

EM Cases Course 2017

Knee Emergencies Module



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Podcasts to listen to prior to the course

Link to: [Occult Knee Injuries Pearls & Pitfalls](#)

Knee injuries in the ED are much more than fractures and the catchall soft tissue injuries. Occult knee injuries - those that have a normal or near normal x-ray - can cause serious morbidity if missed. Knowing the subtleties in diagnosis and management will make a real difference to our patients' future function.

Case 1:

A 40-year-old man lost control while driving and collided into a barrier at 70km/hr. He was belted, no airbag was deployed and there was no passenger intrusion. He did not lose consciousness and has full recollection of the event. His only complaint is severe right knee pain.

His extremity exam reveals a swollen tender right knee with an obvious effusion and very limited range of motion. Neurovascular examination is normal including present peripheral pulses however, there is significant ligamentous laxity of the knee.

Q1: In general, what are the kinds of the classic mechanisms of knee injuries that result in their commonly associated knee injuries?

Q2: What extremity injuries are on your differential diagnosis in this case?

Q3: What can we look for on physical exam to heighten our suspicion for an occult knee dislocation that has reduced before hitting the ED doors?

Q4: Is a high mechanism injury necessary for a knee dislocation?

Q5: Why is it important to maintain a high index of suspicion for occult knee dislocation in this case, and what tests would you order to confirm the diagnosis?

Case 2:

A pedestrian was struck at low speed by a car at the level of the knee. He is complaining of both medial and lateral knee pain. Physical examination reveals that on valgus strain, the patient is tender at the medial knee as well as the lateral knee.

Q1. What would you look for on x-ray?

Q2. What mechanism of injury and physical examination findings would make you suspect a tibial plateau injury?

Q3: What complications do we need to be on look out for with tibial plateau fractures?

Case 3:

A 45-year-old man, with a history of diabetes, was recently on Ciprofloxacin for suspected pyelonephritis. He has recently decided to play soccer with his teenaged son three times a week. He comes in to the ED after slipping on the soccer field, stumbling, and then not being able to weight bare due to severe left knee pain. He is unable to extend his knee against resistance and he has a lot of trouble performing a straight leg raise. On physical exam, you notice a knee effusion, but there is no joint line tenderness and his ACL, PCL, MCL, and LCL all seem to be intact with a negative Lachman test.



Q1. Why is it important for all patients with knee injuries to have an active SLR test performed?

Q2. What knee diagnoses should be considered in a patient who cannot straight leg raise?

Q3: What are the physical exam findings in quadriceps tendon injuries?

Q4: What are the typical X-ray findings in quadriceps tendon injuries?

Q5: What is the ED management of patients with a suspected quadriceps tendon rupture?

Case 4:

A 12-year-old boy presents to your ED after injuring his knee playing basketball. He planted his foot and rotated his left leg following a jump, and then fell to the floor. He had to be carried off the court. He complains of severe pain in his left knee and says he cannot put weight on it. He says he may have heard a “pop” as he planted.

On exam his left knee is swollen with a balotable effusion and is very tender to the touch diffusely. He’s unable to extend completely and can only flex to about 45 degrees. There appears to be anterior laxity of the knee. He’s still unable to weight bear.

Q1. What’s the most likely diagnosis in this case? What are the features in this story that are key in helping you make the diagnosis?

Q2. What physical exam maneuvers will help you to confirm the diagnosis of ACL tear?

Q3: What would you look for on X-ray in this patient?



Q4. What additional x-ray views should be obtained aside from the A-P and lateral, for suspected tibial spine fractures?

Q5. What is the ED management of suspected ACL rupture?

Case 4:

A 30y/o woman was playing volleyball and when she went to a sort of squatting position she had a sudden onset of knee pain that stopped her from continuing to play. She is able to weight bare with a limp in the ED and she doesn't have much swelling if any, but complains bitterly when you attempt to extend her knee fully.

Q1. What are some of the key features that can help us differentiate a meniscus injury from a ligament injury like an ACL tear?

Q2. What are the most important physical exam maneuvers we can do to help diagnose meniscus tears?

Q3: What is a locked knee and how do you manage it differently that a patient with a suspected simple meniscus tear that has full ROM or near full ROM?

References

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