Common Knee & Shoulder Injuries in the Workplace

Factors that Complicate Causation

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Most Common Injury + Mechanism

- Meniscus Tear – Plant and pivot
- MCL Sprain – Valgus load to knee
- ACL Sprain – Knee Buckles
- PCL Sprain – Direct impact to front of the knee
- Chondral Injury – Rapid deceleration or fall onto knee
- Fractures – Higher impact fall or direct blow
- Quad/Patellar Tendon Tears – Jump/Fall from height

History of the Event
Careful Consideration

- History
- Mechanism
- Clinical Exam
- X-ray Findings
- Response to Treatments

History

- Significant injuries often cause significant pain/discomfort acutely.
- Witnessed?
- Reported in a reasonable time frame
- Sought treatment elsewhere?
- Distracting Injury?
- Migrating and Evolving?
- Occupational Health Evaluation? Consistent Exam?
- Response to treatment?

Distracting Injury

- These can certainly occur:
  - Underlying injury unnoticed due to severe pain from significant injury (about 8% in multiple trauma)
  - Crush injuries
  - Fractures
  - Burns
  - Mechanism must make sense

Gynec orthopaedic trauma in the multiply injured patient.
Cellular Level

Arthritis = Loss of Normal Cartilage

How Do We Know?

Important to Get Correct Xrays
MRI Needed?

What Causes Knee Arthrosis

- Osteoarthritis
- Inflammatory Arthritis
- Rheumatoid - Autoimmune
- Crystalline Arthropathy
- Gout/Pseudogout
- Post-Traumatic
  - Prior Fracture
  - Prior Ligamentous Injury
- Obesity

Exposure...
How can you tell if work is primary cause of arthritis?

Can Knee Arthritis Be Asymptomatic?

What Causes Symptoms to Develop

- New activity that increases forces in the knee
- Dietary changes
- Can develop spontaneously
- Often wax and wane
- Everyone's pain threshold is different
Recent Case

- 60 yo female nurse
  - Psych patient scuffle, moved away quickly
  - and developed pain/swelling
- Has had waxing/waning pain for years, had injections/visco

Recent Case

- 48 yo male laborer fell and struck his knee
- No reported issues prior but admits he is not active aside from his job

Chronic Cartilage Injury
Arthritis Treatments

- Rest, Ice, NSAIDs
- Steroid Injection
- Lubricant Injection
- Bracing
- Knee Replacement

Arthroscopy for Arthritis is Futile

Temporary Aggravation of Arthrosis

- Patients with mild to moderate arthritis
- MRI can help determine acute component

Acute Cartilage Injury - Patella

Direct Fall Onto Patella – Defect on Patella or Trochlea
Acute Cartilage Injury Condyle

- Usually Deceleration
- Plant and Pivot
- Hard to cause cartilage injury to condyle from a fall

Treating Acute Chondral Injury

Meniscus
Types Of Tears

Mechanism

Determining Acuity
- Begins with History - Mechanism Make Sense?
- Exam – Is it Meniscal Pain? Reproducible?
- Radiographs – Is there Arthritis?
Acute Tears

Treatment

Chronic Degenerative Tears

- Often times they exhibit non-specific pain
- May have meniscal pain but mechanism vague
- Any prior medical is key
Acute?

PCL Tear

Patellar/Quad Tendon Tear
Treatment

Most Common Shoulder Injuries

Rotator Cuff Anatomy
**Cuff Function**

**Rotator Cuff Tear Mechanism**

**Spectrum of disease**

- Intrinsic Degeneration of Tendon in Watershed Area
- Part of the Aging Process
- Incidence of Cuff Tear:
  - 50-59 y.o. – 13%
  - 60-69 y.o. – 20%
  - 70-79 y.o. – 31%
  - >80 y.o. – 51%
- Why Do Some Tears Hurt and Others Not?
Does Xray Help?

Does MRI Make Sense?

Objective Data: MRI
Treatment
Be sure no other source of pain!

Judicious Use of Diagnostic Injection
AC Joint?
Biceps?

GOAL

Improving Techniques

Partial Thickness Rotator Cuff Tear

- Spectrum of Rot Cuff Disease: Tendonopathy/Tears
- Abundantly common age > 45 years old
- Mechanism
  - Overhead/Repetitive
Partial Thickness Tears
- Can be pain free then suddenly develop pain at tear increases in size
   
   - My First Line is PT
   - If Fails Take Down Intact Rotator Cuff and Repair

Impingement
- Extrinsic Force On Rotator Cuff
  - Sustained/Repetitive overhead work

Response to Treatment
- Repetitive motion or overuse injuries get worse when doing the activity and get better when the inciting activity is removed.
Other Factors?

- True Cuff Tendinosis should improve with therapy and/or injection.
- If it doesn't improve then likely another reason.

SLAP Mechanism

Labral Tear Mechanism
Treating the biceps

- Not much difference in Tenotomy (release) vs Tenodesis.
- Cosmetic Deformity.
- Possible subtle loss of peak torque (supination).
- Age >50: aggressive with treating biceps if Rotator Cuff Tear.
- Biceps is often a source of continued pain after cuff repair.

AC Joint

- By Age 50 AC Joint Becomes Degenerative.
- Is it symptomatic???
- Can it be traumatic???

Distal Clavicle Resection

- Sometimes too narrow to get scope in the joint.