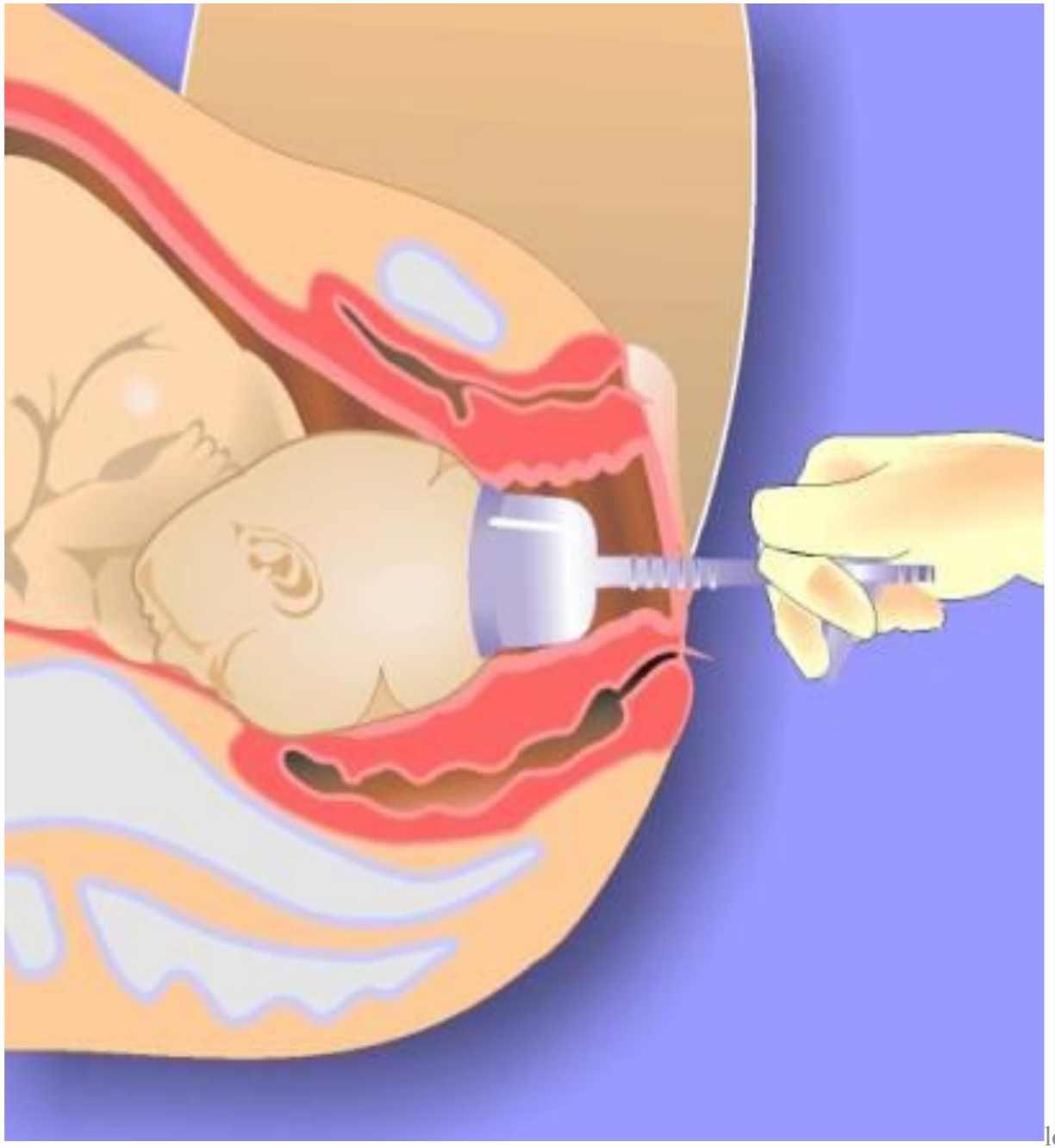
- Vacuum operation is contraindicated in the following instances:
  - Operator inexperience
  - Inability to achieve a correct application
  - An inadequate trial of labour
  - Lack of a standard indication
  - Gestational age less than 37 weeks
  - Uncertainty concerning foetal position and station
  - Known or suspected foetal coagulation defects
  - Suspicion of cephalopelvic disproportion
  - Non-vertex presentation(e.g. breech, face, brow)
  - Absence of uterine contractions
  - Incomplete cervical dilation & Unengaged head

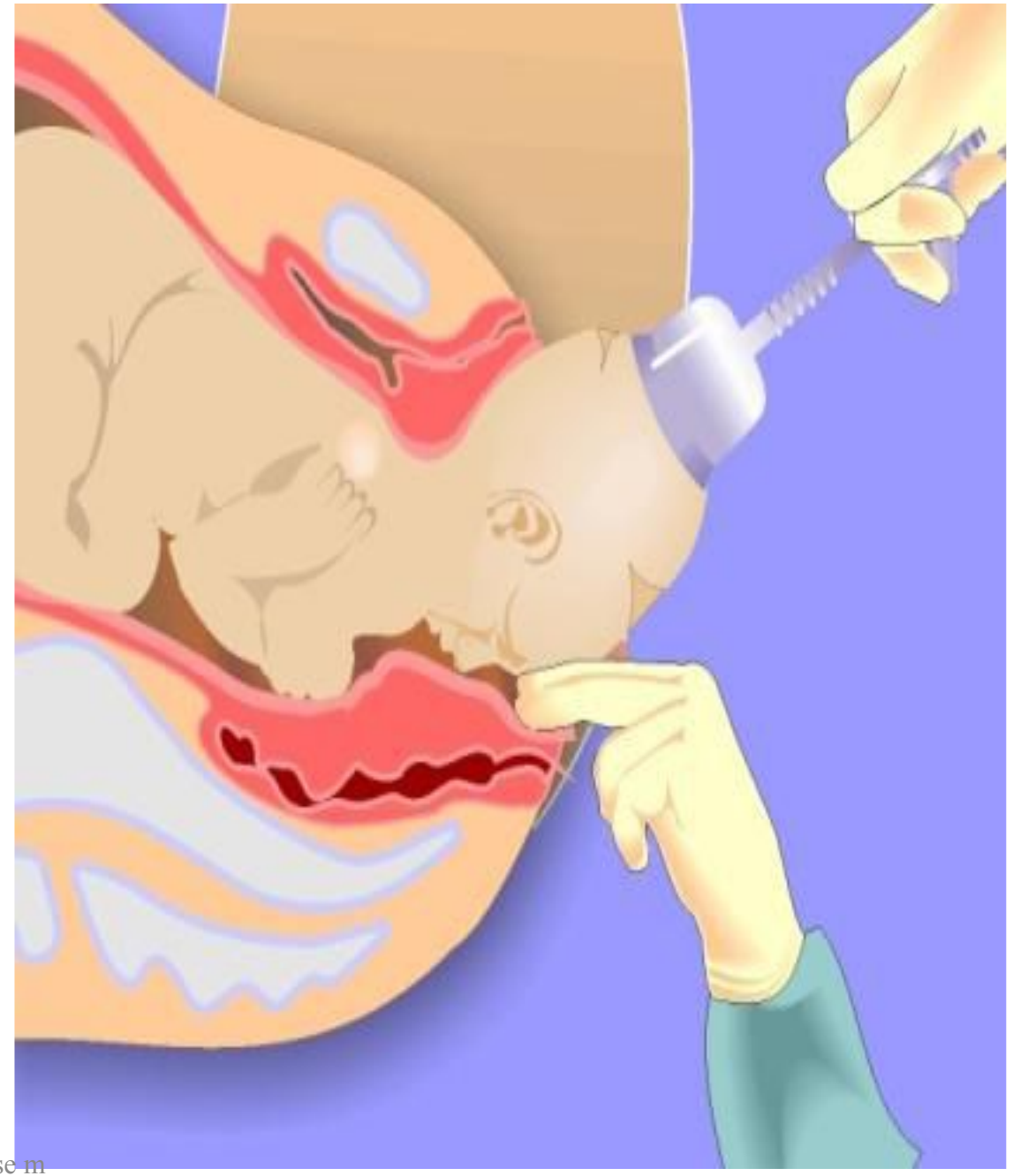
THE PROCEDURE

- The **ABCEFGHIJ** Mnemonic has been used to facilitate the remembering of the steps in VE
- **A:** Ask for help; Address the patient (counsel on procedure and obtain informed consent); ensure adequate Anaesthesia as necessary
- **B**: Empty the Bladder
- **C:** Confirm that the Cervix is fully dilated
- **E**: Prepare the Equipment and Extractor ensuring that they are ready to use
- **F:** Apply the vacuum cup over sagittal suture 3cm in front of posterior Fontanel. This is known as the "Flexion point" – (proper application results in flexion of foetal head when traction applied)



- **G:** Apply Gentle traction at right angles to plane of cup only during contractions. **Note** that Bending, rotary force, or paramedian application will cause detachment**!**

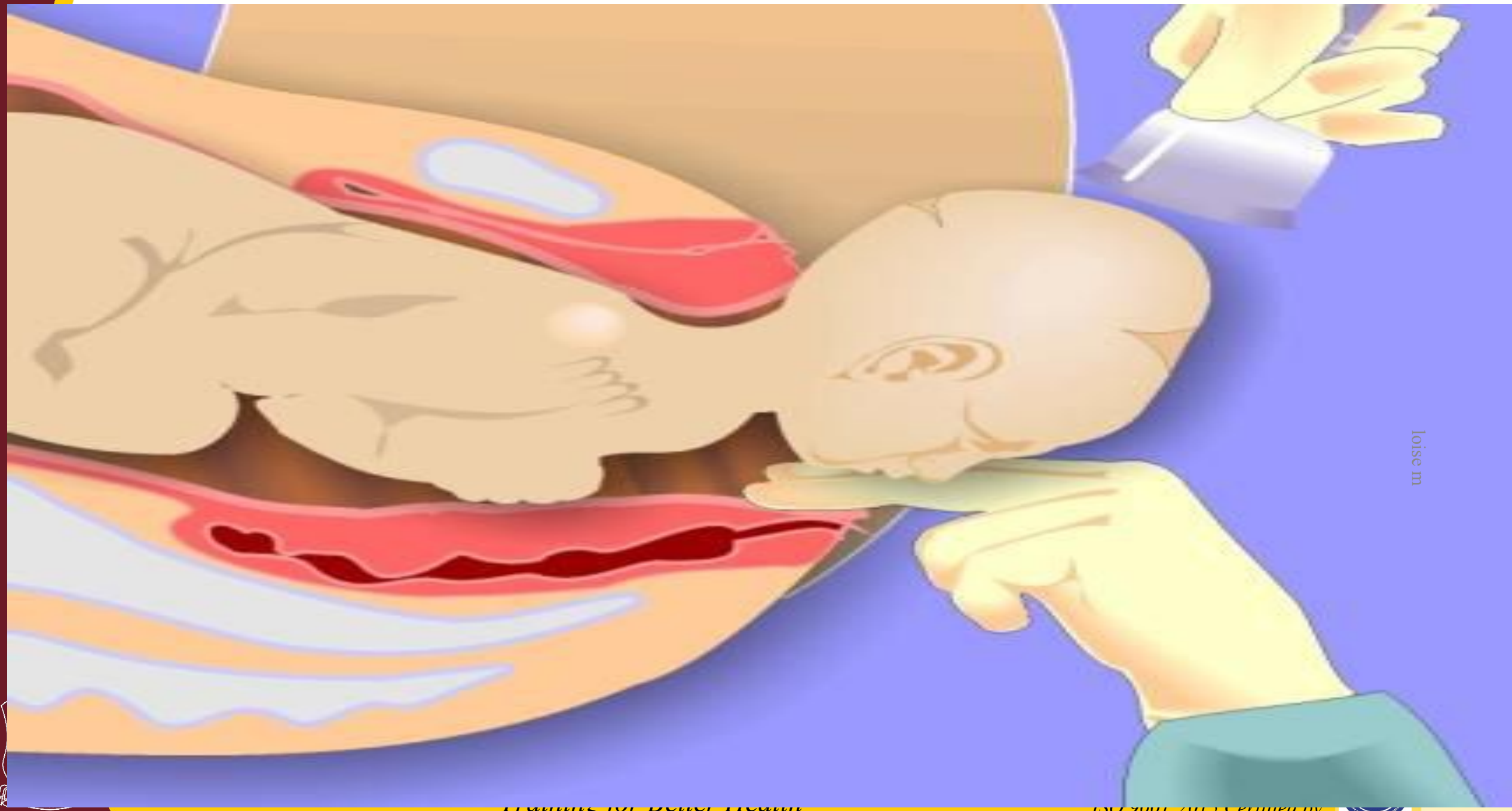




- **H= Halt**
- Further attempts at vacuum extraction should be stopped in the following circumstances: Halt traction after a contraction and Reduce pressure between contractions
  - Halt procedure if there is:
  - Disengagement of cup 3 times
  - No progress in 3 consecutive pulls
  - Total time that has elapsed after application is more than 20 minutes– foetal injuries increase after 10 minutes of application time
- **I= Incision**
- Evaluate for Incision (episiotomy) when the head is being delivered. An episiotomy may not be necessary for vacuum per se, but in case of subsequent shoulder dystocia or difficult delivery

- **J= Jaw**

It is recommended that the vacuum cup is removed when the **Jaw is reachable**

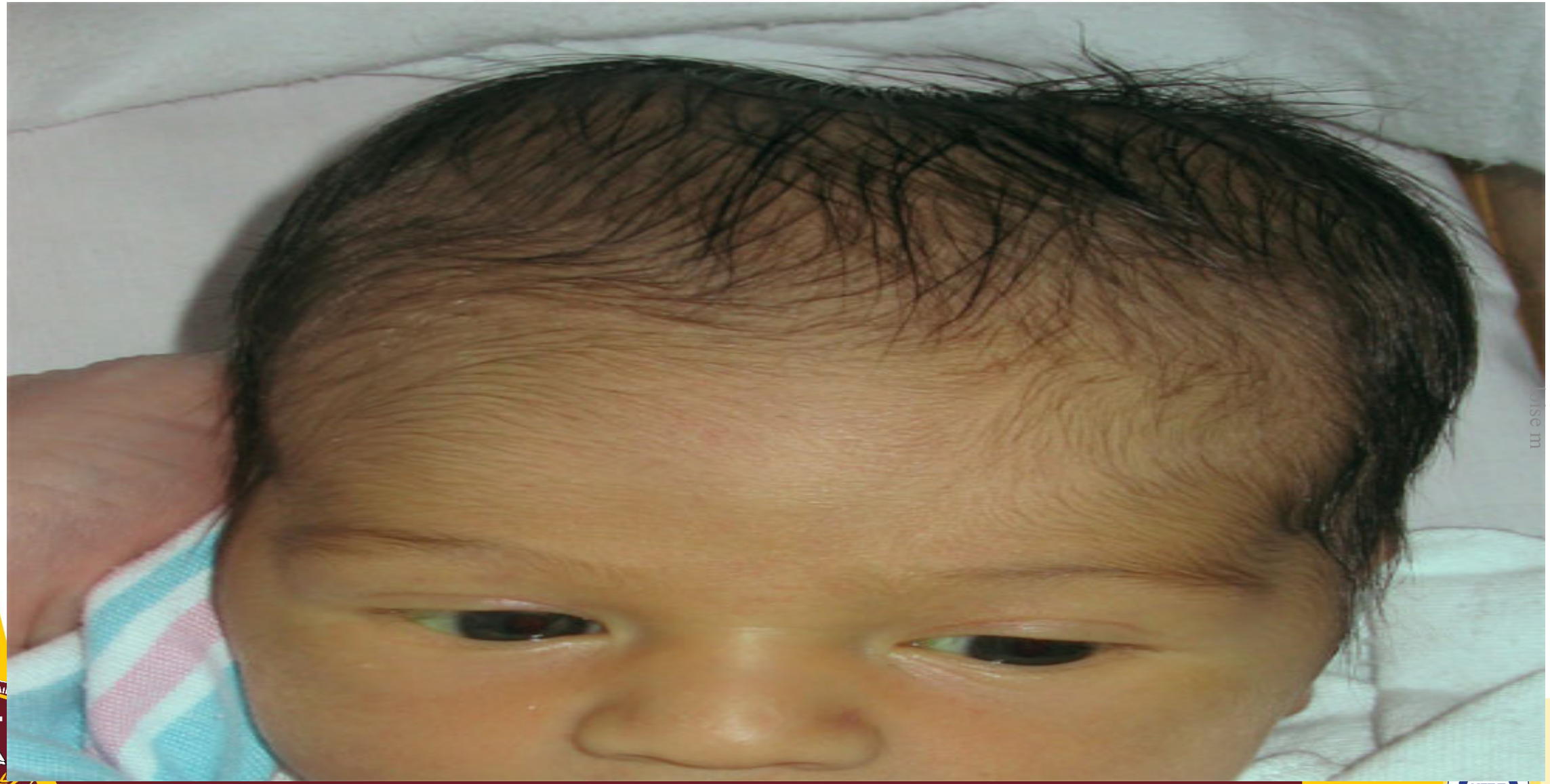


Complications of vacuum extraction

These complications occur mainly due to some degree of disproportion where the cup has been applied for long period and forceful traction used

- Failure of the procedure
- Trauma to the foetal scalp
- Chignon, that is, oedema and bruising where the cup had been applied, which can occasionally get infected
- Some babies develop cephallohaematoma
- Intracranial haemorrhage
- Necrosis of the scalp
- Aponeurotic haematoma

