NORMAL LBOUR CONTINUED

MECHANISM OF LABOUR

Figure 17.3 Sagittal section of the pelvis demonstrating the anterior–posterior (AP) diameters of the inlet and outlet.

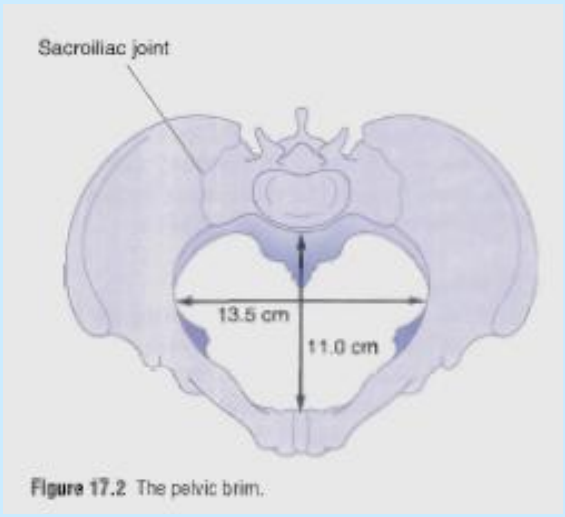
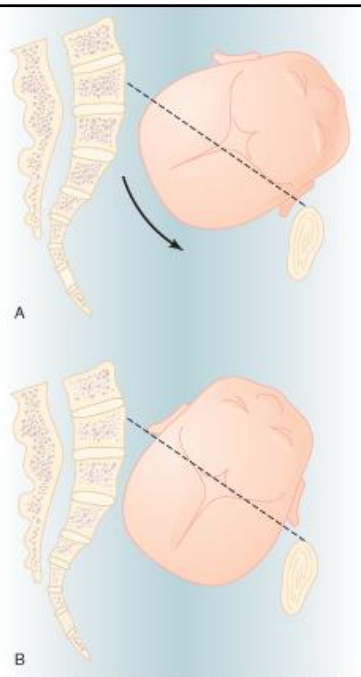


Figure 17.2 The pelvic brim.

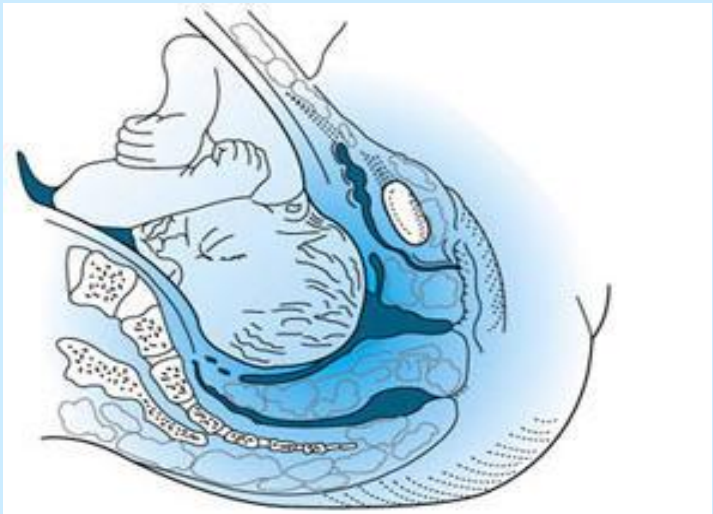


Mechanisms of labor, or the cardinal movements of labor, refer to the changes in position of the fetal head during passage through the birth canal in the vertex presentation

1- Engagement

Engagement is descent of the biparietal diameter of the fetal head below the plane of the pelvic inlet.

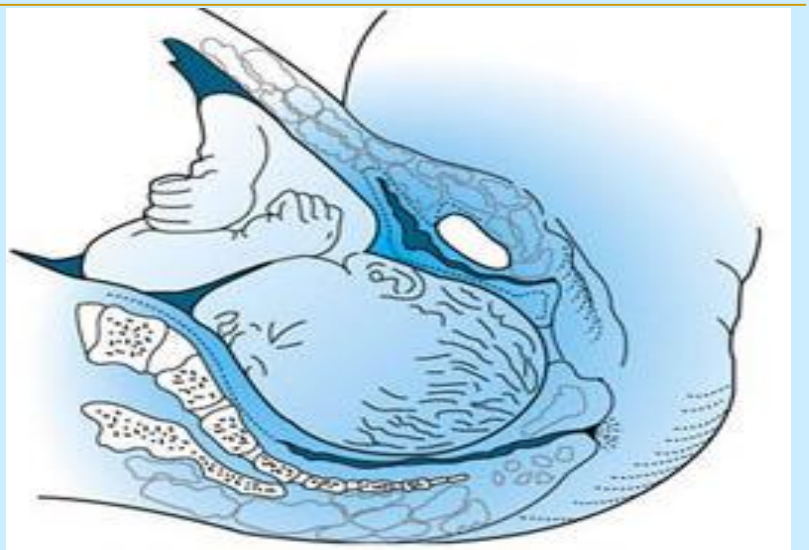
The head enters the pelvis in the occiput transverse position in women with a gynecoid pelvis.



