Labral Tears and FAI: What Can Be Treated Non-op, What Needs Surgery, How Much Surgery is Necessary and What Are the Outcomes?

John D. Kelly IV
Director Shoulder Sports Med
Univ. of Penn.
Power Points

• Imaging findings MUST correlate with Hx and PE
• Not all imaging findings are clinically relevant
• Labral tears rarely occur in isolation
• Poor science currently as to how much bone to resect
• Results awesome......in right patient
Labral Tears FAI: What Can Be Treated Non Op?

• Asymptomatic Labral Tears
• Asymptomatic FAI

• Trust your exam!
• Many ‘labral tears’ and CAM/Pincer lesions are not clinically significant
Don’t Drink the KOOL-AID
Not all MRI findings need surgery!
Imaging ‘scans’ misleading
DO ‘MAN SCAN’

• Impingement Test
• Very good test for impingement and labral tear
• If **not** present....think twice about surgery
Identification of acetabular labral pathological changes in asymptomatic volunteers using optimized, noncontrast 1.5-T magnetic resonance imaging.

Schmitz MR¹, Campbell SE, Fajardo RS, Kadrmas WR.

• 42 asymptomatic volunteers
• 1.5 T magnet
• 2 Fellowship trained msk radiologists
• ~83% scans positive for labral tear
“West Philly CAM Lesion”
Symptomatic Labral Tears Can Come from ..

- Microtrauma (twisting, hyperflexion)
- Macrotrauma (dislocation)
- Attritional

Do a thorough History!!!
History for both Labral Tear and FAI: Symptoms

- Clicking, catching
- Groin pain with change of direction
- Pain with prolonged sitting
- Hip ‘tightness’
- “C” sign
If Symptomatic Labral Tear Present: Rarely Isolated

• Essentially ALWAYS assoc. with excessive BONE
• Cam Impingement
• Pincer Impingement
Impingement

- Bony impingement of the femoral head and or acetabulum against the labrum and or chondral surface
- CAM
- PINCER
CAM Impingement

- Non spherical femoral head
  ‘CAM’ shears against acetabulum.
- Characteristic pattern of anterosuperior cartilage injury (Wave Sign)
Huge CAM
‘Wave Sign’
Acetabular Delamination
Pincer Impingement

- Excessive anterior acetabular ‘coverage’ or bone
- Excessive bone ‘pinches’ labrum against femoral head
- *Peripheral* labral wear pattern
- Acetabular retroversion or coxa profunda
Pincer

- Ant Sup. Labral tear >> degen., ossification
- worsens ‘pincer’
- Profunda, protrusio, retroversion, malunion, lack of offset, or overcoverage from prior surgery
Deep Socket >>>>> Pincer

Coxa Profunda        Protrusio Acetabuli
Impingement Presentations

• Cam more likely in men
• Pincer more likely in women
• But.....most patients have elements of both present
Cam and Pincer

- Beck et al. 302 hips
- 9% had isolated cam
- 5% had isolated pincer
- 86% had a combo of both lesions.
Imaging Signs of FAI: Crossover Sign

• Anterior overcoverage
• Anterior joint line *crosses over* posterior joint line
• Dependent on rotation of x-ray
Frog Lateral

- Easy to obtain
- Reasonable approximation of CAM
Dunn View

- 90 flexion or......
- 45 flexion
- Hip abducted 20 degrees
- Superb for CAM
False Profile XRAY:
Degree Anterior Coverage
Alpha Angle:
Most CAM > 55

↑ alpha angle in FAI patients (74°) when compared to controls (42°)

Notzli et al. JBJS Br 2002
‘Can’t Help: Asymptomatic FAI’

• Thomas Byrd, MD
• ‘The hip will tell you what’s going on’

  peripheral ecchymosis labrum > Pincer

  ‘wave sign’ > Cam
CAN’T Help: Joint Space Narrowing

- If joint space < 2mm, *arthritis* is the likely cause of pain
- Arthroscopy will not reliably treat DJD of the hip!!!
Can’t Help: Spine Source of Hip Pain

- No real pain provocation with hip maneuvers
- Tension signs
- HISTORY
  - pain with sitting (disc)
  - pain relieved with sitting (stenosis)
  - numbness, tingling
More on Exam

• Gait
• Rule out spine source
• Rule our ‘sports hernia’
• Pain reproduction with provocational maneuvers
Exam

- Log roll (intra-articular synovitis)
- Resisted straight leg raise
- Passive abduction
- Impingement Test
- Point tenderness bursa or medius insertion
- Elicit psoas ‘snap’

- FABER
- Thomas Test
FABER TEST
Snapping Psoas

• Elicited best from ABER to ADIR
Lateral Tenderness: Bursa or Tendon?
Peritrochanteric Space:
Trochanteric Bursitis
Gluteus Medius Tear
Work Up

• When in doubt intra articular lidocaine injection
• Note *amount* of pain relief
• No relief from injection ~ no relief from surgery
Treatment

• Resect or repair torn labrum
• **Remove excessive bone acetabulum**
• **Remove excessive bone femur**
• Microfracture chondral injury
• (Resect Bursa)
• (Release Psoas)
• (Release ITB)
Rx Pincer Impingement

Peel off labrum
Resect bone
Repair Labrum
Labral Repair
Pincer: How Much bone to resect????

- NO ONE KNOWS
- But.......can use fluoro
- Or...resect to capsule
Rx CAM

- Removal eccentric bone
- Contour head
CAM
How Much Bone to Resect CAM?

• Poor science but.....
• Make sure no convexity exists
• Do not resect more than 30% neck (fracture risk)
• Intra op Impingement Sign
• Fluoro
Complications

• Chondral scuffing (easy)
  ‘femoral head biopsy’ K. Baldwin, MD

• Neuropraxia pudendal nerve (ouch)
• Instability (too much bone resection)
Results FAI Surgery

- Arthroscopic Treatment of Femoroacetabular Impingement (FAI): Midterm Results (Three to Six Years Follow-up Mardones et al)

- 96% of the patients had negative postoperative impingement test.

- Postoperative MHHS had a significant improvement (p<0.05) compared to the preoperative score.
Arthroscopic Management of Femoroacetabular Impingement (FAI) in Adolescents
F. Winston Gwathemey, M.D. et al

- 122 consecutive hips among 108 adolescents less than 18 years of age
- A chronologically matched control group of 122 patients 18-50 years of age was identified who had also undergone arthroscopic surgery for FAI
- Average improvement of the study group was 23 points MHHS...at least as good as adults
Arthroscopic Debridement Versus Refixation of the Acetabular Labrum Associated With Femoroacetabular Impingement
Christopher M. Larson, M.D.

- First 36 hips the labrum was debrided
- Next 39 hips the labrum underwent refixation
- At most recent follow-up, good to excellent results were noted in 66.7% of hips in the debridement group compared with 89.7% of hips in the refixation group ($P < .01$).
Conclusions

• Not all imaging findings need surgery.
• Exam must fit
• When in doubt lidocaine injection
• Labral tears rarely occur without bone issue
Conclusions

- NO SCIENCE in how much bone to resect but can use common sense, intra op exam and FLUORO
- Repair labrum when possible
- Results GREAT ...........in right patient
Get Good Help
THANK YOU