Common (and Uncommon) Running Injuries
Goals

- Case base review of Common (and some not so common) running injuries.
Group Participation is Encouraged...
Case 1

- 18 year old girl presents with knee pain with running
  - Pain is worse going up and down hills
  - Pain also occurs after prolonged sitting
  - Pain is to anterior knee
  - Denies any trauma to knee
- Exam
  - No deformities
  - FROM to knee
  - Positive patellar grind test
  - No tenderness to tibial tubercle
  - No joint line tenderness
  - No laxity appreciated
Differential Diagnosis

- Patellofemoral syndrome
- Chondromalacia Patella
- Patellar Tendonitis
- Quadriceps Tendonitis
- Fat Pad Syndrome
- Sinding Larsen Johannson syndrome
- OCD lesion
- Apophysitis
- Meniscal pathology
Anterior Knee Pain

- Chronic knee pain in any part of extensor mechanism of knee
- Runner’s Knee, Jumpers Knee
- Pain often has gradual and insidious onset—no known trauma or injury
- Usually no complaints of knee locking, acute swelling, or giving way/buckling
Patellofemoral Knee Pain

- Many names: patellofemoral syndrome, anterior knee pain, runner’s knee
- Very common—most common in adolescent females
- Contributing factors: biomechanical (larger Q angle, weaker quadriceps/ VMO muscle, tight hamstrings/ITB) Overuse: repetitive injury
- Dull anterior poorly localized knee pain: often worse with stairs, uneven terrain, keeping knee flexed

Greater Q angle in Females
Patellofemoral Syndrome

- Dx: patellar compression test and apprehension test
Chondromalacia Patella

- Softening and breakdown of cartilage on underside of Patella
- Arthroscopic diagnosis
- Overuse
  - Maltracking
- Post Traumatic
- Patellar Compression Test
Patellar Tendonitis

- Inflammation of the Patellar tendon
- Pain usually at Origin
- Misnomer
  - Patellar Tendinosis
- Overuse
- Muscle Weakness
  - Quad
  - Hamstring
  - Gluteus
- Flat Feet
- Poor Ankle Dorsiflexion
- Tight Achilles Tendon
- Fat Pad Syndrome
Quadriceps Tendonitis

- Inflammation at insertion of Quadriceps Tendon
- Quadriceps Tendinosis
- Similar to Patellar tendonitis
Osgood Schlatter’s Disease of the Knee

X-rays are NOT generally needed to make diagnosis.

Prominent tibial tubercle

Thigh bone (femur)

Tibia

Bony fragment

Prominent tibial tubercle
Osgood Schlatter Disease of the Knee

- Traction apophysitis of tibial tubercle due to repetitive microtrauma
- Common cause of knee pain in early adolescence
  - females: age 8–13, males: age 10–15
- Pain located over tibial tubercle---worse with activity
- Can take 18–24 months to resolve
- Activity modification, NSAIDS, if severe pain and compliance an issue: short course of immobilization
Sinding–Larsen–Johansson Syndrome

- Traction apophysis of the distal pole of patella: repetitive microtrauma
- Most common in active males during growth spurt: 11–15 yrs
- Jumper’s Knee
- Self-limiting: Resolves in approx 6–12 months, responds to activity modification, NSAIDS, physical therapy (quad strengthening)

Ossification/fragmentation seen at distal pole of patella
Anterior Knee Pain: Management

- Manage conservatively with NSAIDS, physical therapy, isometric exercises, activity modification
- Often frustrating problem to treat in the athlete: activity modification hard for athlete
- Physical therapy: Emphasis of strengthening VMO, improving patella tracking, correcting biomechanical faults.
- Generally responds well to conserv. tx: AVOID surgery
Anterior Knee Pain: Management

- Bracing
- Cortisone
- Viscosupplementation
- Needling
- PRP
- Orthotics
- Shoe Wear
  - Runnersworld.com
Anterior Knee Pain: Management

- Surgery
  - AVOID!!!
- Lateral Release
- Realignment procedures
- Tendon Debridement
- Patellar Resurfacing
Iliotibial Band Syndrome

- Pain to outside of knee
  - Caused from friction of band over femoral condyle (bone)
  - Tight IT band
  - Running Style
  - Can also be caused from biking

- Clinical diagnosis

- Treatment
  - PT
  - Bracing
Iliotibial Band Syndrome

- Treatment
  - Relative Rest
  - Stretching
  - Foam Roller
  - Ice
  - Massage
  - Strengthening
  - Mechanics
    - Gait Analysis
Case 2

- 32 year old female presents with foot pain x 1 week
- worse with running
- Training for marathon x 8 weeks
Case 2

- Pain in plantar aspect of lateral metatarsals
- Exam
  - Tender to 4th and 5th metatarsal
  - Swelling to lateral foot
  - Increased pain with hopping
- Differential?
- Plan?
Case 2

- Xrays were unremarkable
- Treated for stress fracture
  - Cam walker boot x 2 weeks
- Repeat xrays at 4 weeks
- Cross Train
Stress Fracture
Stress Fracture

- Small crack in bone usually caused from increasing running distance too quickly before body gets used to it.
- Usually affects metatarsals or tibia
- Often not initially seen on xray (15%)
- May need mri or bone scan to diagnose
- Pain worsens with load bearing, improves with rest
- Usually takes 6–8 weeks to heal
Stress Fracture
Stress Fracture

Other causes
- Osteopenia
  - Bone Scan
- Improper foot wear
  - Minimalist shoes

Treatment
- Relative rest
  - Boot
  - Cross training
- Bone Stimulator
Another common Foot Problem