Left occipitoanterior engagement.

2- DESCENT:

- When the uterus contract it pushes the baby down the birth canal (**the fetal head descend through the pelvic brim to the midcavity).**



Descent in left occipitoanterior position.

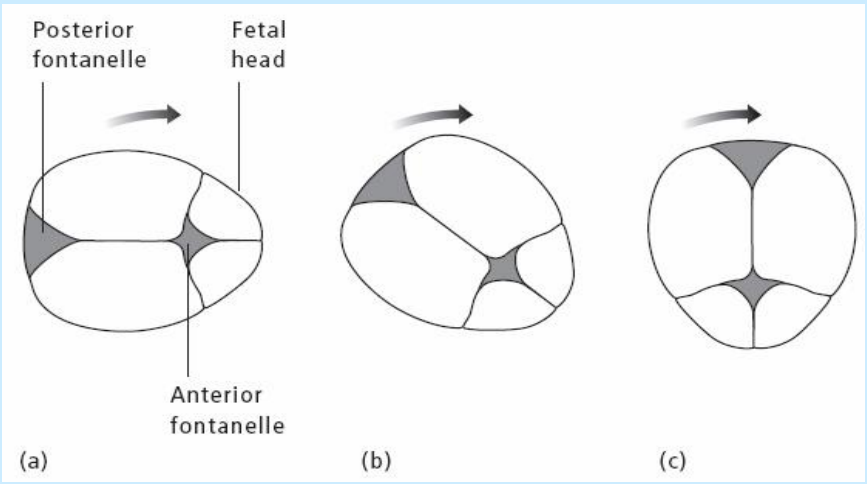
3- Flexion

Uterine activity is fundally dominant; the line of force is down the fetal spine and causes flexion of the fetal head. flexion is a passive movement that permits the smallest diameter of the fetal head (suboccipitobregmatic diameter) to be presented to the maternal pelvis.

- With the progress there is ***further descent*** of the presenting part in the pelvis

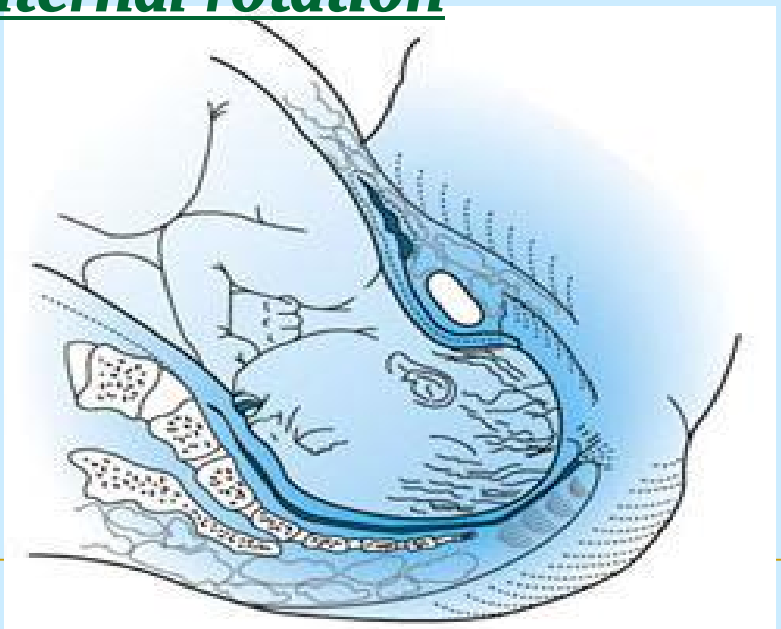
4- Internal rotation

The head rotates from the left occipitotransverse position at engagement to become direct occipitoanterior.



