

Кафедра перинатологии им.А.А. Козбагарова

Labor management

- Physiological childbirth is childbirth one fetus at term 37-41 weeks of gestation, which began spontaneously at low risk at onset of labor passed without complications, in which the child was born spontaneously to cephalic presentation, postpartum mother and the newborn are in a satisfactory condition

- first, the latent phase of labor the period of time, not necessarily continuous, when the contractions are painful, there are some changes of the cervix, including its softening and opening to 4 cm.
- the first stage of labor- regular contractions, there is progressive cervical dilatation from 4 cm

- Mothers should be informed that the duration of the established first stage of labour is different, and that the average first labor lasts from 8 to 18 hours. Re-generations last on average 5 - 12 hours.

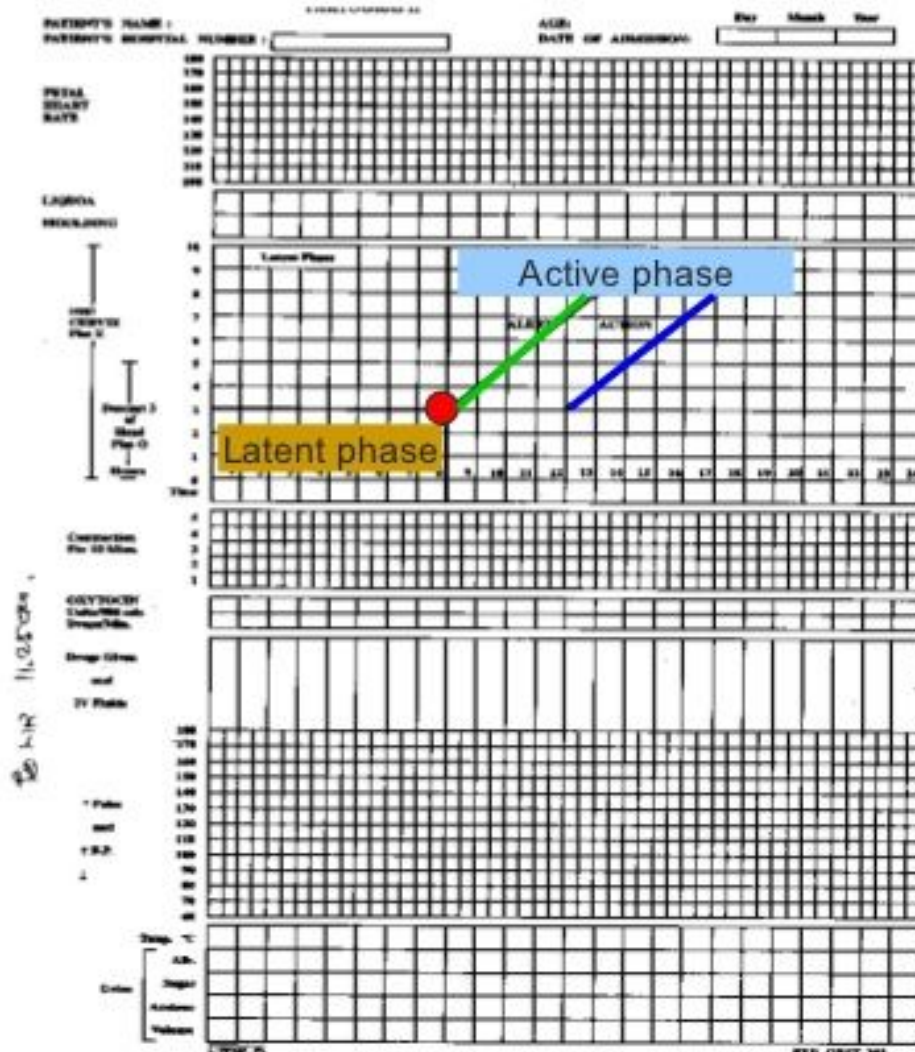
- General examination:
- · palpation definition of regular uterine contractions (at least two contractions in 10 minutes lasting 20 seconds or more);
- · determination of the position and presentation of the fetus;
- · auscultation of fetal heart rate (normal 110-160 beats/min, early in the first period, not less frequently than every 30 minutes in the active phase at least once every 15 minutes for 1 full minute after the end of the fight during attempts - every 5 minutes or after each attempts);
- · vaginal examination;
- · measurement of blood pressure at least every 4 hours (with hypertension after 1 hour)
- · heart rate measurement – every 30 minutes;
- · T of the body not less frequently than every 4 hours;
- · control the frequency and volume of urination (self-control mothers);
- · discussion with the woman method of doing 3-year period providing a full verbal and written information about potential advantages and disadvantages of active and expectant management.

