Ethical issues experienced in the application of human genetics technologies. The possibility of misuse of gene therapy for the purpose of eugenics, commercial exploitation of the donor mother in cases of "three parent babies" and conceiving "savior babies" through pre-implantation genetics tests are future ethical challenges. *Patenting of genes*. A gene patent is a patent on a specific isolated gene sequence, its chemical composition, and the processes for obtaining or using it. It is a constant ethical issue as to who owns the tissue (genes) – the patient or the laboratory. Patents act under Section 3C of Indian law states a gene is "patentable" only if it is "recombinant".
Conclusion: There are no easy or correct solutions for difficult ethical problems in medical genetics. With new discoveries new ethical dilemmas will emerge. Medical genetics community has to ensure that interests of their patients and families take precedence.

31. A study of interparietal bones in adult human skulls

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Introduction: The squamous part of the occipital bone consists of an upper membranous or interparietal part and a lower cartilaginous or suboccipital part. Controversy exists regarding the ossification of these two parts. Failure of fusion of ossification centers gives rise to various anomalies of the interparietal bone.
Objective: To study the human dry skulls for the presence of the interparietal bones and to note its incidence.
Methods: 50 dry adult human skulls were collected from the Departments of Anatomy, Regional Institute of Medical Sciences (RIMS), Imphal and J.N. Institute of Medical Sciences (JNIMS), Imphal, Manipur and examined for the presence of interparietal bones; incidence was noted, photographs taken and compared with previous observations.
Results: Interparietal bones were present in 11 out of the 50 (22%) skulls examined.
Conclusion: Interparietal bone can appear in various forms and position. Knowledge of interparietal bone is important for the radiologists, neurosurgeons, anthropologists, orthopedicians, and forensic experts in their respective fields.

32. Role of neurokinin-1 receptor antagonist in attenuating morphine tolerance in rats

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Objective: Substance P (SP) is an important 11 amino acid neuropeptide, which is involved in transmission of pain at the spinal level. It acts on the Neurokinin-1 (NK1) receptors, which are present in different parts of nervous system. It was hypothesized that an antagonist of the NK1 receptor will relieve pain. In the current study, the role of SP and NK1 receptor antagonist was investigated for potentiating the analgesic effect of morphine.
Methods: Localization of SP in spinal cord was done using immunohistochemistry. Morphine (10 mg/kg) was administered subcutaneously for 7 days. In a separate group of rats, morphine was co-administered with NK1 receptor antagonist fosaprepitant by intraperitoneal route at a dose 30 mg/kg for the same duration. Finally after 40 min time interval, pain sensitivity was evaluated by the hot plate test at 52.5 °C. Locomotor activity and cardiac parameters were measured after administration of NK1 receptor antagonist.
Results: SP was localized in the superficial laminae of spinal cord. Co-administration of NK1 receptor antagonist with morphine attenuated morphine tolerance. There was no alteration of motor activity or normal cardiac parameters after NK1 receptor antagonist administration.
Conclusion: SP localization in the dorsal horn of the spinal cord suggests its involvement in pain transmission. Fosaprepitant potentiated the action of morphine and also attenuated morphine tolerance. This finding could be of clinical relevance.

33. Potter's syndrome/Potter's sequence – A rare congenital anomaly

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Objective: Detailed study of embryogenesis and embryological anomalies and their various presentations.
Methods: Routine dissection of foetuses was done during dissertation work and embryological study in department of anatomy, Andhra Medical College, Visakhapatnam, Andhra Pradesh. Foetuses were collected from Department of Obstetrics and Gynaecology, Victoria Government Hospital and King George Hospital, Visakhapatnam.
Results: Foetus showed features of Potter's facies. The kidney is horseshoe shaped with lower poles fused. Kidney is polycystic with bubble-like appearance. The renal pelvis is separate with two ureters on the right and left, running down, but are seen fused before reaching the bladder and opened as a single ureteric opening. The rectum and bladder have a common outlet sharing defective urorectal septal development. Anal agenesis was noted. The embryological basis and clinical importance will be presented at the conference.
Conclusion: Sound knowledge of embryogenesis and the associated congenital anomalies and the importance of appropriate usage of prenatal diagnostic techniques are mandatory in field of obstetrics and gynaecology, paediatrics and paediatric surgery. For effective prenatal care, early diagnosis of the anomalies and timely appropriate counselling of the parents to take the right decision at the right time are essential.

