CONTRACTED PELVIS AND CEPHALOPELVIC DISPROPORTION

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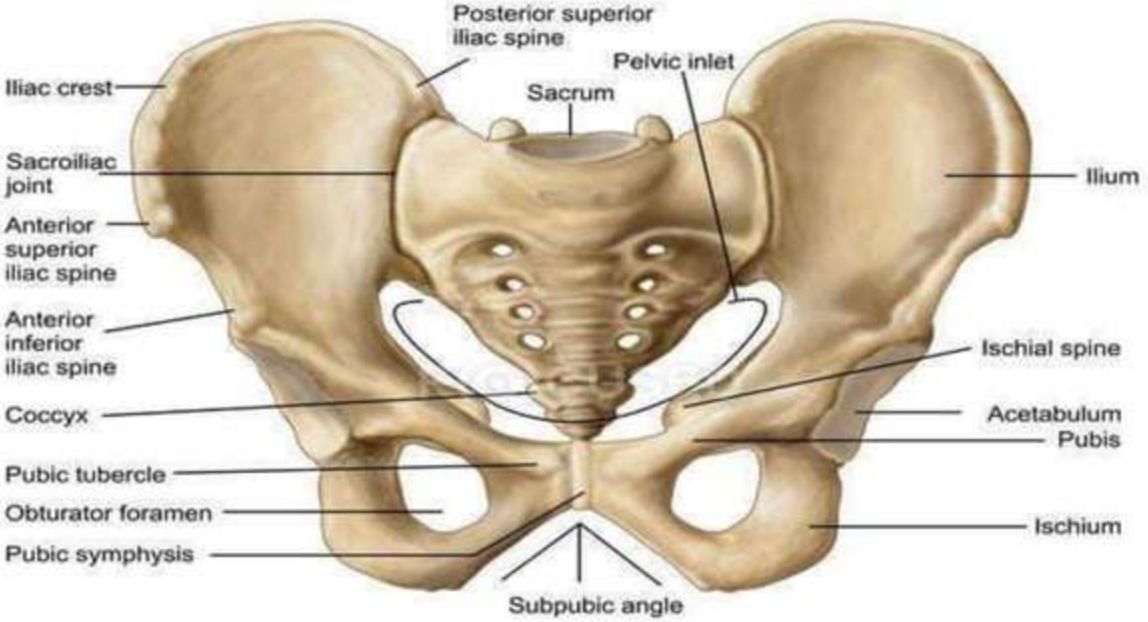
CONTRACTED PELVIS

- Anatomical definition

It is defined as a pelvis in which one or more of its diameter is reduced below the normal by one or more centimeter.

- Obstetric definition

It is defined as a pelvis in which one or more of its diameter is reduced so that it interferes with the normal mechanism of labor.

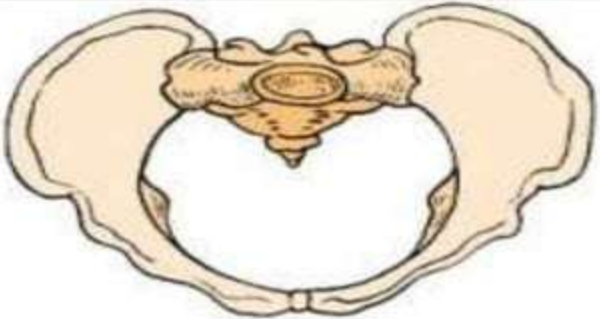

Posterior superior iliac spine
Pelvic inlet
Iliac crest
Sacrum
Sacroiliac joint
Ilium
Anterior superior iliac spine
Anterior inferior iliac spine
Ischial spine
Coccyx
Acetabulum
Pubis
Pubic tubercle
Obturator foramen
Ischium
Pubic symphysis
Subpubic angle

FACTORS INFLUENCING SIZE AND SHAPE OF PELVIS

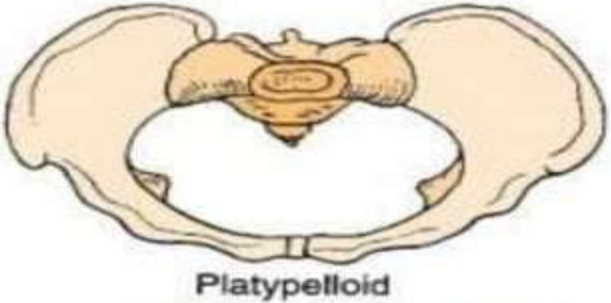
1. Developmental factor
2. Racial factor
3. Nutritional factor
4. Sexual factor
5. Metabolic factor
6. Trauma, disease or tumor of the Bony pelvis

On the basis of the shape of the inlet the female pelvis is divided into four parent type-