- Programme used for reference is basically the **first stage** of labor.
- **The second stage of labor**
- Passive phase of second stage of labor:
 - · discovery of full cervical dilatation to active attempts.
- The active phase of second stage of labor:
 - · head of the fetus on the pelvic bottom;
 - · contractions bearing-down character

Uterine action

- Labour starts with contractions about one in every 10 minutes increasing to one in every 2–3 minutes. The upper uterine segment contracts and retracts so that the lower segment and later, the cervix, is pulled over the baby's head rather like putting on a tight polo-neck sweater.

PARTOGRAM



Friedman's partogram - 1954

2 phases of labour (base on dilatation of the cervix ●)

■ Latent phase (dilatation < 3 cm)

■ Active phase (>3 cm dilated)

Philpott and Castle - 1972

Introduced the concept of "ALERT" and "ACTION" lines.

ALERT LINE – represent the mean rate of slowest progress of labour

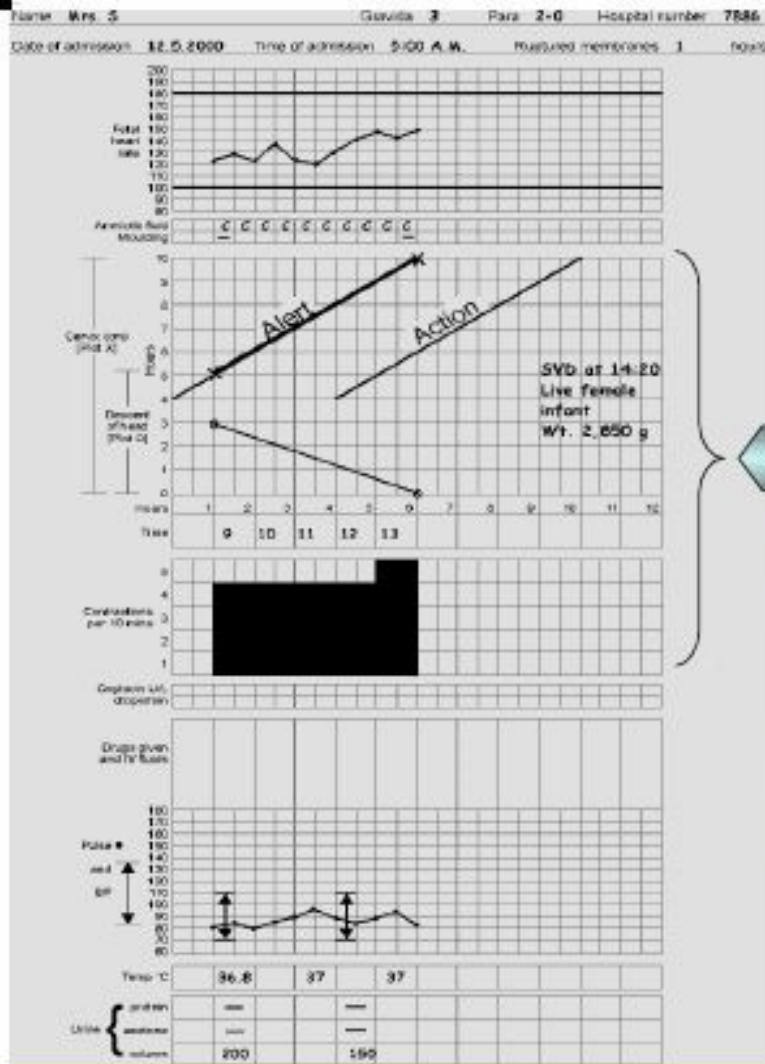
ACTION LINE – appropriate action should be taken.

