

Conference Abstract

DAY 1 15th September 2023 (Friday)

ORAL 1

2.00-3.30 pm

Scientific Session 8

Anterior curvature of femur bone and its surgical implications**Sunil O, Balachandra N**

Department of Anatomy, Dr. B.R. Ambedkar Medical College

Email: sunilobulesh013@gmail.com

Background: The femur is the longest and strongest bone in the human body. Its shaft, almost cylindrical along most of its length and is bowed forwards. Several anthropological studies have dealt with the compatibility of femoral prostheses. Intramedullary nailing is currently accepted as the gold standard in the treatment of diaphyseal femur fractures. Mismatch between the radii of curvature of the intramedullary nails and the anterior bowing of femur result in angular defects, iatrogenic fractures, and penetration of the distal anterior femoral cortical bone.

Aims and objectives: To measure the radius and angle of curvature of femur bones and compare it with the contemporary intramedullary nails available for routine surgical procedures.

Materials and methods: 104 dry human femur bones specimens without structural deformities were studied to measure the radii and angle of curvature in the department of Anatomy, Dr. B.R. Ambedkar Medical College, Bengaluru. The radius and angle of curvature of femur bones were measured, tabulated and compared with intramedullary nails. Statistical analysis was carried out with the help of IBM-SPSS (IBM Corporation) and Microsoft Excel.

Results and Conclusion: The mean radii of curvature and mean angle of curvature of femur was 68.7 cm and 29.8° respectively. The radii of curvature and angle of curvature of intramedullary nails were between 180 - 200 cm and 15-25° respectively. The difference between the anterior concavity of the femur and the intramedullary femoral nails that are in use in current clinical practice implicates the inadequacy of the design for at least the Indian population. Intramedullary nails should be redesigned accordingly to prevent the complications.

Keywords: Anthropological, Fracture, Iatrogenic, Intramedullary, Prosthesis