Conference Abstract

DAY 1 15th September 2023 (Friday)	ORAL 1	2.00-3.30 pm	Scientific Session 8

A Cross-Sectional Study of Trabecular Pattern of Calcaneus through High Resolution Radiographs in Normal & Menopausal Women

Manisha Sachin Chougule, Drakshayini B. Kokati, Roshni Sadashiv.

JGMMMC, Gabbur Cross Adargunchi Hubli

Email: drmanishasc23@gmail.com

Introduction: Human skeletal bones are having different distribution of cortical & trabecular bone. Arrangementof bony elements of trabecular bone mainly influenced by line of stress on that particular boneduring weight bearing. Many investigators were interested to reveal this wealth of architecturalvariety. Trabecular pattern of the calcaneus is comprised of 5 trabecular lamellae and Ward's neutraltriangle enclosed within trabeculae. This trabecular pattern isinfluenced by various factors like age,sex, hormones & disturbances in calciummetabolism. Present study is aimed to find out theinfluence of hormones on trabecular pattern of calcaneus with the help of high-resolutionradiographs as fracture of this bone accounts to 2% of all the fractures & 60% of tarsal fractures.

Material and methods: With consideration of inclusion & exclusion criteria total 50 high resolution radiographs of lateralview of ankle joint of patients between 25-35 years & 50-60 years each, had been collected. Imageswere procured from PAX database & information about patients retrieved from medical records. Comparison of 5 types of trabecular pattern & Ward's triangle of calcaneus in normal & menopausalwomen was done. Qualitative analysis of trabecular pattern & Ward's triangle was done with thehelp of graphs & pie chart. Quantitative analysis of modified calcaneal index was done by applyingchi square test & p-value was calculated.

Results: In reproductive age group, trabeculae like tendotuberosity trabeculae, primary compressive & tensile trabeculae were seen in all images. Secondary compressive trabeculae were absent in 9(18%)and secondary tensile trabeculae in 3 (6%) radiographs. In menopausal age group secondarycompressive trabeculae was absent in 32(64%), secondarytensile,trabeculae in 28(56%), primarytensile trabeculae in 22(44%), primary compressive trabeculae in 18(36%) and tendotuberositytrabeculae in 7(14%) radiographs. In menopausal age group large size Ward's triangle was observedin 44% radiographs, medium size in 32% of the sample and in the remaining (24%) it was of smallsize. In reproductive age group only in 8% Ward's triangle was medium size and the remaining werehaving small size triangle. Grading of Calcaneal index done for both the groups. For statisticalanalysis we combined grade I & II and IV & V. Chi square test applied and p-value was calculated. p-value was significant for the calcaneal index.

Conclusion: The present study would help to understand the biomechanics & its relation withdisappearance of compressive & tensile trabecular with age in female. It is hoped that thepresent study will enlighten in designing & development of prosthesis for the ankle in managing the condition associated with calcaneum.

Keywords: Calcaneum, compressive Trabeculae, tension trabeculae, Ward's triangle,Calcaneal index.