

A study of Upper End Length of Femur and Its Applied Significance

Patel MP¹, Nirvan AB², Pandya AM³, Dave RV⁴, Singel TC⁵

¹Associate Professor, Department of Anatomy, M.P. Shah Medical College, Jamnagar

²Associate Professor, Department of Anatomy, B.J. Medical College, Ahmedabad

³Associate Professor, Department of Anatomy, P.D.U. Medical College, Rajkot

⁴Assistant Professor, Department of Anatomy, B.J. Medical College, Ahmedabad

⁵Professor, Department of Anatomy, Zydus Medical College, Dahod

Abstract:

Background & objectives: Upper end length of femur is the distance between fovea capitis of the femoral head and greater trochanter of the femur. The current study was carried out to obtain side-wise and sex-wise mean values of upper end length of femur and ascertain its application in forensic medicine, anthropology and clinical medicine. **Material & Methods:** The study sample consisted of 242 dry, human, adult femora [176 male (87 right, 89 left) and 66 female (32 right, 34 left)] from skeletal collections. Upper end length and maximum femoral length were measured. **Results:** Mean value of upper end length of femora in the study population was, 90.73 mm and 84.2 mm respectively for right male and female, and 91.7 mm and 85.2 mm respectively for left male and female. Higher value in males was statistically significant ($P < 0.001$) on both sides. Upper end length identified 5.74% of right male femora, 0.00% of right female femora, 3.37% of left male femora and 0.00% of left female femora. The correlation coefficient and regression equation to obtain maximum femoral length from upper end length were 0.770 & $117.235 + 3.570 * (\text{upper end length})$ for male bones and 0.858 & $74.236 + 4.253 * (\text{upper end length})$ for female bones. **Conclusions:** Upper end length of femur is a very useful tool for sexual identification & for estimation of femoral length. For a more anatomically accurate population specific prosthesis, other proximal femoral parameter also needs to be studied in the same population.

Keywords: upper end length of femur, proximal (upper) epiphyseal breadth, sex determination.