

Case Report: Tibial Plateau Fracture

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Introduction

- The tibia is the second largest bone in the human body
- It is an essential weight bearing bone
- Tibial plateau fractures occur typically from high energy mechanisms
- Account for less than 2% of all fractures.
- Men in their 40's and 50's from high energy mechanisms
- Elderly women via low energy mechanisms.
- Presentation includes pain, inability to bear weight on the affected leg, swelling, bruising, decreased range of motion, visible deformity, and historical context
- Physical exam will include evaluation of the skin to look for an open fracture, evaluation of knee effusion, compartment syndrome, neurovascular compromise, range of motion, and varus/valgus testing.
- Neurovascular compromise can present as loss of motor or sensory function as well as loss of distal pulses.
- Range of motion will likely be unable to be assessed secondary to pain and swelling.

Case

This patient is a 37-year-old female presenting to the Emergency Department with left knee pain. The patient was playing catch with her 70-lb St. Bernard when the dog ran back towards her and collided with the side of her knee. The patient fell to the ground and was immediately unable to bear weight on the left leg. The patient denies hearing any pops or clicks. On physical exam, she was noted to have an effusion of the left knee with diffuse tenderness to palpation of the knee and decreased range of motion secondary to pain. AP and lateral X-rays of the left knee were obtained as shown in Figures 1 and 2 below, which revealed a comminuted fracture of the lateral tibial plateau with a large joint effusion. She underwent open reduction with internal fixation the following day.

Imaging

Figure 1. AP X-Ray of Left Knee

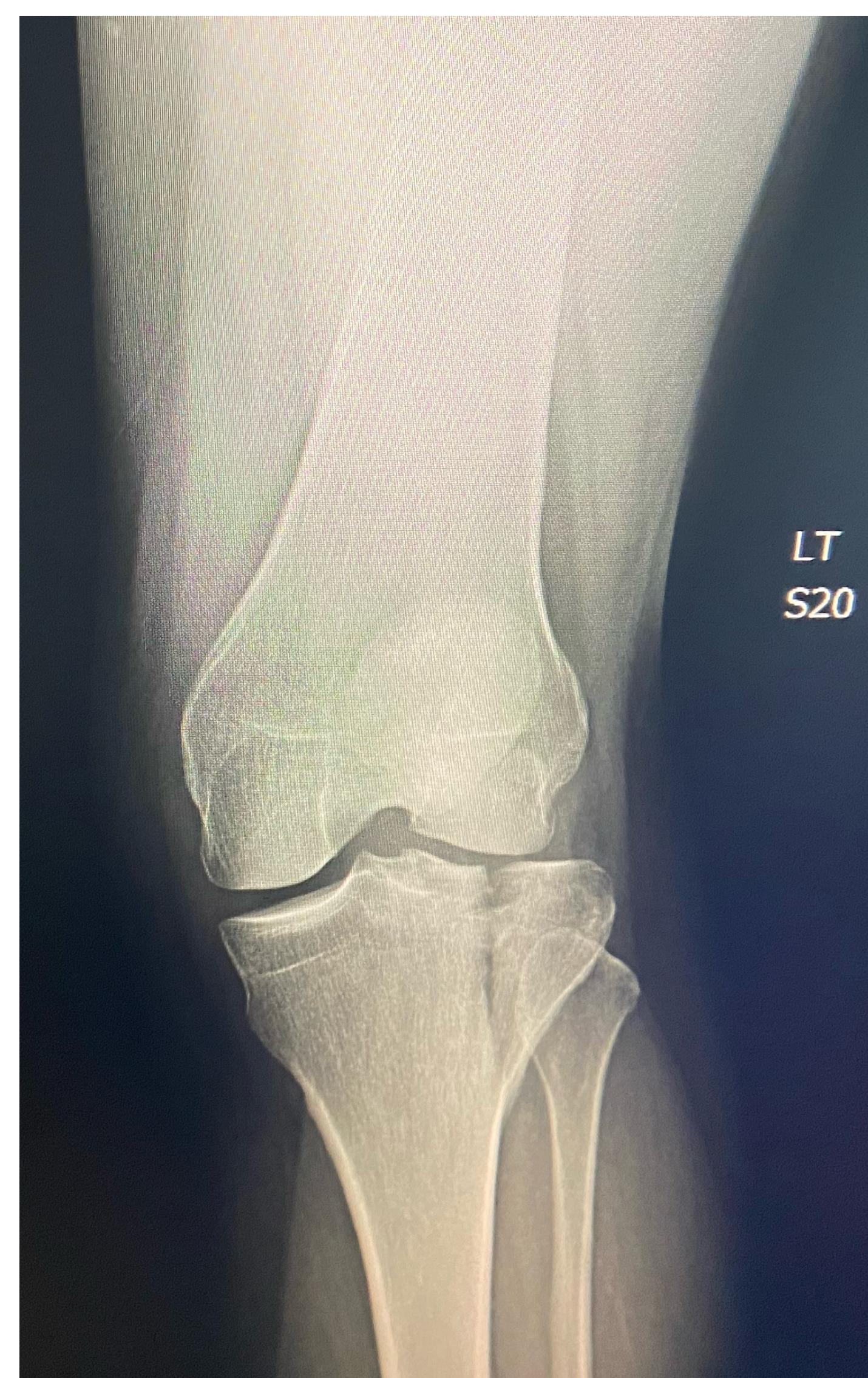


Figure 2. Lateral X-Ray of Left Knee



Discussion

- X-rays are indicated when a tibial plateau fracture is suspected
- Tibial plateau fractures can be classified by the Schatzker classification.
- Schatzker types I-III include fractures of the lateral plateau.
- Non-operative management is indicated if the fracture is minimally displaced, if the fracture was due to a low energy mechanism with stable ligamentous support, if the patient is non-ambulatory at baseline, or if the patient has comorbidities that would prevent them from being surgical candidates.
- Non-operative fractures will be placed in a knee brace or knee immobilizer and will be non-weightbearing for about two months.
- Surgical management commonly involves open reduction with internal fixation
- Open reduction with internal fixation is indicated for medial plateau fractures as well as bicondylar fractures.
- It is also indicated with significant articular depression, widening of the condyles, and ligamentous instability.
- External fixation is indicated when the fracture is highly comminuted or the fracture is open and contaminated.

References



Acknowledgements

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