Normal labour is plotted to the left alert line

PARTOGRAPH

Name		Gravida	Para	Hospital no.	
Date of admission		Time of admission		Ruptured membranes	
				hours	
Fetal heart rate					
Liquor Moulding					
Cervix (cm) [Plot X]					
Descent of head [Plot O]					
Hours					
Time					
Contractions per 10 mins					
Oxytocin U/L drops/min					
Drugs given and IV fluids					
Pulse and BP					
Temp °C					
Urine					

PARTOGRAM RECORDING



Labour progress

Recording the uterine on the partogram

Nos. of
Contraction
in 10 mins

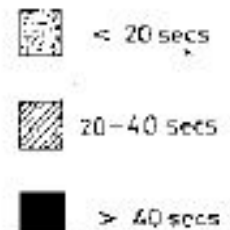
Time
(hours)

2 weak contractions
in 10 minutes

5 strong contractions
in 10 minutes

3 moderate contractions
in 10 minutes

Key



Stages

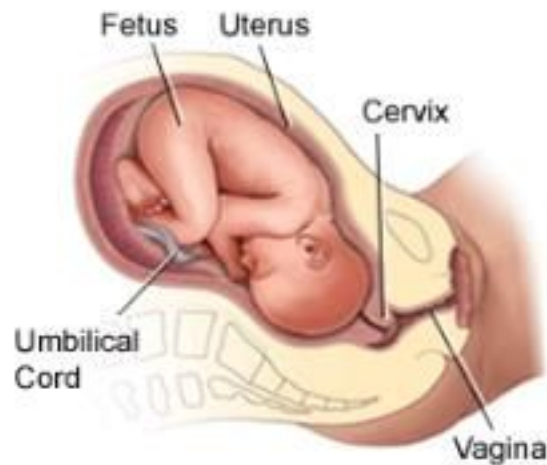
- 1 *The first stage, dilatation* —from the onset of labour until the cervix is fully dilated. More recently it has been divided into two phases:
 - • *The latent phase* of effacement of the cervix: to 3cm dilation.
 - • *The active phase* of active cervical dilatation: from 3cm to full dilation.
- 2 *The second stage, expulsive* —from full cervical dilatation to birth of the baby.
- 3 *The third stage, placental* —from birth of the baby to the delivery of the placenta.

The uterus in the first stage

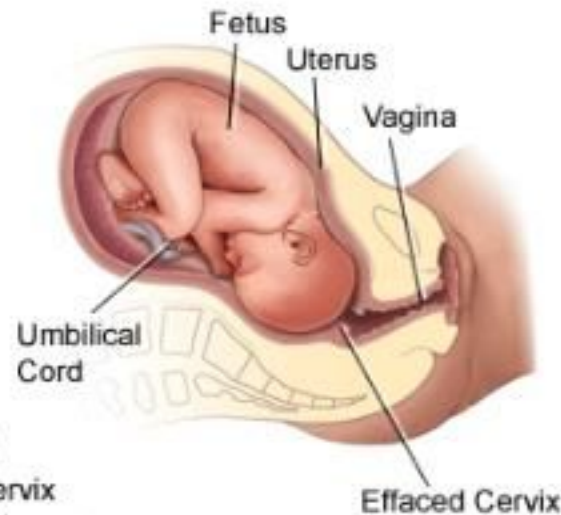
- **1** Uterine muscle fibres contract and retract, so they do not return to their original length after contraction but remain shorter.
- **2** There is a heaping up and thickening of the upper uterine segment while the lower uterine segment becomes thinner and stretched.
- **3** The cervix is pulled up and the canal is effaced so its length diminishes.
- **4** The cervix is pulled up and open and so the os is dilated.

