

HAIRLINE FRACTURES OF THE LATERAL PLATEAU OF THE TIBIA AND FIBULA INCLUDING AN OSTEOCHONDRAL FRACTURE OF THE FEMORAL CARTILAGE OF A COLEGIATE FOOTBALL ATHLETE

Dietz A, Martin C: King's College, Wilkes-Barre, PA, Wilkes University Wilkes-Barre, PA.

BACKGROUND

PATIENT

20-year-old male division III football athlete

HISTORY

- The patient was found supine on the football field complaining of left anterior knee pain.
- The athlete stated that he received a direct blow to the area causing him to collapse to the ground.
- No past medical history of knee injuries.

OBSERVATION

- No Gross Deformity
- Slight Edema in the area

PALPATION

- Point tenderness in the joint line of effected knee
- No palpable crepitus

SPECIAL TESTS

- (-)McMurray's
- (-)Bounce Home Tests
- (-)Anterior Drawer
- (-)Posterior Drawer

Example of an avulsion fracture of the tibial spine:



DIFFERENTIAL DIAGNOSIS

- ACL Tear
- MCL Tear
- Meniscus Tear
- Fracture to the Tibial Plateau

TREATMENT

INITIAL CARE

- The patient was removed from play and was given an ice bag and an ace wrap to reduce effusion in the area.

PHYSICIAN FOLLOW UP

- After immediate treatment the patient had a follow up the next day to see if the effusion was reduced in the area. Due to special tests coming back negative, the patient was referred for further diagnostic testing to correctly diagnose the injury. An x-ray was then performed where the results came back with an avulsion fracture of the tibial spine. Once the avulsion fracture was diagnosed, the patient was then scheduled for an MRI to see the severity of the avulsion and if it would need surgery or if rest and immobilization would be able to treat the injury. MRI results showed a nondisplaced left lateral tibial plateau fracture, trabecular fibular head fracture, and lateral femoral condylar osteochondral fracture with displacement of the osteochondral fragment within the anterior intercondylar notch.

TREATMENT

- Patient was instructed to be Non-weight-bearing and was scheduled for surgery to remove to loose body in the joint space.

POST-OPERATIVE CARE

- Loose body was removed
- Rehabilitation consists of regaining range of motion and improving strength
- Patient remained compliant throughout the whole rehabilitation progress

RETURN TO PLAY

- Rehabilitation is still in progress focusing on range of motion and strengthening exercises.

UNIQUENESS

- All signs and symptoms were indicative of a meniscus injury, but no damage was present.
- Patient presentation:
 - When the injury occurred the patient was able to weight-bare even while having three separate fractures in a small area

RELEVANT EVIDENCE

- Osteochondral fractures could be difficult to diagnose and may need multiple types of medical imaging to correctly diagnose these injuries. According to literature depending on the severity of the fracture internal fixation is the gold standard for proper healing.

CONCLUSIONS

- Hairline fractures are not uncommon in athletics but the way that this specific injury occurred and how the patient was able to tolerate and weight-barre on three different weight baring bones without pain was interesting. The patient only had pain with the ROM exercises most likely to the fact that the loose body was in the joint space and causing discomfort. This could be used to show that a valgus force is strong enough to cause damage to not only ligaments but also bones in the area

REFERENCES

1. Urrea, Luis H, and James F Silliman. "Acute Chondral Injuries to the Femoral Condyles." Operative Techniques in Sports Medicine, vol. 3, no. 2, 1995, pp. 104–111., doi:10.1016/s1060-1872(95)80036-0.