

THE SPORTS MEDICINE DIFFERENCE IN KNEE AND LEG PROBLEMS

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Knee Anatomy

Knee Anatomy (con't)

THE SPORTS MEDICINE DIFFERENCE

Acute Treatment of Traumatic Injury - On the Field Eval

- Initial assessment on the field
 - ◇ Is everything in its right place?
 - ◇ Any other injury besides the obvious?
 - ◇ Neurovascular intact?
 - ◇ Able to transport to sidelines - How?

THE SPORTS MEDICINE DIFFERENCE

Acute Treatment of Traumatic Injury - Sideline Management

- Detail examination of the knee ligaments, muscles, bones, etc
- Imaging studies needed?
- Immobilization?
- Tape/brace?
- Can they return to play?
 - ◇ Check their function

THE SPORTS MEDICINE DIFFERENCE

Acute Treatment of Traumatic Injury - In the Office Setting

- Get the injured athlete in to the clinic within 48 hours.*
 - ◇ Usually has been seen at ER or urgent care already
 - ◇ Instruct patient while waiting to been seen to follow the RICE protocol.

THE SPORTS MEDICINE DIFFERENCE

Acute Treatment of Traumatic Injury - In the Office Setting

- Further imaging studies needed?
 - ◇ Get the study sooner rather than later.
 - ◇ Look at the films yourself!
- Is there an effusion?
 - ◇ May not be present and still have a significant injury. (torn capsule)

THE SPORTS MEDICINE DIFFERENCE

Acute Treatment of Traumatic Injury - In the “Office” Setting

- Weight bearing status: NWB-PWB-FWB
- Straight leg immobilization versus hinged knee immobilizer
- Med changes from ER - get off the vicodin/T3 and on a NSAID if needed

THE SPORTS MEDICINE DIFFERENCE

Acute Treatment of Traumatic Injury - In the Office Setting

- HEP vs PT
 - ◇ Effusion inhibits the VMO - need to reduce the effusion ASAP and start quad rehab even if athlete requires surgical intervention for internal derangement

Epiphyseal Fractures about the Knee

- Distal femoral and proximal tibial physeal fractures occur with high energy trauma
- If tenderness is present over the physeal plates, radiographs must be taken.
- If plain films are normal, stress radiographs should be performed.

Epiphyseal Fractures about the Knee

Epiphyseal Fractures about the Knee

- CT and/or MRI should be performed for a detailed understanding of the complete injury for recognition of the extent of bone and soft tissue injury.
- Keep patient in knee immobilizer, NWB, and refer to an orthopedist.

The Sports Medicine Detective

The Chronic Non-Acute Injury

- These are the most difficult injuries.
- Need to discover WHY they are hurting. A diagnosis of tendonitis is not very helpful by itself for the long term performance of the athlete.

Patellar Tendinitis (PFJD)

- Gradual onset of anterior knee pain
- Increased pain with running, jumping, squatting, stairs, prolonged sitting
- Tender to palpate the inferior patella pole
- MRI may be needed for protracted symptoms to determine if it is a tendinosis

Patellar Tendinitis (PFJD)

- Standard Treatment:
 - ◇ NSAIDS
 - ◇ Iontophoresis
 - ◇ Phonophoresis
 - ◇ Activity modification
 - ◇ Cryotherapy
 - ◇ Braces
 - ◇ Quad/HS strength

Patellar Tendinitis (PFJD)

- Advanced Treatment (TREAT THE CAUSE)
 - ◇ PT exercises
 - ◇ muscle imbalances

- ◇ McConnell Tape
 - ◇ patella alignment
- ◇ Foot Orthotics
- ◇ Correct technique errors with training

What Can Cause PFJD?

- Patella instability
- Q-angle
- Miserable Malalignment Syndrome
- Femoral Anteversion/Retroversion

- Poor skill techniques
- Muscle imbalance
- Tight ITB
- Pronation
- Supination

The Influence of Pronation

- Pronation
 - ◇ calcaneus- eversion
 - ◇ talus- adducts & plantar flexes
 - ◇ tibia- internally rotates
 - ◇ knee- flexion & valgus stress
 - ◇ femur- internal rotation
 - ◇ hip- flexion and adduction
 - ◇ spine- C-curve with convexity towards the pronated leg

The Influence of Pronation

- The use of a simple foot orthotic and proper shoe selection can help align the leg properly and decrease the stress on the knee allowing the athlete to function properly

The Influence of Supination

- Supination
 - ◇ calcaneus- inversion
 - ◇ talus- abducts & dorsi flexes
 - ◇ tibia- externally rotates

- ◇ knee- extends & varus stress
- ◇ femur- external rotation
- ◇ hip- extension and abduction
- ◇ spine- C-curve with concavity towards the supinated leg

The Influence of Supination

- The use of a simple foot orthotic and proper shoe selection can help align the leg properly and decrease the stress on the knee allowing the athlete to function properly

Osgood-Schlatter Disease

- 1903 described concurrently by Dr. Osgood and Dr. Schlatter in separate papers.
- Caused by submax repetitive tensile stresses at the tibial apophysis resulting in minor avulsion and repair, confirmed with x-ray
- Tx: ice, activity as tolerated, knee brace, quad stretches, monitor symptoms

Sinding-Larsen-Johannson Disease

- Described in 1921
- Results from persistent traction at the immature inferior patellar pole causing calcification
- History and x-rays help to differentiate it from a patellar sleeve fracture
- Tx: Tx: ice, activity as tolerated, knee brace, quad stretches, monitor symptoms