PHASE 2: PROCESS OF LABOR

Initial (Latent) Phase Stage 1



Active Phase



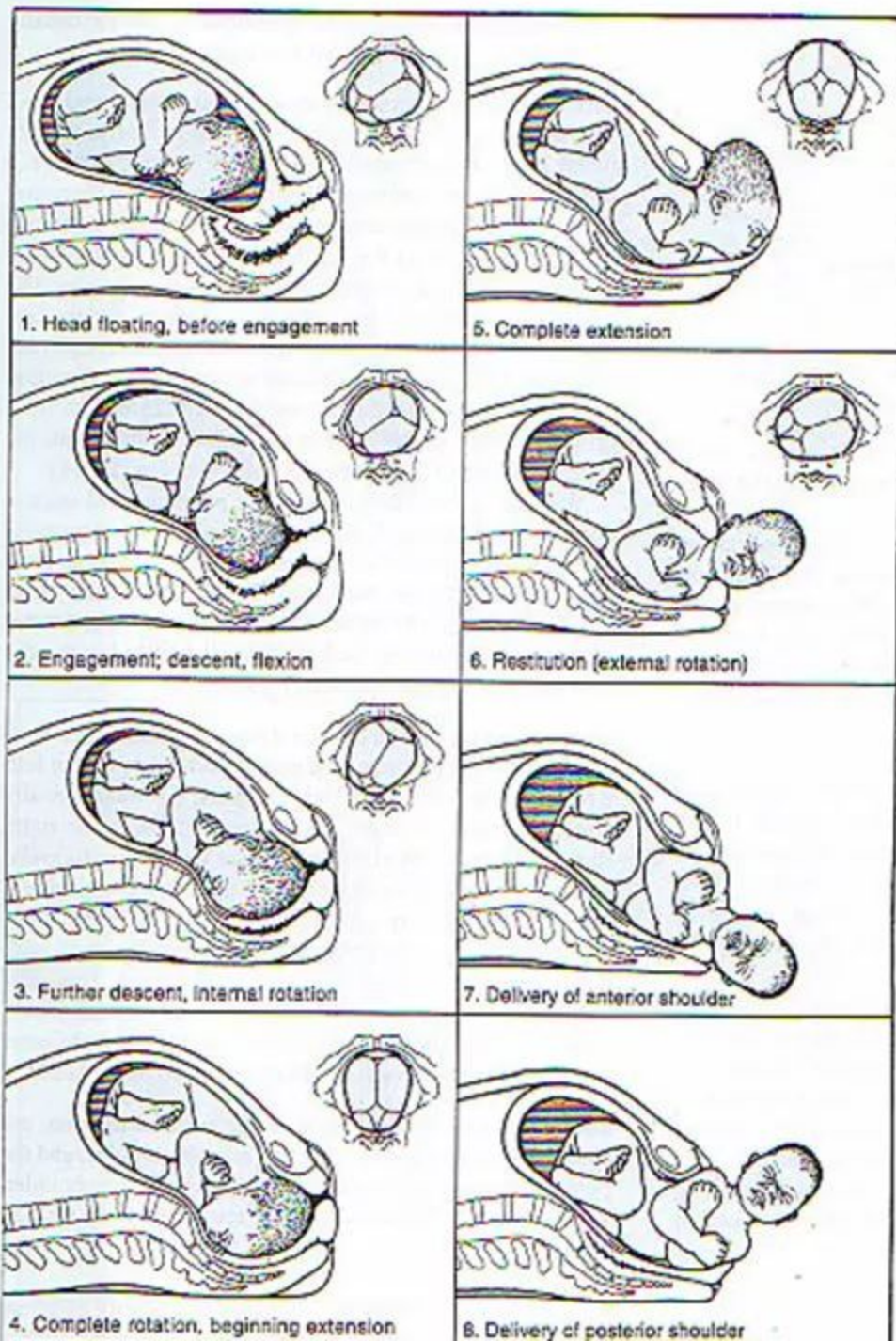
Transition Phase



Cardinal movements

Mechanism of labor

- Engagement
- Descent
- Flexion
- Internal Rotation
- Extension
- External Rotation
- Expulsion



The uterus in the second stage

- **1** A diminution in the transverse diameters because of:
 - Pulling up of the lower segment.
 - Straightening out of the fetus.
- **2** The fetal head is forced into the upper vagina which now forms a continuous tube with the uterus and a fully effaced cervix.
- **3** As well as uterine contractions, expulsive efforts are made by the mother using:
 - The abdominal wall muscles.
 - The fixed diaphragm, thus raising intra-abdominal pressure.
- **4** Voluntary efforts are not essential; paraplegic women and those with epidural analgesia have normal deliveries. Pushing is instinctive, and very satisfying to the woman who then assists at her own delivery.

The uterus in the third stage

- **1** The uterine muscles contract so constricting the blood vessels passing between the fibres, and thus preventing excessive bleeding.
- **2** The placenta separates at the delivery of the fetus when the uterus contracts sharply in size. Haemostasis is mostly mechanical immediately after delivery, with muscle fibres kinking bloodvessels. During pregnancy and most of the labour the placental bed and the placenta are roughly the same size. With the fetus removed, the area of the placental bed is reduced to about half that of the placenta

