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Fusion of vertebrae at various sites: An embryological and clinical relevance

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Introduction: Skeletal abnormalities related to vertebral column is important, as a part of axial skeleton whole body weight be transmitted through it. Also acts as lever for movement of appendicular skeleton, connected through muscles. For this reason various sites of vertebral assimilation is focused in present study.

Materials and methods: Three cases are considered (i) complete fusion of fifth lumbar vertebra with sacrum, sacralization (commonest); (ii) complete fusion of atlas with occipital bone occipitalization of atlas (rare); (iii) partially fused typical cervical vertebrae, vertebra critica or block vertebrae (rarest). Congenital sacralization, occipitalization of atlas and block vertebrae can be explained as partial or complete disruption of merging process of caudal and cranial segments of sclerotomes.

Result: Decreased mobility at L5/S1 result in biomechanical changes and altered weight distribution increases stress on the muscles in the region of lumbosacral and sacroiliac joint represents with low back pain with radicular symptoms.

Conclusion: Anomalies of cervical region could be congenital or acquired. Its association to syndrome is not uncommon, like with chorda dorsalis, kippelfiel syndrome, Arnold chiari malformation, syringomyelia and other neuropathology because of its relation to adjacent structures. Thus it may interest anatomist, radiologist, anaesthesiologist, orthopedists neurologist, neurosurgeons and even orthodontist.

Conflicts of interest

The authors have none to declare.

http://dx.doi.org/10.1016/j.jasi.2017.08.081

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Glomerular developmental chronology in human fetuses kidney

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Introduction: In foetal life the glomerulus of cortical region shows many developmental changes. Normal histology of the fetal glomerulus at various stages of development was studied to get insight into the morphology of fetal glomerulus. Glomerular study is necessity for correlation with increase in gestational age and pathological changes for normal functioning of kidney in fetal life.

Method: Dissection of 70 normal human fetuses was done and histological findings of glomerulus were noted with respect to the age of fetus. The histology of fetal kidney was studied using H & E stain. Important developmental stages of glomerulus were studied.

Result: Fetal kidney glomerulus histology is different from adult. Unlike in adult kidney, foetal kidney glomerulus shows many developmental stages as v, c, s and crescentic in starting phase. Multiple rows arrangement in between medullary rays with well developed mature glomeruli at juxtamedullary junction. Capillary invagination with developed juxtaglomerular apparatus was appreciated. Nephrogenic zone which was found as broad band in early gestational weeks was disappeared near term.

Conclusion: The present study will be helpful in understanding the normal histological architecture of foetal kidney glomerulus and add to the existing knowledge regarding development of foetal kidney, its relation with gestational age and pathogenesis.

Conflicts of interest

The authors have none to declare.

http://dx.doi.org/10.1016/j.jasi.2017.08.082

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Overview study of non immune hydrops fetalis (NIHF) and its prenatal management

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Introduction: Hydrops fetalis is a Greek term that describes pathological fluid accumulation in fetal soft tissues, serous cavities like pleural and pericardial, scalp and body wall.

Hydrops fetalis is a prenatal form of cardiac failure, broadly divided into two groups, immune hydrops fetalis (IHF) and non immune hydrops fetalis (NIHF). IHF is caused by erythroblastosis fetalis secondary to Rh isoimmunization. IHF has decreased markedly up to less than 20% and most of the cases of hydrops fetalis about 90% are NIHF. Our main aim is to study NIHF in detail.

Materials and methods: The present study was conducted over a period of one year among 1000 live births with 100 stillborn fetuses and abortuses. NIHF fetuses were sent to the department of anatomy for academic study.

Results/observations: We report two cases of non immune hydrops fetalis of 16–18 weeks of gestation.

Discussion/conclusion: Edith Potter in 1943 described NIHF. Pathophysiology of NIHF is imbalance in regulation of fluid movement b/w the vascular and interstitial spaces. The most common etiology of NIHF includes cardiovascular, chromosomal and hematologic abnormalities.

Routine ultrasound has been recommended as the initial diagnosis of NIHF. The prognosis depends on etiology and gestational age.

Conflicts of interest

The author has none to declare.

http://dx.doi.org/10.1016/j.jasi.2017.08.083

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Teratogenic effect of propylthiouracil on Swiss albino mice

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Aims and objective: To study the teratogenic potential of propylthiouracil on developing vital organs in Swiss albino mice.

Material and methods: The drug was given orally in a dose of 150 mg/kg/day from 6 to 8th day of gestation to pregnant Swiss albino mice. Similarly, distilled water was used as vehicle in control group. The pregnant mice were sacrificed on 18th day of gestation by cervical dislocation and the foetuses were dissected out by uterotomy. The vital organs (i.e. liver, kidney, brain and placenta)