Symposium on Maternal Pelvis and Fetal Skull

Symposium Summary – Maternal Pelvis and Fetal Skull

Date: 24/07/2025 Time: 1pm to 3pm

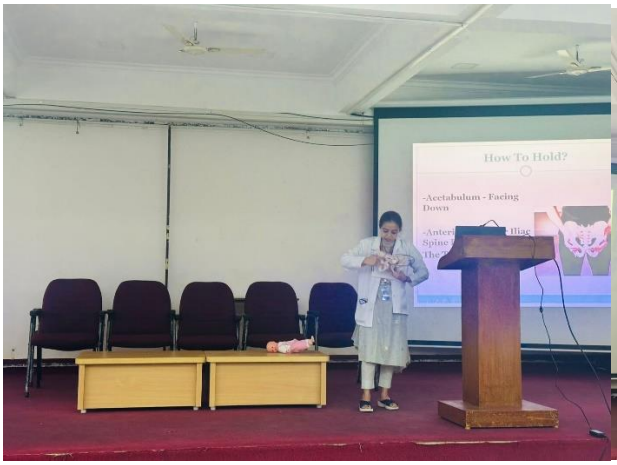
Theme: Journey Through the Birth Canal: Navigating Normal Labour & Malpositions

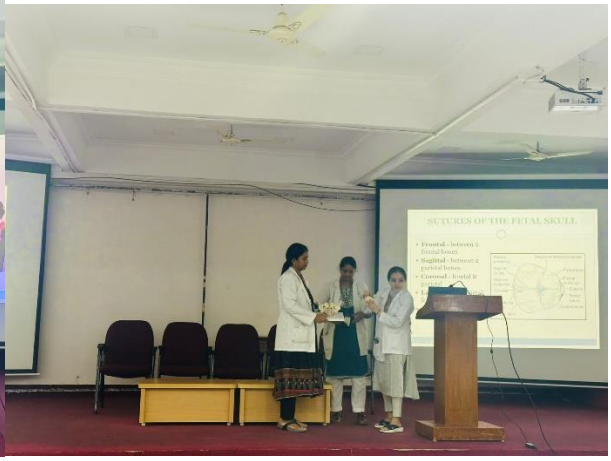
Moderators: Dr. Sornam, Dr. Ishwarya

Presenters:

1 **Dr. Ishita Rathore – Maternal Pelvis & Fetal Skull**

- Dr. Anusha – Physiology of Labour
- Dr. Sangeetha – Malpositions (ROP)





1. Introduction

- Focus on the three Ps: Passage (Maternal Pelvis), Passenger (Fetal Skull), and Powers.
- Emphasis on how pelvic anatomy and fetal skull adaptability influence the course of labour.

2. Maternal Pelvis (The Passage)

Bones & Joints

- Bones: Innominate (ilium, ischium, pubis), sacrum, coccyx
- Joints: Sacroiliac, sacrococcygeal, pubic symphysis

True vs. False Pelvis

- False pelvis: No obstetric significance
- True pelvis: Critical in labour; divided into inlet, cavity, and outlet

Pelvic Inlet

- Shape: Transversely oval (TD > AP)
- Inclination angle: ~55°; high inclination → delayed engagement, favors OP position
- Key diameters: AP, transverse, oblique, sacrocotyloid, posterior sagittal
- Diagonal conjugate measurement: Assesses adequacy of pelvic inlet

Pelvic Cavity & Midpelvis

- Shape: Cylindrical, truncated
- Plane of greatest pelvic dimension: Roomiest, no obstetric value
- Plane of least pelvic dimension: Narrowest; critical for fetal descent
- Ischial spines significance: Landmark for zero station, internal rotation, pudendal block, and risk of deep transverse arrest

Pelvic Outlet

- Boundaries: Pubic arch, coccyx, ischial tuberosities
- Subpubic angle: >90° in gynecoid pelvis; <90° in android pelvis
- Waste Space of Morris: >1 cm suggests difficult descent, perineal trauma risk

Caldwell–Moloy Classification

- Types: Gynecoid, Android, Anthropoid, Platypelloid
- Most common: Mixed pelvis
- Abnormal pelvis: Rachitic flat, Naegele's, Robert's, Oblique contracted

3. Fetal Skull (The Passenger)

Parts & Bones

- Vault: Frontal (2), Parietal (2), Temporal (2), Occipital (1)
- Base & Face
- Sutures: Frontal, sagittal, coronal, lambdoid, temporal
- Fontanelles: Anterior (bregma) & posterior (lambda) – allow moulding and clinical assessment

Clinical Significance

- Determining presentation:
- OA: Posterior fontanelle palpable
- OP: Anterior fontanelle palpable
- Brow: Anterior fontanelle + forehead
- Face: No fontanelle palpable
- Hydrocephalus: Wide sutures/fontanelles
- Moulding grades:
- Grade 1: Sutures opposed
- Grade 2: Overlapped, reducible
- Grade 3: Overlapped, irreducible → suggests obstructed labour & fetal hypoxia

