

Mechanism of labor

Definition:-

It is a series of changes in position & attitude that the fetus undergoes during its passage through birth canal. It is described for the vertex presentation & gynaecoid pelvis.

Cardinal movement of labor in vertex presentation

1. Engagement:-

- a. The widest diameter (Biparietal diameter) of the presenting part has passed successfully through pelvic inlet.
- b. It occurs prior to labor (36 weeks) in majority of nulliparous but not in multiparous which occur at time of labor.
- c. If 2/5 of fetal head is palpable abdominally; so the head is engaged.
- d. Normally the head enters the pelvis in the transverse position (occipito-transverse) so the anterior parietal bones slide over symphysis pubis followed by posterior parietal bones so that sagittal suture stays synclitic i.e. midway between symphysis & sacral promontory.
- e. If sagittal suture approaches more the promontory of sacrum so more of anterior parietal bone presents itself to examining fingers so called (*Ant. asynclitism*). If suture lies close to symphysis, more of posterior parietal bone will present (*Post. asynclitism*).

2. Descent: -

In nulliparous engagement occurs before onset of labor and further descent does not occur until onset of 2nd stage of labor. In multiparous descent begins with engagement.

Descent is brought by one or more of 4 forces:-

1. Pressure of amniotic fluid.
2. Direct pressure of the fundus upon breech.
3. Contraction of abdominal muscles.
4. Extension & straightening of fetal body.

3. Flexion:-

As the descending head meets resistance from cervix, wall of pelvis, pelvic floor; flexion of head results. The chin is brought into more contact with fetal thorax & shorter (*Suboccipito-pragmatic*) diameter changes to longer (*Occipito-frontal*) diameter.

4. Internal rotation:-

It is turning of head in a manner that occiput moves gradually from original position anteriorly toward symphysis pubis or less common toward sacrum (**occipito-posterior**). It is essential for completion of labor. Internal rotation is always

associated with descent of presenting part. It is not occur until head has reached level of ischeal spines (i.e. engaged).

5. Extension:-

When head reached the vulva after flexion it undergoes extension. Extension brings the base of occipit into direct contact with the inferior margin of symphysis pubis. The vulval outlet is directed upward & forward so that extension must occur before the head pass through vulval outlet. If flexed head not extend before reach pelvic floor; it would impinge upon posterior portion of perineum.

Two forces come into play:-

First: - forces excreted by uterus act more posteriorly.

Second: - force supplied by resistant pelvic floor & symphysis act more anteriorly.

The result is the direction of vulval outlet. The head is borne by further extension as the occipit, bregma, forehead, nose, mouth & finally chin. Immediately after birth; the head drop downward so the chin lies over anal region of mother.

6. Restitution:-

For the shoulder to be delivered it should rotate into direct antero – posterior plane. When this occurs; the occipit rotate through further $1/8^{\text{th}}$ of circle to transverse position.

7. Shoulder rotation: -

After restitution & external rotation the shoulder will be in antero- posterior position. The anterior shoulder is under symphysis pubis delivered first then posterior shoulder.

References:-

Ten teacher of obstetric.

Fourth year lecture