Internal rotation of the fetus. (a) Inlet: right occipitotransverse position. (b) Mid-cavity: right occipitoanterior position. (c) Outlet: direct occipitoanterior position

Internal rotation

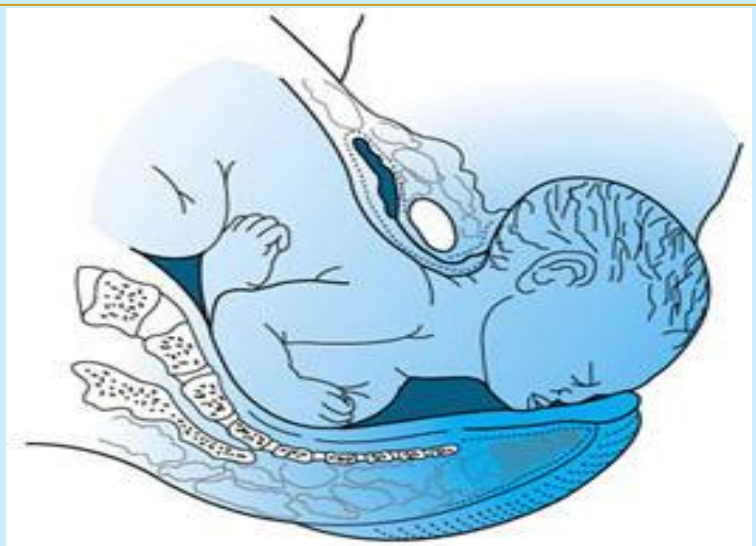


Further flexion and descent

Further descent through the pelvis causes the chin to be forced tightly up against the fetal chest. The fetal occiput comes to lie behind the maternal symphysis pubis.

5- Extension

As the head continues its descent, gradual extension of the fetal head occurs distending the perineum. With more extension, the widest diameter passes through the vulval introitus (crowning) and the head is born by extension at the fetal neck.



Extension of the head.

6- Restitution and external rotation

As the head is born, the shoulders enter the maximum diameter (the transverse diameter) of the maternal pelvic inlet. As they descend through the canal, the shoulders rotate (just as the head did in internal rotation) and, as they do so, the head (outside the body now) rotates 90°. The shoulders now lie in the anteroposterior diameter behind the maternal symphysis pubis.

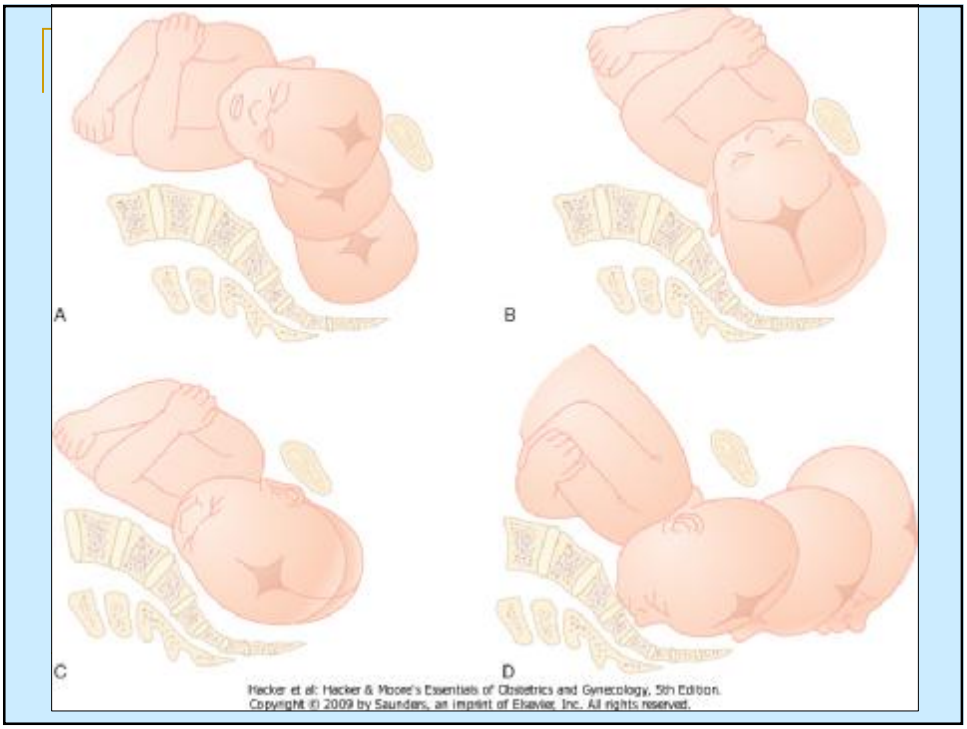
External rotation of the head.

