



B. PROBLEMS WITH THE PASSENGER

I. ABNORMAL LIE

Where the long axis of the fetus is not lying along the long axis of the mother's uterus.

- Transverse
- Oblique
- Unstable

Longitudinal (may either be cephalic or breech) is normal

II. MALPOSITION

Where the fetus is lying longitudinally and the vertex is presenting, but not in Occiput Anterior (OA) position.

A. Occiput Posterior (OP)

- A malposition of vertex presentation
- Arrested labor may occur when head does not rotate and/or descend.
- Delivery maybe complicated by perineal tears or extension of an episiotomy.

B. Occiput Transverse (OT)

- Is the incomplete rotation of *Occiput Posterior* to *Occiput Anterior*, which results in a horizontal or transverse position of the fetal head.

Factors that Favor Malposition

1. Pendulous abdomen – in multiparae
2. Anthropoid pelvic brim – favors direct OP/OA
3. Android pelvic brim
4. Flat sacrum – transverse position
5. Placenta on the anterior uterine wall

Diagnosis

- Course of labor is usually normal, except for prolonged second stage (>2 hours)

Abdominal Examination:

- a) Lower part of the abdomen is **flattened**
- b) Difficult to palpate **fetal back**
- c) Fetal small parts are palpable **anteriorly**
- d) Fetal heart tone may be heard in the **flanks**

Vaginal Examination:

- a) Posterior fontanel is towards the **sacral-iliac joint** (difficult)
- b) Anterior fontanel is easily felt, if head is **deflexed**
- c) Fetal head may be markedly molded with extensive caput, making it more difficult to diagnose the correct station and position.

Management

Spontaneous rotation to occiput anterior occurs in 90% of cases.

- Especially in good uterine contraction, spacious pelvis, average size fetus.
- If arrest of labor occurs in 2nd stage: Emergency *cesarean section*

III. MALPRESENTATION

Where the fetus is lying longitudinally, but presents in any manner other than vertex.

- Breech

- Brow
- Face
- Shoulder
- Compound

A. Vertex Malpresentation –

1. Brow Presentation

- most uncommon of all presentation
- babies born vaginally from brow presentation experience extreme facial edema

Assessment

- On abdominal Examination** – more than half of fetal head is above the symphysis pubis and occiput is palpable at a higher level than the sinciput.
- On vaginal examination** – the anterior fontanel and the orbits are felt.

Management – can be delivered by CS only

2. Face Presentation

- Occurs when head is hyper-extended, the face is the presenting part, the chin (mentum) is the denominator
- The mechanism of labor in face presentation is:
 - Descent
 - Internal Rotation
 - Flexion
 - Extension
 - External Rotation
 - Expulsion

Causes

Maternal	Fetal
<ul style="list-style-type: none"> • Lax uterus due to Multiparity • Contracted pelvis / CPD • Placenta previa • Multiple pregnancy • Occiput posterior due to tendency of fetus of extending head instead of flexing it 	<ul style="list-style-type: none"> • Large fetus • Congenital Malformation (Anencephaly) • Multiple cord coil • Musculoskeletal abnormality (spasm / shortening of extensor muscle of neck) • Tumors around the neck (congenital goiter)

Signs and Symptoms

- Absence of engagement occurs
- On IE, the examining fingers feel the mouth, nose, malar bones. and orbital ridges
- UTZ confirms the diagnosis

Management

- If chin is in anterior position (LMA or RMA), uterine contractions are strong, head is small, shoulders have already entered the pelvis and there is no pelvic contraction, vaginal delivery is possible but longer than usual. Forceps may be used to hasten 2nd stage
- If chin is in posterior position (RMP, LMP), vaginal delivery may be impossible and dangerous if attempted because it can lead to transverse arrest. CS

3. Sincipital Presentation

- Occurs when the larger diameter of the fetal head is presented.
- Labor progress is slowed with slower descent of the fetal head.