4. Key Clinical Correlations

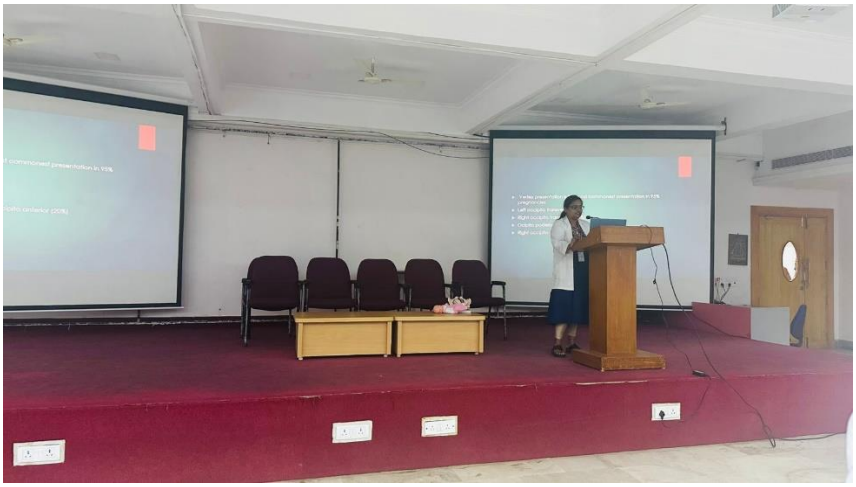
- Curve of Carus directs fetal descent.
- Narrow subpubic angle → obstructed descent & perineal injury risk.
- Midpelvis (ischial spines) is the critical zone for labour progress.
- Sutures & fontanelles guide intrapartum diagnosis of fetal position.
- Moulding assessment essential for detecting obstructed labour.

5. Conclusion

- Successful labour depends on the interaction between the maternal pelvis and fetal skull.

- Accurate knowledge of pelvic diameters, shapes, and fetal skull anatomy is crucial for predicting and managing normal and abnormal labour.
- Clinical application: Timely recognition of pelvic contraction, fetal malpositions, and obstructed labour to ensure safe maternal and neonatal outcomes.

Presenter - Dr.Naga Revathi.J



Moderators Dr.Sornam.ms(prof)

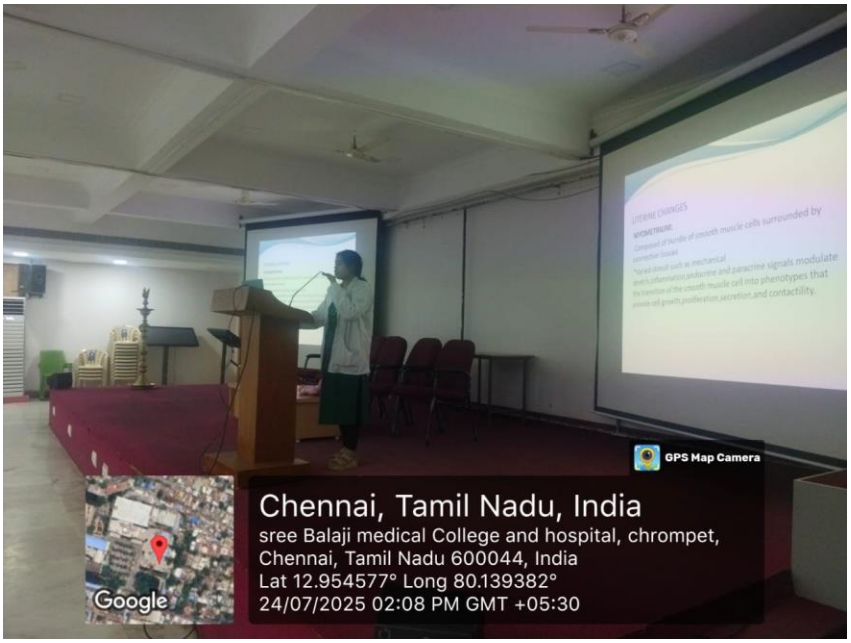
Dr.Ishwarya(SR)

Topic- mechanism of normal labour

- The mechanism of labour is defined as the process by which the fetus adjust itself to the pelvic architecture and manoeuvres itself through the parturient canal with minimum difficulty to achieve a safe vaginal delivery. vertex presentation is the most commonest presentation in 95% pregnancies
- Left occipito transverse(64%)
- Right occipito transverse (20%)
- Ocipito posterior (20%)
- Right occipito anterior /left occipito anterior (20%)

cardinal movements - engagement, descent,flexion,internal rotation,extension,restitution,external rotation, expulsion