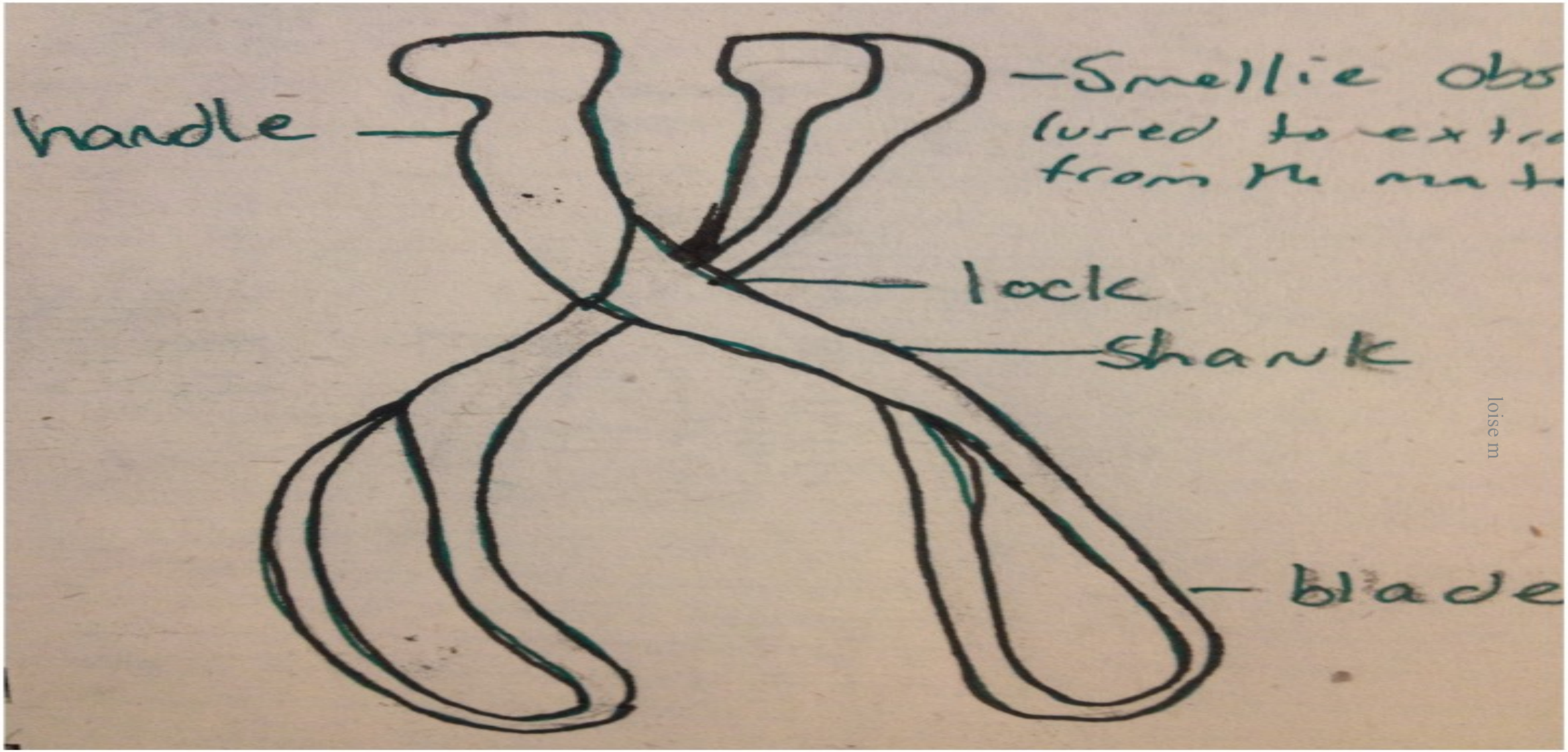
Cephallhaematoma



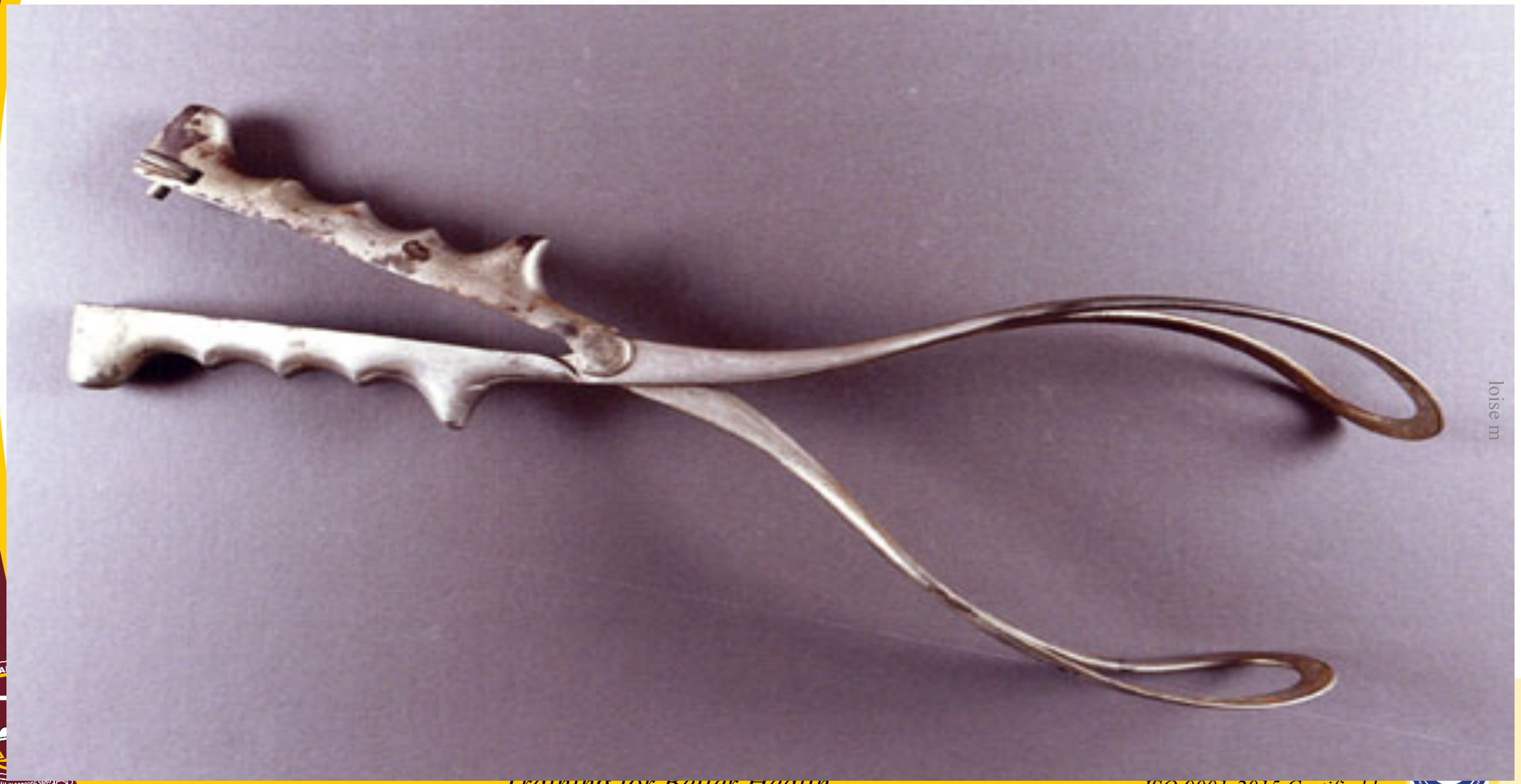
FORCEPS DELIVERY

INTRODUCTION

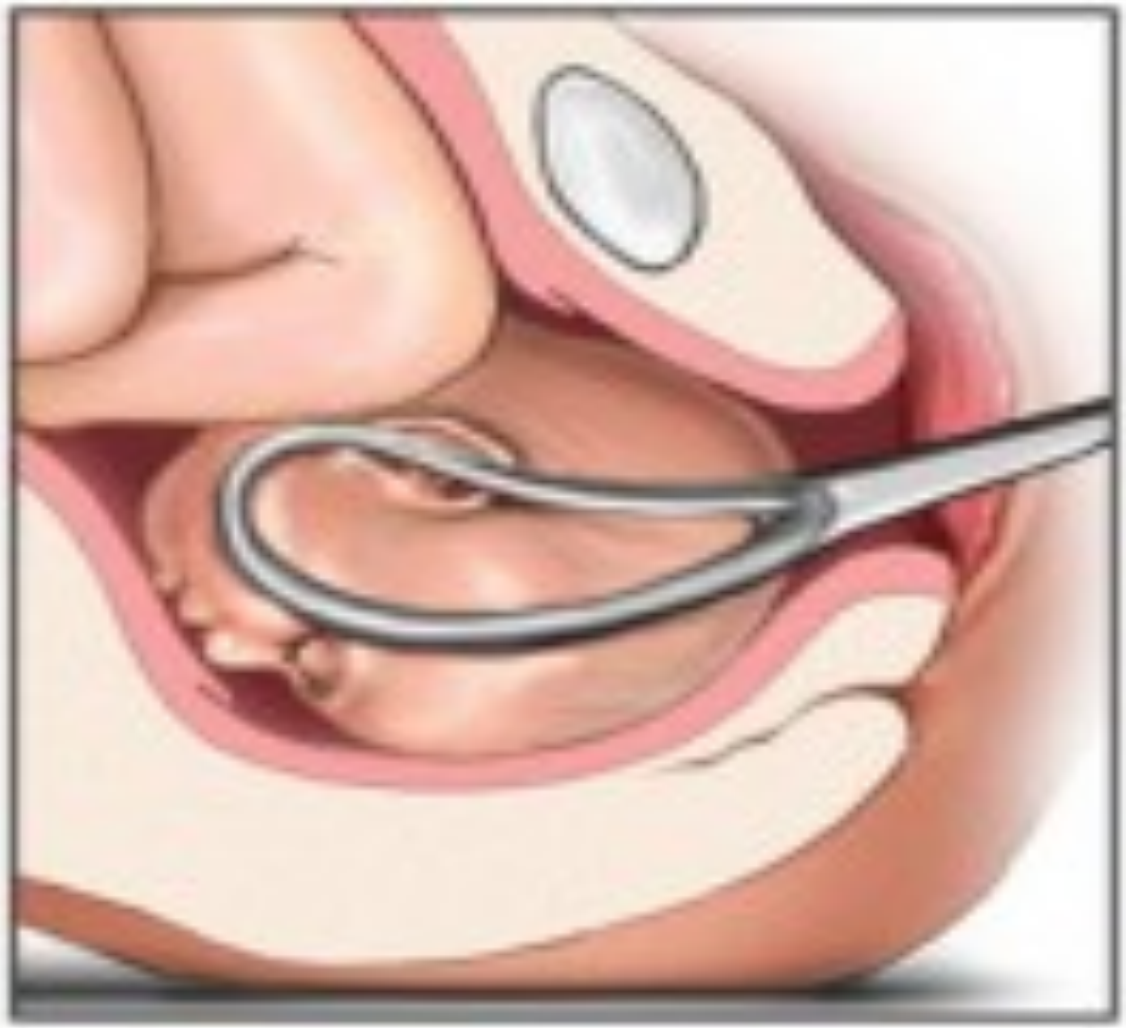
- Forceps delivery is a means of extracting the foetus with the aid of obstetric forceps when it is inadvisable or impossible for the mother to complete the delivery by her own effort
- This procedure is performed by a forceps which is an instrument that has two parts that cross each other like scissors and lock at the intersection. The lock may be of sliding type or of screw type.
- Each part consists of a handle, a lock, a shank and a blade.
- The blade is joined to the handle by a shank.
- The blade has two curves, cephalic curve to fit the head, and pelvic curve that correspond with the curved axis of the pelvis.


handle
—Smellie obs
lured to extra
from the mouth
lock
shank
blade

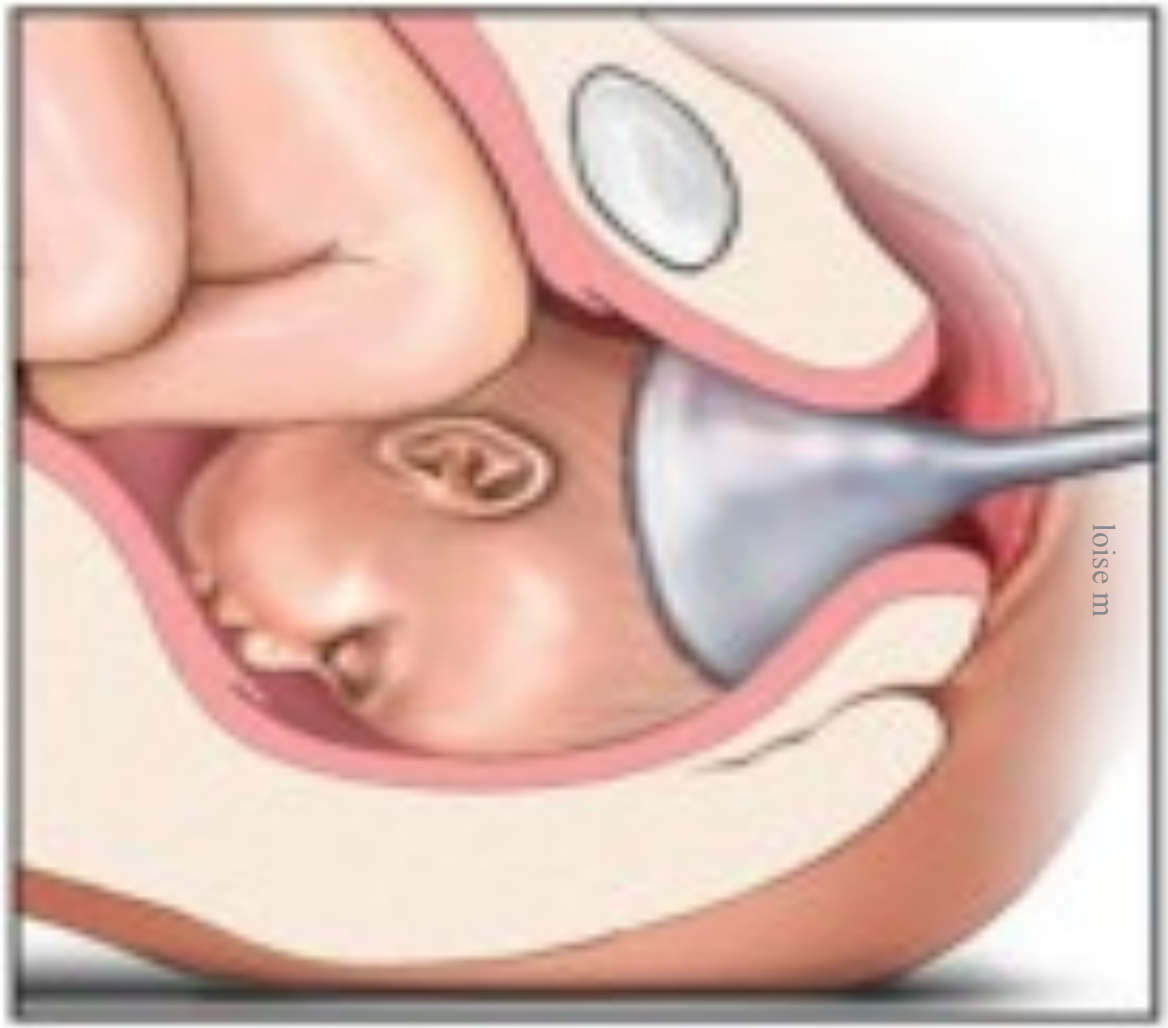
Forceps

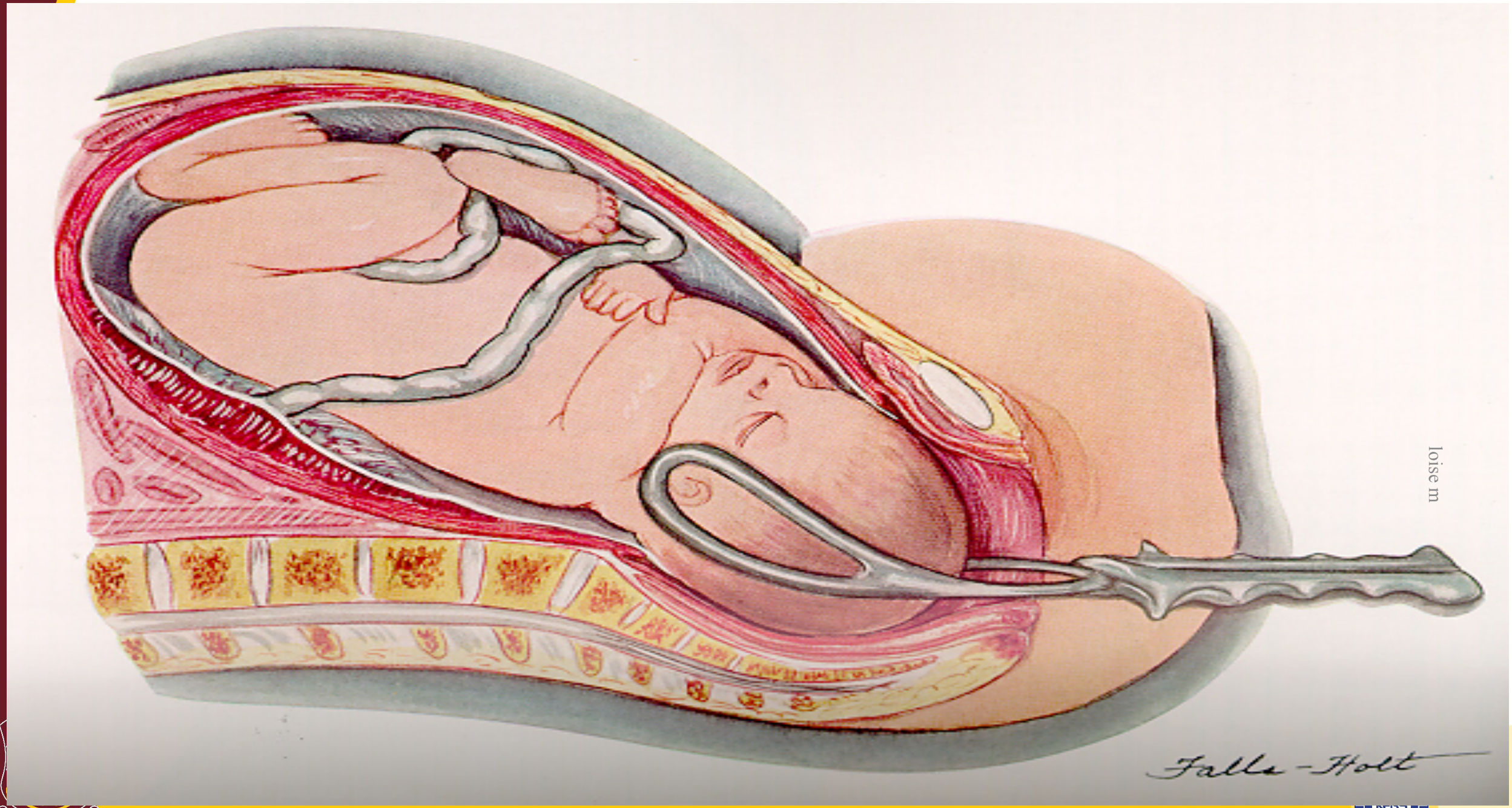


Forceps



Vacuum extraction




loise m
Falls - Holt

Types of forceps

There are several types of forceps including;

- Kielland's, Simpson's, Wrigley's, Neville- Barne's, Haig-Fwerguson's, Milne-Murray and Diper forceps among others.

- **Simpson forceps** are the most commonly used among the types of forceps and has an elongated cephalic curve. These are used when there is substantial molding, that is, temporary elongation of the fetal head as it moves through the birth canal
- **Elliot forceps** are similar to Simpson forceps but with an adjustable pin in the end of the handles which can be drawn out as a means of regulating the lateral pressure on the handles when the instrument is positioned for use. They are used most often with women who have had at least one previous vaginal delivery because the muscles and ligaments of the birth canal provide less resistance during second and subsequent deliveries. In these cases the fetal head may thus remain rounder.

- **Kielland forceps** are distinguished by an extremely small pelvic curve and a sliding lock. They are the most common forceps used for rotation. The sliding mechanism at the articulation can be helpful in asynclitic births (when the fetal head is tilted to the side), since the fetal head is no longer in line with the birth canal
- **Wrigley's forceps** are used in *low* or *outlet delivery*, when the maximum diameter is about 2.5 cm above the vulva
- **Piper's forceps** have a perineal curve to allow application to the after-coming head in breech delivery.

Types of Forceps Delivery

- **Low Forceps**

Today the majority of forceps delivery is carried out when the foetal head is on the perineal floor whereby the internal rotation may have already occurred. This is called outlet forceps or low forceps delivery

- **Mid Forceps**

This is when the head is higher in the pelvis but engaged and the greater diameter has passed the inlet. This is known as mid forceps.

- **High Forceps**
- If the head is not engaged, the procedure is termed high forceps. This is an extremely difficult and dangerous operation. A caesarean section is usually preferred to mid/high forceps.

Pre-requisites for forceps delivery

Prerequisites for forceps delivery include:

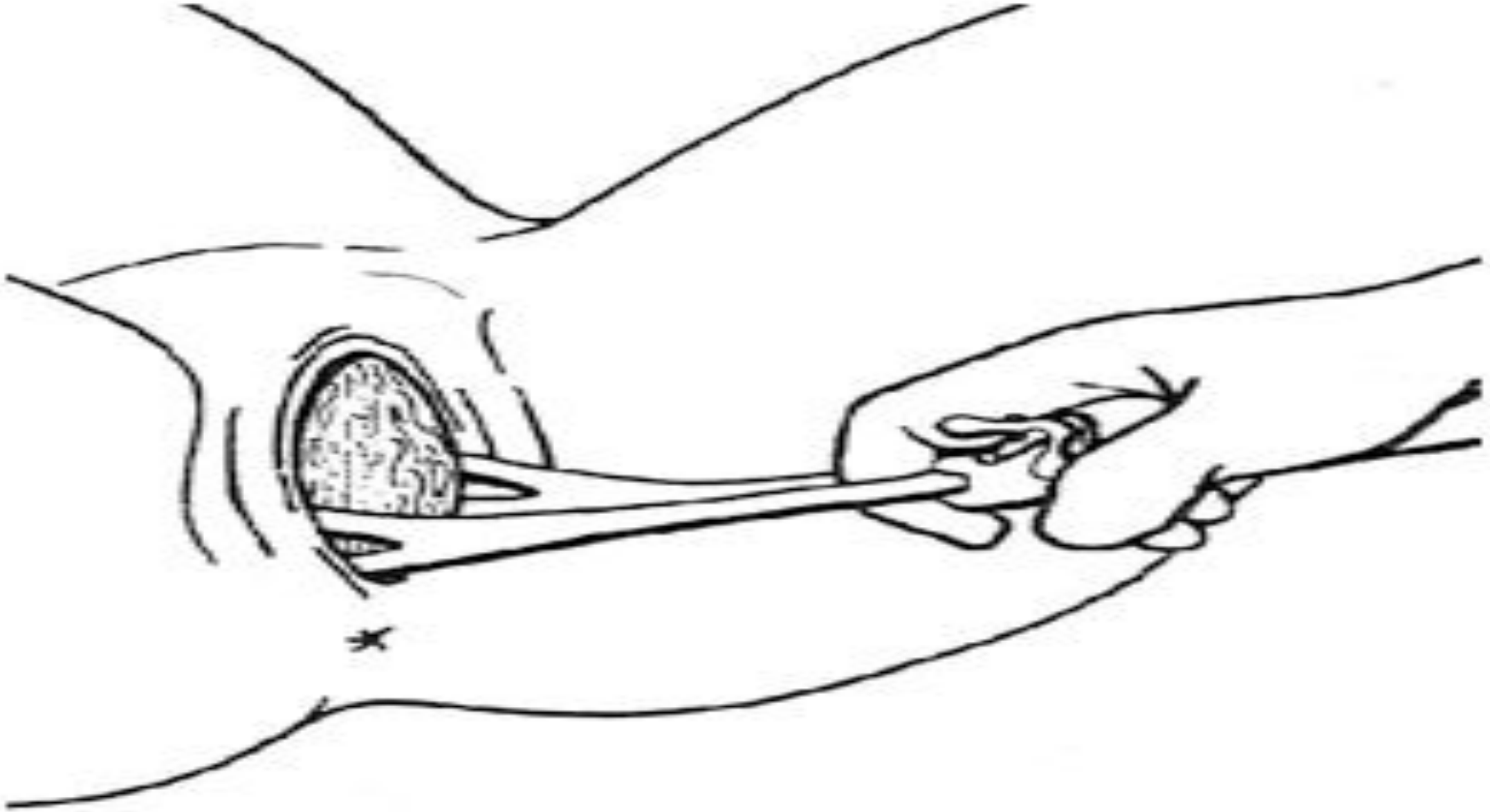
- Information giving & consent. Briefly explain the procedure to the mother so as to gain her consent for the procedure
- Presentation must be suitable
- Head has to be engaged
- The pelvic outlet needs to be adequate
- Good uterine contractions
- Membranes should be ruptured
- Bladder must be kept empty either by catheterization or continual voiding.
- Cervix must be fully dilated
- Ensure there is a ready working neonatal resuscitataire.