PRESENTING PART		DIAMETER
Suboccipitobregmatic	Flexed vertex presentation	9.5 cm
Suboccipitofrontal	Partially deflexed vertex	10.5 cm
Occipitofrontal	Deflexed vertex	11.5 cm
Mentovertical	Brow	13 cm
Submentobregmatic	Face	9.5 cm

B. Breech Presentation – Most common cause of fetal malpresentation.

Types of Breech Presentation

1. **Frank Breech**
 - Buttocks comes first
 - Hips are flexed, knees are extended
2. **Complete Breech**
 - Buttocks comes first
 - Hips and knees are flexed
3. **Footling (Double or Single)**
 - 1 or both feet come first
 - Rare in term, common in premature
4. **Kneeling Breech**
 - 1 or both legs extended at the hips & flexed at the knees
 - Extremely rare

Assessment

1. **Abdominal Examination** – Leopold's Maneuver no. 1 – head is felt on the fundus.
2. **Auscultation** – Leopold's Maneuver no. 2 – FHT on upper quadrant of the abdomen.
3. **Vaginal Examination** – Buttocks and/or feet are felt; thick dark meconium is normal.

Etiology

MATERNAL	FETAL	PLACENTAL
Polyhydramnios Oligohydramnios Uterine abnormalities Pelvic tumor Uterine surgery Contracted pelvis Previous breech delivery	Prematurity Multiple pregnancy Fetal Anomalies <ul style="list-style-type: none"> • Hydrocephalus • Anencephaly 	Placenta previa

Complications

1. **Prolapse cord** – presenting part does not fit well enough into the pelvic brim.
2. **Birth trauma** that includes:
 - Fracture of the skull, clavicle, humerus
 - Intracranial hemorrhage
 - Rupture of abdominal organs
3. **Dysfunctional & prolonged labor** – soft buttocks does not aid in cervical dilatation.
4. **Meconium aspiration** – pressure on abdomen and buttocks can force passage of meconium into the amniotic fluid before birth.
5. **Intrauterine anoxia**
6. **Fetal death**

Management

1. **Confirmation by ultrasound** – at or after 36 weeks.

2. **External Cephalic Version (ECV)** – attempt ECV if:
- breech presentation is present at or after 37 weeks
 - vaginal delivery is possible
 - there are no contraindications (fetal abnormality, placenta previa, uterine bleeding, previous uterine surgery, hypertension, multiple gestation, Oli or Polyhydramnios)

Risk of ECV

- Placental abruption
- PROM
- Cord accident
- Transplacental Hemorrhage
- Fetal bradycardia

3. **Vaginal Breech Delivery** – may be attempted if:

- there is no pelvic contraction
- fetal weight is not more than 3,500 grams
- there is experienced/skilled personnel in breech delivery
- spontaneous labor occurs with progressive cervical dilatation
- no evidence of fetopelvic disproportion

Principle: Masterly Inactivity (Hand-Off).

Important points for safe conduct of vaginal breech delivery are:

- Do not be in a hurry
- Never pull from below, let the mother expel the fetus by her own effort with uterine contractions
- Always keep the fetus with its back anterior
- Keep a pair of obstetric forceps ready if necessary to assist the coming head
- Anesthetist and pediatrician should attend the delivery
- Inform operating room if cs is needed

General Techniques of Vaginal Breech Delivery

Spontaneous Breech Delivery – born without traction or manipulation from OB

Partial Breech Extraction – born up to the umbilicus; rest of the body is extracted

Total Breech Extraction – entire body is extracted by OB

Different Maneuvers

Pinard's – done in breech with extended leg

- once the groin is visible, gentle pressure can be applied to abduct the thigh and reach the knee
- The knee can be flexed with pressure in the popliteal fossa & the leg delivered.
- anterior leg is always delivered first

Loveset Maneuver – automatically corrects any upward displacement of arms

- Baby's trunk is rotated with downward traction, holding at the iliac crest so that posterior shoulder comes below the symphysis pubis, arm is delivered by flexing the shoulder followed by hooking at the elbow and flexing it, followed by bringing down the forearm like a "hand shake".
- Same procedure is repeated by reverse rotation of 180° so that anterior shoulder comes below the symphysis pubis.

