

Malpresentations and Malpositions

Background

1. Definition

- Presentation:
 - Fetal part presenting at pelvic outlet
- Normal:
 - Vertex head is presenting part
- Malpresentations
 - Cephalic
 - Brow (brow of infant is presenting), face and compound (head and hand presenting together)
 - Breech (complete, frank, footling)
 - Shoulder
- Position: position of fetal occiput in relation to maternal pelvis
- Normal: occiput anterior
- Malpositions: occiput posterior, occiput transverse

Pathophysiology

1. Incidence

- Face 1/600
- Brow 1/1,400
- Breech 1/33
- Compound 1/1,500
- Occiput posterior: 15% early labor and 5% at delivery
- Transverse 1/335

2. Risk factors for malpresentation

- Fetal factors
- Prematurity
- Large baby
- Fetal anomaly:
 - Anencephaly, hydrocephaly, muscle dystrophy, neurologic impairment, anterior neck mass or multiple nuchal cord loops (prevent flexion of the head); 50% of face presentation
- Short umbilical cord
- Fetal death
- Maternal and uterine factors for malpresentation
- Contracted pelvis e.g. distortions following pelvic fracture that prohibits fetal descent into the pelvis
- Multiparity resulting in lax abdominal wall
- Multiple pregnancy
- Uterine cavity abnormalities (bicornuate, septate uterus)
- Space occupying lesions (uterine leiomyomatoma)
- Placental abnormalities (placenta previa)
- Amniotic fluid volume abnormalities (oligo-polyhydramnios)

3. Morbidity/mortality

- Increased likelihood of intervention due to anomalies on fetal tracing

- Lower baseline often seen with occiput posterior position, ineffective uterine action, fetopelvic disproportion, prolonged or arrest of labor
- Increased PROM increasing risk of infection and cord prolapse
- Pathologic contraction rings
 - Usually the result of unrecognized labor dystocia and possible rupture of lower uterine segment
- Increased incidence of instrumental delivery or C-section (maternal trauma, bleeding, infection)

Diagnostics

1. History

- No descent of baby late in pregnancy in many cases of malpresentation
- Fetal head in the fundus for breech and elsewhere for other malpositions
- Large abdomen suggestive of failure of fetus to descend
 - Fundal height measurement may confirm on physical exam

2. Physical exam

- Leopold maneuvers
- Vaginal exam
 - Head unengaged after rupture of membranes
 - Face
 - Triangle shaped: mouth and orbital ridges (or malar bones)
 - Chin is the presenting part, anteriorly or posteriorly
 - Brow:
 - Frontal sutures, anterior fontanelle, orbital ridges, eyes but not mouth nor chin
 - Breech
 - Great trochanters (or ischial tuberosities) + anus in a line (attn: mouth can be mistaken for anus and ischial tuberosities for malar bones)
 - Compound
 - Fetal extremity prolapses along with presenting part
 - Transverse lie
 - Ribs, scapula, clavicle, axilla
 - Described as dorsoanterior, dorsoposterior and right or left acromial
 - Prolapse of arm or hand in vagina

3. Diagnostic testing

- Based upon physical examination
- Ultrasound may be useful to confirm breech and transverse presentations
- Ultrasound not useful for OP/OA

Management

1. External cephalic version for breech/transverse lie with or without induction of labor after 37 weeks
2. Criteria for external version >37 weeks; singleton; unengaged presenting part; reactive NST; good amniotic fluid volume
3. Contraindication to external version

- Previous unexplained 3rd trimester bleed; placenta previa; prior classical c/s; previous myomectomy; oligohydramnios; PROM; abnormal U/S; suspected IUGR; hypertension, signs of uterine placental insufficiency
 - Success rate of version is operator dependent
 - Up to 60-70%
 - Risk of non-reassuring fetal monitoring
 - Done in settings where emergent delivery can be done
- 4. Augmentation of labor not contraindicated if no signs of obstruction and evidence of hypotonia, except in brow and compound presentations
- 5. Specifics:
 - Face
 - 25-30% : spontaneous rotation of mentum posterior to mentum anterior
 - Mentum anterior can deliver vaginally while mentum posterior cannot
 - Neonatal resuscitation endotracheal intubation may be difficult secondary to facial swelling
 - Instrumentation usually contraindicated, vacuum extractor contraindicated
 - C-section most common form of delivery
 - Brow
 - Spontaneous conversion to face (30%) or occiput posterior (20%)
 - C-section most common form of delivery
 - Breech
 - Planned c-section for persistent breech
 - Term Breech Trial : planned c-section for term breech associated with decrease perinatal mortality and morbidity; modest increase in short-term maternal morbidity
 - Criteria for vaginal breech delivery:
 - >36 weeks; adequate clinical pelvimetry; complete or frank breech; fetus not too large; fetal head flexed; no other indication for c/s; no previous c/s for CPD; absence of fetal anomaly that may interfere with vaginal delivery; continuous fetal heart rate monitoring available; experienced physician,
 - Informed consent with women planning a vaginal breech delivery should include the risk of neonatal morbidity and mortality may be higher than if a planned c-section is performed
 - Compound
 - In most of the cases, prolapsed part will ascend with the descent of the presenting part, allowing normal delivery
 - Most usual presenting part is the hand or arm
 - Instrumentation not recommended
 - Transverse lie/shoulder
 - Risk of formation of pathologic contraction ring above lower uterine segment and uterine rupture if shoulder forced in the pelvis
 - Delivery by Caesarean section if no version to vertex
 - Occiput posterior
 - 90% conversion to occiput anterior during labor
 - Spontaneous vaginal delivery in OP position possible
 - Vacuum or forceps may be needed

- Manual rotation of persistent OP may assist in facilitating birth
- Occiput Transverse
 - If does not convert to occiput anterior or occiput posterior will need either forceps rotation or Caesarean

See also Vacuum-assisted delivery

References

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