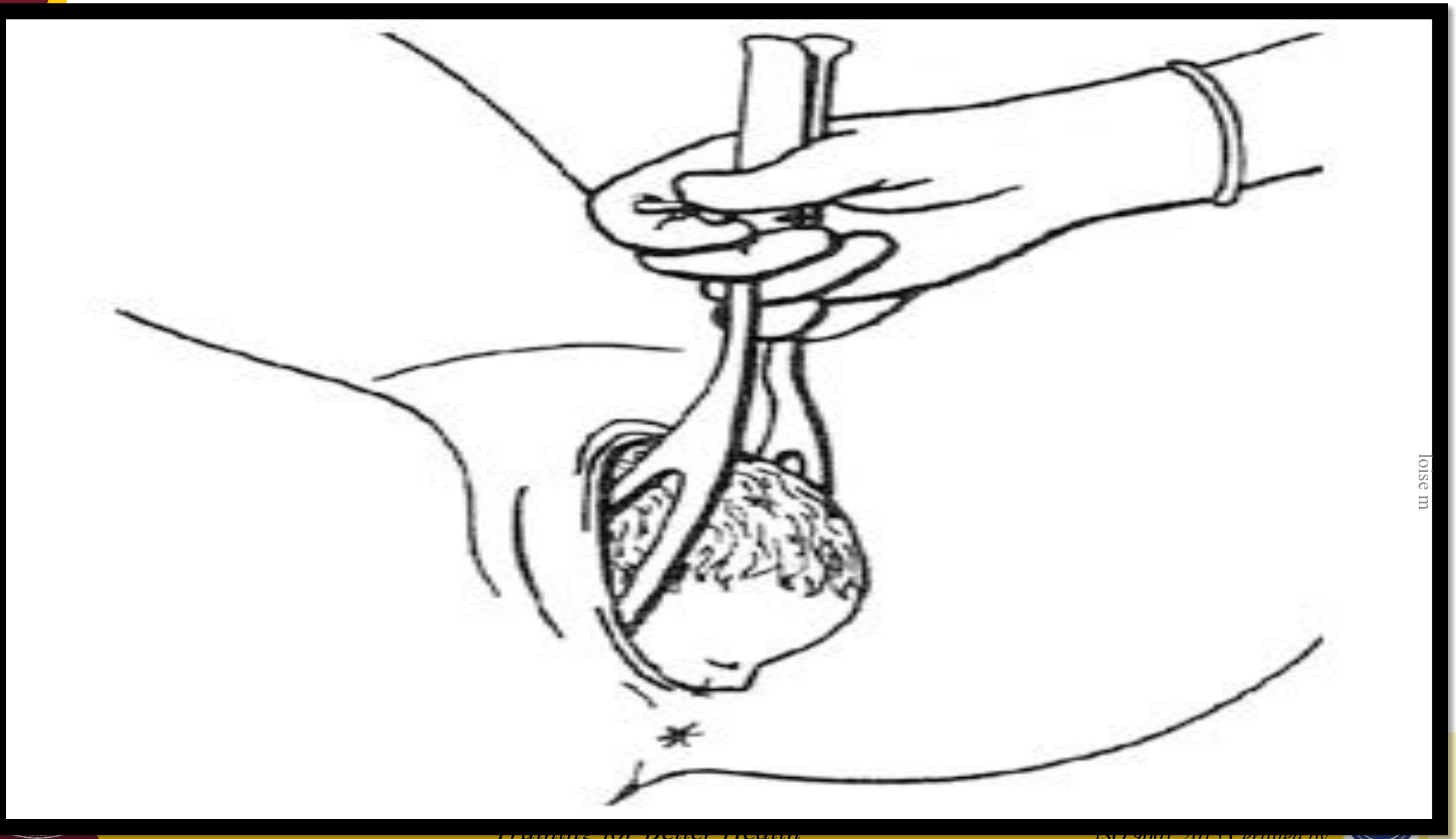
Procedure

- The mother is given analgesia and placed in the lithotomy position.
- The vulva is swabbed and draped.
- Catheterisation is done.
- The physician checks the exact position of the foetal head by vaginal examination to ascertain engagement/descent of the presenting part.
- The fingers of the right hand are passed in the vagina to direct the blade

- The left blade is applied first and held by the left hand between the fingers and thumbs of the left hand.
- The blade is then passed between the head and the palm or surface of the right fingers. The handle is carried backwards towards the middle well over the mother's abdomen to the right side almost parallel with her right inguinal ligament.
- The above position of the blade will ensure the instrument follows the directions of both the pelvic and cephalic curve.
- After ascertaining it lies in the correct position next to the head, the fingers of the right hand are withdrawn.

loise m





Indications for use of forceps delivery

- Delay in second stage of labour
- Foetal compromise/distress in 2nd stage of labour
- Maternal distress/exhaustion in 2nd stage
- Malposition e.g. OPP
- Breech presentation: forceps are usually used to deliver the after-coming head in a breech presentation in a controlled fashion

Contraindications

The following are contraindications to forceps-assisted vaginal deliveries:

- Any contraindication to vaginal delivery
- Inability to obtain adequate informed consent
- A cervix that is not fully dilated or retracted
- Inability to determine the presentation and fetal head position
- Inadequate pelvic size
- Confirmed cephalopelvic disproportion
- Unsuccessful trial of vacuum extraction (relative contraindication)
- Inadequate facilities and support staff
- An insufficiently experienced operator

Complications of forceps delivery

Maternal complications;

- Trauma or soft tissue damage which may occur to the perineum, vagina or cervix.
- Haemorrhage from the above
- Dysuria or urinary retension which may result from bruising or oedema to the urethra
- Painful perineum
- Postnatal morbidity

Neonatal complications

- Marks on the baby's face caused by the pressure of the forceps
- Excessive bruising from the forceps
- Facial palsy, rusulting from pressure from a blade compressing a facial nerve
- Cephalhaematoma: an effusion of blood under the periosteum which covers the skull bones secondary to rupture of blood vessels crossing the periosteum
- Cerebral irritability-causing cerebral oedema or haemorrhage

SYMPHYSIOTOMY

SYNONYMS:

- Pelviotomy
- Synchondrotomy
- Pubiotomy
- Gigli's operation

DEFINITION:

- **Symphysiotomy** is a surgical procedure in which the cartilage of the pubic symphysis is divided to widen the pelvis allowing childbirth when there is a mechanical problem.
- Also known as Gigli's operation, after Leonardo Gigli, who invented a saw commonly used in Europe to accomplish the operation.

Indications for symphysiotomy

The most common indications are;

- a trapped head of a breech baby
- shoulder dystocia which does not resolve with routine manoeuvre
- obstructed labour at full cervical dilation when there is no option of a caesarean section.

Currently the procedure is rarely performed in developed countries, but is still routine in developing countries where caesarean section is not always an option

- Symphysiotomy results in a temporary increase in pelvic diameter (up to 2 cm) by surgically dividing the ligaments of the symphysis under local anaesthesia. This procedure should be carried out only in combination with vacuum extraction.
- Symphysiotomy in combination with vacuum extraction can be a life-saving procedure in areas of the world where caesarean section is not feasible or immediately available.

Complications of symphysiotomy

- urethral and bladder injury
- Infection= PUERPERAL SEPSIS
- pain and
- long-term walking difficulty.

Symphysiotomy should, therefore, be carried out only when there is no safe alternative. It is advised that this procedure should not be repeated due to the risk of gait problems and continual pain

END

MALPOSITIONS OF THE OCCIPUT & MALPRESENTATIONS

Introduction

- Malpositions & malpresentations of the fetus present the midwife with a challenge of recognition and diagnosis both in the antenatal period and during labour
- It is there4 imperative for the learner midwives to have a thorough understanding of the various fetal malpositions as well as malpresentations.

GENERAL OBJECTIVE:

By the end of the learning sessions, the student nurse should be able to describe and manage the major malpresentations of the occiput and occipitoposterior position

SPECIFIC OBJECTIVES:

- Describe and manage the following;
  i. Occipito posterior position
  ii. Breech presentation
  iii. Face presentation
  iv. Shoulder presentation
  v. Brow presentation
  vi. Compound presentation
  vii. Unstable lie

DEFINITIONS

- Lie
  - Relationship of long axis of fetus to the long axis of the uterus
  - Longitudinal, transverse, oblique
- Presentation
  - Portion of fetus foremost in birth canal
  - Vertex, breech, face, brow, shoulder
- Position
  - Reference point on presenting part in relation to the maternal pelvis.
  - Examples: LOA / ROA / LOP/ROP

- Left and right occipito-anterior are the only normal presentations and positions.
  - Malposition: occipito-posterior.
- Malpresentations: anything except vertex as face, brow, breech, shoulder, cord and complex/compound.
- Malpresentations may be identified late in pregnancy or may not be discovered until the initial assessment during labor

Types of Malpresentation

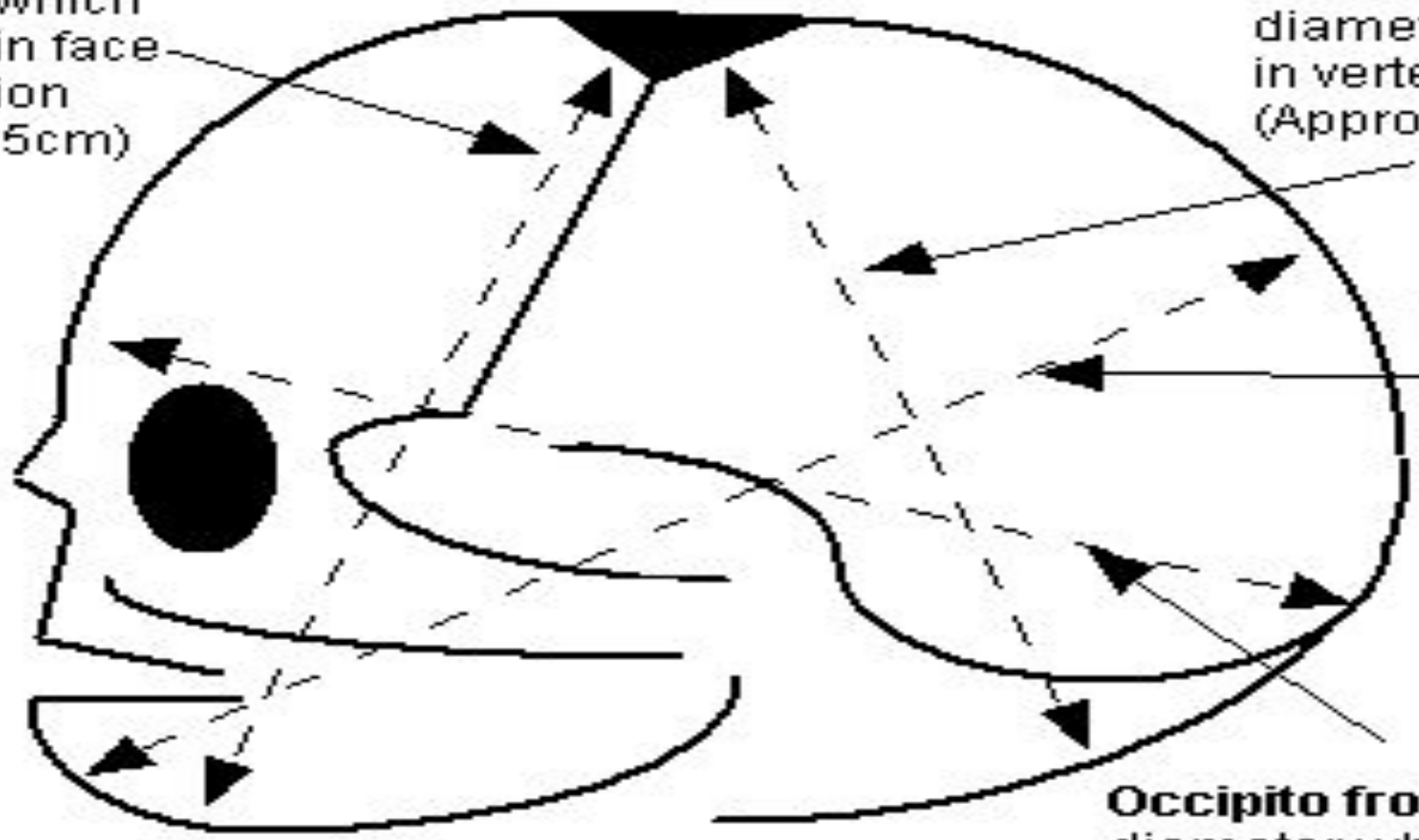
BREECH

- *Complete (Flexed) Breech Presentation*
- *Footling Breech Presentation*
- *Frank (Extended) Breech Presentation*
- *Kneeling Breech Presentation*

VERTEX

- *Brow Presentation*
- *Face Presentation*
- *Sincipital Presentation*

- **SHOULDER**
- **COMPOUND**
- **TRANSVERSE**



Submentobregmatic
diameter which presents in face presentation (approx 9.5cm)

Suboccipitobregmatic
diameter which presents in vertex presentation (Approx 9.5cm)

Mentovertical
diameter which presents in brow presentation (approx. 14 cm)

Occipito frontal
diameter which presents with a deflexed head commonly associated with occipitoposterior position (approx 11.5cm)

MALPOSITION

- It is considered in case of vertex presentation when the occiput is in the transverse position or posterior

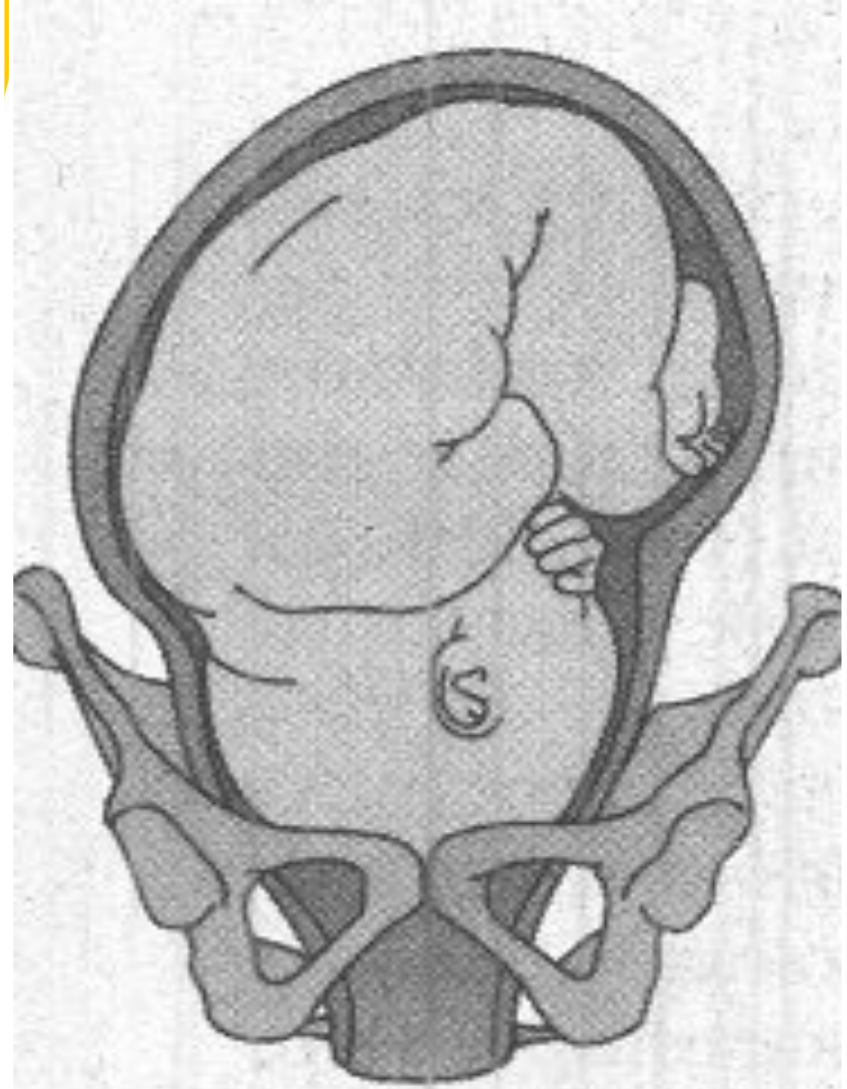
Occipitoposterior

- Definition: Occipito-posterior position is a malposition of the head. The occiput is directed posteriorly.
- It is usually seen in multipara or those with lax abdominal wall. Fetal malpositions are assessed during labor.

OCCIPITO POSTERIOR POSITION(OPP)

DESCRIPTION

- OPPs are the most common type of malposition of the occiput & occur in approximately 10% of labours.
- Occipito posterior position is a malposition of the occiput. It is a vertex presentation where the **occiput is placed posteriorly over the sacro-iliac joint** or directly over the sacrum is called an occipito-posterior position.
- As a consequence, the **foetal head is deflexed** & larger diameters of the foetal skull present
- The occipito posterior position can be either left or right. The cause is not clear but it is associated with abnormalities of the pelvis.



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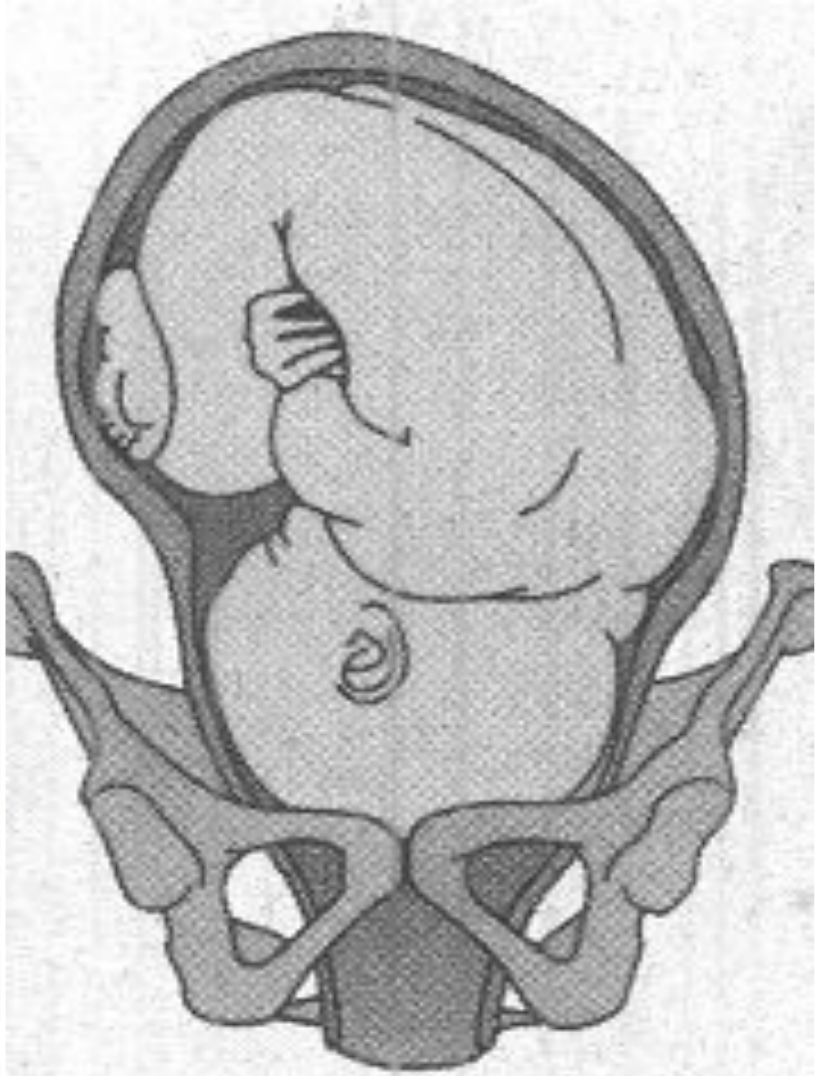
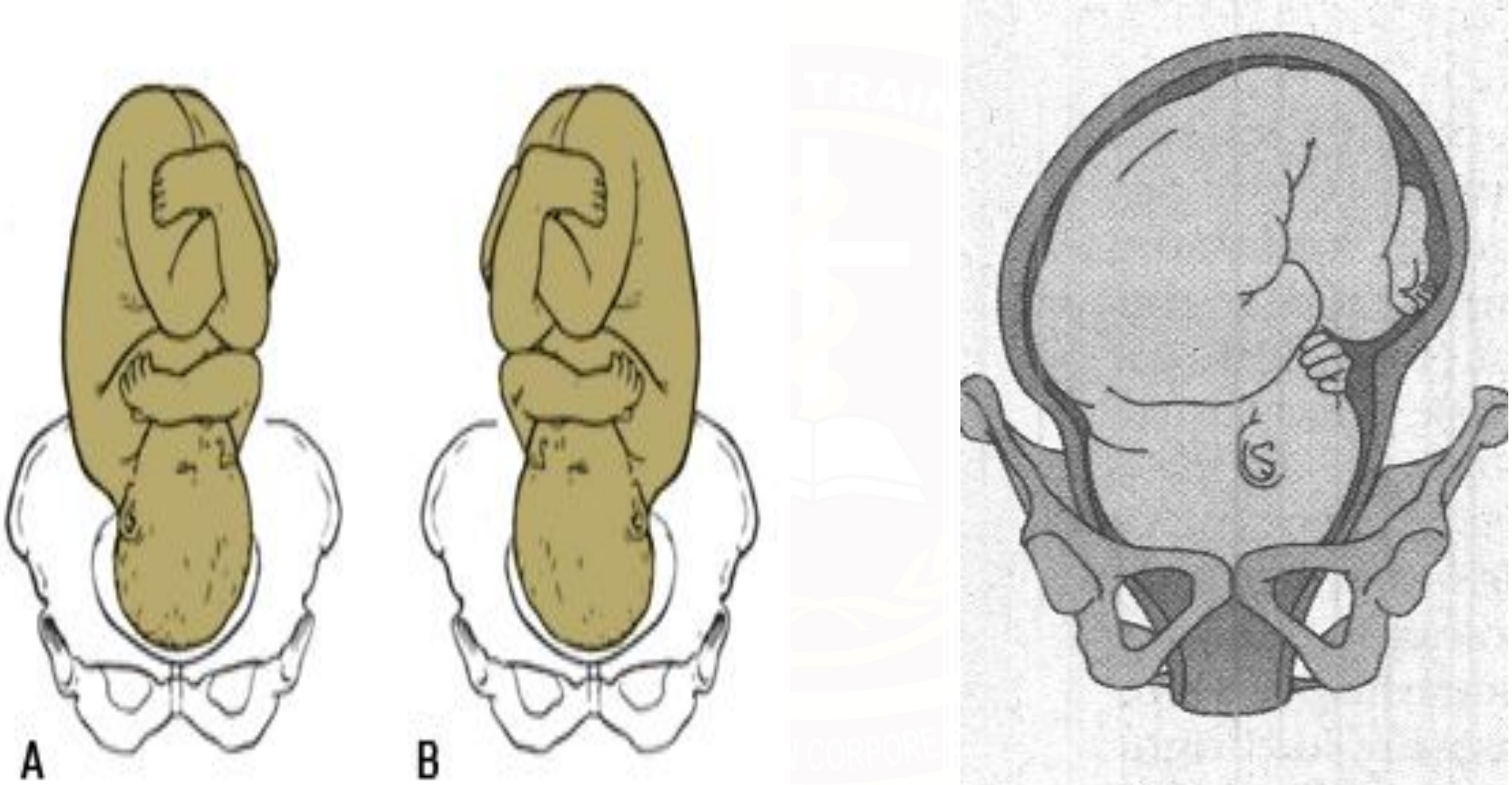