The uterus in the third stage

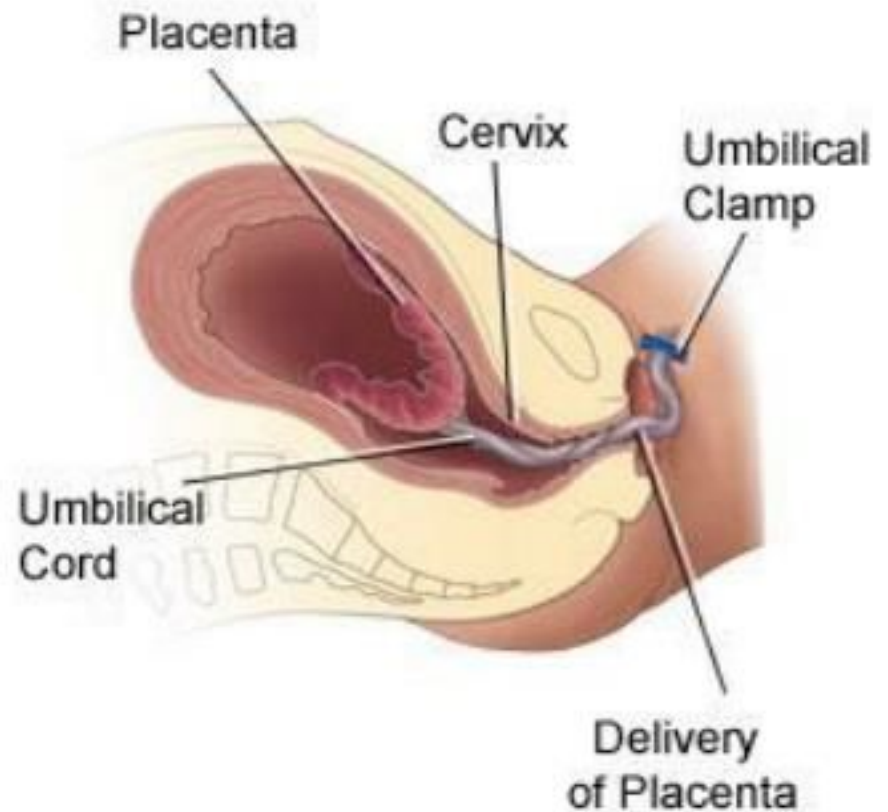
- The placenta is therefore sheared off and is finally expelled from the uterus by contractions passing down into the lower segment.
- The signs of descent of the placenta in the uterus are:
 - The uterus becomes hard.
 - The umbilical cord lengthens.
 - There is a show of blood.

PHASE 2: PROCESS OF LABOR

Stage 2



Stage 3



LIE, PRESENTATION, ATTITUDE & POSITION

CEPHALIC PRESENTATION

- Head is flexed sharply ➡ vertex / occiput presentation
- Head is extended sharply ➡ face presentation
- Partially flexed ➡ bregma presenting (sinciput presentation)
- Partially extended ➡ brow presentation



(A) vertex



(B) sinciput



(C) brow



(D) face

Longitudinal lie. Cephalic presentation. Differences in attitude of fetal body.

Note changes in fetal attitude in relation to fetal vertex as the fetal head becomes less flexed

NORMAL LABOUR AND DELIVERY



PHASES OF THE FIRST STAGE OF LABOUR

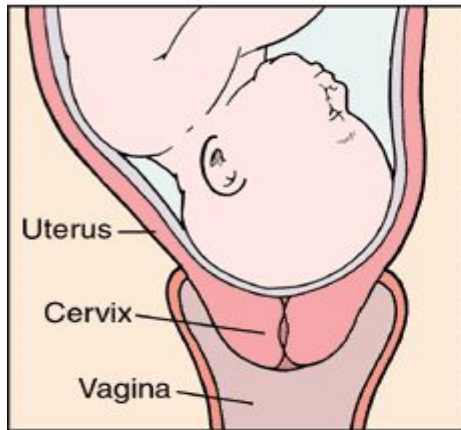
LATENT Phase

1. Begins with onset of contractions
2. Slow progress
3. Little cervical dilatation
4. Progressive cervical effacement
5. Ends once the cervix reaches 3 cm dilatation
6. Durations
 - ~ 8 hours for nulliparae
 - ~ 6 hours for multiparae