Mauriceau-Smellie-Veit Maneuver (Jaw Flexion & Shoulder Traction) – used to extract the head after delivery of infant's body

- Baby is rested on obstetrician's supinated non-dominant hand, with limbs hanging on either side.
- Non-dominant Index & middle fingers are placed on malar bones, dominant index & ring fingers are placed on shoulders with middle finger on sub-occipital region.
- To achieve flexion, traction is given in downward and backward direction and simultaneous suprapubic pressure is maintained by the assistant until nape is visible.

- Baby is pulled upward and forward direction so that face is born, and by depressing the trunk the head is born.

Prague Maneuver – used when the back of the fetus fails to rotate to the anterior.

- The operator delivers the shoulders with one hand, while making pressure above the symphysis pubis with the other hand.

Bracht Maneuver – Delivery by extension of the legs and trunk of the fetus over the symphysis pubis and abdomen of the mother

- The fetal head is born spontaneously as the legs and trunk are lifted above the maternal pelvis, and as the body of the infant is extended by the operator.

Abdominal Rescue – fetus is replaced when fully deflexed head is entrapped and cannot be delivered vaginally. CS follows

Cleidotomy – involves cutting of shoulder to facilitate delivery. Also used in shoulder dystocia

Management

- Continuous assessment of POL; contractions, effacement, dilatation, station, presentation
- Assessment of fetal condition: ultrasound to determine anomalies such as hydrocephaly, microcephaly and anencephaly

4. Cesarean Section (CS)

C. Shoulder Presentation

- Occurs when fetus assumes a transverse or oblique lie
- The fetus does not engage in this presentation so there is a great danger of cord prolapsed after membranes have ruptured

Causes

1. Lax uterine and abdominal muscles due to multiparity
2. Contracted pelvis
3. Fibroids and congenital abnormality of the uterus
4. Preterm fetus, hydrocephalus
5. Placenta previa
6. Multiple pregnancy

Signs and Symptoms

1. Shape of uterus is more horizontal than vertical
2. On Leopold's Maneuver – the fetal head and buttocks occupy the sides of the uterus

Management

1. External version can be performed before labor begins to rotate fetus
2. If version fails, the preferred method is CS

D. Compound Presentation

- A fetal presentation in which an extremity presents alongside the part of the fetus closest to the birth canal. The majority of compound presentations consist of a fetal hand or arm presenting with the vertex.

Management

1. Observed closely to ascertain whether the arm retracts out of the way with descent of the presenting part.
2. If it fails and appears to prevent descent of the head, prolapsed arm should be pushed gently upward and the head simultaneously downward by fundal pressure.

SUMMARY

PRESENTATION	MANAGEMENT
Breech	Vaginal delivery +- ECV / CS
Face	Vaginal delivery (chin anterior), CS (chin posterior)
Brow	Cesarean Section (CS)
Shoulder	Cesarean Section (CS)
Compound	Replacement of prolapsed arm →vaginal delivery / Cesarean Section

IV. FETAL DISTRESS

Refers to the presence of signs in a pregnant woman before or during childbirth that suggest that the fetus may not be well.