LOA



Right (A) and left (B) occipito posterior position

Causes

- Direct cause unknown but may be associated with an abnormally shaped pelvis
- In an android pelvis, the forepelvis is narrow & the occiput tends to occupy the roomier hindpelvis. The oval shape of the anthropoid pelvis, with its narrow transverse diameter, favours a direct opp

Antenatal diagnosis

Abdominal examination

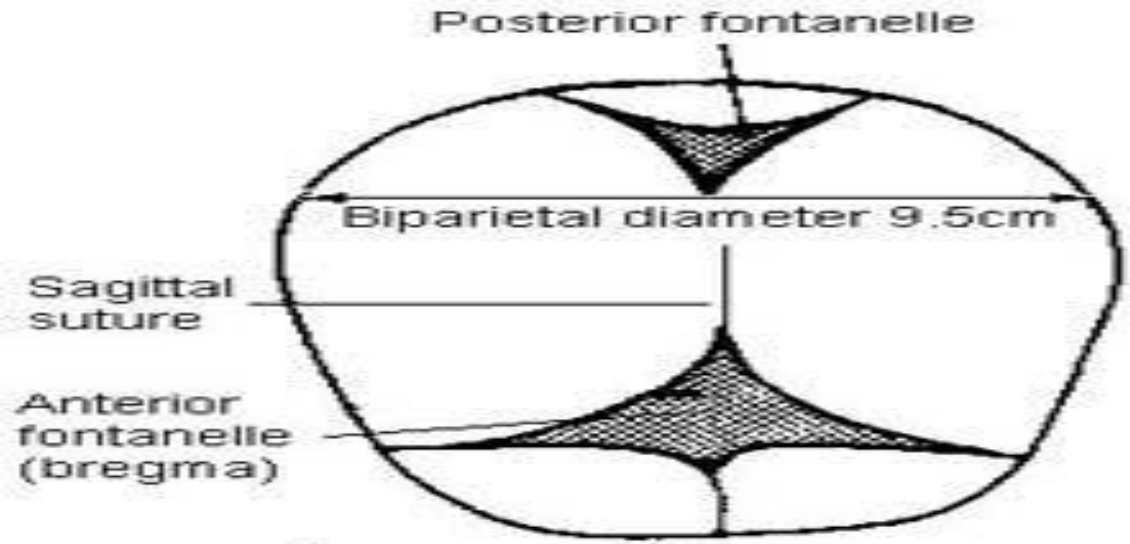
- **Listen** to the mother. The mother may complain of backache and she may feel that her baby's bottom is very high up against her ribs. She may report feeling movements across both sides of her abdomen
- On **inspection,** there is a sauser-shaped depression at or just below the umbilicus. The depression is created by the 'dip' between the head & the lower limbs of the foetus
- On **palpation,** the head is high, as the engaged diameter of 11.5cm (OF) cannot enter the brim until flexion takes place. The head feels large and the occiput and sinciput are on the same level. The back is difficult to palpate. Limbs are felt on both sides of the abdomen

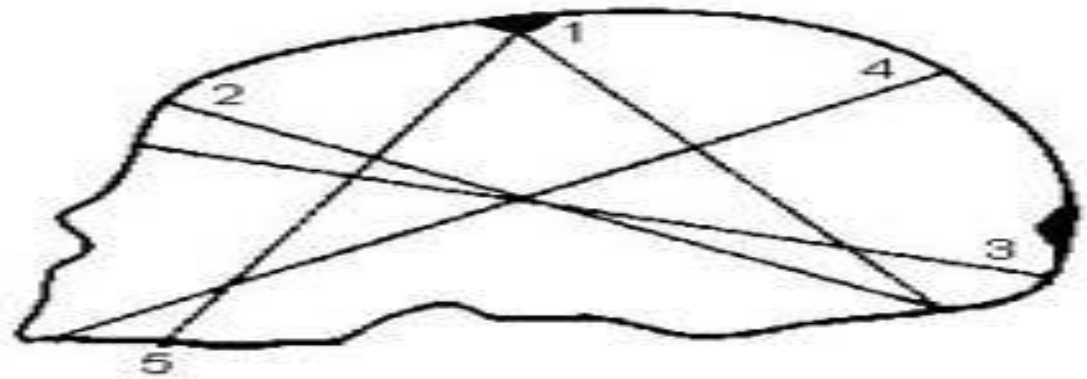
- On **auscultation**, the foetal heart is heard on the right flank. It could also be heard at the umbilicus, either at the middle line or slightly to the left.

Diagnosis during labour

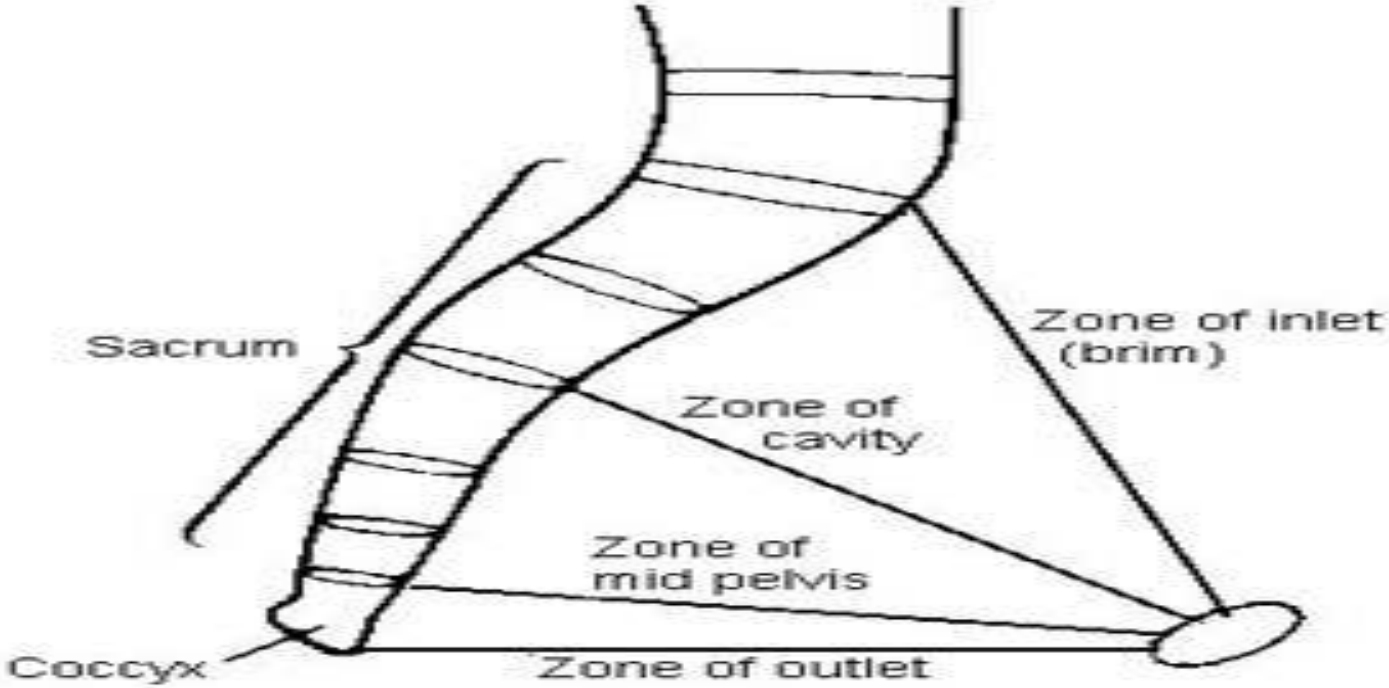
- The woman may complain of continous & severe backache worsening with contractions. The absence of backache does not necessarily indicate an anteriorly positioned foetus
- There is slow descent of the presenting part in spite of good contractions becoz the large & irregularly shaped presenting circumference does not fit well onto the cervix. Early rupture of membranes also occurs & the contractions may be incoordinate

- On **vaginal examination,** findings depend upon the degree of flexion of the head. Locating the anterior fontanelle in the anterior part of the pelvis is diagnostic but this may be difficult if caput succedaneum is present. The Sagittal sutures will be in the right oblique of the pelvis



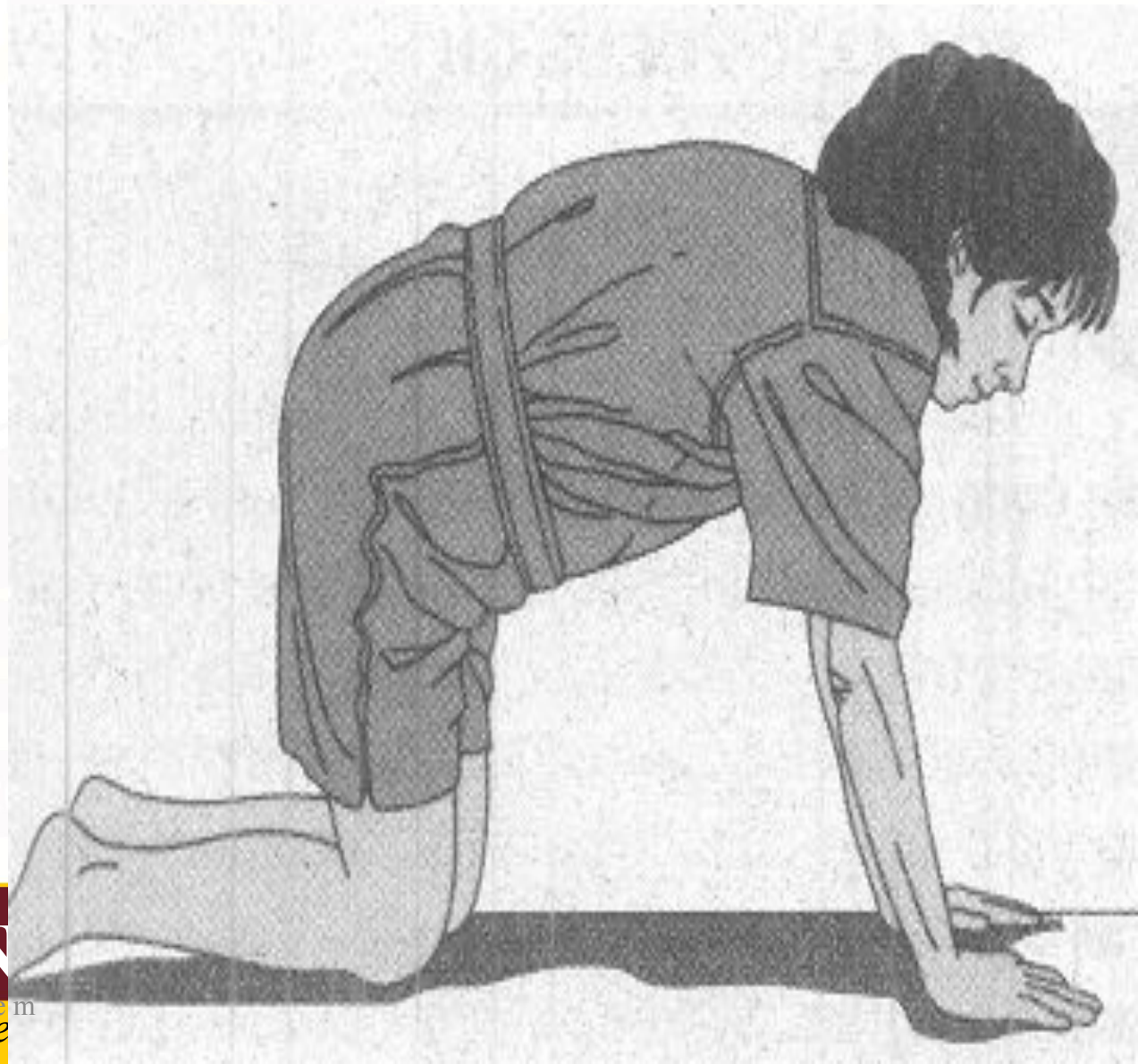


1 Suboccipitobregmatic 9.5cm flexed vertex presentation
2 Suboccipitofrontal 10.5cm partially deflexed vertex
3 Occipitofrontal 11.5cm deflexed vertex
4 Mentovertical 13cm brow
5 Submentobregmatic 9.5cm face



ANTEPARTUM MANAGEMENT

- Encourage the mother to lie on her side from the fetal back, which may help with rotation.
- Knee – chest position help with rotation
- Apply sacral counter – pressure with heel of hand to relieve back pain.
- Continue support and encouragement:
- Keep client and family informed progress.
- Praise client's efforts to maintain control.



Care in labour

- In the occipito posterior position you should expect prolonged, painful labour due to poor fitting of the presenting part, the deflexed head does not fit well onto the cervix therefore does not produce optimum stimulation for uterine contractions
- The midwife can help to provide physical support such as massage and other comfort measures and suggest changes of posture and position. The all-fours position may relieve some discomfort

Care during first stage of labour

- Pain relieving and is also believed to aid in the rotation of the foetal head. Labour is prolonged with incoordinate uterine action.
- Give intravenous fluid to ensure that the mother is not dehydrated
- If there are signs of obstruction or the fetal heart rate is abnormal at any stage, deliver by caesarean section.
- If the membranes are intact, rupture the membranes with an amniotic hook or a Kocher clamp.
- If the cervix is not fully dilated and there are no signs of obstruction, augment labor with oxytocin.
- If the cervix is fully dilated but there is no descent in the expulsive phase, assess for signs of obstruction.

Care during first stage of labour ctd

- Uterine action should be regulated by the use of syntocinon infusion
- Keep accurate records by plotting half-hourly observations of the foetal heart, contractions every four hours, and blood pressure in the partograph.
- Maintain a strict intake and output chart.
- The mother may have the urge of early pushing due to the occiput pressing on the rectum. You should discourage her from pushing at this stage as this will cause the cervix to be oedematous and delay the onset of the second stage. Encourage her to change her position and use breathing techniques, as these will control the urge of early pushing

Care during second stage of labour

- The second stage/ full dilatation of the cervix should be confirmed by vaginal examination as the caput may be seen at the vulva with the anterior lip of the cervix.
- If head is not visible at the onset of second stage, then the midwife could encourage the woman to remain upright. This position may shorten the length of 2nd stage & may reduce the need for operative delivery
- Where contractions are weak & ineffective, syntocinon infusions may be commenced to stimulate adequate contractions & achieve advance

- Maternal & foetal conditions are closely observed throughout 2nd stage. Length of 2nd stage is increased in opp & chances of c/section are high
- During labour, one of the following may occur:
  - *Long internal rotation*
  - *Short internal rotation*
  - *Deep transverse arrest*

Characteristics of Long Internal Rotation(mechanism of right opp)

- The lie is longitudinal
- The attitude is one of **deflexion**
- The presentation is vertex
- The presenting part is the middle or anterior area of the left pariental bone
- The position is right occipito posterior
- The denominator is the occiput
- The **occipito frontal diameter** 11.5cm (**the presenting diameter in O.P.P)** lies in the right oblique diameter of the pelvic brim. The occiput points to the right sacroiliac joint & the sinciput to the left iliopectineal eminence
- **Note**: the engaging diameter in O.P.P is **sub-occipito frontal** diameter (10 cm)

Flexion

- There is increased flexion and descent takes place with increasing flexion. The occiput becomes the leading part

Internal rotation of the head

- The occiput reaches the pelvic floor first & rotates forwards 3/8 of a circle along the right side of the pelvis to lie under the symphysis pubis. The shoulders follow, turning 2/8 of a circle from the left to the right oblique diameter

Crowning

- The occiput escapes under the symphysis pubis & the head is crowned

Extension

- The sinciput, face and chin sweep the perineum, the head is born by extension

Restitution

- the occiput turns 1/8 of a circle to the right, undoes the twist at the neck and the head rights itself with the shoulders

Internal rotation of the shoulders

- The shoulder enters in the same oblique diameter of the pelvis. Anterior shoulder reaches the pelvic floor first and rotates 1/8 of a circle forward and lies under the symphysis pubis

External rotation of the head

- accompanies the internal rotation of the shoulders. The occiput turns a further 1/8 of a circle to the right

Lateral flexion

- Anterior shoulder escapes under the symphysis pubis, while the posterior shoulder sweeps the perineum & The body is born by movement of lateral flexion

Fate/ course of OPP

OPP

Engaging diameter :- occipito-frontal 11.5cm or sub-occipitofrontal 10cm.

Favorable (90%)

3/8th rotation

occipit comes under symphysis pubis (rt/lt occipito anterior)

Normal vaginal delivery

Unfavorable (10%)

Mild deflexion

Occiput rotate by 1/8th circle

Deep transverse arrest

Severe deflexion

Occiput rotate posteriorly by 1/8th

POPP/ occipito-sacral position

Face to pubis delivery

Possible course and outcomes of labour

- As with all labours, complicated or otherwise, the mother should be kept informed of her progress and proposed interventions so that she can make informed choices and give informed consent, ensuring the optimum outcome for herself and her baby.

Long internal rotation

- This is the commonest outcome, with good uterine contractions producing flexion and descent of the head so that the occiput rotates forward 3/8 of a circle as described above

Factors favoring a long anterior rotation

(1) Well flexed head.

(2) Good uterine contractions.

(3) Roomy pelvis.

(4) Good pelvic floor.

(5) No premature rupture of membranes.

Short internal Rotation-persistent OPP

- In cases of short internal rotation or persistent occipito posterior position, the occiput fails to rotate forward. It persists with the same position. The sinciput reaches the pelvic floor first and rotates forwards, while the occiput sinks in the hollow of the sacrum.
- The baby is *born facing the pubic bone* ***(face to pubis).***

Cause

- *Failure of flexion*. The head descends without increased flexion and the sinciput becomes the leading part. It reaches the pelvic floor first and rotates forwards to lie under the symphysis pubis

Causes of failure of long anterior rotation:

(1) Deflexed head.

(2) Uterine inertia.

(3) Contracted pelvis: rotation of the head cannot easily occur in android pelvis due to projection of the ischial spines and convergence of the side walls.

(4) Lax or rigid pelvic floor.

(5) Premature rupture of membranes or its rupture early in labour.