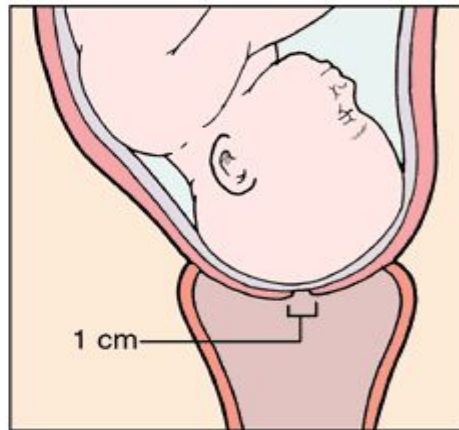
ACTIVE Phase

1. Active process
2. Begins after 3 cm of cervical dilatation
3. Period of active cervical dilatation (average rate 1 cm/hr)
4. S-shaped curve which is used to define progress of labour
5. It has 3 component
 - a) acceleration - slow
 - b) maximum - fast
 - c) deceleration - slow

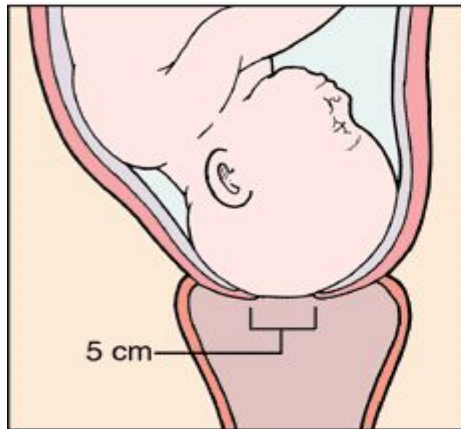
Cervical Effacement and Dilatation During Labor



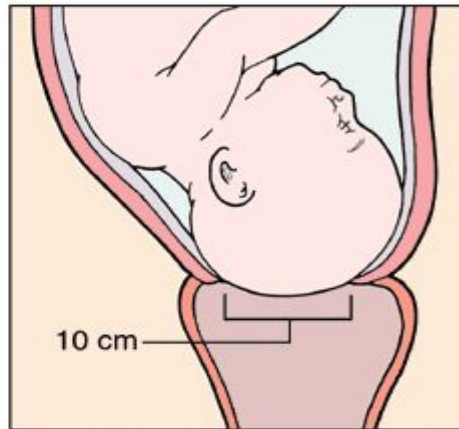
1. Cervix is not effaced or dilated.



2. Cervix is fully effaced and dilated to 1 cm.



3. Cervix is dilated to 5 cm.



4. Cervix is fully dilated to 10 cm.

NORMAL LABOUR AND DELIVERY



MANAGEMENT OF THE SECOND STAGE OF LABOR

Once the onset of the second stage has been confirmed a woman should not be left without attendance. Accurate observation of progress is vital, for the unexpected can always happen.

- **Maternal position:**

With the exception of avoiding supine position, the mother may assume any comfortable position for effective bearing down.

The semi-recumbent or supported sitting position, with the thighs abducted, is the posture most commonly adopted

- **Bearing down**

With each contraction, the mother should be encouraged to bear down with expulsive efforts

NORMAL LABOR AND DELIVERY

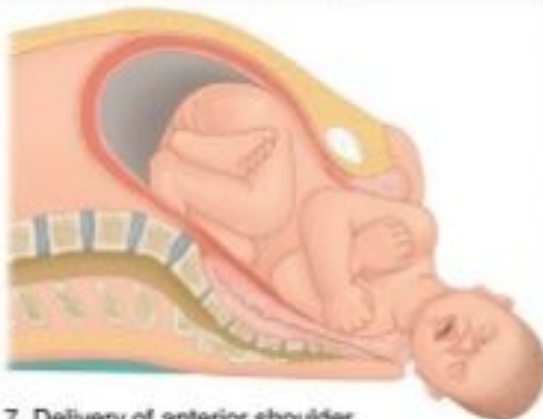
- Mechanisms of Labor with Left Occiput Anterior Presentation



5. Complete extension



6. Restitution (external rotation)



7. Delivery of anterior shoulder



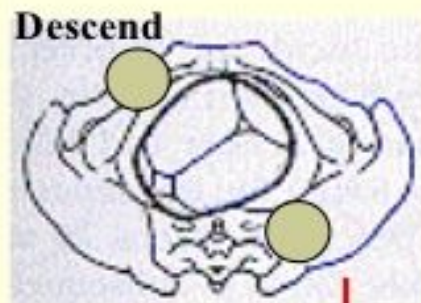
8. Delivery of posterior shoulder

NORMAL LABOUR AND DELIVERY

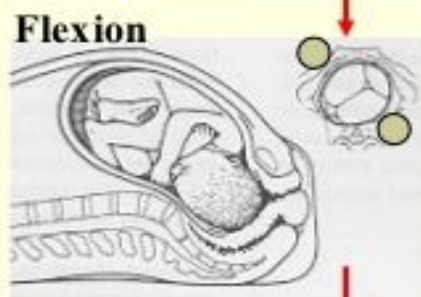
MECHANISMS OF LABOUR for occiput anterior (OA)



