

in control group ($p=0.01$)). Other parameters were tabulated and statistically analyzed.

Conflicts of interest

The authors have none to declare.

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A study of morphometric variations of celiac trunk using computed tomographic angiography



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Aims and objectives: To evaluate the normal anatomy of celiac trunk and prevalence of anatomical variations of celiac trunk in the South Gujarat population.

Material and methods: A total of 50 subjects, between 3 and 70 years of age and both sex, who underwent CT angiography of abdominal aorta for medical or surgical indications were selected for the study. Subjects allergic to contrast medium or having history of malignancy or previous abdominal surgery or aortoarteritis were excluded from the study. The angiography images were obtained using spiral CT scanner from department of radio-diagnosis of Surat Municipal Institute of Medical Education and Research (SMIMER) and reformatted as 3D images to evaluate celiac arterial anatomy and its variations with respect to level of origin, length, diameter and branching pattern.

Results: Variation in the vertebral level of origin of celiac trunk was observed in about 60% cases. The length and dimensions of the trunk also displayed a wide range of variation. Variant branching patterns are found in 32% of subjects with bifurcation of celiac trunk into splenic and common hepatic arteries and left gastric arises from some different sources.

Conclusion: The knowledge of morphometric variations of celiac trunk is indispensable for diagnostic and operative procedures of abdomen. Without a thorough understanding of the arterial architecture and the knowledge of variations, surgery may carry a considerable risk leading to lethal complications. A high celiac trunk may lead to its compression. Variation in branching pattern is considerably important in hepatobiliary surgery and chemo-embolization for malignancy.

Conflicts of interest

The authors have none to declare.

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Morphometry of lumbar pedicle using CT scans and digital images



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Aims and objectives: The lumbar pedicle has garnered a lot of attention in the last decade due to its surgical utility during

screw placement to achieve safe and strong posterior stabilization therefore the present study aimed to measure the surgically relevant dimensions of the lumbar pedicle in normal Indian subjects, to define baseline safety parameters for posterior pedicle screw fixation.

Material and methods: CT Scans of the lumbar spine of 25 adult Indian patients free from spinal disorders were obtained from department of Radio-diagnosis and 60 macerated lumbar vertebrae of adult Indian subjects with no visible deformities were obtained from the Department of Anatomy, AIIMS, New Delhi following institutional ethical clearance. Morphometric measurements were taken for each lumbar vertebra on the CT scans of lumbar spine (using computer software) as well as on the Image analyzer (using ImageJ software) for digital photo-graphs of individual lumbar vertebrae.

Results: The statistically significant difference was observed only in 2 parameters (SA – Sagittal Angle of Pedicle, D_{MA} – Depth to anterior cortex along midline axis) on both left and right pedicle of typical lumbar vertebra and 4 parameters on left (TA – Transverse Angle, SA – Sagittal Angle, D_{PA} – Depth to anterior cortex along Pedicle axis, D_{MA}) and five parameters on right (PW – Pedicle Isthmus Width, PH – Pedicle Isthmus Height, TA, SA, D_{MA}) pedicle of atypical lumbar vertebra when comparison was done between CT Scans and Image J software ($p < 0.05$).

Conclusion: This baseline data may be of great value to spine surgeons while correcting various deformities using pedicle screw in this region.

Conflicts of interest

The authors have none to declare.

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Association between nasal septal deviation and pneumatization of mastoid air cells: A computerised tomographic study



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Aims and objectives: The air reservoir for the middle ear, the mastoid air cell system holds a prominent place in the pneumatization systems of the skull. The nasal septum helps to regulate the amount of air passing through the nasal cavities. Nasal septal deviation (NSD) has been claimed to jeopardize the nasal aerodynamics and diminish the amount of nasal airflow at the convex side thereby altering the pressure of the pneumatization system of the skull. The objective of this study was to find the association between the degree of NSD and pneumatization of mastoid air cells.

Material and methods: The CT images from 120 subjects of both sexes were studied retrospectively. The images of subjects who presented with NSD were included for this study. Other gross pathologies that distorted the visualisation of the PNS region like tumor and trauma were excluded from this study. The direction and degree of NSD were noted. The NSD was graded into three grades according to Elahi et al.'s grading system. The pneumatization of mastoid air cells was noted.

Results: The Grade I, II, III NSD were seen in 20, 45, 55 subjects respectively. Grade III was more frequently seen in this study. The mastoid air system was found to be smaller in the deviated side of septum compared to the contralateral side.