1. Definition of normal Labour
2. Factors influencing progress of Labour
3. Diagnosis of Labour
4. Stages of Labour
5. Management of Labour
LABOUR DEFINITION

LABOUR IS DEFINED AS

THE ONSET OF REGULAR PAINFUL CONTRACTIONS WITH PROGRESSIVE EFFACEMENT AND DILATATION OF THE CERVIX ACCOMPANIED BY DECENT OF THE PRESENTING PART LEADING TO EXPULSION OF THE FETUS OR FETUSES AND PLACENTA FROM THE MOTHER
FACTORS TO HELP DETERMINE IF LABOUR IS NORMAL

- Mature Fetus 37-42 weeks
- Spontaneous expulsion
- Vertex is the presenting part
- Vaginal Delivery
- Time (not < 3 hours but not > 18 hours)
- Complications??
INFLUENTIAL FACTORS OF THE PROGRESS OF LABOUR

3P’s
• Power
• Passenger
• Passage
True and False Pelvis

- The bony pelvis is divided into superior and inferior portions by a boundary called the **pelvic brim** which is formed by the following landmarks: beginning posteriorly at the sacral promontory of the sacrum, then laterally and inferiorly around the arcuate lines of the ilium, continuing inferiorly along the iliopectineal lines of the pubis, finally anteriorly at the superior portion of the pubic symphysis. Together these points form an oblique plane that is higher in the back than in front. The circumference of this plane is the pelvic brim.
PELVIC PRIM / INLET

- POST SACRAL PROMENTARY
- ANTERIOR S.P
- LATERALLY UPPER BORDER OF THE PUBIC BONE AND ILEO-PECTINEAL LINE

- TRANSVERSE DIAMETER 13.5CM
- AP DIAMETER 11CM
- INLET ANGLE 60 DEGRESS
PELVIC MIDCAVITY

- middle of the: S.P
- from the sides: pubic bone, inner aspect of the ischial bone
- Posteriorly: S2-S3 Junction
- almost round

- AP Diameter: 12 cm
- Feel ischial spine vaginally: station
Pelvic outlet

- Anteriorly: Lower margin of S.P
- Laterally: Pubic bone descending rami, ischial tuberosity and Sacro-tuberous ligament
- Posteriorly: End of sacrum
- Ap diameter: 13.5
- Transverse diameter: 11cm
FEMALE PELVIS

- Basic framework for the birth canal
- True Pelvis - Inlet, cavity and Outlet (The fetus must pass through all three in order for labour to be successful)
- Types of Pelvis - Gynaecoid, Anthropoid, Android and Platypelloid
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<thead>
<tr>
<th></th>
<th>Gynecoid</th>
<th>Anthropoid</th>
<th>Android</th>
<th>Platypelloid</th>
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<td>AP diameter</td>
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<td>Inclination of sacrum</td>
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<td>Forward</td>
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<td>Pelvic outlet</td>
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<tr>
<td>Subpubic arch</td>
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<table>
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<tr>
<th>SHAPE</th>
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<th>MIDPELVIS</th>
<th>OUTLET</th>
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<table>
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THE FETAL SKULL

(a) Superior view

(b) Lateral view
diameters of the skull

- **Vertex**: Sub-occipito-bregmatic: 9.5cm
- **OP**: Sub-occipito-frontal: 10cm
- **Occipito-frontal**: 11.5 cm
- **Brow**: Mento-vertical: 13.5cm
- **Face**: Sub-mento-bregmatic: 9.5cm
DIAMETERS OF THE SKULL

Fig. 13-2 Possible presenting diameters of the average term fetal skull.
Moulding

- The bones of the fetal head can move closer together or overlap to help the head fit through the pelvis.
- Parietal bones overlap occipital and frontal from +0 to +3,
- +0+2 being normal and +3 being cause for some concern.

Moulding...

