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Morphometry of posterior cranial fossa: Comparative study on cadavers and MRI as applicable in Chiari malformation I

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Aims and objectives: The aim of the present study is to investigate the detailed morphometry of posterior cranial fossa (PCF) on cadavers and MRI of normal and Chiari malformation I (CMI) patients. The overcrowding in PCF because of underdeveloped bony structures in the intrauterine life is the main cause of CMI.

Materials and methods: The study was conducted on five cadavers and 10 MRI of adult CMI patients and 10 of healthy individuals. The following measurements were made. Length of basiooccput from posterior clinoid process (PCP) to basion; length McRae line (MC); length of supraocciput, opisthion to internal occipital protuberance (IOP); AP diameter of PCF from PCP to IOP.

Results: The average length of basiooccput was 53.23 mm in normal cadavers and 49.54 mm on MRI of normal individuals. In CMI cases the average length was 44.88 mm in cadaver and 37.65 mm on MRI. The average normal diameter of MC was 22.54 mm in cadavers and 20.78 mm on MRI, while in the CMI it was 17.89 mm in cadaver and 9.63 mm on MRI. Length of supraocciput was measured 56.38 mm on normal cadavers and 60.22 mm on MRI. In the CMI the supraocciput average length was 41.55 mm in cadaver and 48.16 mm on MRI. The AP diameter of PCF was 78.42 mm on cadavers and 82.44 mm on MRI of normal individuals and in CMI the length was 60.87 mm in cadaver and 62.12 mm on MRI.

Conclusion: The posterior cranial fossa hypoplasia is associated with Chiari malformation and this data can be used to screen the cases before they present clinically.

Conflicts of interest

The authors have none to declare.

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Pedal radiographic analysis of meta tarsal combined cortical thickness

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Introduction: Many patients are reporting to pain clinic involving one or both feet. Thorough clinical examination with radiological imaging of foot is indispensable to find out the etiology. Age, diet, hormones and genetic factors influence the modelling and remodeling of bone. The individual bone functional adaptation (cortical thickness and curvature) are influenced by multiple internal and external forces. Cortical thickness is a reliable measure of bone density and useful to identify at risk individuals. Because of distribution of pressure in foot undergoes modification during normal gait itself, we aimed to study the meta tarsal cortical thickness in pedal antero-posterior radiograph of the out patients with pain in the foot.

Methodology: The digital pedal antero-posterior radiograph of 50 males and 50 females were included in the study. Those with trauma to foot, joint deformities, established osteoporosis, patients taking steroids, and diabetes mellitus were excluded from the study. Combined cortical thickness (CCT) of 1ST to 5th metatarsal were measured using RADIANT DICOM viewer and the data were analysed and compared.

Results: The average combined cortical thickness (CCT) for males is 4.08 mm, 4.31 mm, 3.61 mm, 3.22 mm, 3.45 mm for 1st to 5th metatarsal respectively and for females is 3.12 mm, 3.65 mm, 2.62 mm, 2.67 mm, 2.78 mm for 1st to 5th metatarsal respectively were observed.

Conclusion: This study showed variation of CCT between the gender and also within the metatarsals of the individual which could be due to variation in pressure loading during gait. Decreased CCT signals that the stressed bone needs to be de-stressed appropriately so as to avoid fractures and chronic pain foot.

Conflicts of interest

The author has none to declare.

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Laproscopic investigations of infertility in females of western Rajasthan

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Aims and objective: This study help clinicians to clinch the exact etiological diagnosis by adapting the most relevant investigative procedure and to contemplate the most rational therapy in treating the female infertility in western Rajasthan.

Materials and methods: This study has been conducted on 500 patients of age group 19–40, at the Department of Obstetrics and Gynecology, Umaid Hospital attached to SNMC, Jodhpur and Vasundhra Hospital and Fertility Centre, Jodhpur. History has been taken and all relevant facts have been recorded. Investigation done with laparoscopy to look abnormality in fallopian tube, endometrium and ovaries.

Result: In present study maximum number of infertile females (47%) belong to age group 19–25, 36% belongs to group between 26 and 30 years, 15% belongs to age between 31 and 35 and 2% between 36 and 40. Laproscopic findings were normal in 50.8% cases. Tubal blockage was seen bilaterally in 9.2% cases, unilaterally in 10.2%. Other positive observation seen in Fallopian tube were congestion in 2.4%, swollen tube 4%, adhesion 5.6%, thickened Fallopian tube were observed in 3.4% and endometrium in only 2% cases.

Conclusion: Laproscopy is a reliable examination as first line study in the work-up for infertility to distinguish normal uterus, from those with altered morphology that require further studies.

Conflicts of interest

The authors have none to declare.

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