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### Radiological assessment of patterns and thickness of bony roof of superior semicircular canal



E. Kamala

Chennai Medical College Hospital and Research Centre, Trichy, India

**Introduction:** Superior semicircular canal (SSC) a part of the inner ear balancing system in humans has three layered covering over it. The outermost bony cover is thin at birth, but progressively thickens until three years of age. Studies had reported dehiscent or extremely thin bone overlying the SSC with varied incidence. Few studies also claim reduced thickness of the bony plate with advancing age. With the gaining importance of this bony plate thickness, this study was done to find out the pattern and thickness of bone overlying the SSC across age and gender.

**Methods:** The computerized tomographic images of patients who were referred for high resolution CT temporal bone to the radiology department during 2015–2016 were studied for the patterns and thickness of the bony plate overlying the SSC. The correlation between the different types and age was studied.

**Result:** A total of 140 images of temporal bones were studied. The bony plate showed five different pattern namely normal, thick, papyraceous, pneumatized and dehiscent in differing proportions. The normal range of thickness was noted to be from 0.6 mm to 2.5 mm. With increase in age, papyraceous or dehiscent type was observed to be predominant when compared to other types.

**Conclusion:** The thinning and dehiscence of the bone overlying SSC has led to the superior semicircular canal syndrome. The correlation between various patterns, thickness of bony plate overlying SSC and age in this study, stresses the importance for studying the temporal bone in cases of variation in balancing and giddiness along with regular investigations to rule out the dehiscence of bony plate.

#### Conflicts of interest

The author has none to declare.

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### Study of radiological pattern in feet of disabled leprosy patients attending tertiary care hospital



Sunita Bharati\*, S. Swayamjothi, V.C. Giri, M.K. Showkath Ali

SSSMC&RI, Ammapettai, Chennai, India

**Introduction:** Leprosy is a social and chronic inflammatory disease mainly affect skin and peripheral nerve, bone changes are common in leprosy. India contributes about 60% new leprosy case detection globally. It is considered to be important mainly because of its potential to cause permanent and progressive physical deformities with serious social and economical consequences. About 25% of the leprosy patients who are not treated at the early stages of the disease develop deformities of the hands and feet. About 80% of the joint lesions are in the metatarso-phalangeal joints of the foot or in the inter-phalangeal joints of the hands and feet. The main aim of this study is to observe the radiological changes in feet of leprosy patients with deformities

**Aim and objectives:** 1. To study the radiological changes in the feet of leprosy patients with deformities. 2. To suggest suitable recommendation based on study.

**Materials and methods:** Types of study: cross-sectional, observational study.

Study population: Leprosy diagnosed patient attending CLTRI Hospital& SSSMC&RI Hospital.

Study setting: Hospital based, i.e. CLTRI outpatient dept. and SSSMC&RI outpatient dept.

Study tool: X-rays of lower extremity.

Study period: April 2016–June 2016.

Statistical method: Percentage and proportion.

**Result:** Total of 93 leprosy patients (70 male and 23 female) with disabilities/deformities were examined radiologically to evaluate bone changes. The common age group observed is 40–60 years with average 52.6 (range 12–85 years) years. X-rays of lower extremity were used for this study. Specific bone changes are periosteitis and sclerosis which may occur due to lack or incomplete anti-leprosy treatment and non-specific changes are absorption of bones and cupping of joints which may occur due to increased duration of disease and also partial or lack of treatment. Out of total 93 study subjects the partial absorption of metatarsals 40 (40.3%), proximal phalanges absorption seen in 54 (58.1%) and complete absorption of middle phalanges 62 (66.7%) terminal (distal) phalanges 63 (66.7%). The sclerosis seen in 8 (8.6%) and cupping of MTP joint seen in 35 (37.6%) of study subjects.

**Conclusion:** Though leprosy is an ancient disease, it still continues to be the most feared, due to deformities. The bone changes with deformities are preventable, since all these are not due to the disease itself. The study of the radiological changes may help the clinician in formulating methods for the management of the disease and in preventing the permanent loss of function and the occurrence of deformities and disabilities.

#### Conflicts of interest

The authors have none to declare.

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### Anomalous origin of bronchial artery from aortic arch or its branches: A CT study



Uma Pandalai\*, Minnie Pillay, Sreekanth Moorthy, T.S. Tintu

Amrita School of Medicine, Amrita Vishwa Vidyapeetham, Amrita University, Kochi, India

**Introduction:** Bronchial artery embolization has become an established procedure in the management of massive and recurrent haemoptysis. Bronchial artery of anomalous origin is known as a source of haemorrhage and persistent haemoptysis post embolization. Only very few studies has been reported on the anomalous origin of bronchial artery.

**Aim:** To study the prevalence of anomalous origin of bronchial artery from aortic arch or its branches from chest CT images.

**Materials and methods:** 3000 CT chest images available in the Department of Radiology were studied during the period of June 2015 to June 2016.