- Reshaping of the fetal skull:
  - Obliteration of the sutures.
  - Overlapping of the bones of the vault:
    - One parietal bone overlaps the other.
    - Both overlap the occipital bone.
- It accounts for diminution of the biparietal diameter and suboccipitobregmatic diameters by 0.5-1 cm. Or even more.
Caput succedaneum is a diffuse swelling of the scalp caused by the pressure of the scalp against the dilating cervix during labour. Caput can make it difficult to define the position of the fetal head. It is graded subjectively from 0 (none) to +3 (marked).
Brain stimulates pituitary gland to secrete oxytocin.
Nerve impulses from cervix transmitted to brain.
Head of baby pushes against cervix.
Oxytocin carried in bloodstream to uterus.
Oxytocin stimulates uterine contractions and pushes baby towards cervix.
CAUSES OF THE ONSET OF NORMAL LABOUR

It is unknown but the following theories are proposed:

- Hormonal Factors
  - Oestrogen Theory
  - Progesterone withdrawal theory
- Prostaglandin Theory
- Oxytocin Theory
- Fetal Cortisol Theory
- Mechanical Factors
- Uterine Distension Theory
- Stretch of the lower uterine segment
PRINCIPLE MOVEMENTS IN NORMAL MECHANISM OF LABOUR

- Engagement
- Descent
- Flexion
- Internal rotation of head
- Crowning
- Extension of head
- Restitution
1. Presentation of head
2. Rotation and delivery of anterior shoulder
3. Delivery of posterior shoulder
4. Delivery of lower body and umbilical cord
DIAGNOSIS OF LABOUR

Signs that can clue into the onset of Labour

- Show- evidence by mucus mixed with blood or mucus plug
- Rupture of membranes- look for leaking liquor
- Panful, regular uterine contractions, at least (1:10)
VAGINAL EXAMINATION

- Confirm degree of dilatation and effacement
- Identify the presenting part
- Fetal head engagement
- Confirm or artificially rupture if necessary (ROM)
- Exclude cord prolapse
partogram is a composite graphical record of key data (maternal & fetal) during labour entered against time on a single sheet of paper.
COMPONENTS OF A PARTOGRAM

- Patient Identification
- Time (recorded in 1hr intervals)
- Fetal Heart Rate
- State of Membranes
- Cervical Dilatation
- Uterine Contractions
- Drugs & Fluids
- BP (2hr intervals)
- Pulse Rate (30min intervals)
- Oxytocin
- Urinalysis
- Temperature
Labour progress recording in latent phase

Plot dilatation as “X”
Plot descent as “O”

At admission:
- Dilatation → 2 cm
- Descent → -2

2 hours after admission:
- Dilatation → 2 cm
- Descent → -1

As the dilatation is only 2 cm therefore the labour progress is in the latent phase.
Fetal information

- Fetal heart rate
- Membrane and amniotic fluid
- Moulding

Notes should be legible, dated and timed.

1. Begin plotting at the “zero” hour on the partogram
2. All entries made in relation to time when the observations are made
3. Enter the outcome of delivery
STAGES OF LABOUR

- **First Stage**
  - Begins with the onset of true labour contractions and ends when the cervix is fully dilated (10cm).
  - Cervical effacement and dilatation occurs in this: Latent & Active Latent: From diagnosis of labour to 3cm dilatation Active: From 3cm to full dilatation (10cm)

- **The second stage of labour**
  - begins with complete dilatation and ends with the birth of the baby. Approximately 2 hours in a nulliparous and 1 hour in a multi-parae woman

- **Third stage**
  - Begins after birth and ends with the expulsion of the placenta and membranes
  - Shortest stage: After birth, up to 30 minutes
FIRST STAGE WHAT HAPPENS

1- Contractions
   1. Regular
   2. Increasing Frequency
   3. Stronger

2- Cervical Dilatation and Effacement
   3. Engagement of the presenting part
Quantitatives Assessment

- Palpation
- External tocodynamometry
- Internal uterine pressure catheters.
- 95% of women in labor will have 3-5 contractions per 10 minutes.
Stage 1:
The cervix relaxes, causing it to dilate and thin out.