- Gynecoid (50%)
- Anthropoid(25%)
- Android(20%)
- Platypelloid(5%)

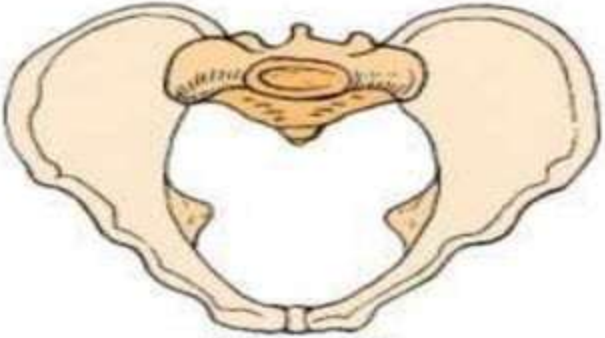


Gynecoid



Platypelloid

Android



Anthropoid

ETIOLOGY

1. Nutritional and environmental Defects
   - Minor variation: common
   - Major: Rachitic and osteomalacia(rare)
2. Disease or injuries
   - Affecting the bones of pelvis- fracture, tumors, arthritis
   - Spine- kyphosis, scoliosis,spondylolisthesis,coccygeal deformity
   - Lower limb- poliomyelitis, hip joint disease.
3. Developmental defects

Naegele's pelvis, Robert's pelvis; high or low assimilation pelvis,split pelvis.

ASYMMETRICAL OR OBLIQUELY CONTRACTED PELVIS

1. Naegele's pelvis
- This type of pelvis is extremely rare.
- It is produced due to arrested development of one ala of the sacrum
- It may be congenital or acquired
- The method of delivery is by cesarean section

2. Robert's pelvis(transversely contracted pelvis).
- This is an extremely rare abnormality
- Ala of both the side are absent and the sacrum is fused with the innominate bones
- Delivery is done by cesarean section

3. Kyphotic pelvis
- This pelvis deformity is secondary to the kyphotic changes of the vertebral column either following tuberculosis or rickets.

