

Distal Femur and Tibial Plateau Fractures
2018 OTA NP/PA Course
October 17, 2018

Distal Femur Fractures

- I. Objectives
 - a. Anatomy
 - b. Fracture Patterns
 - c. Treatment

- II. Anatomy
 - a. Osteology – extraarticular /intraarticular areas
 - b. Trapezoidal in axial plane
 - i. 10 degrees lateral
 - ii. 25 degrees medial
 - c. Notch seen on lateral view behind Blumensaat's line
 - d. Superficial femoral artery to popliteal artery at Hunter's canal
 - e. Sciatic nerve lateral to popliteal vessels

- III. Classification
 - a. Extraarticular: AO/OTA type 33-A
 - b. Partial Articular: AO/OTA type 33-B
 - c. Complete Articular: AO/OTA type 33-C
 - d. Hoffa fragment – best seen on sagittal CT scan
 - i. Can be an isolated fracture a fragment of a C-type injury
 - ii. Present in 33% of AO/OTA 33-C injuries
 - iii. Lateral femoral condyle (75%) > medial femoral condyle (25%)

- IV. Treatment
 - a. Emergency Department
 - i. Assess pulses
 - ii. Long leg splint / knee immobilizer / skeletal traction
 - iii. IV antibiotics / tetanus for open fractures
 - iv. Emergencies
 1. Distal neurovascular compromise
 2. Compartment syndrome
 - b. Operating Room
 - i. Anatomic articular reduction and absolute stability
 - ii. Functional (length, alignment, rotation) of metaphysis with relative or absolute stability
 - c. Postoperative
 - i. Range of motion within 1-2 weeks
 - ii. Quadriceps strengthening
 - iii. NWB 8-12 weeks for articular injuries
 - iv. NWB 4-6 weeks for extraarticular injuries

Tibial Plateau Fractures

- I. Objectives
 - a. Anatomy
 - b. Soft tissue concerns
 - c. Fixation

- II. Anatomy
 - a. Osteology – extraarticular /intraarticular areas
 - b. Lateral joint – convex
 - c. Medial joint – concave
 - d. Tibial spines

- III. Classification
 - a. Extraarticular: AO/OTA type 41-A
 - b. Partial Articular: AO/OTA type 41-B
 - c. Complete Articular: AO/OTA type 41-C
 - d. Carefully assess the integrity of the extensor mechanism

- IV. Treatment
 - a. Emergency Department
 - i. Assess pulses
 - ii. Long leg splint / knee immobilizer
 - iii. IV antibiotics / tetanus for open fractures
 - iv. Emergencies
 1. Vascular Injury
 2. Compartment syndrome
 - b. Operating Room
 - i. Temporizing external fixation for length-unstable injuries or soft tissues not amenable to early fixation
 - ii. Anatomic articular reduction and absolute stability
 - iii. Functional (length, alignment, rotation) of metaphysis with relative or absolute stability
 - iv. Medial and lateral plates for bicolunar injuries
 - c. Postoperative
 - i. Range of motion within 1-2 weeks
 - ii. Quadriceps strengthening
 - iii. NWB 8-12 weeks for articular injuries
 - iv. NWB 4-6 weeks for extraarticular injuries