7- Delivery of the body

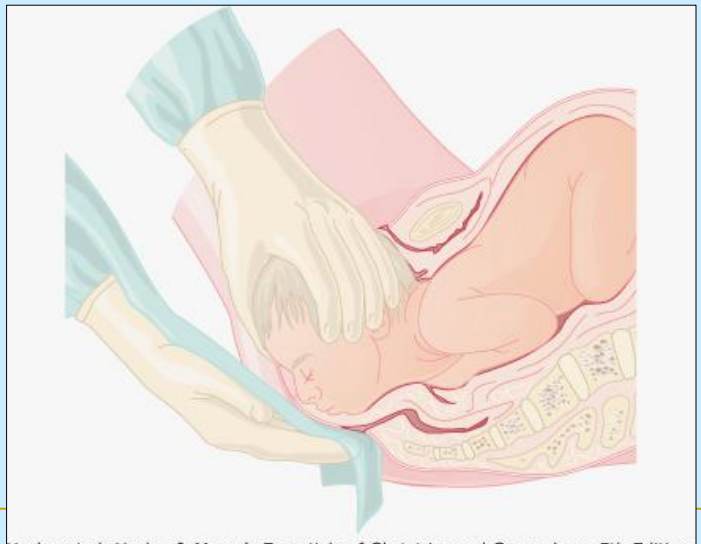
Delivery of the anterior shoulder is aided by gentle downward traction on head. The posterior shoulder is then delivered by gentle upward traction on the head. Following these maneuvers, the body, legs, and feet are delivered with gentle traction on the shoulders.

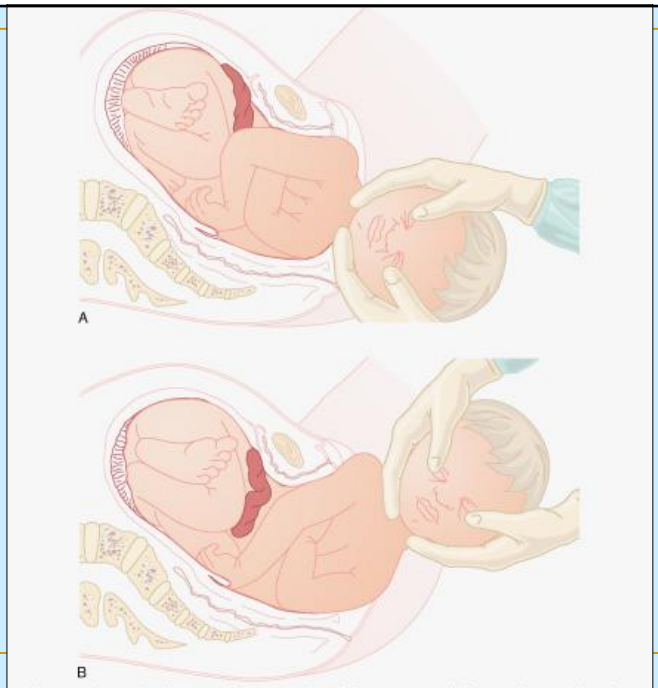
Delivery of anterior shoulder.

Delivery of posterior shoulder.



Ritgens maneuver for delivery of head





REVISION

Uterine activity of labor can be classified as having four distinct phases, which are:

1. ***Phase 0 (Quiescence);***
2. ***Phase 1 (Activation);***
3. ***Phase 2 (Stimulation);***
4. ***and Phase 3 (Involution).***

- **Labour starts with contractions about one in every 20 minutes increasing to one in every 2–3 minutes.**

- ***Normal labor pattern (EFFICIENT UTERINE CONTRACTIONS) consists of three to five contractions in 10 minutes.***

Tachysystole:

The presence of more than five contractions in 10 minutes for a period of 20 minutes is abnormal and is defined as tachysystole .

