Clinical Case Slide - Knee I

Wednesday, May 29, 2019, 9:30 AM - 11:10 AM
Room: CC-105B

Chair: William W. Dexter, FACSM. Maine Medical Center, Portland, ME.
(No relationships reported)

(No relationships reported)

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(No relationships reported)

May 29 9:30 AM - 9:50 AM
Knee Pain - Baseball
(No relationships reported)

HISTORY: A 16 year old high school hockey player and baseball pitcher noticed lateral knee pain and intermittent swelling for about 2 months prior to presentation. He does not recall any trauma or injury. He did have a viral URI and episode of strep pharyngitis several weeks before this started. He denies radiation of the pain. He feels that his knee flexion is limited. He treated the knee with ice, ibuprofen, and acetaminophen through the season and was able to complete his baseball season prior to presenting to his PCP for evaluation. Because no definite etiology was identified in this visit, MRI was ordered, which showed complex loculated effusion, enlarged popliteal lymph nodes, and synovial thickening. There were no structural injuries appreciated.

PHYSICAL EXAMINATION: Initial exam in the sports medicine clinic revealed tenderness at the lateral joint line and 1+ knee effusion. There was no erythema or warmth at the joint. He had full active and passive range of motion and full strength. Ligamentous testing was normal.

DIFFERENTIAL DIAGNOSIS:
PVNS
Rheumatologic condition
Lymphoma/Leukemia
Lyme disease
Traumatic hemarthrosis

TEST AND RESULTS:
Repeat MRI with additional views: Complex loculated effusion; Synovitis/synovial proliferation; No hemosiderin staining with blooming artifact
Joint aspiration: 20 cc cloudy yellow synovial fluid; TNC 37,270, Neutrophils 73%
Cytology: No malignant cells
ANA: 1:80 homogeneous
Rheumatoid Factor: Negative
Lyme: Negative
ESR: 9
CRP: 21.8
CBC: WBC 5.9, Hgb 15.5, Hct 45.4, Plt 287

FINAL WORKING DIAGNOSIS: Juvenile idiopathic arthritis (JIA)

TREATMENT AND OUTCOMES:
Referred to pediatric rheumatologist
Bilateral knee aspiration and corticosteroid injection
Prednisone taper
Methotrexate therapy
Check anti-CCP antibodies
Referred to ophthalmology to rule out uveitis

May 29 9:50 AM - 10:10 AM
Knee Pain - Football
Megan Liberty1, Jason Read2. 1University of Florida College of Medicine - Jacksonville, Jacksonville, FL. 2Nemours Children's Specialty Care, Jacksonville, FL.
(No relationships reported)

HISTORY: A 14-year-old male football player presented to our sports medicine clinic complaining of left knee pain and swelling. Onset of knee pain was 2 months prior and he began to complain of intermittent swelling over the last 3-4 weeks prior to this initial visit. There was no reported history of trauma or injury. Pain worsened with activity and was localized to his anterior knee and medial joint line. NSAIDs and a knee brace did not alleviate his symptoms. He denied any associated knee instability, popping, locking or patellar instability. Neurological signs and symptoms were absent. Review of systems was otherwise negative.

PHYSICAL EXAMINATION: Examination revealed a moderate sized left knee effusion with tenderness to palpation around the patella and medial joint line. There was no ecchymosis or erythema. Strength exam was normal. Knee range of motion was decreased in both flexion and extension secondary to swelling. There was pain on patellofemoral grind test with a negative patellar apprehension test. He had a negative Lachman and McMurray test. Anterior and posterior drawer tests were also negative. No ligament laxity was appreciated with varus or valgus stress testing. Examination of the contralateral knee was normal. He was otherwise well appearing with a normal gait.
DIFFERENTIAL DIAGNOSIS:
1. ACL tear
2. Meniscus tear
3. Fracture
4. Juvenile idiopathic arthritis
5. Osteochondritis dissecans

TESTS AND RESULTS: 3 view x-rays of left knee were obtained and normal. MRI revealed distal femoral osteomyelitis with associated intraosseous and subperiosteal abscess with deep posterior knee soft tissue abscess. CBC showed WBC 11.7, Hgb 10.5, Hct 32.2. Platelets 576. CRP 9.45mg/dL, ESR 57mm/hr.

FINAL WORKING DIAGNOSIS: Osteomyelitis of the left distal femur with intraosseous and subperiosteal abscess

TREATMENT AND OUTCOMES: 1. Taken to the OR for incision and drainage. 2. Cultures returned positive for oxacillin sensitive staphylococcus aureus. Pediatric infectious disease was consulted. A PICC line was placed and he completed a 6-week course of IV clindamycin. 3. Follow up x-rays taken 1-month post-op were normal 4. A full return to sports is expected.