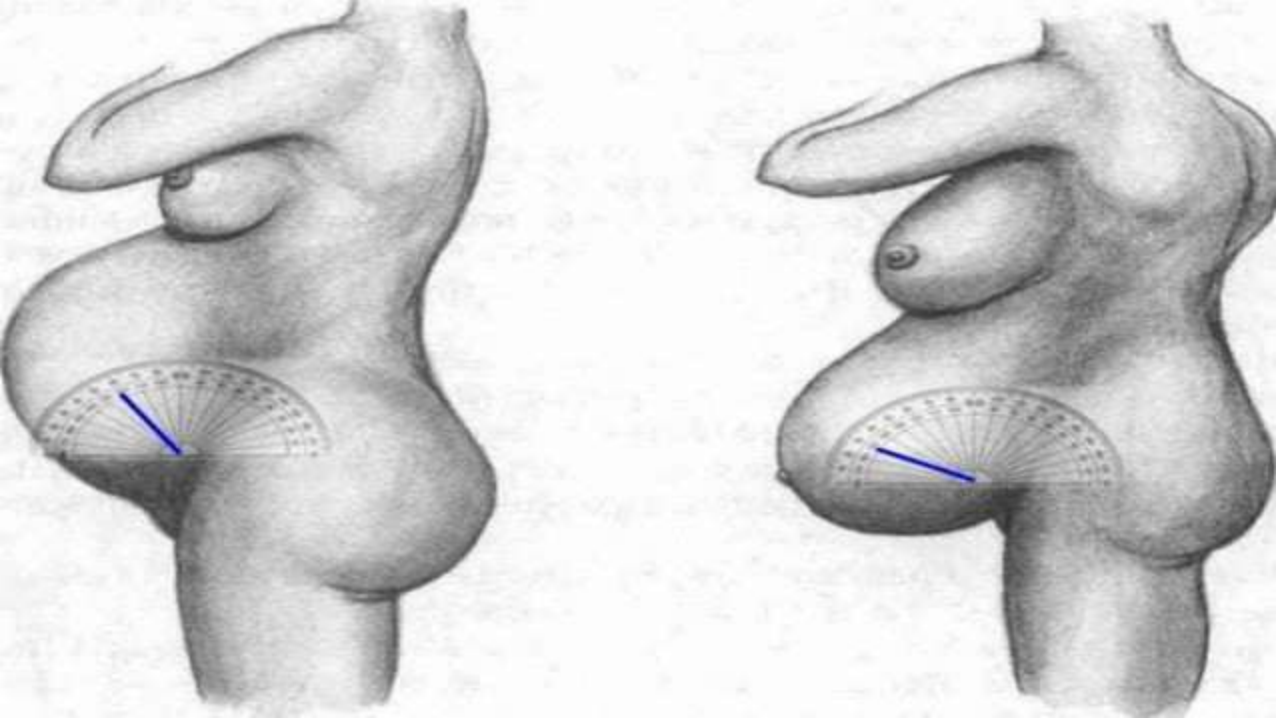
MECHANISM OF LABOR IN CONTRACTED PELVIS WITH VERTEX PRESENTATION

- In the flat pelvis, the head find difficulty in negotiating the brim and once it passes through the brim,there is no difficulty in the cavity or outlet . The head negotiate the brim by the following mechanism.
- The head engages with The sagittal suture in the transverse diameter.
- Head remains deflexed and engagement is delayed
- If the anteroposterior diameter is too short, the occiput is mobilized to the same side to occupy the sacral bay. The biparietal diameter is thus placed in sacrocotyloid diameter and the narrow bitemporal diameter is placed in the narrow conjugate .

- Engagement occurs by exaggerated parietal presentation so that the super-subparietal diameter , instead of biparietal diameter ,passes through the pelvic brim.
- Molding may be extreme and often there is an indentation or even a fracture Of parietal bone. However , the caput that form is not big.
- Once the head negotiates the brim , there is no difficulty in the cavity and outlet and normal mechanism follows.

DIAGNOSIS

1. History collection
2. Physical examination
   - Stature
   - Stigma
   - Dystocia dystrophia syndrome
3. Abdominal examination
   - Pendulous Abdomen in primigravida
4. X-ray
5. CT scan
6. MRI



Cephalopelvic disproportion

DEFINITION

The disparity in the relation between the head and the pelvis is called cephalopelvic disproportion.

It is a plevis in which one or more of its diameter is reduced below the normal by one or more centimeter.

INCIDENCE

According to American college of nursing midwives, CPD occurs 20 out of 250 pregnancy.

" It has been seen through studies that 65% of women who have been diagnosed with CPD in previous pregnancies , deliver vaginally in subsequent pregnancies" .

CAUSES

- Nutritional Deficiency
- Injury to Pelvic bone
- Developmental defects
- A large size baby
- Abnormal fetal position
- Problem with genital tract.

CLASSIFICATION

A) CLASSIFICATION BY PELVIC ARCHITECTURE

1. Pelvis aequabiliter justo minor
- Characterized by general reduction of all diameter ; equally shortened usually by 1-2 cm.
- Seen in short height Women or women with massive skeletAl bone

2. Flat pelvis
- Reduced anteroposterior diameter with normal transverse and oblique diameters .

3. Generally contracted Pelvis
- All diameters reduced, but the anteroposterior diameter are shortened greater then the others

B) DEGREE OF CONTRACTURE

There are 4 degree of contracture

1. First degree-true conjugate <11cm but not <9cm, spontaneous delivery is possible
2. Second degree-true Conjugate 9-7.5cm , spontaneous delivery possible but complications may arise
3. Third degree- true conjugate 7.5-6 cm, spontaneous delivery impossible, use c- section.
4. Fourth degree true conjugate <6cm , impossible delivery, only way is c- section also known as absolutely contracted pelvis