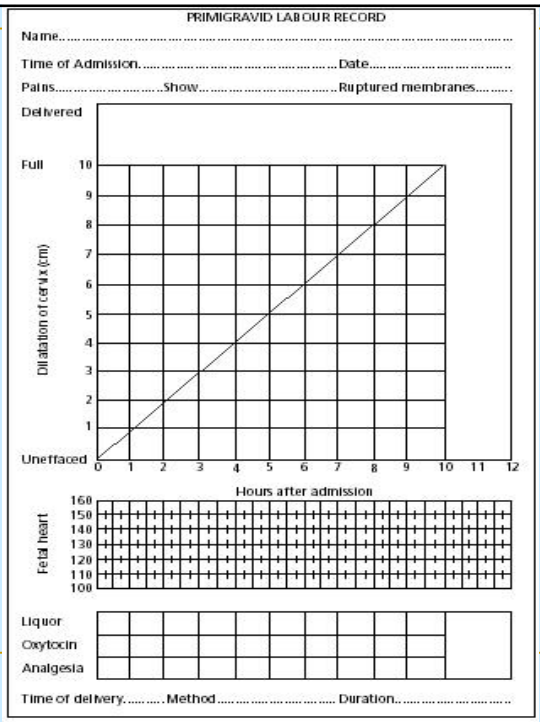
The upper uterine segment contracts and retracts so that the lower segment and later, the cervix, is pulled over the baby's head rather like putting on a tight polo-neck sweater.

Contractions are painful and this may be due to:

- Hypoxia because of the duration of the contraction.
- Compression of the nerve endings in the myometrium.
- Cervical stretch and dilatation

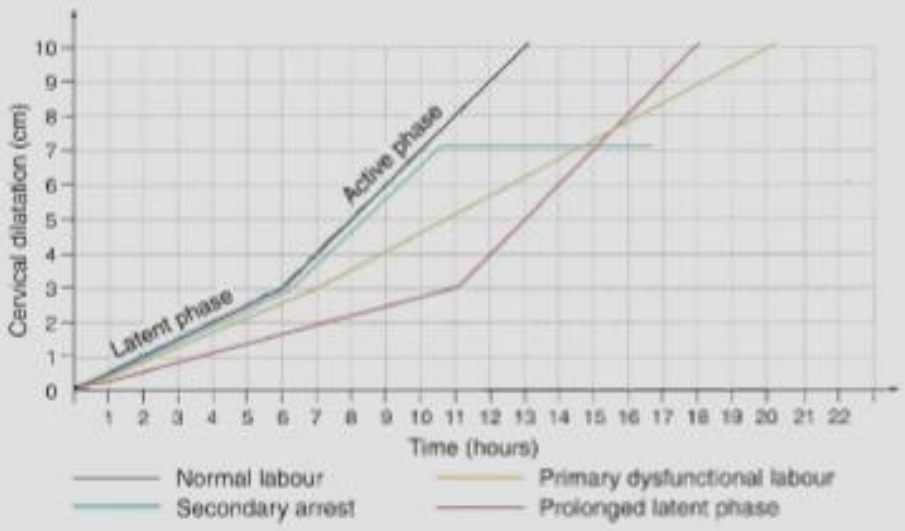
During each uterine contraction, the maternal blood supply to the intervillous space is severely reduced and may be cut off. This reduces the fetal O2 supply and allows less time for exchange of waste products from the fetus to the mother. Most normal fetuses can stand intermittent hypoxic ischaemia, the fetus often needs to be carefully monitored during labour.

PARTOGRAM



PARTOGRAM

PARTOGRAM SHOWING NORMAL AND ABNORMAL 1ST STAGE



MANAGEMENT OF THE THIRD STAGE

- **It is the stage of placental separation and expulsion**
- **Placental separation occurs as a result of reduction of the volume of the uterine cavity by the contractions and retraction**
- **A cleavage plane developed within the decidua basalis and the placenta lies free in the lower uterine cavity.**

Figure 17.21 Signs of separation and descent of the placenta. After separation, the uterine upper segment rises up and feels more rounded.

active management of the 3rd stage

We can actively manage the 3rd stage by a controlled cord traction as follow:

1. **Give her 10 units oxytocin or syntometrin with the delivery of the anterior shoulder to induce uterine contractions immediately after the delivery of the baby.**
2. **1-2 minutes after baby's delivey; clamping of the cord**

3. When contraction is felt by the midwife's left hand placed suprapubically gentle pushing of the uterus upward and by the other hand grasp the cord and apply gentle traction downward to facilitate placental separation, all of the membranes must be peeled off with twisting motion.
4. Never pull the cord when the uterus is not contracted because of risk of uterine inversion