Signs and Symptoms

Generally it is preferable to describe specific signs in lieu of declaring fetal distress that include:

1. Decreased movement felt by the mother
2. Meconium stained amniotic fluid
3. Non-reassuring patterns seen on cardiotocography:
 - Increased or decreased fetal heart rate (tachycardia and bradycardia), especially during and after a contraction
 - Decreased variability in the fetal heart rate
 - Late decelerations

Causes

There are many causes of "fetal distress" including:

1. Breathing problems
2. Abnormal position and presentation of the fetus
3. Multiple births
4. Shoulder dystocia
5. Umbilical cord prolapse
6. Nuchal cord
7. Placental abruption
8. Premature closure of the fetal ductus arteriosus
9. Uterine rupture
10. Intrahepatic cholestasis of pregnancy, a liver disorder during pregnancy

Treatment

- Instead of referring to "fetal distress", current recommendations hold to look for more specific signs and symptoms, assess them, and take the appropriate steps to remedy the situation through the implementation of intrauterine resuscitation.
- Traditionally the diagnosis of "fetal distress" led the obstetrician to recommend rapid delivery by instrumental delivery or by caesarean section if vaginal delivery is not advised.

V. PROLAPSE UMBILICAL CORD

- Occurs when the cord passes out the uterus ahead of the presenting part.
- Occurs after membranes have ruptured when the fetus is not yet engaged or does not completely cover the pelvic inlet.
- Always lead to cord compression as the presenting part descends in the birth canal.

Causes

1. Polyhydramnios
2. Long cord
3. Malposition and malpresentation (shoulder and foot)
4. Prematurity
5. Placenta previa
6. Premature rupture of membranes

Risk Factors

Spontaneous Factors:

- **Fetal Malpresentation:** Abnormal fetal lie tends to result in space below the fetus in the maternal pelvis, which can then be occupied by the cord.
- **Polyhydramnios**, or an abnormally high amount of amniotic fluid
- **Prematurity:** likely related to increased chance of malpresentation and relative polyhydramnios.
- **Low Birth Weight:** usually described as <2500g at birth, though some studies will use <1500g. Cause is likely similar to those for prematurity.
- **Multiple Gestation**, or being pregnant with more than one fetus at a given time: more likely to occur in the fetus that is not born first.
- **Spontaneous Rupture of Membranes:** about half of prolapses occur within 5 minutes of membrane rupture, two-thirds within 1 hour, 95 % within 24 hours.

Treatment Associated Factors:

- Artificial rupture of membranes
- Placement of internal monitors (for example, internal scalp electrode or intrauterine pressure catheter)
- Manual rotation of fetal head

Signs and Symptoms

1. Cord protrudes from the vagina.
2. Cord is palpable in vaginal canal /cervix during IE
3. Fetal distress, especially variable deceleration in FHT pattern

Classification

There are three types of umbilical prolapse that can occur:

- **Overt Umbilical Cord Prolapse:**
 - Descent of the umbilical cord past the presenting fetal part.
 - Cord is through the cervix and into or beyond the vagina.
 - Requires rupture of membranes.
 - This is the most common type of cord prolapse.
- **Occult Umbilical Prolapse:**
 - Descent of the umbilical cord alongside the presenting fetal part, but has not advanced past the presenting fetal part.
 - Can occur in intact or ruptured membranes.
- **Funic (Cord) Presentation:**
 - Presence of the umbilical cord between the presenting fetal part and fetal membranes.
 - The cord has not passed the opening of the cervix.
 - The membranes are not yet ruptured.

Management

1. Prevention - after membranes have ruptured:
 - a. Always assess FHT.
 - b. Place client in bed rest.
2. Reduce pressure on the cord by:

- a. Place client in Knee-chest or Trendelenburg position, or place folded towel under the hips.
- b. Put on sterile gloves and insert 2 fingers into the vagina, then put presenting part upward.
3. If cord is exposed to air, cover with saline moistened sterile compress to prevent it from drying because drying of the cord may lead to atrophy and constriction of blood vessels.
4. Never replace cord back into the vagina as this can result in cord kinking or knotting.
5. O₂ therapy
6. Deliver baby ASAP
 - a. Vaginal delivery if cervix is fully dilated without fetal distress.
 - b. CS if cervix is not yet fully dilated and if fetal distress is present.

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