Hip Pain – Overuse, labral tears, arthritis, and other pathology

Michael Stanton, M.D.
Orthopaedics at Red Creek
Outline

• Extra-articular pathologies
  • Muscle strains/Avulsion injuries
  • Snapping Hip
  • Lateral hip pain
  • Stress Fractures

• Intra-articular pathologies
  • FAI
  • Labral Tears
  • Arthritis
Hip and Groin Injuries

- Accounts for up to 5-9% of all athletic injuries.
- 27-90% with chronic groin pain found to have multiple co-existing pathologies.

<table>
<thead>
<tr>
<th>Groin Pain Differential Diagnosis: Musculoskeletal Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intra-articular</strong></td>
</tr>
<tr>
<td>Acetabular labral tears</td>
</tr>
<tr>
<td>Osteonecrosis of the femoral head</td>
</tr>
<tr>
<td>Chondrolysis</td>
</tr>
<tr>
<td>Femoroacetabular impingement</td>
</tr>
<tr>
<td>Femoral neck stress fracture</td>
</tr>
<tr>
<td>Instability</td>
</tr>
<tr>
<td>Legg-Calvé-Perthes disease</td>
</tr>
<tr>
<td>Oncologic processes</td>
</tr>
<tr>
<td>Osteoarthritis</td>
</tr>
<tr>
<td>Osteochondritis dissecans</td>
</tr>
<tr>
<td>Septic arthritis</td>
</tr>
<tr>
<td>Slipped capital femoral epiphysis</td>
</tr>
<tr>
<td>Synovitis</td>
</tr>
<tr>
<td><strong>Extra-articular</strong></td>
</tr>
<tr>
<td>Apophyseal avulsion fracture</td>
</tr>
<tr>
<td>Focal joint abnormalities</td>
</tr>
<tr>
<td>Iliofemoral ligament sprain</td>
</tr>
<tr>
<td>Lumbar radiculopathy</td>
</tr>
<tr>
<td>Pubic ramus stress fracture</td>
</tr>
<tr>
<td>Muscle strain: adductors/sartorius, rectus femoris, ilipsoas, or rectus abdominis</td>
</tr>
<tr>
<td>Nerve entrapment: genitofemoral (L1, L2, L3), iliohypogastric (T12, L1), ilioinguinal (T12, L1), lateral femoral cutaneous (meralgia paresthetica, ventral rami [L2–L4]), obturator, or pudendal</td>
</tr>
<tr>
<td>Osteitis pubis</td>
</tr>
<tr>
<td>Psoas muscle abscess</td>
</tr>
<tr>
<td>Sacroiliac joint disorders</td>
</tr>
<tr>
<td>Snapping hip syndrome</td>
</tr>
<tr>
<td>Sports hernia/pubalgia (eg, hockey player syndrome)</td>
</tr>
<tr>
<td>Trochanteric bursitis</td>
</tr>
</tbody>
</table>

Suarez et al JAAOS 2013
Muscle Strains

- Most common hip/groin injury
- Eccentric contraction in muscle that cross two joints
- MT junction/muscle belly
- Adductor injuries common in hockey, football, and soccer
- Rectus femoris injuries common in soccer and gymnastics
Adductor Tears

- Tenderness localized to adductor longus origin

PE
- Pain with passive stretch of adductors
- Pain with resisted adduction

Treatment
- Nonoperative
  - Gentle ROM and strengthening once acute pain resolved
- Injection based treatments at adductor longus origin
Adductor Tears – MRI Scan

Coronal Images
Rectus Femoris Injuries

- Swelling and tenderness in anterior thigh 8-10 cm below AIIS
- PE
  - Weak knee extension and hip flexion
- Treatment
  - Nonoperative – most cases
  - Operative
    - Significantly displaced AIIS avulsion in adolescent
    - Full thickness tears of tendon w/ retraction
Rectus Femoris Injuries

- Bony avulsion of anterior inferior iliac spine

Acute injury

Chronic Injury
Rectus Femoris Injuries - MRI
Snapping Hip

Multiple etiologies:

**External**

Iliotibial band snapping over greater trochanter

**Internal**

Iliopsoas tendon snapping over prominent AIIS or the femoral head

**Intra-articular**

Mechanical pathology within the hip joint
Greater Trochanteric Bursitis

- Lateral sided hip pain
  - Hip joint not involved
- Significant tenderness to palpation over greater trochanter
Greater Trochanteric Bursitis

- Two categories of patients
  - Runners, repetitive athletes, often have external snapping
  - Hip/core weakness
Greater Trochanteric Bursitis

- Can see inflamed bursa on MRI
- Treatment
  - Non-operative: NSAIDs, physical therapy, injections
  - Operative: rare indications, can perform open vs. endoscopic bursectomy
Femoral Neck Stress Fracture

Compression vs tension side
Outline

- Extra-articular pathologies
  - Muscle strains/Avulsion injuries
  - Snapping Hip
  - Lateral hip pain
  - Stress Fractures

- Intra-articular pathologies
  - FAI
  - Labral Tears
  - Arthritis
Labral Anatomy/Function

- Fibrocartilaginous structure
- Triangular in cross section
- Increases the articular surface by 22% and the acetabular volume by 33%.
- Creates a seal to retain synovial fluid within the central articulating compartment.
Labral Tears

- Most common cause of hip pain found at the time of arthroscopy ~ 90%
- Common causes
  - Trauma
  - Laxity/hypermobility
  - Bony impingement (FAI)
  - Dysplasia
  - Degenerative
Femoroacetabular Impingement

- Ganz et al 2003 CORR
- Two distinct types of FAI based on the pattern of chondral and labral lesions observed during surgical dislocation of the hip
  - Cam impingement
  - Pincer impingement
Cam Impingement
Wave Sign
Pincer Impingement
Etiology of FAI

- Unknown but several theories
- CAM impingement
  - SCFE
  - Stress on growth plate around time of closure
- Gender Differences
- Genetic factors
  - Pollard JBJS-B 2010
    - 96 siblings of 64 patients treated for FAI
    - 2.8 RR with cam impingement
    - 2.0 RR of pincer impingement
Clinical Presentation

- Location:
  - Groin
  - Lateral hip
  - Anterior thigh
  - Buttocks

- Mechanical symptoms – snapping/catching
- Walking limitation 37%
- Pain with activity and weight bearing
Physical Exam

- **C-sign:**
  - Hand cupped above greater trochanter with thumb over posterior aspect of trochanter and fingers gripping into groin
  - Suggests intra-articular pathology

- **Log roll**
  - Passive supine rotation test
    - Trauma, effusion, synovitis

- **Straight leg raise**
  - Intraarticular pathology
  - Psoas tendinitis/bursitis
Anterior Impingement Test

- **FADDIR** (flexion/adduction/IR)-elicits pain with anterior femoroacetabular impingement and/or torn labrum
- 95-97% sensitivity for labral tear.
Non-operative treatment

- Activity modification
- NSAIDs
- Optimizing core strength
- Avoid squatting activities
  - Limit hip flexion to 45°
- Intra-articular injection
  - Cortisone with marcaine, lidocaine
  - Diagnostic and therapeutic
Operative Treatment - Arthroscopy

- Goals of surgical intervention
  - Improving clearance for hip motion
  - Alleviating femoral abutment on acetabulum
  - Addressing the labrum
  - Prevent degeneration of hip
When not to scope a hip

- Not for young arthritic hip
- 2mm of joint space
- 86% with < 2mm converted to THA
- 16% with > 2mm converted to THA

Skendzel AJSM 2014
Mild Osteoarthritis?
Mild OA?
Osteoarthritis

- 2nd most common major joint
- Groin/buttock pain
- Pain at rest/night
- Functionally limiting pain
- Loss of motion
- Gradual onset
Osteoarthritis

- Treatment options
  - NSAIDs
  - Cane
  - Weight loss
  - Physical therapy
  - Injection based treatments
Osteoarthritis

- Surgical treatment
  - Arthroscopy
  - Arthroplasty
Thank You