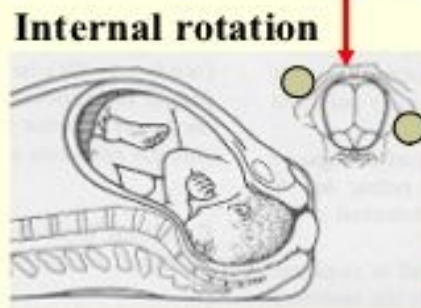
F
I
C
E
R
I
E
L



LOA



LOA



OA



Restitution



Extension

LOA

OA

OA

Internal rotation of shoulder

External rotation of head



LOT



Lateral flexion of body

Delivery



Crowning

- **Active management of the 3rd period:**
- after the birth of the anterior shoulder/m administered 10 UNITS of oxytocin (or oxytocin 5 IU/in) (for uterine contraction after child birth);

- **Drug-free pain relief**

- Pain reduction can be achieved by the use of non-drug methods of pain relief (shower and bath, music, massage, special breathing combined with relaxation), psychological support for women and families, information about the birth process

- **Inhalation anesthesia**

- All maternity units should be a mixture of oxygen and nitrous oxide 50:50, because it can ease the pain of childbirth, but women should be informed that it may cause nausea and dizziness

Pain relief in labour

- • Labour is usually painful. Relief of pain is better
- given before the woman feels the pain of the
- contractions.
- • Careful timing of analgesia is as important as
- correct dosage.

Nitrous oxide

- This is self-administered, pre-mixed with O₂ (50% of each), in Entonox machines. Inhalation should start as each contraction is felt and before the woman feels pain (Fig. 12.8) for it takes some seconds to work.

Pethidine

- Pethidine has been used for many years as an analgesic in labour. Many units have now withdrawn it because of evidence that it is a poor analgesic and can have a prolonged depressant effect on neonatal respiratory effort.
- • Synthetic analgesic and antispasmodic.
- • Dose: 50–150mg i.m.; 50–100mg i.v. (slowly, for it can cause nausea).
- • Use in first stage. Try to avoid giving within 2 hours of expected delivery if possible because of depression of neonatal respiration.
- • Can cause drop of maternal blood pressure.
- • Causes nausea in 20%. Give anti-emetic.

Non-drug analgesia

- Increasing numbers of women are turning to nonpharmacological methods of pain relief. Pain is such a subjective symptom that anything which helps a woman and does not put her or her fetus at increased risk should be explored. Maybe these methods cause the release of endorphins and so postpone the need for more formal analgesia; this reduces the total dose, giving the woman a greater sense of self-participation.

- Relaxation

The woman should take training in pregnancy. The method works best if there is a sympathetic attendant to guide in labour (e.g. partner). It is safe for mother and fetus.

- Hypnosis

If both woman and attendant are trained, this can give good pain relief. It is expensive on attendant's time and only works for susceptible women. If it works, it is very safe for the fetus.

Acupuncture

- Some women opt for acupuncture in labour. The effects are very variable from one person to another and the need for several needles in various points of the body limits mobilization which many women find unacceptable.

Anaesthesia

- Depression of the central or peripheral nervous system to prevent transmission and reception of painful impulses.
- General anaesthesia is useful for operations such as an emergency Caesarean section when speed is essential.

Regional

Nerve roots are blocked at their outflow.

- **Spinal block**

- Heavy nupivercaine into subarachnoid space.
- Give at L3–4, put woman in head-up position.
- Blocks T11–S1.
- Used once only usually for operative delivery (e.g. Caesarean section).

Epidural block

- • Bupivacaine 1% or Marcain 0.25–0.5% through a cannula inserted into peridural fat. Affects nerve roots T11–S4.
 - Pain relief rapid, lasting 2–3 hours.
 - Repeated doses can be given; therefore used for pain relief in labour.
 - Requires expert anaesthetist .
 - Loss of sensation from the uterus means the woman needs help in the second stage to recognize uterine contractions.
 - Using a constant infusion of bupivacaine with fentanyl reduces the density of the block and allows some mobilization for the woman (walking epidural).