

Anatomy Proximally, the femur is composed of a specialized metaphyseal region consisting of the head, neck, and greater and lesser trochanters. One or multiple nutrient arteries arise from the DFA or its branches to supply the inner 2/3 of the cortex and bone marrow. The femur is bowed anteriorly with an average radius of curvature 120 cm (+/- 36 cm); the shorter the radius, the greater the bow.[3] The linea aspera is the major cortical thickening along the posterior aspect of the femur and is an attachment site for muscles and the medial and lateral intermuscular septa and acts as a compressive cortical strut.[4] Three abundant muscular compartments envelop the femur. It ends proximal to the condyles at a distance equal to the greatest width of the femoral condyles.[2] The diaphysis is a smooth cylinder with differences in cortical thickness throughout its length, which may help assess intraoperative femoral rotation. Distally, the femur comprises the metaphyseal flare, which continues into the medial and lateral femoral condyles, separated by the intercondylar notch. The gluteal muscles also surround and attach to the proximal femur and shaft; they include the gluteus maximus, medius, and minimus and cover the superior and inferior gluteal nerves. The femoral artery passes under the mid-portion of the inguinal ligament and divides into the superficial femoral artery (SFA) and deep femoral artery (DFA), also known as the profunda femoris. Classically the first 5 cm distal to the lesser trochanter is termed the subtrochanteric region and is considered a separate fracture pattern.