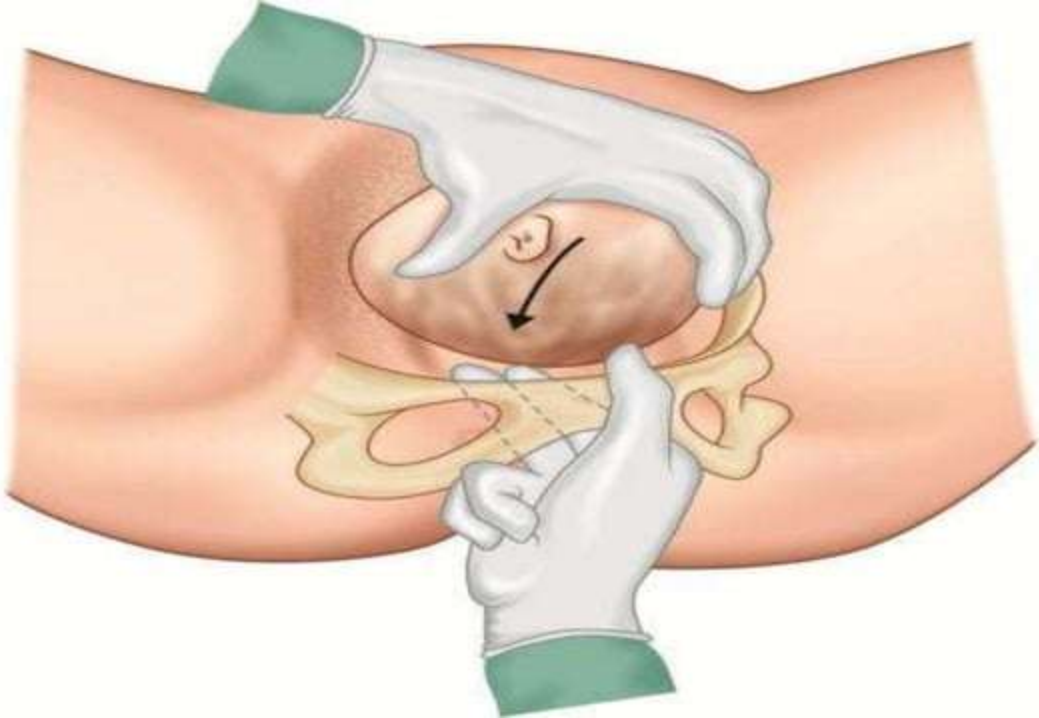
DIAGNOSIS

a)Abdominal method

The patient is placed in dorsal position with the thighs slightly flexedand separated. The head is grasped by left hand , two fingers(index and middle) of the right hand hand are placed above the symphysis pubis kepping the inner surface of the finger in line with the anterior surface of the symphysis pubis to note the degree of overlapping , if any when the head is pushed downward and backward.

B)Abdominovaginal method. (Muller Munro Kerr)

- The bimanual method is superier to the abdominal method as the pelvic assessment can be done simultaneously.
- Lower bowel is emptied, preferably by enema patient is Asked to empty the bladder
- The patient is placed in lithotomy position and the internal examination is done taking all aseptic precaution. Two finger of the right hand are introduced into the vagina with the fingertips placed at the level of ischial spine and thumb is placed over the symphysis pubis the head is grasp by the left hand and is pushed in downward and backward direction into the pelvis.



- X- ray
- Cephalometry
- MRI
- CTscan

MANAGEMENT

1. Moderate degree
- Induction of Labor

2. Severe degree
- Cesarean section
- Trial labor

INDUCTION OF LABOR

Induction 2-3 weeks prior to EDC may be considered only in cases with minor to moderate degree of pelvic contraction . It is not favored now a days . However,in a selected multigravida with previous history of difficult vaginal delivery this method may be considered 2-3 weeks before the date in any Case , one should be certain about the fetal gestational age

CESAREAN SECTION

Elective cesarean section at term is indicated in:

- Major degree of contraction
- Major disproportion
- Absolute contraction
- Dead fetus
- Patient not fit for trial labor The operation is done in planned way any time during last week of pregnancy.
- Emergency:when trial labor is failed

TRIAL LABOR

It is the conduction of spontaneous labor in a moderate degree of disproportion, in an institution under supervision with watchful expectancy hoping for a vaginal delivery

CONDUCTION OF A TRIAL OF LABOR

- Careful fetal and maternal monitoring by electronic fetal monitoring and non stress test
- Oral feeding remain suspended and hydration is maintained by intravenous drip
- Augmentation of labor by pitocin

The progress of labor is mapped with partograph:

i) progressive descent of the head
ii). progressive dilatation of the cervix

After the membrane rupture, pelvic examination is to be done:

i) to exclude cord prolapse
ii) to note the color of liquor
iii) to assess the pelvis once or more
iv) to note the condition of the cervix including pressure of the presenting part of the cervix
v) in favorable cases, end spontaneously, low forcep and low ventose.
vi) In unfavorable cases, do caesarean section.

Successful trial

A trial is called successful, if a healthy baby is born vaginally, spontaneous or by forcep or ventose with the mother in good condition

Failure of trial labor

Delivery is by cesarean section or delivery of a dead baby spontaneously or by craniotomy is called failure of trial labor

ADVANTAGES OF TRIAL LABOR

- Lowers incidence of cesarean section.
- A successful trial ensures women a good future obstetrics.

DISADVANTAGES OF TRIAL LABOR

- May end before fullcervix dilation.
- Increased fetal mortality and morbidity.
- If failed, trial operative risk increases.

NURSING MANAGEMENT

- Check vitals every 4 hourly
- Monitor both contraction and fetus continuously
- Report immediately the sign of fetal distress
- Position the mother in ways to increase the pelvic diameter such as sitting or squatting which increase the outlet diameter and also aid in fetal descent
- Assess the fetus for hypoxia
- Provide support to the client and the family members in coping with stress of a complicated labor

COMPLICATIONS

1. First stage
- Fetal distress
- Prolonge d labor

2. Second stage
- Delayed second stage
- Shoulder dystocia

3. Third stage
- Retained placenta
- PPH
- Maternal injury


Thank You