34. Correlation of fetal gestational age with bi-parietal diameter by ultrasonography in southern part of Rajasthan

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Objective: The present study was carried out to assess gestational age in second and third trimesters with the help of ultrasonography measurements of one of the important fetal parameter, i.e., bi-parietal diameter (BPD) in local population (southern zone) of Rajasthan.
Methods: Two hundred normal pregnant females were studied with the known last menstrual period in southern part of Rajasthan. Gestational age was determined by measurement of fetal bi-parietal diameter with real time ultrasonography machine. Statistics was applied to correlate GA and BPD.
Results: In this study, foetal mean BPD showed linear increase from 13 to 36 weeks. Statistically significant correlation was found between GA and BPD ($r = 0.38$). Mean BPD showed increase of 2.38 cm in 13–20 weeks, 2.18 cm between 20 and 27 weeks and only 1.72 cm from 27 to 34 weeks. Average growth rate of BPD was found to be 0.31 cm/week from 13 to 28 weeks, which then later reduced to 0.23 cm/week from 28 to 36 weeks of gestation.
Conclusion: BPD is one of the useful criteria to measure GA and to predict expected date of delivery (EDD). Mean measurements of BPD in the present study were found to be lower than that of western studies except Hadlock series, which compares well with present study. The mean BPD values of present study compares well with some Indian studies and other found higher results. Variation in predicted values is attributed to anthropometric differences between the two populations due to racial, genetic, nutritional and socioeconomic factor. Therefore, large-scale studies should be done and population-specific tables should be derived to correlate BPD and GA.

35. Angle of femoral neck anteversion in Tamilnadu population of India

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Background: Abnormal femoral neck anteversion (FNA) have been implicated in the etiogenesis of the hip osteoarthrosis and development dysplasia of the hip. The purpose of this study is to estimate the FNA in Tamilnadu population of India hitherto reported.
Method: Digital photographs of 187 dry adult femurs (right side – 75 and left side – 114) were taken and the angle of anteversion was determined with the aid of image tool software.
Results: The average angles of anteversion obtained were $18.5 \pm 9^{\circ}$ on right side and $19.4 \pm 11^{\circ}$ on the left side. Retroversion was observed in 3.17% femurs of both sides.
Conclusion: The knowledge of FNA angle nowadays is becoming more significant with the increase in demand for total hip replacement, and anthropological studies. The present study provides FNA data of Tamilnadu population, which adds to the other existing data and may be supportive for the interventional procedures undertaken in this population.

36. A morphological study of fetal myocardial bridges

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Objective: A band is overlying the intramural segment of coronary artery – a place where the artery goes through myocardium instead of epicardium is myocardial bridging (MB). In adult cadaveric and angiographic study, a wide variation of 0.5–90.4% occurs in the incidence of MB with very little data on fetus. Hence, the aim of this study was to identify the presence of myocardial bridges in fetuses of varying gestational age.
Methods: Thirty fetal cadaveric hearts were examined. After removing epicardium, the course of the coronary arteries was delineated and observed for the presence of MB. In the hearts with MB, the location, length, and its distance from the coronary ostium were measured. Histological study of the artery under the myocardial bridges was done.
Result: Out of thirty hearts, 19 showed MB in the left anterior interventricular artery. Five and two hearts showed myocardial bridges in right coronary artery and circumflex artery, respectively. Multiple MB in single artery was seen rarely. The length of the MB segment was around 4 mm on an average. Mostly the MB is seen in the mid- to distal part of the artery. Routine H&E staining of the artery showed narrowing of the segment under MB.
Conclusion: This study concludes that MB is present in fetuses mostly in the left coronary artery. This study may provide potentially useful information for the preoperative evaluation of a newborn and may have clinical implication for sudden fetal deaths.

37. The role of Q-angle in the diagnosis of patello femoral pain syndrome

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Introduction: One of the most common disorders of knee is patella femoral pain syndrome (PFPS), which constitutes about 25% of all knee injuries treated in the orthopedic department. PFPS is considered to be a challenging problem to the clinicians, as multiple factors contribute to its etiology like abnormal lower limb mechanics, muscle weakness, soft tissue tightness and even over exercise. Till date, there is no gold standard test, which would pin point the diagnosis of PFPS. The most commonly used tests are (1) patellar tilt test, (2) palpation of patellar retinaculum, (3) patellar mobility test, (4) medio lateral glide, (5) patellar apprehension test, (6) muscle flexibility, (7) crepitus, (8) patellar tracking test, (9) patellar compression test, and (10) Q-angle. Among the above-mentioned test, an increased Q-angle with subsequent abnormal lateral tracking of patella is considered to be one of the main causes of PFPS.