Diagnosis-short internal rotation

- In **first stage of labour, Signs** are mainly a deflexed head & foetal heart heard in the flank or in the midline. Descent is slow
- **In 2nd stage of labour**, there is delayed 2nd stage. On VE, the anterior fontanelle is felt behind the symphysis pubis but a large caput succedaneum may mask this. If the pinna of the ear is felt pointing towards the mother's sacrum, this indicates a posterior position

- The long occipitalfrontal diameter,11.5cm, causes considerable dilatation of the anus & gaping of the vagina while the foetal head is barely visible & the broad biparietal diameter distends the perineum & may cause excessive bulging

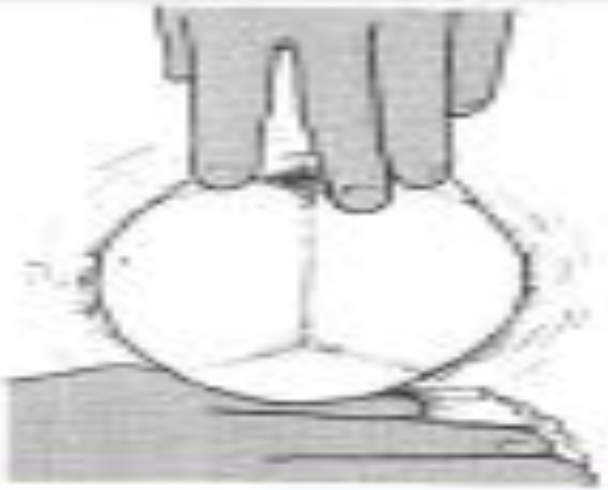
Specific management of Face to Pubis Delivery

- The sinciput emerges first from under the symphysis pubis & the midwife should maintain flexion by restraining it from escaping further, allowing the occiput to sweep the perineum & be born first
- Give an episiotomy when necessary: You should watch for signs of buttonhole tear due to the large presenting diameter. A buttonhole tear is a rupture at the centre of the perineum.
- If you failed to diagnose this earlier you may be extending the head thinking it is a vertex delivery, until you see the hairless forehead escaping under the pubis arch. You should then flex the head towards the symphysis pubis

- The mother must be kept informed of progress and participate in decisions. Pushing at this time may not resolve the problem; the midwife and the woman's partner can help by encouraging breathing . A change of position may help to overcome the urge to bear down.
- If an operative delivery is required for the safe delivery of a healthy baby then the mother's informed consent is required/obtained
- Assisted delivery via vacuum extraction is necessary & is associated with lower incidence of trauma to both the mother and the infant

1) Sinciput will emerge. You should hold the sinciput back to maintain flexion which will allow the occiput to sweep the perineum.

2) Now let the occiput sweep the perineum and be born first.



3) Get hold of vertex and bring the face downwards under the symphysis pubis.

4) Now extend the head and let the sinciput, face and chin sweep the perenium and the face is born by extension.

Deep transverse arrest

- This is where the head descends with some increase in flexion. The occiput reaches the pelvic floor & begins to rotate forwards.
- Flexion is then **not maintained** & the **OF** diameter becomes **caught** in the bispinous diameter of the pelvic outlet
- The arrest may also be due to weak contractions, a straight sacrum or a narrowed pelvic outlet.

Diagnosis-deep transverse arrest

- On vaginal examination the sagittal suture is on the transverse diameter of the pelvis and both anterior and posterior fontanels are palpable.
- The head is caught at the ischial spines.

Management of Deep Transverse Arrest

- Reassure the mother while explaining the position of her labour. Take her consent for the operative procedures which will be necessary.
- Pushing at this time may not resolve the problem & the MW should encourage on breathing exercises. A change in position may help overcome the urge to bear down
- Inform the doctor of her situation. Encourage her to breathe slowly and change her position to discourage pushing.
- A vacuum extraction may be performed or the head may be rotated with forceps and the baby delivered. Vacuum extraction is associated with a lower incidence of trauma to both the mother & the infant

Conversion to Face or Brow presentation

- At the onset of labour with a deflexed head, an extension occasionally occurs instead of flexion. When there is complete extension, the baby will be born as face presentation but when there is incomplete extension (this is refered to as 'military attitude'), the presenting part turns to brow. A delivery by caesarean section is recommended.
- This is a rare complication of posterior positions & is more commonly found in multiparous women

Cesarean section in case of occipito-posterior position is considered if:

- Active management of labor fails as in:-
  - Cases of failure of descent of the head or
  - Failure of full dilatation of the cervix.
  - Failure of trial forceps or ventouse.
  - Maternal or fetal distress.
  - Elderly primigravida.
  - Contracted or android pelvis

Nursing Diagnoses:

Fatigue

- Assess psychological and physical factors that may affect reports of fatigue level
- Monitor physical response for example, palpitations/rapid pulse
- Monitor fetal heart beat and contractions continuously.
- Refraining from intervening with client during contraction.

Anxiety

- Keep client and family informed progress.
- Provide support during labor through personal touch and contact. These methods convey concern.
- Continue support and encouragement.
- Make the client feel she is somewhat in control of her situation.
- Provide client and family teaching.

Nursing Diagnoses cntd'

Impaired gas exchange

- Encourage the mother to lie on her side from the fetal back, which may help with rotation.
- Knee – chest position may facilitate rotation.
- Pelvic – rocking may help with rotation.
- Monitor FHB appropriately
- Be prepared for childbirth emergencies such as cesarean section, forceps-assisted delivery, and neonatal-resuscitation.

Pain

- Encourage relaxation with contractions.
- Apply sacral counter – pressure with heel of hand to relieve back pain.
- Provide comfortable environment.
- Teach breathing exercises for use during early labor until client receives pharmacologic relief.
- Monitor physical response for example, palpitations/rapid pulse

Complications associated with OPP

- ***Obstructed labour***, as a result of deflexed or partially extended head that is impacted in the pelvis
- ***Maternal trauma***, as a result of prolonged labour, or instrumental delivery causing perineum tears. In undiagnosed OPP, instrumental delivery may cause third or 4th degree tears, Hence PPH.
- ***Neonatal trauma*** to the baby, if forceps or vacuum extraction are used

- ***Cerebral haemorrahage***. The unfavourable upward moulding of the fetal skull, found in an occipitoposterior position, can cause intracranial haemorrhage. The larger presenting diameters also predispose to a greater degree of compression. Cerebral haemorrhage may also result from chronic hypoxia, which accompany prolonged labour.

- ***Cord prolapse*** which may cause hypoxia, that may result in a fresh stillbirth

- ***Asphyxia***, due to possible prolonged labour henceleading to brain damage

END

MALPRESENTATIONS

DEFINITION OF MALPRESENTATION:

- Where the fetus is lying longitudinally, but **presents** in any manner other than vertex
  - BREECH
  - FACE
  - BROW
  - COMPOUND
- The diagnosis of abnormal fetal presentations is commonly made with a combination of Leopold's Maneuver, Vaginal examination, and Ultrasound

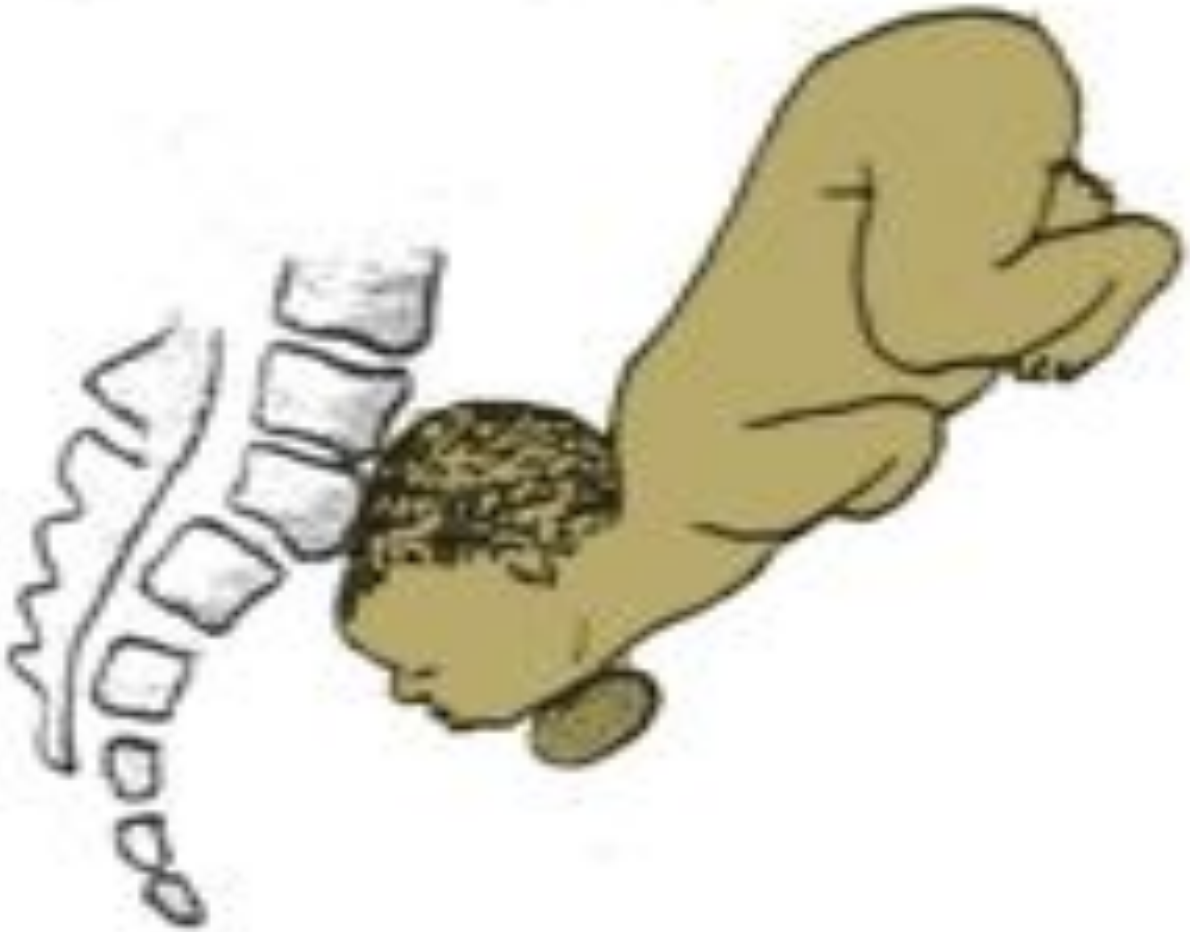
FACE PRESENTATION

- Face presentation occurs when the **head is one of complete extension**, the occiput of the foetus being in contact with its spine
- Incidence about <1:500

CLASSIFICATION OF FACE PRESENTATION:

- Majority develop **during labour** from vertex presentations with the occiput posterior(**secondary face presentation**).
- Less commonly, the face presents before labour(**primary face presentation**)

- In face presentation, the denominator is the mentum & the presenting diameters are submentobregmatic(9.5cm) & bitemporal(8.2cm)



Mento-anterior

Mento-posterior

causes

- **Anterior obliquity of the uterus**

The pendulous abdomen of a multiparous woman leans forward resulting in the alteration of the direction of the uterine axis.

This causes the foetal buttocks to also lean forward and the force of the contractions to be directed in a line towards the chin, rather than occiput, which usually results in extension of the head.

Causes cntd…

- **Contracted Pelvis**

In the flat pelvis, the head enters in the transverse diameter of the brim & the parietal eminences may be held up in the obstetrical conjugate, the head becomes extended & face presentation develops

- **Polyhydramnios**

If the vertex is presenting & the membranes rupture spontaneously, the resulting rush of fluid may cause the head to extend as it sinks into the lower uterine segment

Causes cntd…

- **Congenital Abnormality**

Anencephaly can be a foetal cause of face presentation. In a cephalic presentation, becoz the vertex is absent, the face is thrust forward & presents. A tumour of the foetal neck may cause extension of the head

Abdominal and Per Vaginal Diagnosis of a Face Presentation

Antenatal dx

- Antenatal diagnosis is **rare** since face presentation develops during labour in the majority of cases.
- A cephalic presentation in a known anencephalic fetus may be presumed to be a face presentation.

Intrapartum dx

- On abdominal palpation, Face presentation may not be detected, especially if the mentum is anterior. **The occiput feels prominent**, with a **groove** between head and back, but it may be mistaken for the sinciput.

- The limbs may be palpated on the side opposite to the occiput and the fetal heart is best heard through the fetal chest on the same side as the limbs. In a mentoposterior position the fetal heart is difficult to hear because the fetal chest is in contact with the maternal spine
- <u>On vaginal examination;</u>
  - The presenting part is high, soft and irregular.
  - When the cervix is sufficiently dilated, the orbital ridges, eyes, nose and mouth may be felt. Confusion between the mouth and anus could arise, however. The mouth may be open, and the hard gums are diagnostic. The fetus may suck the examining finger.

- As labour progresses the face becomes oedematous, making it more difficult to distinguish from a breech presentation. To determine position the mentum must be located; if it is posterior, the midwife should decide whether it is lower than the sinciput; if so, it will rotate forwards if it can advance.
- In a left mentoanterior position, the orbital ridges will be in the left oblique diameter of the pelvis. Care must be taken not to injure or infect the eyes with the examining finger.

There are six positions in a face presentation, namely:

- Right mento-posterior
- Left mento-posterior
- Right mento-lateral
- Left mento-lateral
- Right mento-anterior
- Left mento-anterior

- The denominator is the mento, the presenting diameters are the submento bregmatic (9.5cm) and the bi-temporal (8.2cm).

Mechanism of labour in a left mentoanterior position

- Lie is longitudinal
- Attitude is one of **extension of the head and the back**
- The presentation is **face**
- The position is left **mento** anterior. In a left mento anterior position, the orbital ridges will be in the left oblique diameter of the pelvis
- The denominator is the **mentum**
- The presenting part is the **left molar bone**

- **Extension**

Descent takes place throughout and with increasing extension and thus the **mentum** becomes the leading part

- **Internal Rotation of the Head**

This occurs when the chin reaches the pelvic floor and rotates forwards 1/8 of a circle to lie under the symphysis pubis. The chin escapes under the symphysis pubis.

- **Flexion** takes place and the sinciput, vertex and occiput sweep the perineum, the head is born

- **Restitution**

This occurs when the chin turns 1/8 of a circle to the mother's left.

- **Internal Rotation of Shoulders**

The shoulders enter the pelvis in the left oblique diameter and the anterior shoulder reaches the pelvis floor first and rotates forward 1/8 of a circle along the right side of the pelvis to lie under the symphysis pubis.

- **External Rotation of the Head**

This occurs simultaneously and the chin moves a further 1/8 of a circle to the left

- **Lateral Flexion**

The anterior shoulder escapes under the symphysis pubis, the posterior shoulder sweeps the perineum and the body is born by a movement of lateral flexion

Possible course & outcome of labour

- **Prolonged labour-** labour is usually prolonged because the face is an illfitting presenting part & does not usually stimulate effective uterine contractions
- **Mentoanterior positions-** with good uterine contractions, descent & rotation of the head occurs & labour progresses to a spontaneous delivery
- **Mentoposterior positions-** if head is completely extended, so that the mentum reaches the pelvic floor first, & the contractions are effective, the mentum will rotate forwards & the position becomes anterior

Management of Labour in Face Presentation

First stage

- Upon diagnosing the condition the first action you must take is to inform the doctor about the face presentation.
- Routine maternal and foetal condition observations are done as in normal labour (maternal pulse, foetal heart rate and contraction) half hourly. Blood pressure and temperature is done two hourly.
- Care should be taken not to infect or injure the foetal eyes during VEs

- Empty the urinary bladder every two hours.
- Vaginal examination to determine cervical dilation and descent of the head, is done every four hours to monitor progress of labour.
- Immediately following rupture of the membranes, a VE should be performed to exclude
- as such an occurrence is more likely becoz the face is an illfitting presenting part.
- In mentoposterior positions, the midwife should note whether the mentum is lower than the sinciput since rotation and descent depends on this. If the head remains high despite good uterine contractions, the mother is prepared for caesarean section

Management of labour cntd…

Delivery

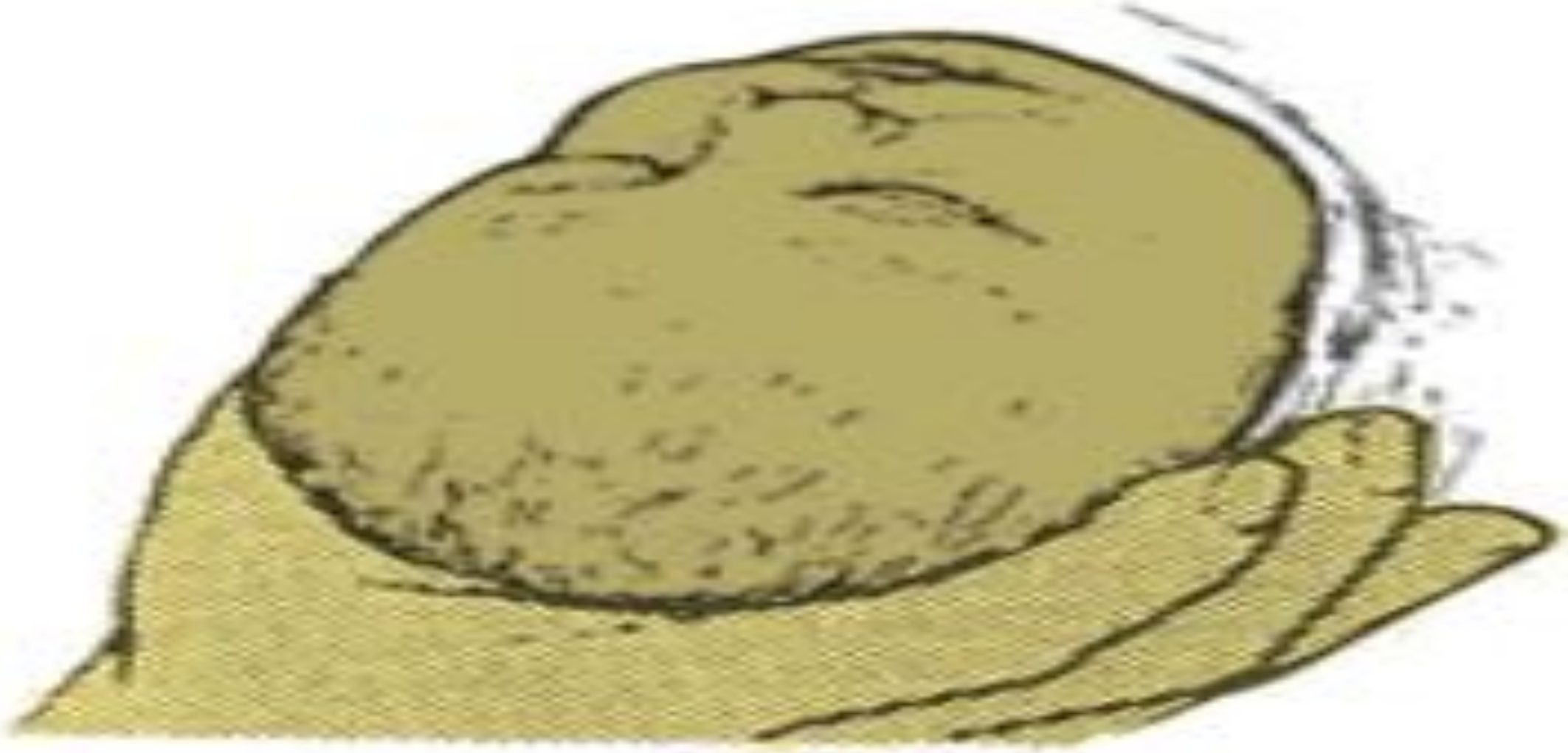
- When the face appears at the vulva, extension must be maintained by holding back the sinciput & permitting the mentum to escape under the symphysis pubis before the occiput is allowed to sweep the perineum. This way, the submentovertical diameter(11.5cm) distends the vaginal orifice instead of the mentovertical diameter(13.5cm)
- Episiotomy is performed to avoid extensive perineal lacerations

The baby's face appears at the vulva

loise m

The occiput is allowed to ride over the perineum

loise m



The head delivered

loise m

Complications of face presentation

- *Obstructed labour*; Because the face, unlike the vertex, does not mould, a minor degree of pelvic contraction may result in obstructed labour
- *Cord prolapse;* A prolapsed cord is more common when the membranes rupture because the face is an ill-fitting presenting part.
- *Facial bruising;*The baby's face is always bruised and swollen at birth with oedematous eyelids and lips;
- *Cerebral haemorrhage*;The lack of moulding of the facial bones can lead to intracranial haemorrhage caused by excessive compression of the fetal skull or by rearward compression, in the typical moulding of the fetal skull found in this presentation;

- *Maternal trauma;* Extensive perineal lacerations may occur at birth owing to the large submentovertical and biparietal diameters distending the vagina and perineum.There is an increased incidence of operative delivery, either forceps delivery or caesarean section, both of which increase maternal morbidity.