131 May 29 10:10 AM - 10:30 AM
Knee Injury - Trampoline
Sabrina P. Sawlani, Brian McCall, Brian J. Donohue. Presence Resurrection Medical Center, Chicago, IL. (Sponsor: Poonam Thaker, FACSM) (No relationships reported)

HISTORY: 21-year-old male presents to ER for left knee injury after mis-landing a flip while jumping on a trampoline. He hyperextended his left leg, felt a pop and severe pain with numbness of left foot. Notable deformity which self-reduced.

PHYSICAL EXAMINATION: LLE: Ecchymoses and edema of distal thigh, knee and proximal leg. ROM- active and passive knee flexion and extension limited due to pain. DP/PT pulses nonpalpable, capillary refill mildly delayed, and cooler to touch distally. Diminished sensation of dorsomedial foot and lateral leg. Unable to extend toes or dorsiflex ankle. Exam under anesthesia with positive Lachman, anterior drawer, posterior drawer and varus stress tests.

DIFFERENTIAL DIAGNOSIS:
1. Knee dislocation with vascular compromise and peroneal nerve injury
2. Anterior cruciate ligament tear
3. Posterior cruciate ligament tear and posterolateral corner injury
4. Lateral collateral ligament rupture
5. Meniscus tear
6. Tibial plateau fracture
7. Distal femur fracture

TEST AND RESULTS:
-XR L Knee 4+ Views: Medial tibial condyle possible fracture.
-CT Angiogram LLE: Popliteal artery severe stenosis at level of tibial plate. Comminuted medial tibial plateau fracture.
-Diagnostic angiogram: Cut-off of popliteal artery at level of knee, unable to cross with stent.

FINAL WORKING DIAGNOSIS: Left knee dislocation with popliteal artery rupture and left medial tibial plateau fracture

TREATMENT AND OUTCOMES:
1. Emergent vascular surgery with ligation of L popliteal artery and repair of transected L popliteal artery with reverse saphenous vein interposition graft.
2. Orthopaedic Surgery external fixator placement and fasciotomies with skin closure to prevent possible reperfusion injury/cerebral infarct
4. 6 weeks post-injury, removal of L leg external fixator. Nonweightbearing and in physical therapy.
5. 3 months post-injury, EMG for persistent foot drop with severe L peroneal neuropathy at knee.
6. 4 months post-injury, ambulating.
7. 8 months post-injury, referred to peripheral nerve surgery specialist for decompression of L common peroneal nerve at fibular head, and excision of posterior and anterior crural intermuscular septae.

132 May 29 10:30 AM - 10:50 AM
Postoperative Knee Complication - Soccer
Kathleen Maguire, Lyle Micheli, FACSM. Boston Children's Hospital, Boston, MA. (Sponsor: Lyle Micheli, FACSM) (No relationships reported)

HISTORY: 17 year old female status post left ACL reconstruction with hamstring autograft presents one week after surgery with pain and swelling over posteromedial knee. A blood blister was noted and drained. She started on Kellex to prevent superficial wound infection. The following day she returned in exquisite pain with skin discoloration and formation of a collection over the posteromedial knee. This was presumed to be an infected hematoma and she was taken to the operating room for a postsurgical knee washout.

PHYSICAL EXAMINATION: Examination noted an abscess at the popliteal fossa medially with surrounding erythema. The area over this collection was warm and tender to touch. The patient had no calf pain or swelling.

DIFFERENTIAL DIAGNOSIS:
1. Hematoma
2. Knee infection, bacterial or fungal
3. DVT
4. Contact dermatitis
5. Hemophagocytic lymphohistiocytosis (HLH)
6. Still’s disease
7. Pyoderma gangrenosum
8. Behcet’s

TESTS AND RESULTS:
1. Single OR tissue culture positive for s. hominis and p. acnes early in hospital course, subsequent OR cultures negative for growth
2. Multiple blood cultures negative for growth
3. OR tissue biopsy shows marked neutrophilic infiltrate and abscess formation, clinically consistent with pyoderma gangrenosum (PG)

FINAL WORKING DIAGNOSIS: Pyoderma gangrenosum

TREATMENT AND OUTCOMES:
1. Surgery: 19 combined orthopedic and plastic surgery procedures including irrigation and debridement, wound VAC changes, and skin grafting of left knee
2. Infectious Disease (ID): Multiple courses of antibiotics for presumed left knee postoperative infection. Antibiotics discontinued once PG diagnosis was established
3. Hematology: PICC related DVT treated with anticoagulation, anemia managed with transfusions
4. Rheumatology/Dermatology: Due to the patient’s highly elevated inflammatory markers, coagulopathy, anemia, and repeated procedures without significant detectable pathogenic organism, there was concern for an immune-mediated systemic inflammatory response. OR tissue biopsy supported this diagnosis. The patient was started on prednisone and Anakinra and the antibiotics were discontinued
5. She completed her course of anticoagulation, weaned off steroids and immunosuppressive medication and has had no recurrent symptoms