Abnormal labor

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Introduction

• Labor is a physiological process during which a fetus is expelled.

• The mainly labor force is uterine contracion.

• In the labor process, cervical effacement and dilation and fetal delivery occur.
Normal labor

- Normal labor is divided into 3 stages by Froedman.
- The first stage, the second stage and the third stage.
- The first stage is subdivided into the latent phase and the active phase.
# Normal labor staging

<table>
<thead>
<tr>
<th>Labor</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>The first stage</td>
<td>From regular uterine contraction to complete cervical dilation</td>
</tr>
<tr>
<td>The latent phase</td>
<td>From regulation uterine contraction to 3cm cervical dilation</td>
</tr>
<tr>
<td>The active phase</td>
<td>From 3cm cervical dilation to the full cervical dilation</td>
</tr>
<tr>
<td>The second stage</td>
<td>From the full cervical dilation to delivery of baby</td>
</tr>
<tr>
<td>The third stage</td>
<td>From delivery of baby to delivery of placenta</td>
</tr>
</tbody>
</table>
Abnormal labor

- Abnormal labor refers to difficult labor.
- Another name is dystocia.
- Clinical presentation is slow labor process.
The diagnostic criteria of abnormal labor

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Nulliparous criteria</th>
<th>Multiparous criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolonged latent phase</td>
<td>Duration &gt; 16h</td>
<td>Duration &gt; 8h</td>
</tr>
<tr>
<td>Protracted active phase</td>
<td>Cervical dilation &lt; 1.2 cm/h</td>
<td>Cervical dilation &lt; 1.5 cm/h</td>
</tr>
<tr>
<td>Arrested active phase</td>
<td>Cessation of cervical dilation &gt; 2h</td>
<td>As same as nulliparous criteria</td>
</tr>
<tr>
<td>Prolonged active phase</td>
<td>Duration &gt; 8h</td>
<td>Duration &gt; 4h</td>
</tr>
<tr>
<td>Protracted descent</td>
<td>Descent &lt; 1 cm/h</td>
<td>As same as nulliparous criteria</td>
</tr>
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<td>Arrested descent</td>
<td>Cessation of descent &gt; 1h</td>
<td>As same as nulliparous criteria</td>
</tr>
<tr>
<td>Prolonged second stage</td>
<td>Duration &gt; 2h</td>
<td>Duration &gt; 1h</td>
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</table>
Causes of abnormal labor

- Abnormalities of expulsive forces
- Abnormalities of birth canal
- Abnormalities of presentation & position of fetus
Abnormalities of birth canal

• The morphology and capacity are primary causes of dystocia.

• Pelvic structure: pubis, sacrum and ischium.

• Pelvic plane: inlet, midpelvic and outlet

• Bony marker: ischial spine
Ischial spine

- The Ischial spine is halfway of birth canal.

- Station of fetal presentation is described in relationship with the ischial spine.

- The axis of birth canal above and below the ischial spine is divided into fifth respectively.

- As the presenting part reaches the ischial spine, the designation is 0 station.
Classification of abnormalities of pelvis

• Contracted pelvis
  contracted inlet plane
  contracted midpelvis
  contracted outlet plane

• Pelvic malformation
Mechanism

• For Contracted pelvis, the fetus has difficulty in passing through birth canal.

• The labor is protracted or arrested.

• Secondary uterine inertia occurs.
Contracted inlet plane

- Criteria: sacral-pubic diameter $< 18$ cm

- Clinical findings: fetal head palpable above the inlet plane. Prolonged latent phase.
Contracted midpelvis and outlet plane

• Bi-ischial spine diameter < 10cm

• Bi-ischial tubercle diameter < 8cm

• Clinical findings: disorders of active phase and the second stage.
Management

• To assess cephalopelvic relationship by a series of examination.

• Mild cephalopelvic disproportion: trial labor

• Obvious cephalopelvic disproportion: cesarean section.
Abnormalities of fetus

• Abnormalities of fetal position

• Macrosomia

• Fetal malformation
Fetal status

• Fetal lie: The relation of the fetal long axis to that of the mother is termed *fetal lie* and is either *longitudinal* or *transverse*

• Fetal presentation: the foremost part in birth canal.

• Cephalic, breech and should presentation.
Cephalic presentation

• According to degree of fetal head flex, cephalic presentation is divided into vertex, brow and face presentation.

• Brow and face presentation result in dystocia.
Fetal head diameter

- Bi-parietal dimension: 9.5cm
- Suboccipitobregmatic dimension: 9.5cm
- Occipitofrontal dimension: 11.5cm
- Occipitomental dimension: 13cm
Fetal position

• Refer to relation of fetal presentation to mother’s pelvis.

• The occipital bone is the determining point of vertex presentation.

• vertex presentation has a variety of positions.
• Definition of Persistent Occiput transverse position: engagement and descent of fetal head in Occiput transverse position.

• Definition of Persistent Occiput posterior position: engagement and descent of fetal head in Occiput posterior position.
Cephalic dystocia

• In cephalic presentation, when delivery cannot be accomplished with occiput anterior position, it is called cephalic dystocia.

• Clinical findings: disorders of labor process
Management

• To assess cephalopelvic relationship by a series of examination.

• Mild cephalic distocia: trial labor

• Obvious cephalic distocia: cesarean section.
Transverse lie

- The longitudinal axis of the fetus is perpendicular to that of the mother.

- The presenting part is the shoulder.

- Management: cesarean section.
Breech presentation

• Incidence: 3-5%

• Classification: frank, complete and incomplete

• Basis: hip and knee flexed or extended

• Management: cesarean section
Abnormal uterine contractions

• The uterine contraction is the most important expulsive force.

• Bring about dilation of cervix and expulsion of fetus and placenta.

• Common causes of dystocia
Classification

• Hypotonic uterine dysfunction: another name Uterine inertia. Uterine contractions is less than normal.

• Hypertonic uterine dysfunction: uterine tone elevated.

• Uterine inertia is more common.
Clinical presentation

• Abdominal palpation: uterine contraction is weak, and intervals is prolonged.

• Abnormal labor course: the most important clinical presentation.
The diagnostic criteria of abnormal labor

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Interaction

Abnormalities of fetus
- Abnormalities of fetal development
- Abnormalities of fetal size
- Abnormalities of fetal position

Abnormalities of birth canal
- Contracted pelvis
- Pelvic malformation
- Abnormalities of soft tissue

Abnormalities of labor force
- Secondary inertia
- Primary inertia

Cephalopelvic disproportion
- Increased resistance
- Dystocia
Management

• Vaginal examination: rule out cephalopelvic disproportion

• Supportive management

• augmentation
The Vaginal examination

• To determine fetal presentation, position and station.

• To assess the cephalopelvic relation.

• To consider the route of delivery.
The supportive management

- Sufficient rest
- To relieve anxiety and fear.
- Fluid and food intake.
Augmentation

• Increase the frequency and force of the existing uterine contractions.

• Methods: amniotomy
  oxytocin administration
Amniotomy

• If the fetal head is engaged, amniotomy is a choice to facilitate the uterine activity.

• After amniotomy the fetal head descends, pressing directly on cervix to enforce uterine contraction. Accelerating labor.
oxytocin

• Capable of inducing uterine contraction in the third trimester.

• Contraindication: cephalopelvic disproportion and severe fetal malposition.
questions

• To state The pattern of abnormal labor.

• To state the causes of abnormal labor.

• To state the classification of breech presentation.
Thanks