Presenters:
Dr. Anusha

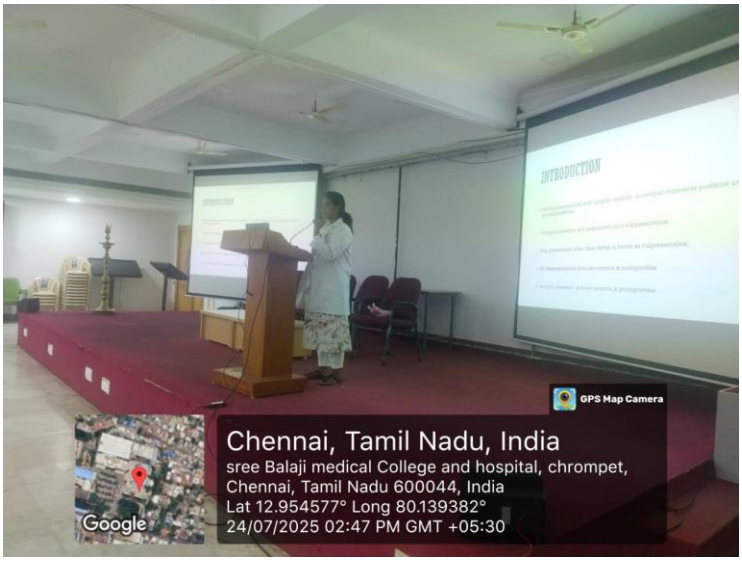


Topic : MECHANISM OF NORMAL LABOUR AND RIGHT OCCIPITO POSTERIOR

Moderators:Dr .Sornam, Dr. Ishwarya

Discussing regarding Physiology of Labour
1)What is Labour
2)Maternal and Fetal compartments
3)Placenta
4)Prostaglandin biosynthesis overview
4)Phases of labor

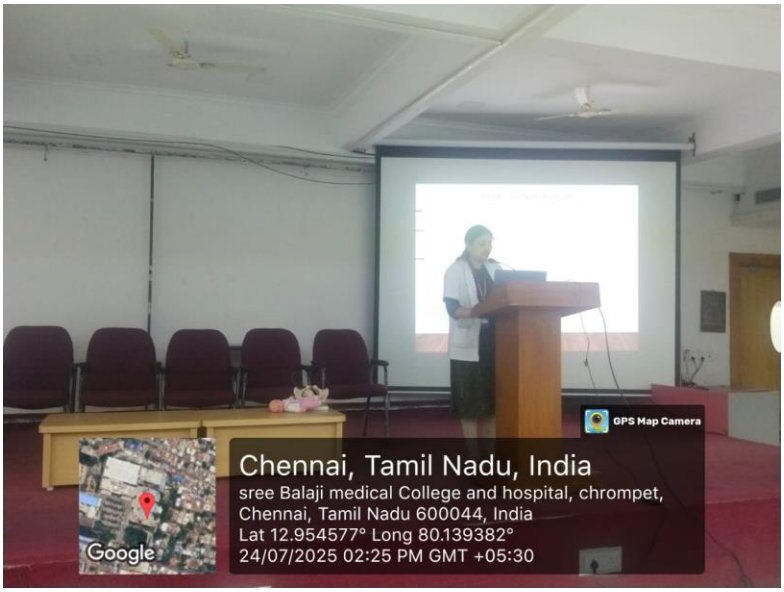
Presenter-Dr.Sangeetha.V final year post graduate



TOPIC:''JOURNEY THROUGH THE BIRTH CANAL:NAVIGATING NORMAL LABOUR AND MALPOSITIONS"

Right occipito posterior (ROP) position Key points: • Incidence: ROP is the most common posterior position and occurs in about 10% of labors. • Diagnosis: The fetal back is hard to feel on examination, with limbs more prominent on the mother's left in ROP. Heart sounds are best heard on the right side. • Mechanism of labor: Labor in ROP is often slower and more painful due to a larger head diameter presenting. In about 90% of cases, the baby's head rotates forward (anteriorly) during labor, allowing for spontaneous vaginal delivery. In the remaining cases, the baby may stay in a persistent posterior or transverse position, potentially requiring assisted delivery with forceps, vacuum, or cesarean section. • Complications: ROP is linked to longer labor, higher rates of assisted or operative delivery, and increased maternal discomfort. Persistent ROP can cause perineal tears or need for interventions. • Etiology: Factors include pelvic shape, poor uterine contractions, deflexed fetal head, and epidural analgesia. In summary, ROP is a common fetal malposition associated with prolonged and sometimes more complicated labors, yet the majority of cases still result in vaginal delivery as the baby usually rotates to a more favorable position during labor

- Dr. Komal – Causation of Labour



Causation of labour refers to the physiological and hormonal processes that initiate childbirth. It involves a complex interplay of maternal, fetal, and placental factors. Key triggers include increased production of oxytocin, rising estrogen levels, and the release of prostaglandins, which lead to uterine contractions. Fetal signals, such as cortisol production from the adrenal glands, also contribute by promoting placental estrogen synthesis. Additionally, mechanical factors like uterine stretch and cervical ripening play roles. Together, these changes activate the myometrium and initiate coordinated contractions, ultimately leading to cervical dilation and delivery. Labour typically begins when both maternal and fetal systems are ready.

Thank you