**Observations:** Left bronchial artery was found arising from aortic arch and right bronchial artery from descending aorta only in a single case. The patient had recurrent haemoptysis post bronchial artery embolization.

**Conclusion:** Bronchial artery of anomalous origin must be suspected in patients in whom the source of haemorrhage is not evident and have persistent haemoptysis post embolization.

#### Conflicts of interest

The authors have none to declare.

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#### An analysis of magnetic resonance venographic drainage patterns of intracranial venous sinuses



T.S. Gugapriya

Chennai Medical College Hospital and Research Centre, Trichy, India

**Introduction:** Magnetic resonance venography (MRV) has become a preferred method of investigation of intracranial venous sinuses when compared to invasive computerized tomography and magnetic resonance angiographic methods. In dural sinus thrombosis, this MRV has established superior diagnostic level in identifying the lesion. With this increasing prominence of MRV in diagnostics, this study was done with the objective of finding out the normal anatomical patterns of intracranial venous sinuses and its variants in adult population.

**Methods:** From the archives of radiology department, 50 patients who underwent MRV for some diagnostic reasons were studied. The patients with intracranial neoplasms, confirmed congenital anomalies, traumatic injury, previous craniotomy and intracranial abnormality were excluded from this study. The paired and unpaired venous sinuses were visualization. The pattern of drainage was observed and variants in it were descriptively analysed.

**Results:** In all the cases studied superior sagittal sinus was visualized compared to less number of inferior sinus. The transverse sinus was found to be dominant on right side in majority of the cases studied with hypoplastic left side sinus and flow gaps in its course. Variation in confluence of sinus was noted in many cases.

**Conclusion:** Knowledge of normal intracranial venous sinus pattern and possible variants help the radiologist to eliminate diagnostic pitfalls while reporting. Also, this baseline data aids us in understanding various developmental anomalies and its correlation with malformation of the brain.

#### Conflicts of interest

The author has none to declare.

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#### Radiological study of secondary ossification centers around the elbow joint in central zone of India



Chhaya Rani

Netaji Subhash Chandra Bose Medical College, Jabalpur, MP, India

**Introduction/background:** The bones of human skeletons develop from separate ossification centers. From these centers ossification progresses till the bone is completely formed. These changes can be studied by means of X-rays. It is therefore possible

to determine the approximate age of an individual by radiological examination of bones till ossification is complete.

**Materials and methods:** This radiological study was carried out with the objective to assess the skeletal maturity round elbow joint, of subjects in Madhya Pradesh region, 168 males and 132 females between age group of 10 and 19 years and size of dwelling in Madhya Pradesh more than 10 years. Subjects representing the heterogeneous population of Madhya Pradesh were included from first year MBBS students of N.S.C.B. Medical College, Jabalpur of different districts of this state, schools as well as patients attending outpatients Department of Radiology, N.S.C.B. Medical College, Jabalpur. Anteroposterior and lateral view of right elbow joint was taken, appearance and fusion of ossification centers around this joint studied. Data was tabulated and statistically analysed by using STATA 12.0 TX, USA.

**Observation and results:** From the analysis, it is found that in males at the age of 16 years, ossification centers around the elbow joint is fused except medial epicondyle and in females, it is completely fused.

**Discussion and conclusion:** From this radiological study, when findings are compared with the other authors from different states of India and in addition with other nations and observed to fluctuate substantially.

#### Conflicts of interest

The author has none to declare.

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#### Anatomical variation and clinical implications of celiac trunk and superior mesenteric arteries: CT angiography based study



Bali Sharma\*, Dhiraj Saxena, Vasanta Leela, S.K. Agarwal

S.M.S. Medical College, Rajasthan University of Health Sciences, Jaipur, India

**Introduction:** Anatomical variations in the celiac, and superior mesenteric arterial branching patterns have a great clinical significance. The presence of certain variant patterns can be advantageous, while some can lead to life threatening complications. Many a times they are present throughout life and fortunately pass undetected. Yet their presence and incidence can be helpful for surgeons and radiologists to be aware of such variant patterns.

**Objective:** The aim of this study was to detect and describe the existence and incidence of anatomical variations of the celiac trunk and superior mesenteric artery by Using imaging technique.

**Materials and methods:** 80 patients visited the Radiology Department of S.M.S. Medical College, Jaipur. To cover the whole abdominal aorta in each patient, spiral CT angiography scan was done and thin slices (0.6mm) axial images were obtained. Both sagittal and coronal images were reconstructed.

**Results:** We found that 77.5% of patients presented a classic anatomy of the celiac trunk and superior mesenteric artery, using this imaging technique, we found the existence of variations of these abdominal blood vessels in 22.5% of patients.

**Conclusion:** The arterial variations should not be ignored and with an accurate knowledge on the anatomical variations, many operative and post operative complications can be avoided. The knowledge on the CT variations would enable the radiologists in protecting the important vessels prior to transcatheter therapies, and also in preventing inadvertent injuries.