CONTROLLED CORD TRACTION

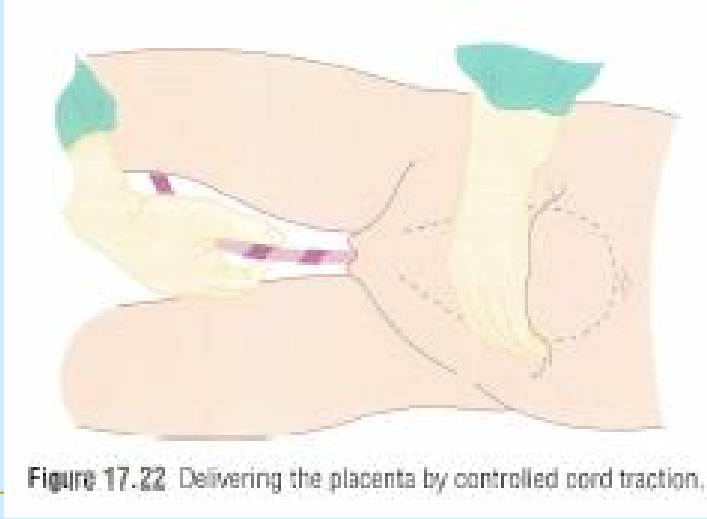
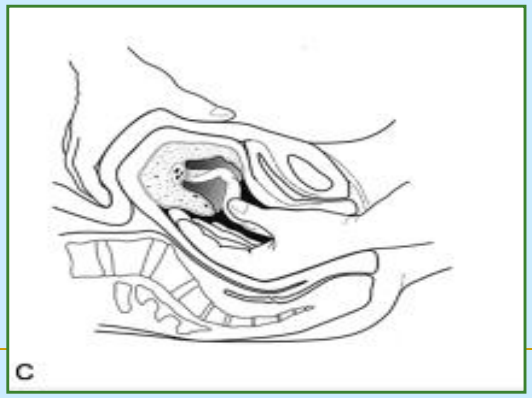


Figure 17.22 Delivering the placenta by controlled cord traction.

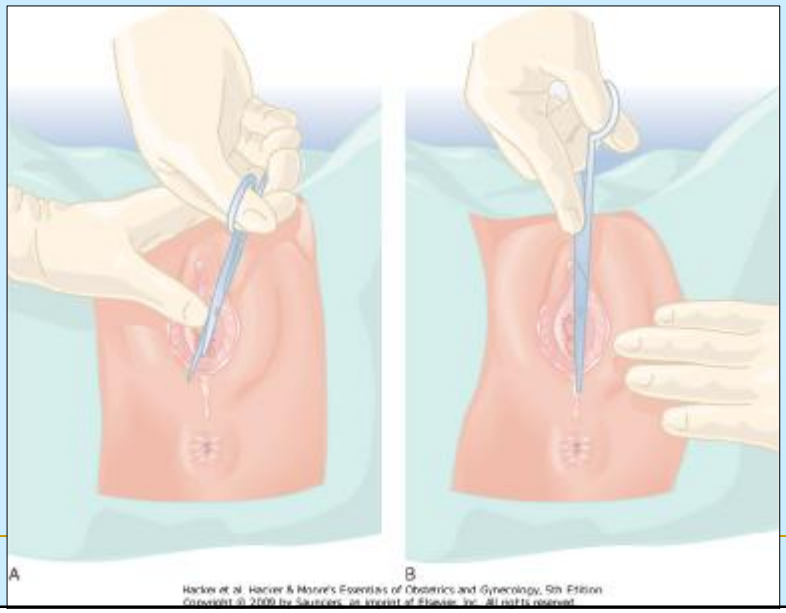
MANUAL REMOVAL OF PLACENTA

when there is retained placenta duration of 3rd stage > 30 min and the placenta still not separated



- After placental delivery it should be inspected for any lost cotyledons or succenturiate lobe.
- Finally the vulva must be inspected for any tears or lacerations in order to repair them.

EPISIOTOMY



- Episiotomy is performed in selected patient and it is indicated if there is rigid perineum which has risk of perineal tear with the head delivery or leading to prolonged 2nd stage of labour, so it is not a routine procedure.
- Restrictive episiotomy appears to have several benefits compared with routine episiotomy

What are the CRITERIA or the features of normal labour?

1- spontaneous onset
2- single cephalic presentation
3- 37-42 weeks gestation
4- no artificial interventions
5- unassisted spontaneous vaginal delivery
6- <than 12 hrs in nulliparous and <than 8 hrs in multiparous
7- healthy mother and baby
8- retrospective diagnosis