Hip Impingement and Arthritis: Preservation vs. Total Hip Arthroplasty

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Faculty Disclosures

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Objectives

• Identify Hip Impingement
• Clinical exam
• Diagnostic tests
• Treatment options
Causes of Hip or Groin Pain

Burnett, Clohisy et al. JBJS 2006

• Average time from injury to accurate diagnosis 21 months
• Average of 3.3 providers seen before definitive treatment

Physical Exam

• Systematic Approach
• Don’t ignore “good hip”
• Exposure:
  – Inspection
  – Palpation
  – ROM
  – Strength testing
  – Provocative tests as indicated

Physical Exam

• Gait:
  – Can the affected leg bear weight
  – Observe for:
    • Antalgic (painful gait)—Decreased stance phase
    • Lurch (Trendelenburg)- laterally vs posteriorly
    • Flat foot- no push off
    • Wide – feet > 4 inches apart
    • Decreased step size
  – Observe patient transfer from laying -> sitting -> standing
  – Estimate height symmetry of iliac crests—if asymmetric compare leg length
Femoroacetabular Impingement (FAI)

- Bony impediment of joint motion
- Abnormal acetabulum and/or proximal femur
- Abnormal anterior/superior acetabular rim
- Reduces clearance for motion – flexion/int rot.

FAI

- Age?
- Anterior groin, lateral hip pain
- Difficulty climbing stairs, getting out of chair/car, tying shoes, socks
- Popping, snapping, locking
- +C, restaurant sign

FAI

- Physical Exam
  - Trendelenburg/limp
  - Painful/restricted hip flexion, abd, int rot.
  - Weakness
  - Tender psoas, rectus tendon, rectus
  - Difficulty squatting
  - +FABER/FADIR

FIX THE 'PINCH'
FAI

• Imaging
  – AP/frog/cross table lateral/false profile/AIR
  – 3D CT Scan
  – MRI Arthrogram – labral tear, cartilage

FAI and Osteoarthritis

• Little quality evidence supporting mechanical theory
  – Xray criteria for diagnosis for FAI
  – Correlation b/w FAI and OA
  – alpha angle >60°
Management

- Physical Therapy
  - Restoration of motion/strength
  - Tendonopathies
    - Abductor
    - Piriformis
    - Hip flexor

The Perfect World...

- Symptomatic <1 yr
- Inability to perform sport or activity
- Well defined FAI
- Good articular cartilage
- Good preop strength
- Normal BMI

FAI

- Treatment
- Surgery
  - Arthroscopy
  - Arthroscopy+mini open
  - Hip Dislocation
  - Arthroplasty

Most common reason for arthroscopy
- Labral Tear – 70 - 80% success rate

Courtesy Marc J. Philippon, MD Hip Arthroscopy: From Diagnosis to Patient Outcomes
Case 1

- 49yo male
- 15yrs of right hip pain
- Pain at work, prolonged sitting and standing
- FROM, pain with flexion
- Strength 4/5 with pain flex, abd.
- +FADIR
Case 2

- 41yo male
- 2-3 yrs of right hip pain
- Pain with sitting, walking, can’t bike
- Painful motion hip flex (90deg), abd. (45)
- +FADIR
Case 3

- 49yo female
- 10 years of left hip pain
- Difficulty working/adl’s
- Limited motion and strength on left side
- FADIR+
Hip Arthroscopy or Arthroplasty


- 8-17 studies, 16K patients (9K >40yo)
-Significant improvement outcome scores after arthroscopy
  - Scope to THA (mean 25 months)
    - >40yo – 18%
    - >50yo – 23%
    - >60yo – 25%

- Predictors of Failure
    - Failure 82%
    - Radiographic OA 52%, No OA 12%
  - >50yo and <2mm joint space (Philippon et al. *Clin Orthop Relat Res*, 2013)
    - 81% accurately predicted THA
    - 9x more likely THA
Hip Arthroscopy or Arthroplasty

- Predictors of Failure
  - >40yo and OA (Kemp et al. *Clin Orthop Relat Res.*, 2013)
    - THA 7mos-5yrs
    - 20x with only acetab OA
  - Worse with femoral head OA
    - 58x more likely for THA
  - Grade 3 or 4 change acetab and femoral head – THA 99% in 10yrs
  - >50 vs. <30yo (Domb et al. *Arthroscopy*, 2015)
    - THA 17% vs. 2%
    - Repeat arthroscopy 15% vs. 4%

Conclusion

- FAI common cause of hip pain
- FAI correlated with OA
- <40 years old – significant improvement after hip arthroscopy
- >40 years old – higher rate of conversion to hip replacement after arthroscopy
  - Increases with obesity and age
- OA best indicator of conversion to hip replacement

Thank You