Stage 2:
Uterine contractions increase in strength and the infant is delivered.

Stage 3:
The placenta is expelled.
SECOND STAGE

First sign of the second stage is the urge to push

Full Dilatation to Delivery of the fetus

- The median duration varies in nulliparous and multiparous women is 60 and 30 minutes, respectively.
- Other factors may affect its duration:
  - Epidural analgesia,
  - duration of the first stage,
  - parity,
  - maternal size,
  - birth weight,
  - and station at complete dilation.

- Signs to look for:-
  - Distention of the perineum
  - Satisfactory progress: steady descent of the fetus through the birth canal & onset of the expulsive phase
SECOND STAGE OF LABOUR

A. Expulsion of the head of the foetus from uterus.

B. Expulsion of the foetus from uterus.

The second stage of labour begins when the cervix is completely opened and ends with the delivery of the baby. The second stage is often referred to as the “pushing” stage. During the second stage, the woman becomes actively involved by pushing the baby through the birth canal to the outside world. When the baby’s head is visible at the opening of the vagina, it is called “crowning”. The second stage is shorter than the first stage, and generally takes between 30 to 60 minutes in a woman’s first pregnancy.
THIRD STAGE

Begins with fetus delivery and ends with delivery of the placenta/membranes

- Two phases: Separation and Expulsion
  - 30 mins or less
- Average blood loss 150-250 ml

Birth of the placenta (Two stages)

- Separation of the placenta from the wall of the uterus and into the lower uterine segment or vagina
- Actual expulsion of the placenta out of the birth canal
BIRTH OF THE PLACENTA Two methods:
- Passive Management (wait for spontaneous expulsion of the placenta)
- Active Management

Active management of 3\textsuperscript{rd} stage, helps to prevent PPH
Includes:
- Use of oxytocin (given around the time of the anterior shoulder delivery, 10 units)
- Controlled cord traction
- Uterine massage
**VSIGNS OF SEPARATION**

- Globular and hard uterus
- Sudden gush of blood
- Cord Lengthening (Most reliable clinical sign)

**EXAMINATION OF THE PERINEUM**

- look for lacerations
- vulva outlet
- vaginal canal & cervix should be inspected
- Repair lacerations or episiotomies immediately or completeness and anomalies
IMMEDIATE CARE OF THE NEWBORN

Assess baby
Health baby with spontaneous respiration place on mother’s abdomen
APGAR scores
Engagement: The fetus is engaged if the widest leading part (typically the widest circumference of the head) is entering the inlet.

Station: Relationship of the bony presenting part of the fetus to the maternal ischial spines. If at the level of the spines it is at “0 (zero)” station, if it passed it by 2cm it is at “+2” station.

Attitude: Relationship of fetal head to spine: flexed, neutral (“military”), or extended attitudes are possible.

Position: Relationship of presenting part to maternal pelvis, i.e. ROP=right occiput posterior, or LOA=left occiput anterior.

Presentation: Relationship between the leading fetal part and the pelvic inlet: cephalic, breech (complete, incomplete, frank or footling), face, brow, mentum or shoulder presentation.

Lie: Relationship between the longitudinal axis of fetus and long axis of the uterus: longitudinal, oblique, and transverse.
Pelvic types

Traditional obstetrics characterizes four types of pelvises:

- **Gynecoid**: Ideal shape, with round to slightly oval (obstetrical inlet slightly less transverse) inlet: best chances for normal vaginal delivery.

- **Android**: Triangular inlet, and prominent ischial spines, more angulated pubic arch.

- **Anthropoid**: The widest transverse diameter is less than the anteroposterior (obstetrical) diameter.

- **Platypelloid**: Flat inlet with shortened obstetrical diameter.