END

BREECH PRESENTATION

- Breech presentation occurs in about three percent of labour . Due to the high risks to both the mother and the baby, the present practice is to book all mothers with breech presentation for caesarean section.
- In breech presentation, the foetus lies with the **buttocks in the lower pole** of the uterus, **after 34 weeks** of pregnancy

INCIDENCE OF BREECH PRESENTATION

- Complete breech;10% :flexion at the hips & knees
- Frank; (60%): flexion at the hips, extension at the knees is the most common type of breech presentation. Can be delivered vaginally
- Footling; (30%): may be single or double with extension at the hip(s) and knee(s) so that foot is the presenting part

Epidemiology:

- Occurs in 3-4% (at term)
- In 25-30% (before 28 weeks)

Factors contributing to breech presentation are

- Maternal causes include contracted pelvis, polyhydramnios and multiple pregnancy
- Foetal causes include pre-term labour, hydrocephalus, extended legs

Types of breech presentation & position

- **Complete breech**

Foetal attitude is one of complete flexion, with hips & knees both flexed & feet tucked in beside the buttocks

- **Breech with extended legs(frank breech)**

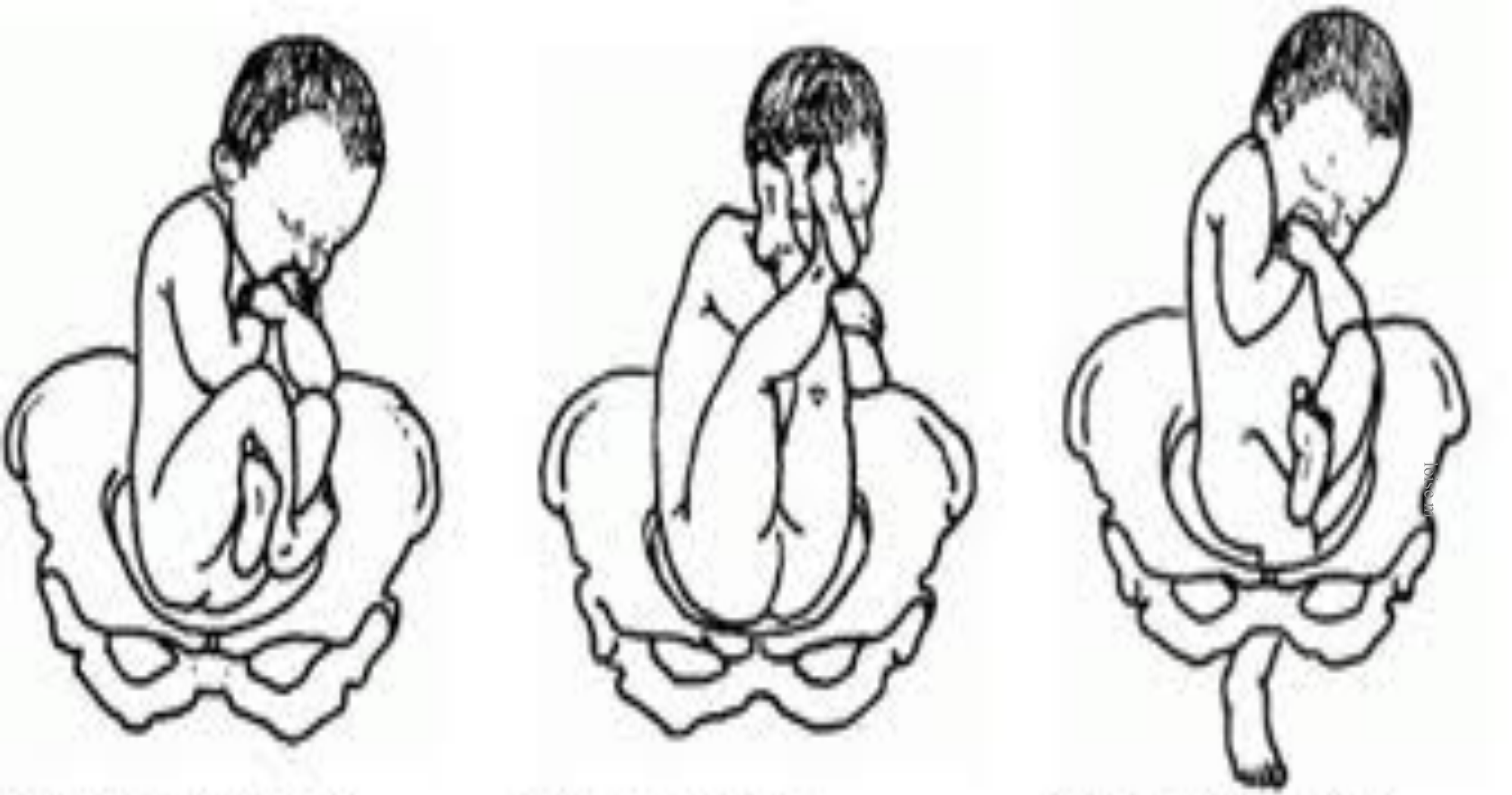
the buttocks present with the hips flexed and the legs extended against the abdomen and chest; this is the most common type of breech presentation

- **Footling breech**

Rare. One or both feet present because neither hips nor knees are fully flexed. The feet are lower than the buttocks

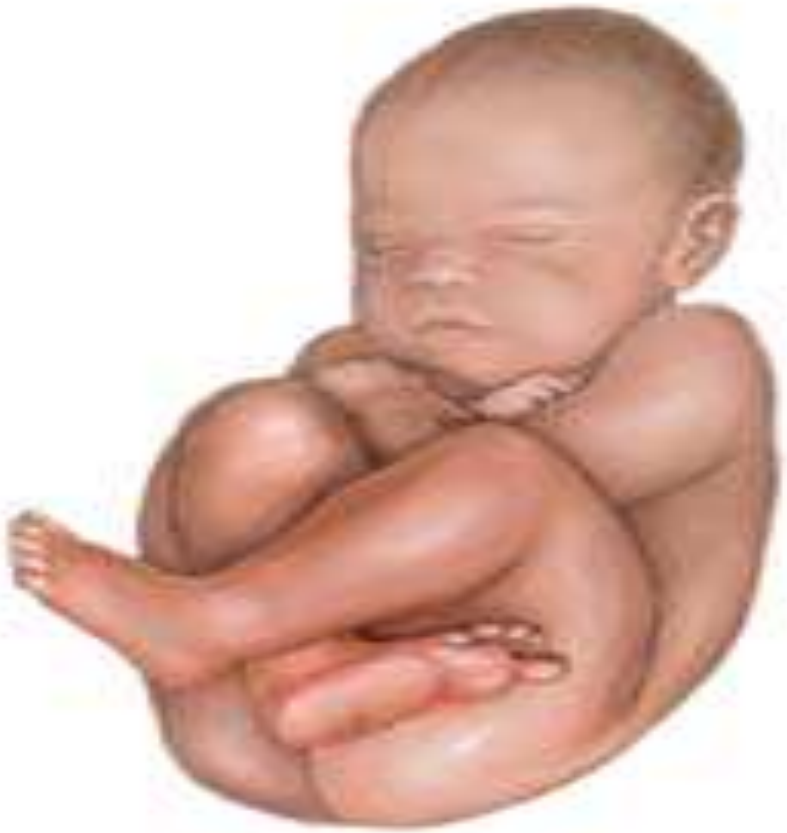
- **Knee presentation**

Very rare. One or both hips are extended with the knees flexed



(a) Complete breech (b) Frank breech (c) Footling breech

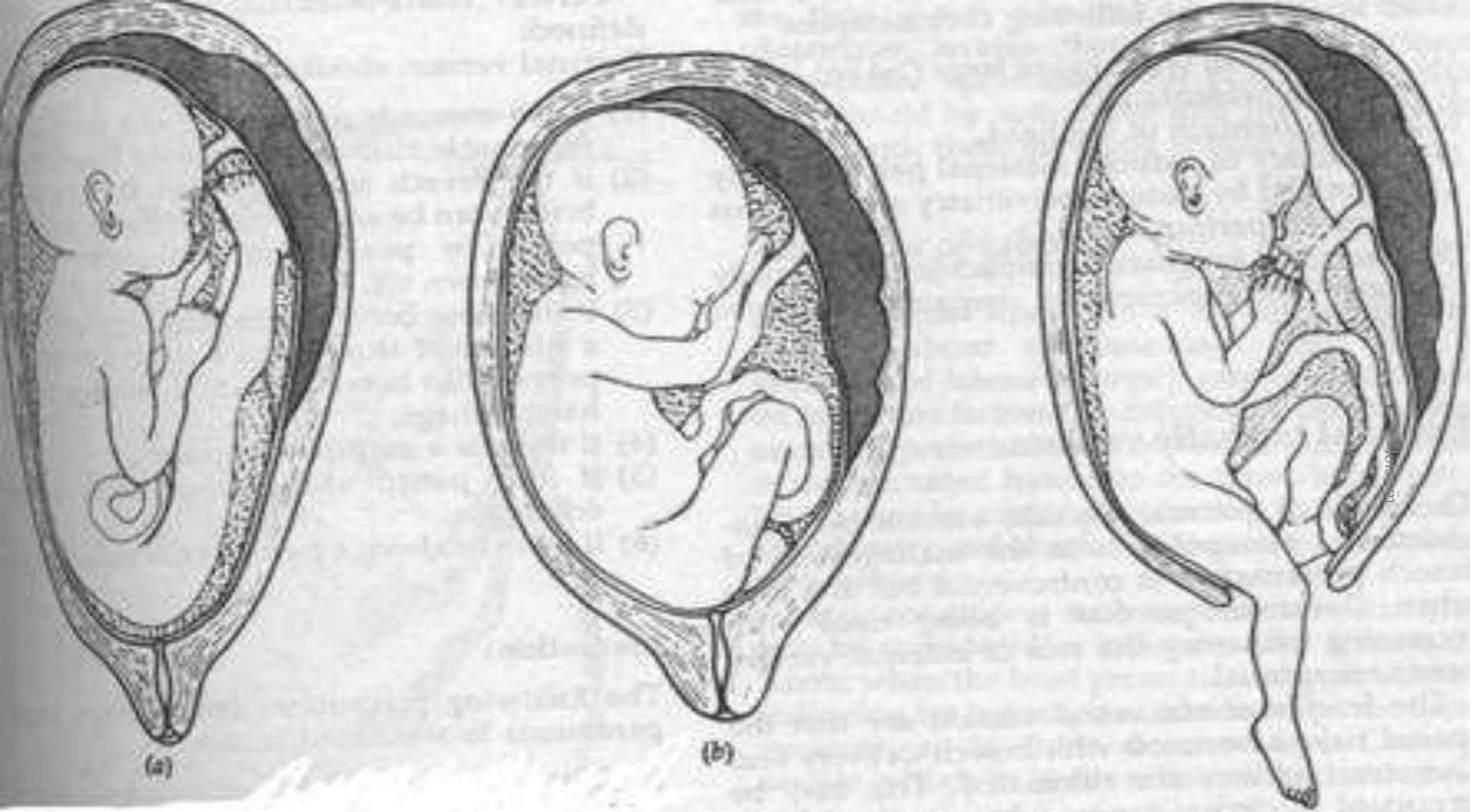
Variations of the breech presentation



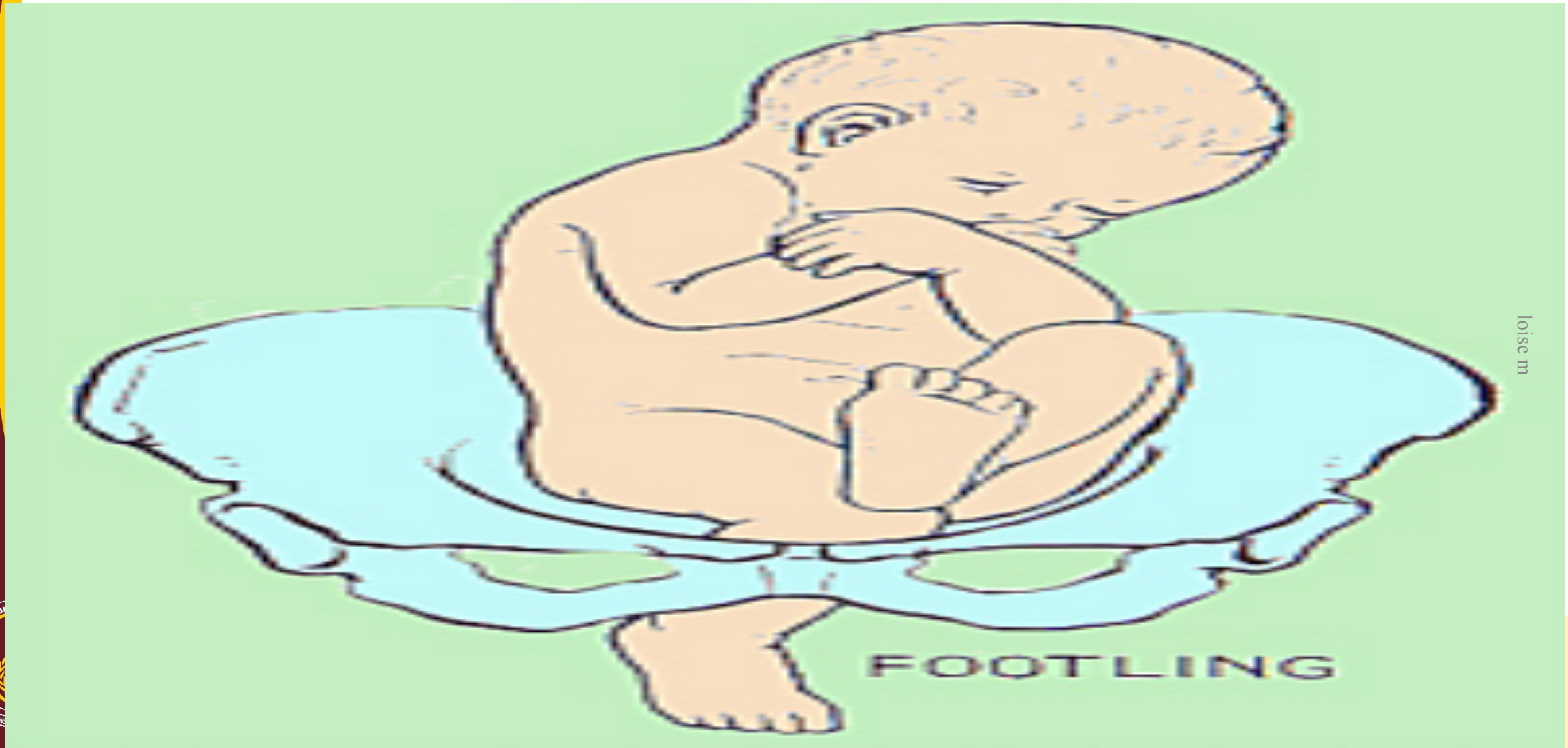
Complete breech

Incomplete breech

Frank breech


(a)
(b)

FOOTLING BREECH PRESENTATION



Causes of breech presentation

1. **Interference with accommodation:**
   - Increased size of the head in relation to breech:
     - Prematurity (the buttocks are not bulky yet): It is the commonest cause.
     - Fetal malformation (particularly hydrocephalus).
     - IUGR.
   - Decreased capacity of fundus or increased capacity of lower segment:
     - In 10% the cavity is mis-shaped as septate or subseptate uterus or submucous myoma or cornual placental implantation which is present in 73% of breech presentation

- Pendulous abdomen: Uterine relaxation and pendulous abdomen in
- high parity (uterus is globular in shape and rather not pyriform).

II- **Interference with fetal movement: (Failure of spontaneous version).**

- IUFD.
- Multiple pregnancy.
- Breech with extended legs: Deflexion or extension attitude with the back of the fetus splinted by the legs may lead to failure of spontaneous version.
- Deflexion attitudes are the main cause of breech presentation in late pregnancy.

- Cord around the neck or short cord

III. **Disorders of amniotic fluid:**

- Polyhydramnios.
- Oligohydramnios: No space for spontaneous version.

IV. **Others:**

- Recurrent breech is present when there is uterine abnormality (Arcuate uterus , subseptate uterus).
- Placenta previa.
- Pelvic tumors.

Diagnosis of breech presentation

Antenatal dx:

- Abdominal examination;
  - Listen to the mother: She may tell you that she can feel that there is something very hard and uncomfortable under her ribs that makes breathing uncomfortable at times. If her baby's feet are in the lower pole of the uterus she may feel some very hard kicks on her bladder
- Palpation: In primigravidae, diagnosis is more difficult because of their firm abdominal muscles. On palpation the lie is longitudinal with a soft presentation

- The head can usually be felt in the fundus as a round hard mass, which may be made to move independently of the back by balloting it with one or both hands

- Auscultation

- When the breech has not passed through the pelvic brim the fetal heart is heard most clearly **above the umbilicus**. When the legs are extended the breech descends into the pelvis easily. The fetal heart is then heard at a lower level

- Ultrasound examination

- This may be used to demonstrate a breech presentation.

- X-ray examination

- Although largely superseded by ultrasound, X-ray has the added advantage of allowing pelvimetry to be performed at the same time.

DX during labour:

- Abdominal examination;
  - Breech presentation may be diagnosed on admission in labour.
- Vaginal examination
  - The breech feels soft and irregular with no sutures palpable, although occasionally the sacrum may be mistaken for a hard head and the buttocks mistaken for caput succedaneum. The anus may be felt and fresh meconium on the examining finger is usually diagnostic. If the legs are extended the external genitalia are very evident

Pre-Natal Management of Breech Presentation

- The midwife refers the mother to a doctor at thirty two weeks if the breech presentation persists.
- An x-ray may be done should there be any doubts in diagnosis. It may reveal the following:
  - Shape and size of the pelvis
  - Size of foetus
  - Foetal abnormalities, for example; hydrocephally
  - Whether the legs are extended or flexed

Nursing Care of Clients with Malpresentations

- Observe closely for abnormal labor patterns.
- Monitor fetal heart beat and contractions continuously.
- Anticipate forceps-assisted birth.
- Anticipate cesarean birth for incomplete breech or shoulder presentation.
- Be prepared for childbirth emergencies such as cesarean section, forceps-assisted delivery, and neonatal-resuscitation.
- Position pt. in Trendelenburg or knee-chest position.
- Manually raise the presenting part aseptically

Anxiety

- Provide client and family teaching,
- Be available to client for listening and talking
- Provide client support and encouragement.
- Encourage client to acknowledge and express feelings.
- Encourage breathing exercises to relieve anxiety.

Fear

- Provide client and family teaching,
- Note for degree of incapacitation.
- Stay with the client or make arrangements to have someone else be there.
- Provide opportunity for questions and answer honestly.
- Explain procedures within level of client's ability to understand and handle.

Risk for Injury

- Observe closely for abnormal labor patterns.
- Monitor fetal heart beat and contractions continuously
- Be prepared for childbirth emergencies such as cesarean section, forceps-assisted delivery, and neonatal-resuscitation.
- Maintain sterility of equipments
- Anticipate forceps-assisted birth.
- Anticipate cesarean birth for incomplete breech or shoulder presentation.

Risk for infection

- Stress proper hand washing techniques of all caregivers.
- Maintain sterile technique.
- Cleanse incision site daily and prn.
- Change dressings as needed.
- Encourage early ambulation, deep breathing, coughing, and position change.

ANTENATAL MANAGEMENT

- If the MW suspects or detects breech presentation at 36weeks' gestation or later, she should refer the woman to a doctor
- The current specific management of all malpresentations is to book the mothers for **elective caesarean section** after 36 gestational weeks.
- The presentation may be confirmed by ultrasound scan (*most preferred coz of its safety*) or occasionally by abdominal x-ray
- On rare occasions, ***external cephalic version*** may be performed.

External cephalic version(ECV)

- ECV is the use of external manipulation on the mother's abdomen to convert a breech to a cephalic presentation.
- ECV is offered at term by an experienced & skilled practitioner
- The success of the procedure not only depends on the skills & experience of the practitioner, but also the position & engagement of the foetus, liquor volume & maternal parity
- Ecv can reduce the number of babies presenting by breech at term by 2/3 thus reducing the c/section rates

Procedure of performing ECV

- Ultrasound scan is performed to localise the placenta & confirm the position & presentation of the foetus
- A 30 minute CTG is performed to establish that the foetus is not distressed at the start of the procedure & maternal BP & pulse are recorded
- Patient is asked to empty the bladder. The MW assists the patient into a comfortable supine position
- Elevate the foot of the bed to help free the breech from the pelvic brim
- The breech is displaced from the pelvic brim towards the iliac fossa. simultaneous force is then used as with one hand on each pole the operator makes the foetus perform a forward somersault

- If the woman is rhesus negative, an injection of anti-D immunoglobulin is given as prophylaxis against iso-immunisation caused by any placental separation. If the version is performed immediately prior to the onset of labour, this should be delayed until after delivery when the blood grp of the baby is known

Complications of ECV

- Knotting of the umbilical cord-this should be suspected if bradycardia occurs & persists. The foetus is immediately turned back to a breech presentation
- Separation of the placenta-the MW should ask the woman to report pain or vaginal bleeding during and after the procedure
- Rupture of the membranes-if this occurs the cord may prolapse becoz neither the head nor breech is engaged

Contraindications of ECV

- Presence of a previous uterine scar
- P.E.T or hypertension- becoz of the increased risk of placenta abruption
- Multiple pregnancy
- Oligohydramnios- becoz too much force has to be applied directly to the foetus & the version is likely to be unsuccessful
- Ruptured membranes
- A hydrocephalic foetus
- Any condition which would require delivery by cs

Mechanism of Labour in a Left Sacro Anterior (LSA) Position

- The bitrochanteric diameter (10cm) enters in the left oblique diameter of the pelvic brim. The sacrum points to the left ilio-pectineal eminence

Summary of LSA Position

- Position :Left Sacro-Anterior, LSA
- Lie :Longitudinal
- Attitude :Complete flexion
- Presentation :Breech
- Denominator :Sacrum
- Presenting part :Anterior left buttock
  - The diameter of engagement : bitrochantric diameter (is a transverse diameter between the two great trochanters of the fetus), it is 10 cm.

