Anatomy of normal pelvis & Fetal skull
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Note: some pictures were not suited for printing, please refer to the slides, if these are not enough.

The pelvis

The pelvic brim or inlet

- The pelvic brim is the inlet of the pelvis and is bounded in front by the symphysis pubis and posteriorly by the promontory of the sacrum
- Transverse by upper margin of the pubic bone, the iliopectal line and ala of the sacrum
- The normal transverse diameter in this plane is 13.5 cm
- The normal AP (ant-post) diameter is 11 cm

The pelvic mid-cavity

- An area bounded anterior in front by the middle of the symphysis pubis and posteriorly by the junction of the second and third sections of the sacrum
Transverse by the pubic bone, the obturator fascia and the inner aspect of the ischial bone and spines

The cavity is almost round as the transverse and anterior diameters are similar at 12 cm

The ischial spines are palpable vaginally and are used as landmarks to assess the descent of the head (station)

The pelvic outlet

Anterior by the lower margin of the symphysis pubis and posteriorly by the last piece of the sacrum

Transverse by the descending ramus of the pubic bone, the ischial tuberosity and the sacrotuberous ligament

AP diameter of the pelvic outlet is 13.5 cm and the transverse is 11 cm

• The transverse is the widest diameter at the inlet, but at the outlet it is the AP

• Maternal stature, previous fractures and bone disease may be associated with measurement less than normal

• Pelvic ligaments loosen in the end of third trimester, the pelvis becomes more flexible and may ↑ during labour

The pelvic measurements

• Maternal stature, previous pelvic fractures, metabolic bone disease like rickets, may all be associated with measurements less than normal

• X-ray and CT (computed tomography scans of the pelvis to measure the pelvis) is now uncommon
The gynaecoid pelvis is the most favourable for labour and most common

- An android pelvis is said predispose to deep transverse arrest

- An anthropoid pelvis encourages an occipito-posterior position

- A platypelloid pelvis also is associated with an ↑ risk of obstructed labour

The pelvic floor

- Two levator ani muscle with their fascia, form a musculofascial gutter during the second stage of labour
The perineum

The perineal body is a condensation of fibrous and muscular tissue lying between the vagina and the anus. It receives attachments of the posterior ends of the bubo-cavernous muscles, the medial ends of the superficial and deep transverse perineal muscles and the anterior fibers of the external anal sphincter. It is always involved in a second degree perineal tear and an episiotomy.

The fetal skull

The bones, sutures and fontanelles

The fetal skull is made up of the vault, the face and the base. At the time of labour, the sutures joining the bones of the vault

The vault of the skull is formed by the parietal bones and parts of the occipital, frontal and temporal bones, between these bones there are 4 sutures: The sagittal, frontal, coronal, lambdoidal

The fontanelles are the junctions of the various sutures.

The anterior fontanelle (diamond shape), is at the junction of the sagittal, frontal and coronal sutures

The posterior fontanelle (triangular shaped), is the junction of sagittal suture and lambdoidal suture between the two parietal bones and the occipital bone
The diameters of the skull

The fetal head is ovoid in shape. The attitude of the fetal head refers to the degree of flexion and extension at the upper cervical spine, different longitudinal diameters are presented to the pelvis in labour depending on the attitude of the fetal head

- Suboccipito-bregmatic diameter = 9.5 cm
- Occipito-frontal diameter = 11.5 cm
- Occipito-mental diameter = 13 cm
- Submento-bregmatic diameter = 9.5 cm

Moulding

A process which effectively reduces the diameters of the fetal skull and encourages progress through the bony pelvic, without harming the underlying brain, severe moulding can be a sign of cephalopelvic disproportion.