intraperitoneal route on 7th day of gestation. Fetuses were delivered on the 18th day of gestation by hysterectomy. Each fetus was assessed for histopathological changes of their brain.

Results: Brain of fetal mice showed congestion of pyramidal cells and glial cells with areas of vacuoles. Hippocampus seen with reduced size of molecular layer, granular cell layer and hilus with hydropic degeneration of granular cell layer.

Conclusion: Histopathological changes in brain of fetus are due to carbamazepine administered to the pregnant mice.

Conflicts of interest

The authors have none to declare.

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Gestational age determination in human female foetuses by measurements of hand and foot

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Introduction: Determination of gestational age is important in civil and criminal cases. Though a reasonable assessment of gestational age can be made by measuring physical parameters such as crown-heel length, weight of foetus and by noting morphological features, organ development and appearance of ossification centres, an alternative parameter is desirable in some instances. In this study we directly correlate growth of different foetal hand parameters with gestational age.

Materials and methods: 30 formalin fixed human female foetuses were obtained from Museum of Department of Anatomy, Jawaharlal Nehru Medical College, Aligarh. Foetuses were divided into five groups: Group I: <17 wks, Group II: 17–20 wks, Group III: 21–25 wks, Group IV: 26–30 wks, Group V: >30 wks. We measured the seven parameters in the foetal hand, i.e. length of the hand, breadth of the hand and lengths of the thumb, index finger, middle finger, ring finger and little finger and foot parameters are length and breadth of foot, length of great toe and 2nd, 3rd, 4th, 5th toes, were measured using vernier callipers.

Observation: It is observe that foetal hand, thumb, middle finger and foetal foot, great toe and 3rd toe lengths are significantly ($p < 0.05$) correlated with gestational age.

Result: It was concluded tthese parameters could be utilized to estimate gestational age. This is justifiable useful in the medico legal cases in which only hand and foot or part of it is available for estimation of gestational age.

Conflicts of interest

The authors have none to declare.

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Second branchial cleft anomaly – A rare clinical presentation

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Background/introduction: Branchial arch anomalies account for 20% of congenital head and neck lesions. Second branchial cleft anomalies account for 90% of the developmental abnormalities of the branchial apparatus. But, complete second arch fistulae are rare and comprise 2% of all branchial anomalies. Second branchial cleft fistulae pass deep to second arch structure and over third arch structures; thus closely associated with major neuro-vascular structures of the neck. The present study highlights the importance of their recognition intra-operatively to prevent injuries to vital neck structures as well as reiterate the importance of study of developmental anatomy and a need to find the surgical proof for the same.

Materials and methods: A case of complete second branchial cleft fistula was detected in ENT outpatient department of our institution. The fistula was surgically excised by the combined "transcervical" and "transoral" approach. A video demonstration of internal opening as well as stages of safe surgical management is being highlighted in this study.

Result: The length of the excised fistula was 10 cm. The fistula tract extended from lower neck to hyoid region and went up through bifurcation of carotid artery and traversed floor of mouth to reach its internal opening. No post-operative complications. Six months follow up showed no recurrence.

Conclusion: Accurate knowledge of surgical anatomy relating to development of neck from branchial arches and its anomalies is essential to perform surgeries in head and neck region to prevent inadvertent vascular or nerve injury.

Conflicts of interest

The author has none to declare.

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Fate of renal tubule in human fetuses

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Introduction: Various congenital malformation have been reported earlier, some of them fatal. Study of developing tubules gives important clues.

Aim: To study morphological development of renal tubules.

Materials and methods: The study was carried out in 30 human fetuses of different age ranging between 3 and 38 weeks. Kidney directed fixed in 10% formalin, processed and stained with haemotoxylin and eosin.

Result and conclusion: The smallest glomeruli were observed in most superficial cortex and largest in the juxtamedullary zone.

Conflicts of interest

The author has none to declare.