Right Sacro Posterior

Left Sacro Posterior

Right Sacro Lateral

Left Sacro Lateral

Right Sacro Anterior

Left Sacro Anterior

The Six Breech Positions

Descent

- This takes place with increasing compaction due to increased flexion of limbs

Internal Rotation of the Buttocks

- The anterior buttock reaches the pelvic floor first and rotates one eighth of a circle forwards along the right side of pelvis to lie underneath the symphysis pubis. The bitrochanteric diameter is now in the antero-posterior diameter of the outlet

Lateral Flexion of the Body

- The anterior buttock escapes under the symphysis pubis. The posterior buttock sweeps the perineum and the buttocks are born by a movement of lateral flexion

Restitution of the Buttocks

- The anterior buttock turns slightly to the patient's right side

Internal Rotation of the Shoulders

- The shoulders enter in the same oblique diameter of the brim as the buttocks. The anterior shoulder rotates forwards 1/8 of a circle along the right side of the pelvis and escapes under the symphysis pubis. The posterior shoulder sweeps the perineum and the shoulders are born.

Internal Rotation of the Head

- The head enters in the transverse diameter of the pelvic brim. The occiput rotates along the left or right side of the pelvis. The sub-occipital region (nape of the neck) impinges under surface of the symphysis pubis

External Rotation of the Body

- The body turns so that the back is uppermost, a movement which accompanies internal rotation of the head.

Birth of the Head

- The chin, face and sinciput sweep the perineum and the head is born in flexed attitude

Specific Management of labour in breech presentation

- **NOTE:** The method of delivery is chosen depends on
  1. Parity of the mother i.e. if she is primigravida
  2. Size of the baby
  3. Other obstetrical complications

FAVORABLE FACTORS FOR VAGINAL BREECH DELIVERY INCLUDE:

- Average sized baby (estimated fetal weight between 2.5- 3.5 kgs)
- Adequate pelvis as confirmed via a pelvic assessment
- Frank or complete breech
- Good labour progress as featured on the partograph
- Easy, spontaneous delivery of buttocks and thighs.

The Principles of Management of breech delivery.

- Intelligent/ keen observation is needed
- Avoid unnecessary interference during the delivery
- Prompt action should be carried out manually when assistance is needed
- Avoid fetal injury and hypoxia

1st stage of labour

- Basic care at this stage is same as in normal labour.
- In complete breech, there is a less well-fitting presenting part & the membranes tend to rupture early. A VE should be performed to exclude cord prolapse
- An epidural block(analgesia) is offered to a woman with breech presentation as it inhibits the urge to push prematurely
- Be prepared to receive an asphyxiated baby thus have ready working neonatal resuscitative equipment
- Discourage the mother from early pushing as this may interfere with effective 2nd stage

2nd stage

- Confirm full dilatation of the cervix thru a VE b4 the woman commences active pushing& reassure the mother
- Inform the obstetrician of the onset of 2nd stage & a paediatrician should be present at the time of delivery

The following procedure should be followed when delivering the complete breech (spontaneous breech delivery):

- Mother's buttocks are positioned at the edge of the bed to allow the baby to hang and apply supra-pubic pressure to the head if required
- Give episiotomy when the buttocks extend the perineum, to avoid compression of a moulded head
- The buttocks should be expelled by an aided bearing down effort of the mother

- With the same contraction the baby is born up to the umbilicus
- Pull a loop of cord to prevent traction of the cord. The cord should be handled gently to avoid inducing spasm and should be nipped under the pubic arch to avoid anoxia
- Check if elbows are on the chest as is the case with complete breech
- The midwife can assist the expulsion of the shoulder by wrapping a small towel around the baby's hips as it is slippery and loses heat
- Hold the baby by the iliac crest to avoid crushing of liver and spleen

- While the uterus is contracting and the woman pushing, the anterior shoulder escapes under the symphysis pubis
- Elevate the buttocks to allow the posterior shoulder to sweep the perineum
- The back should be in the uppermost position until the shoulders are born
- As soon as the shoulders are born, let the baby hang by its weight for one or two minutes

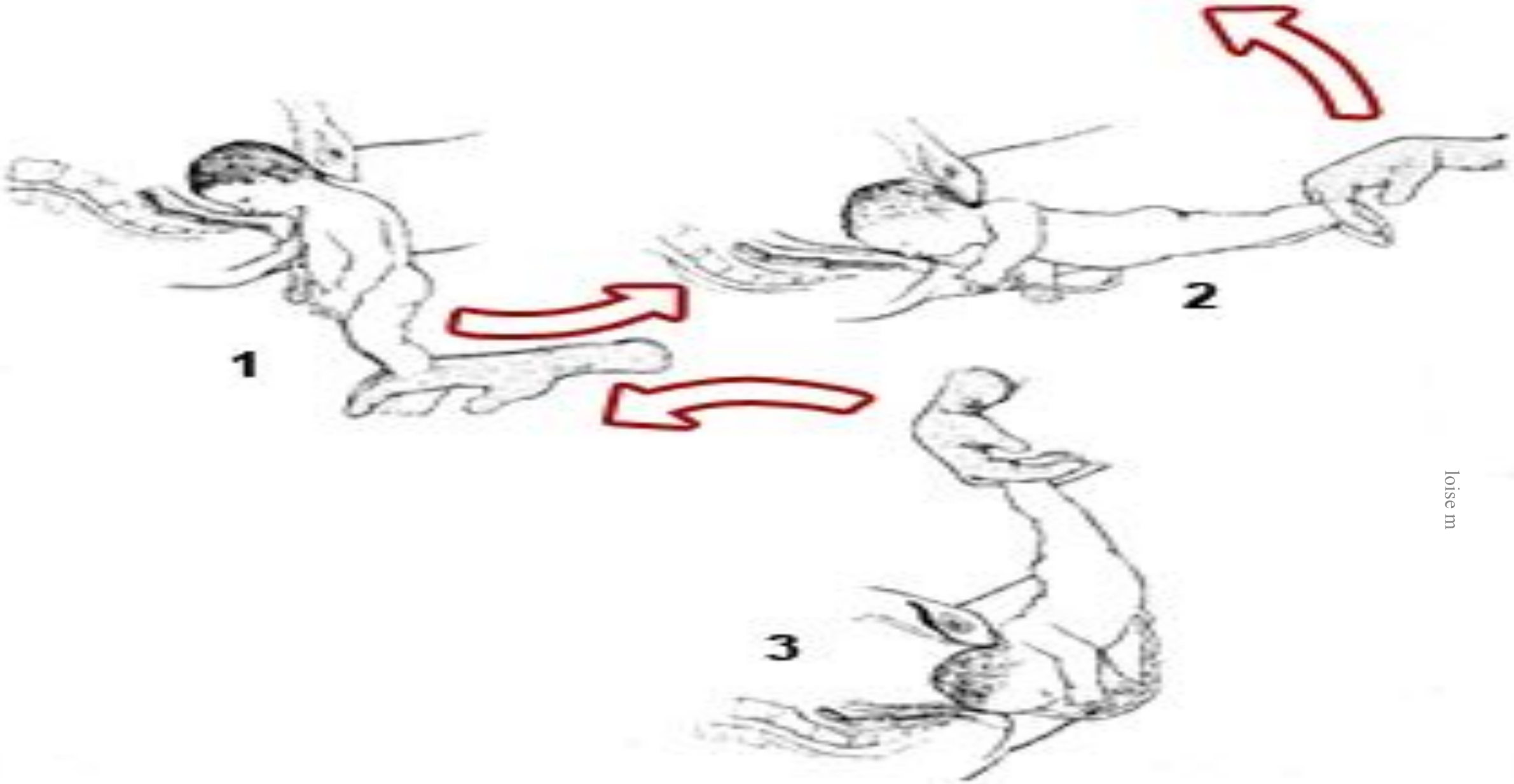
Types of breech delivery

- **Spontaneous breech delivery(SBD)-** occurs with little assistance from the attendant
- **Assisted breech delivery**-the buttocks are born spontaneously, but some assistance is required for delivery of extended legs or arms & the head
- **Breech extraction**-this is a manipulative delivery carried out usually by an obstetrician & is performed to hasten delivery in an emergency situation such as foetal distress

Delivery of the head

Burns marshall method

- The mw or the doctor stands facing away from the mother, and, with the left hand, grasps the baby's ankles from behind with forefingers between the two ankles and hold the stretch, applying sufficient traction to prevent fracture of the neck
- Move the feet through an arch of 180° until the mouth and nose are free at the vulva
- You are now holding the baby upside down and mechanical suction can be used to clear the airway to avoid asphyxia
- At this stage, ask the mother to pant through an open mouth, 'breathing out the head'. One or two minutes should elapse to allow slow delivery of the vault of the head to prevent a tentorial tear

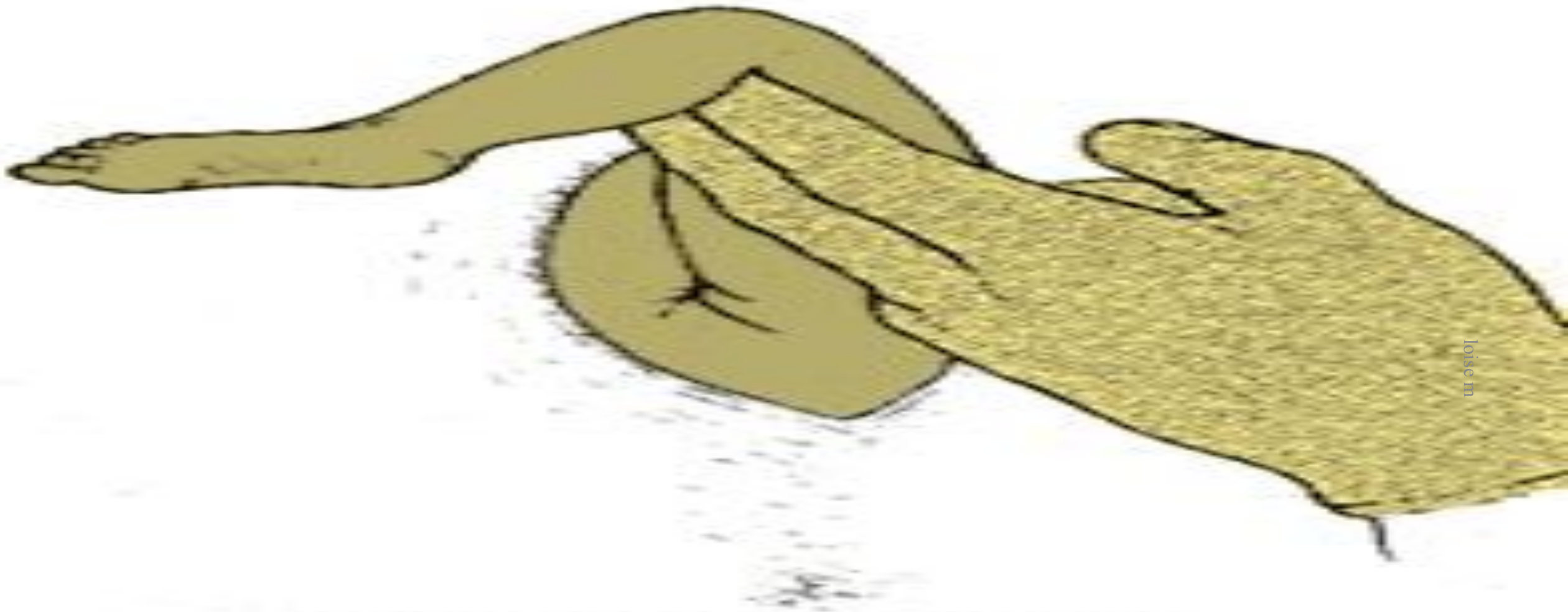


Delivery of the head
(The Burns Marshall method)

2nd stage breech with extended legs (frank breech)

- Apply downward traction until popliteal fossae appear at the vulva
- An episiotomy is made when the buttocks extend the perineum
- Pressure is applied at the popliteal fossae with abduction of the thigh
- The knee will flex and this will aid extraction of the feet and avoid fractures of lower limbs

- The foot will be swept over the baby's abdomen and the feet are born
- You should now wait until the baby is delivered up to the umbilicus, pull a loop of cord
- Feel for the elbow at the chest, which should not be felt with extended hands



Management of the extended legs

loise m

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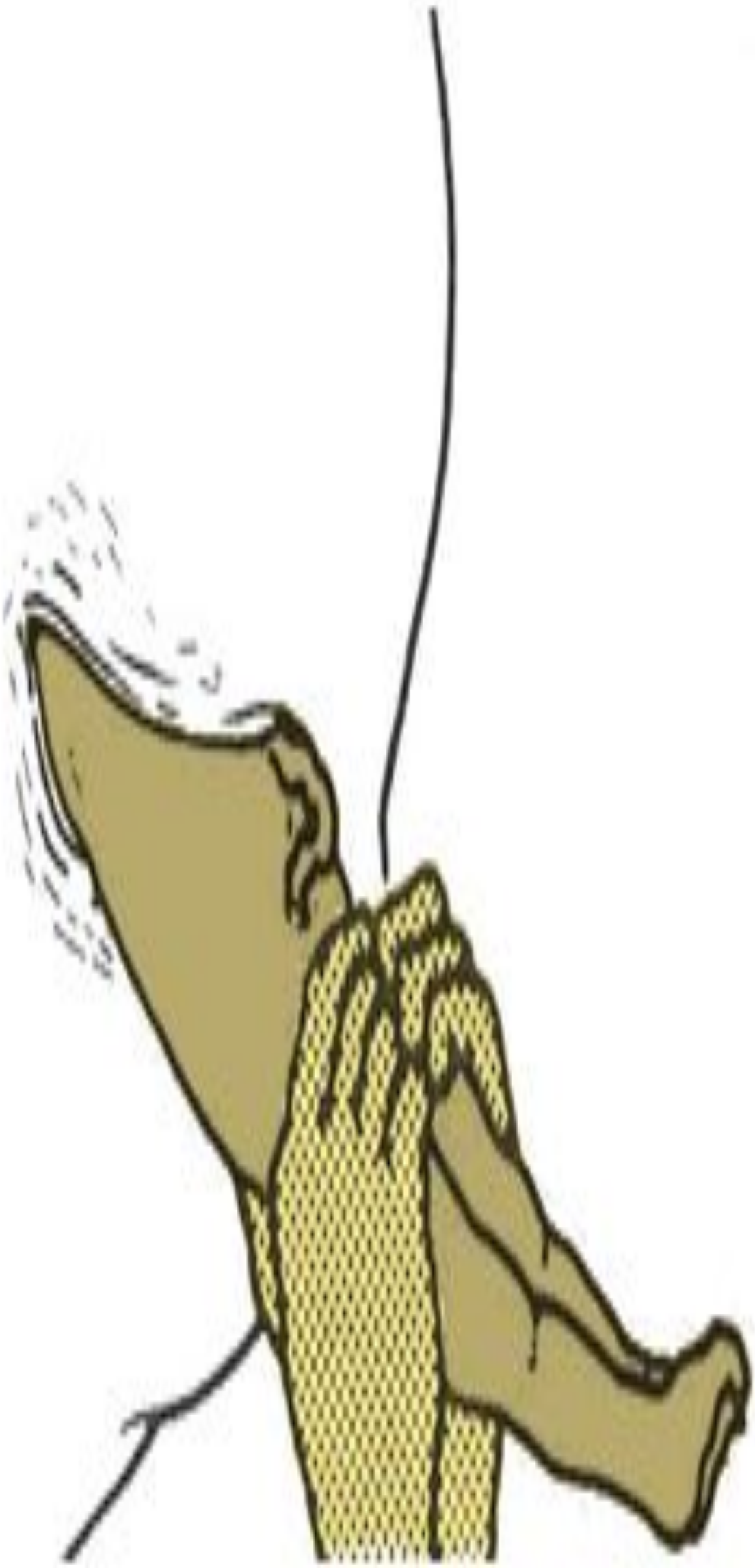
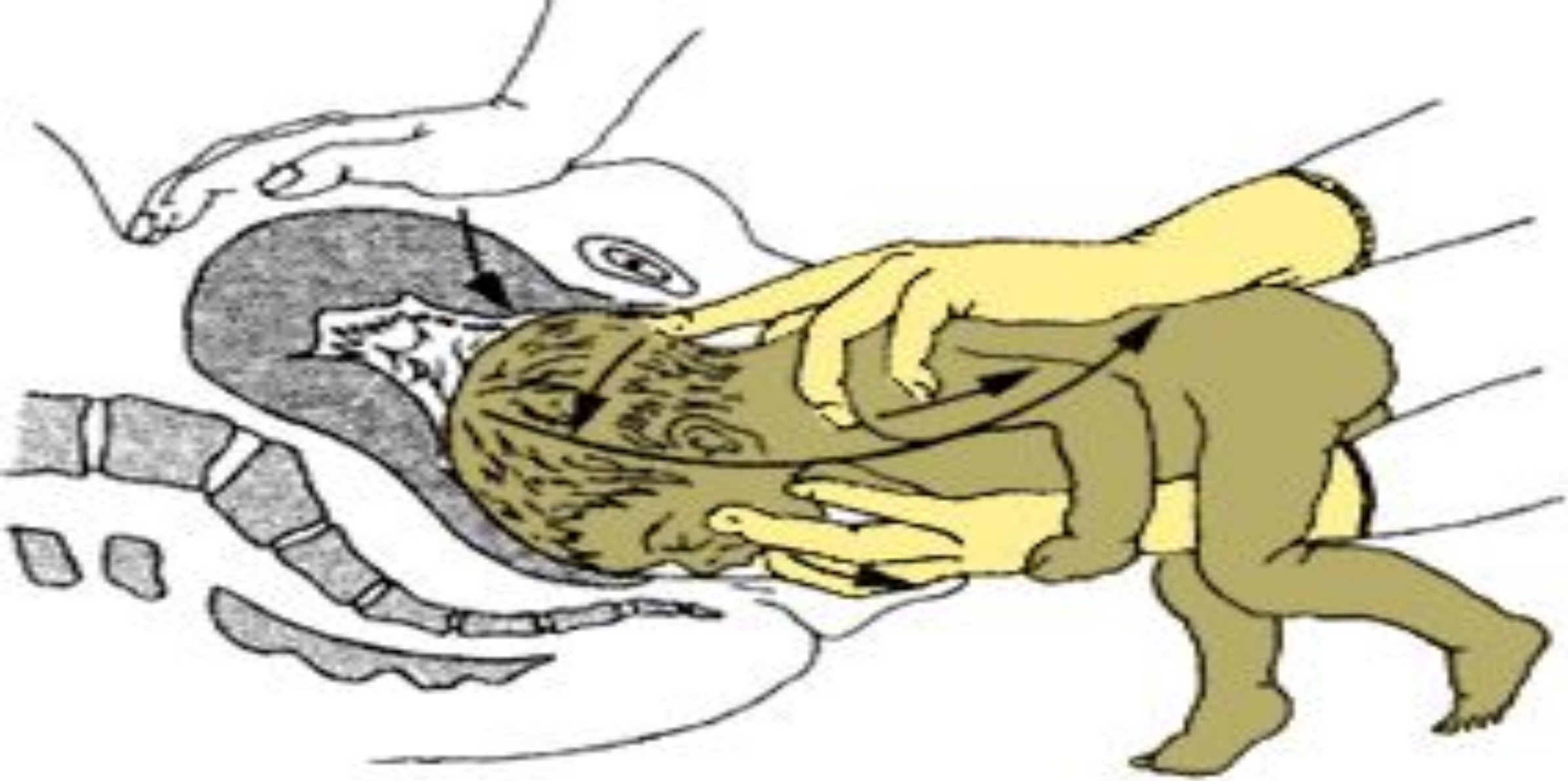


Mauriceau-smellie-veit manoeuvre

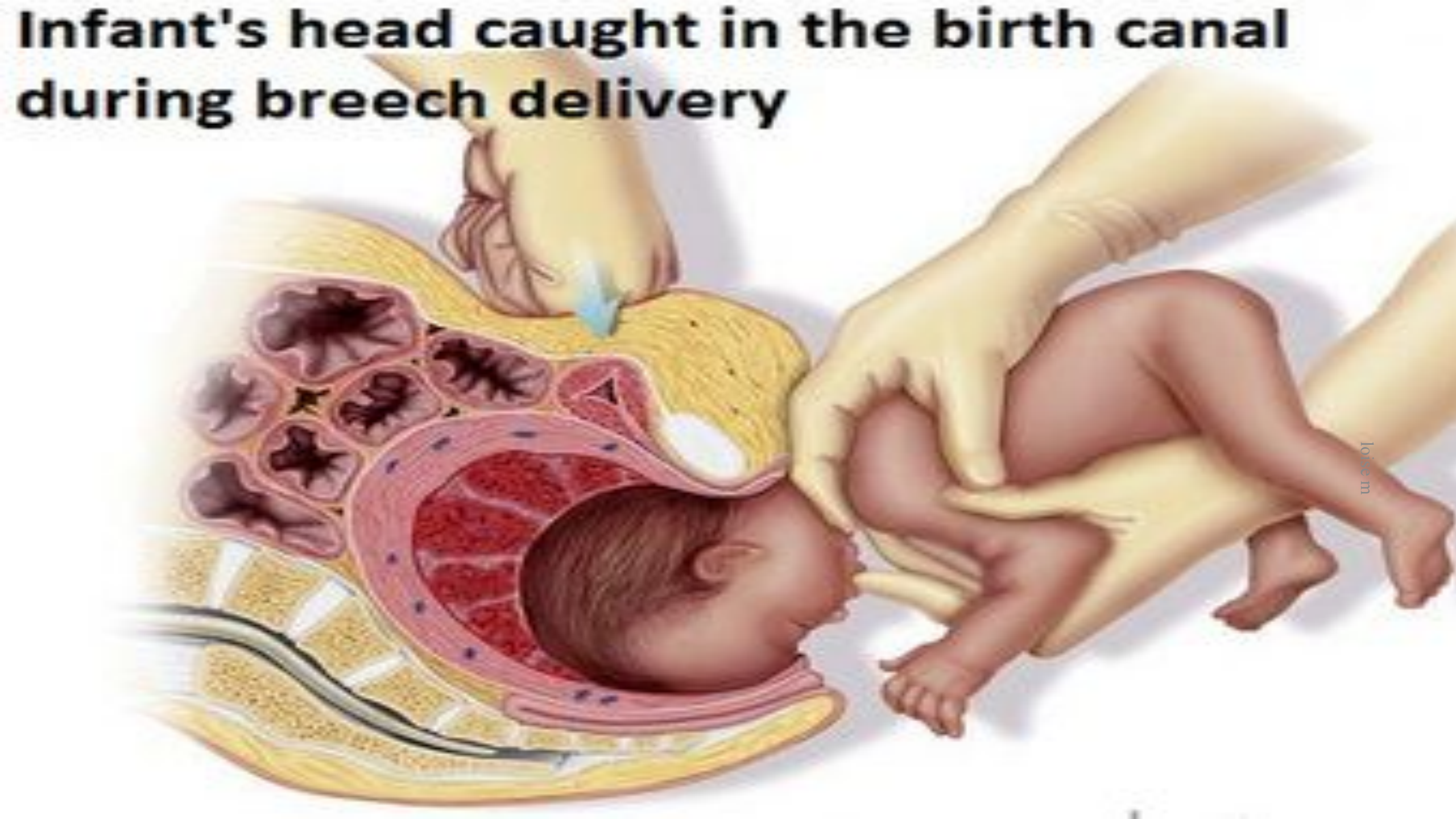
(jaw flexion & shoulder traction)

- **It is the manoeuvre used in delivery of breech with an extended head**
- Mainly used where there is delay in descent of the head because of **extension of the head.**
- The baby is laid astride the right arm with the palm supporting the chest. Two fingers are inserted well back into the mouth to pull the jaw downwards & flex the head
- 2 fingers of the left hand are hooked over the shoulders with the middle finger pushing up the occiput to aid flexion. Traction is applied to draw the head out of the vagina



Delivery of the extended head
(Mauriceau-Smellie-Veit Manoeuvre)

Infant's head caught in the birth canal during breech delivery



Delivery of breech with extended arms (lovset manoeuvre)

- Extended arms are diagnosed when the elbows are not felt on the chest after the umbilicus is born
- Prompt action should be taken to prevent hypoxia. This can be dealt with using **lovset manoeuvre**(a combination of rotation& downwrd traction) employed to deliver the arms whatever position they are in
- When the umbilicus is born & the shoulders are in AP diameter, the baby is grasped by the iliac crests with the thumbs over the sacrum. Downward traction is applied until the axilla is visible

- Maintain a downward traction throughout. Body is rotated through half a circle, 180 degrees, **start by turning the back uppermost**
- Friction of the posterior arm against the pubic bone as the shoulder becomes anterior sweeps the arm infront of the face. This movement allows the shoulders to enter the pelvis in the transverse diameter
- The arm which is now anterior is delivered
- Body is rotated back in the opposite direction & the 2nd arm is delivered in a similar fashion

Causes of Delayed Breech

- Delay in the first stage is rare, though it may be caused by impaction due to a large baby, a small pelvis or weak contractions in which case a caesarean section is done
- Delay during the second stage is usually caused by extended legs

Delay in the Birth of the Head

- If an insufficiently dilated cervix holds up the head, the baby will make gasping movements.
- You should mop the vaginal wall in contact with the baby's face and inserting two fingers make a channel through which you can meet the baby.
- If the head is arrested high in the cavity, disproportion may exist. Suprapubic pressure may help, but application of forceps is necessary.The doctor will use forceps for the delivery of the coming head.

Complications of breech presentation

- Impacted breech- labour becomes obstructed when the foetus is disproportionately large for the size of the maternal pelvis
- Cord prolapse-more common in a flexed or footling breech
- Birth injury
  - Superficial tissue damage
  - Factures of the Humerus, clavicle or femur or dilocation of the shoulder or hip caused during delivery of extended arms or legs
  - Erb's palsy-caused by brachial plexus being damaged by twisting the neck

- Trauma to internal organs- especially a ruptured liver or spleen produced by grasping the abdomen
- Damage to the adrenals- by grasping the baby's abdomen, leading to shock caused by adrenaline release
- Spinal cord damage or fracture of the spine
- Intracranial haemorrhage- caused by rapid delivery of the head which has had no opportunity to mould. Hypoxia may also cause intracranial haemorrhage

Complications cntd…

- Foetal hypoxia- due to cord prolapse or cord compression or due to premature separation of the placenta
- Premature separation of the placenta
- Maternal trauma

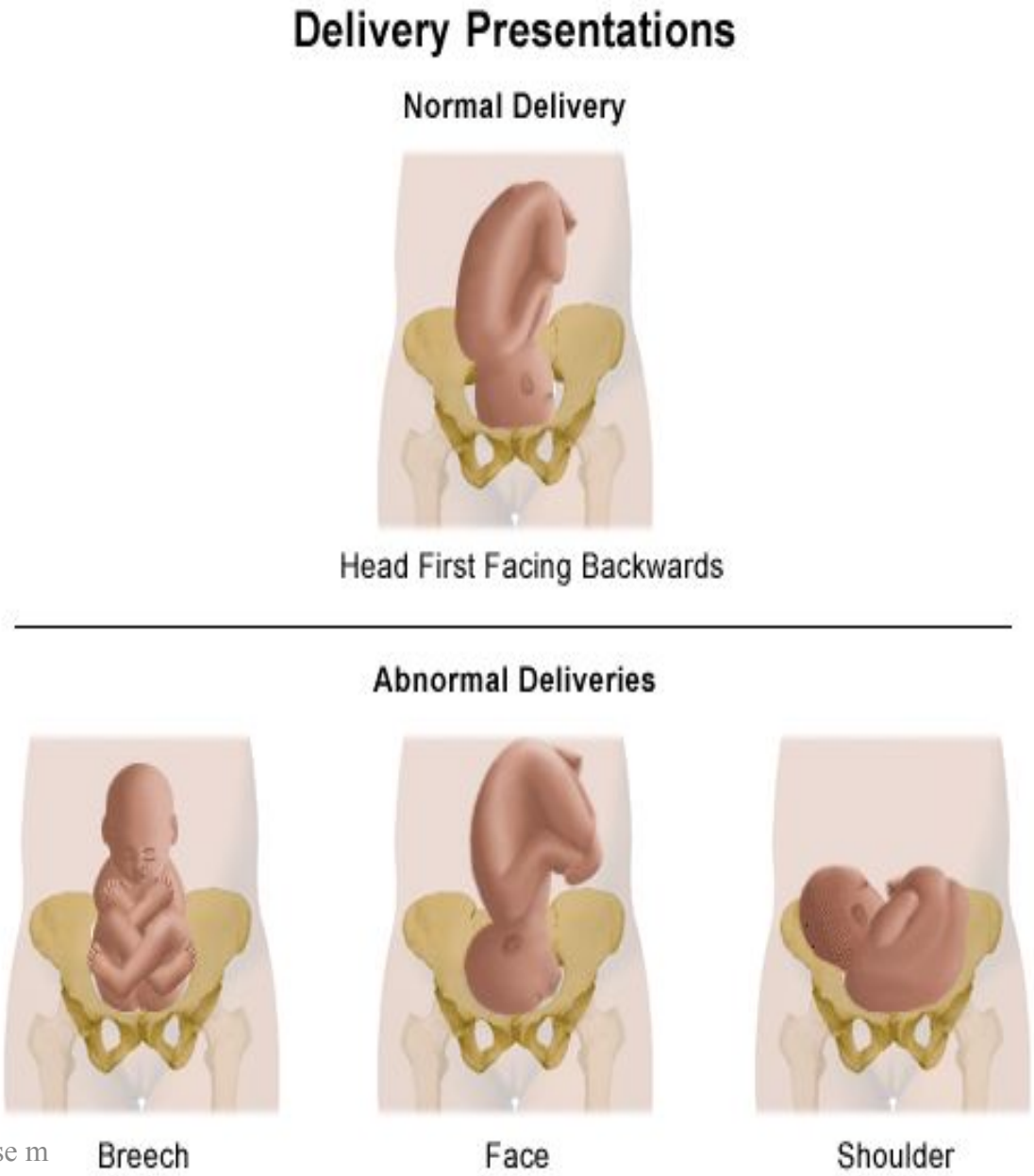
END

SHOULDER PRESENTATION

DESCRIPTION:

- Occurs when the foetus lies with its long axis across the long axis of the uterus(transverse lie) **during labour**.
- Occurs in approximately 1:300 pregnancies near term. Only 17% of these cases remain as a transverse lie at the onset of labour, the majority are multigravida
- The head lies on one side of the abdomen, with the breech at a slightly higher level on the other. The foetal back may be anterior or posterior & the leading part is the arm, shoulder or the trunk

Shoulder presentation



Causes of shoulder presentation

- **Maternal causes**
  - Lax abdominal & uterine muscles especially in multiparity. This is the most common cause & is found in the multigravidae
  - Uterine abnormality eg bicornuate or subseptate uterus as well as uterine fibroids
  - Contracted pelvis. This may prevent the head from entering the pelvic brim

Causes of shoulder presentation cntd…

- **Foetal causes**
  - Preterm pregnancy: the amount of amniotic fluid in relation to the foetus is greater, allowing the foetus more mobility than at term
  - Multiple pregnancy: this is a possibility of polyhydramnios but the presence of more than one foetus reduces the room for manoeuvre when amounts of liquor are normal
  - Polyhydramnios: the distended uterus is globular & the foetus can move freely in the excessive liquor

- Macerated foetus: lack of muscle tone causes the foetus to slump down into the lower pole of the uterus
- Placenta praevia: may prevent the head from entering the pelvic brim

Diagnosis of shoulder presentation

Antenatal

- On abdominal palpation , the **uterus appears broad** & the **fundal height is less than expected** for the period of gestation
- On pelvic & fundal palpation, neither head nor breech is felt. The mobile head is found on one side of the abdomen & the breech at a slightly higher level on the other
- Auscultation: FHS are best heard on one side of the umbilicus towards the foetal head
- An ultrasound scan may be used to confirm the lie & presentation

Intrapartum diagnosis

- On abdominal palpation, findings are as above but with membranes ruptured, the irregular outline of the uterus is more marked. If the uterus is contracting strongly & becomes moulded around the foetus, palpation is very difficult
- On VE, the shoulder is felt as a soft irregular mass

Note; vaginal examination should not be performed without first excluding placenta praevia

- In early labour, the presenting part may not be felt. The membranes usually rupture early becoz of the ill-fitting presenting part with a high risk of cord prolapse
- When the cervix is sufficiently dilated particularly after rupture of the membranes, the scapula, acromion, clavicle, ribs and axilla can be felt.

Possible outcome

- There is **no mechanism for delivery of shoulder presentation**. If this persists in labour, delivery should be via emergency c/section to avoid obstructed labour & subsequent uterine rupture

Specific management

Antenatal;

- Ultrasound examination to detect & rule out placenta praevia & uterine abnormalities
- Pelvic x-ray to detect a contracted pelvis
- Plan for Elective c/section
- Admit the patient for further investigations

Intrapartum management;

- If membranes still intact, external cephalic version may be performed. Can be done in late pregnancy or even early in labour if the membranes are intact and vaginal delivery is feasible.
- In early labour, if version succeeded apply abdominal binder and rupture the membranes as if there are uterine contractions

- If membranes already ruptured spontaneously, a VE should be done to detect possible cord prolapse
- Emergency c/section should be performed if;
  - *The cord prolapses*
  - *When membranes already ruptured*
  - *When external version is unsuccessful*
  - *When labour has been in progress for some hours*

Specific Mgt cntd…

Internal podalic version

- It is mainly indicated in 2nd twin of transverse lie and followed by breech extraction.

Prerequisites:

- General or epidural anaesthesia.
- Fully dilated cervix.
- Intact membranes or just ruptured.

Complications of shoulder presentation

- **Cord prolapse**
- **Prolapsed arm**
- **Neglected shoulder presentation-** the shoulder becomes impacted, having been forced down & wedged into the pelvic brim. The membranes have ruptured spontaneously & if the arm has prolapsed, it becomes blue & oedematous. The uterus goes into a state of tonic contraction, the overstreched lower segment is tender to touch & the foetal heart may be absent. All the maternal signs of **obstructed labour** are present & the outcome if not treated in time is a ruptured uterus & a still birth

With adequate supervision both antenatally & during labour, this should never occur

In summary, the complications of shoulder presentation include:-

MATERNAL COMPLICATIONS

- Obstructed labour
- Uterine rupture
- Puerperal sepsis
- PPH

FETAL COMPLICATIONS

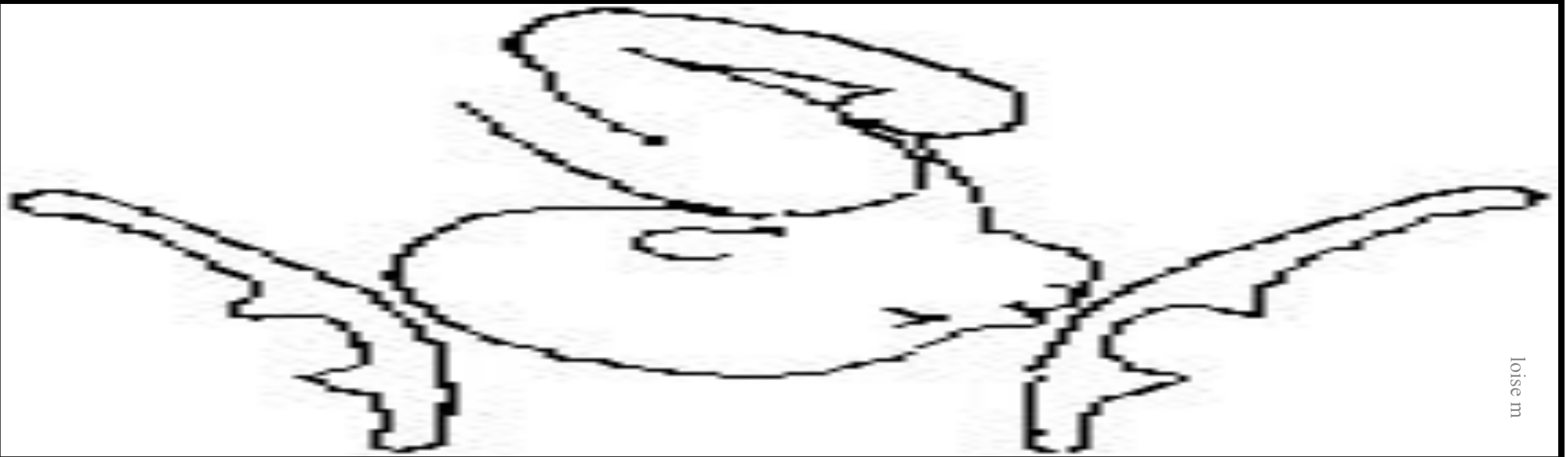
- Fetal death (cord prolapse)
- Prematurity
- Malformation
- Arm prolapse

END

BROW PRESENTATION

- In brow presentation, the foetal head is **partially extended** with the frontal bone, which is bounded by the anterior fontanelle & the orbital ridges, lying at the pelvic brim
- The presenting diameter is **mentovertical** (13.5cm), which exceeds all diameters in an average pelvis
- Occurs in 1:1000 deliveries

BROW PRESENTATION



MGT: If the fetus is alive or dead, deliver by caesarean section.

Causes of brow presentation

- Maternal.These include:
  - lax uterine muscles in multigravidae
  - contracted pelvis.
  - Multiple pregnancy
- Fetal.These include:
  - polyhydramnios
  - placenta praevia.
  - Anencephaly
  - Deflexed fetal head:- thyroid tumour

Diagnosis of brow presentation

- On abdominal palpation, the head is **high**, appers undully **large & does not** descend into the pelvis despite good contractions
- On vaginal examination, the presenting part is high & may be diffucult to reach. The **anterior fontanelle** may be found on the side of the pelvis & on the orbital ridges

Specific Management

- Inform the doctor immediately this presentation is suspected
- Inform the mother about the possible outcome of labour
- Vaginal delivery is extremely rare as obstructed labour usually results
- c/section is the only mode of delivery in brow presentation

complications

- Same as in face presentation with marked **obstructed labour**

UNSTABLE LIE

DEFINITION:

- The lie is defined as unstable when **after 36** weeks' gestation, instead of remaining longitudinal, it varies from one examination to another between longitudinal & oblique or transverse

Causes of unstable lie

Any condition in late pregnancy that **increases the mobility** of the foetus or prevents the head from entering the pelvic brim may cause this

- <u>Maternal causes;</u>
  - Lax uterine muscles in multigravudae
  - Contracted pelvis
- <u>Foetal causes;</u>
  - Polyhydramnios
  - Placenta praevia

Specific Management of unstable lie

Antenatal mgt;

- Admit the patient to hospital at 36-37 weeks gestation to avoid unsupervised onset of labour.
- Alternatively, advice the woman to come to hospital as soon as labour commences
- Ultrasonography should be done to rule out placenta praevia

Intrapartum mgt;

- **Induction of labour** after 36 weeks' gestation when lie is **confirmed to be longitudinal**. The induction is performed by commencing an intravenous infusion of oxytocin to stimulate contractions. A controlled rupture of the membranes is performed so that the head enters the pelvis

- Ensure that the woman has an empty rectum & bladder before the procedure, as a loaded rectum or a full bladder can prevent the presenting part from entering the pelvis
- If induction fails, the mode of delivery should be via c/section

NOTE:

- Extreme caution and close observation is mandatory throughout labour.
- Monitoring of Fetal Heart Beat frequently is very important
- The bladder and the rectum should be emptied to facilitate preservation of the longitudinal lie.

complications

- If labour commences with a lie other than longitudinal, the complications are the same as for a transverse lie

COMPOUND PRESENTATION

SYNONYM: **COMPLEX PRESENTATION**

DEFINITION:

- When a hand, or occasionally a foot, lies alongside the head, the presentation is said to be **compound**
- Occurs with a small foetus or a roomy pelvis & seldom is difficulty encountered except in cases where it is associated with a flat pelvis
- On rare occasions, the head, hand & foot are felt in the vagina, a serious situation which may occur with a dead foetus
- If diagnosed during first stage, medical aid must be sought. If during 2nd stage the midwife sees a hand presenting alongside the vertex, she should try to hold the hand back

END

MWISHO!!!
Questions ???

SUMMARY- MIDWWIFERY BLOCK II CONTENT

1. **PROLONGED PREGNANCY**

3. **ABNORMAL LABOUR:**

- Prolonged labour
- Obstructed labour
- Precipitate labour
- Trial of labour

4. **OBSTETRIC EMERGENCIES (intrapartum related):**

i. Ruptured uterus
ii. Cord presentation
iii. Cord prolapse
iv. Vasa praevia
v. Shoulder dystocia

4. ASSISTED BIRTHS:

i. Caesarean section
ii. Vacuum extraction
iii. Forceps delivery
iv. Symphysiotomy

5. MALPOSITIONS AND MALPRESENTATIONS OF THE OCCIPUT;

i. Occipito posterior position
ii. Breech presentation
iii. Face presentation
iv. Shoulder presentation
v. Brow presentation
vi. Compound presentation
vii. Unstable lie

REVISION

1. Mrs. J, a para 4+0 is admitted in labour ward and on VE, a diagnosis of cord prolapse is made.
   a) Describe the normal umbilical cord (2 mks)
   b) List 6 predisposing factors to cord prolapse (3 mks)
   c) Describe the specific mgt of mrs J until the baby is born (15 mks)
2. Define (3 mks)
   a) Vasa praevia
   b) Fetal exsanguination
   c) Still birth

3. a) What is abnormal labour? 2 mks

b) outline six principles of managing abnormal labour (6 mks)

c) briefly describe how you would apply the principles in managing abnormal labour (12 mks)

4. State 4 causes of prolonged labour (4 mks)

5. Outline 4 signs of actula rupture of the uterus following obstructed labour (4 mks)

- Define post term pregnancy- 1 mk
- State any 4 effects of post term pregnancy- 4
- State any 4 abnormalities of the passenger that predispose to prolonged labour- 4
- Define vasa praevia- 1
- Explain how the bandl's ring eventually results to ruptured uterus- 5 mks
- Explain 4 clinical features of impending rupture of the uterus during labour- 4 mks
- State 6 factors that would necessitate caesarean birth:
  - Maternal fs- 2 mks
  - Fetal fs- 2 mks
  - Placental fs- 2 mks

- Explain how u would diagnose OPP on:
  - Inspection- 1 mk
  - Palpation- 2 mks
  - Auscultation- 2 mks
- Explain 4 possible complications of breech presentation- 4 mks
- Describe the mechanism of labour in a left sacral anterior position- 10 mks
- Explain the 2nd stage management of a mother in breech presentation- 6 mks
- Formulate 3 priority nursing diagnosis in a client with face presentation in 1st stage of labour- 3 mks

Thank you

The End
Thank You