

# The Intricacies of Femoroacetabular Impingement

By

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By the Great Lakes Athletic Trainers' Association

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- The views expressed in these slides and the today's discussion are mine
- My views may not be the same as the views of my company's clients or my colleagues
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# Acknowledgements

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THANKS for your assistance!!





# Learning Objectives for FAI

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- Background/History
- Etiology
- Anatomy/Pathomorphology
- Prevalence
- Clinical Presentation and Exam
- Differential Diagnosis/Osteoarthritis
- Imaging
- Treatment/Rehabilitation



# Femoroacetabular Impingement (FAI)

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Original description by Ganz et al, 2003

“Femoroacetabular impingement is a condition of abnormal contact that may arise as a result of abnormal morphologic features involving the proximal femur and/or acetabulum.”

Meaning.....



# Femoroacetabular Impingement

- Pathological hip condition characterized by:

***ABNORMAL CONTACT BETWEEN FEMORAL  
HEAD/NECK AND ACETABULUM***

- Osseous lesions create contact within normal hip ROM
- Repeated abutment of bony structures leads to labral and/or articular cartilage damage
- All this over time leads to early development of:
  - ➔ **OSTEOARTHRITIS (OA)** (Ganz, 2003; Hansen, 2013; Lung, 2012)



# History of FAI

- 1974 – Stulberg describes possible association between subtle anatomic abnormalities and OA (**not yet called FAI**)
- 1986 – Harris' review of 75 OA pts, 80% showed evidence of femoral or acetabular abnormalities (**not yet called FAI**)
- 1991 – Klaue, Ganz coined the terms “**cervicoacetabular impingement syndrome**” and “**acetabular rim syndrome**” respectively
- These observations, especially IN YOUNGER PATIENTS, prompted 2 questions.....
  1. Why so many labral tears?
  2. Why so much OA earlier than usual?

**ANSWER = FAI...**



# History of FAI

- 2003 – Ganz, et al is first to publish all known characteristics of FAI, its nomenclature, and link to OA
- 2013 – Ayeni, et al publishes systematic review of FAI
  - 2005-10 = 298 articles published (5x more than previous 5 years)
- Very new “discovery” – ONLY about 10 years of significant publishing!



# Etiology of FAI

## Common pathologies linked to FAI include:

- Prior femoral neck fracture
- Prior acetabular or femoral osteotomy
- Acetabular retroversion
- SCFE
- Legg-Calve-Perthes Disease
- Coxa profunda or protrusia
- Marfan's syndrome
- Et al.

→ **However, MOST patients don't describe a clear MOI or Hx** (Ganz et al, 2003)



# Etiology of FAI

## Imam & Khanduja, 2011

- Anatomical malformations themselves do NOT cause FAI, instead repeated abutment (impingement) damages the labrum and articular cartilage leading to the clinical manifestations of FAI
- FAI is often an incidental finding in non-active people seeking medical attention for “other” pathologies
- Genetics – increased chance of FAI if a sibling also has it
- FAI in the Western world is more prevalent than in the Eastern world (why??)



# Etiology of FAI

- FAI can also occur in normal hips as a result of *repetitive, extreme increased ROM* (especially flexion + internal rotation)
- **Predisposing sports/activities**
  - Hockey (especially goalies)
  - Hurdlers
  - Weight lifting
  - Soccer
  - Martial arts
  - Equestrian





# Etiology - Relationship of FAI to Posterior Hip Dislocation

- Many have wondered if FAI could be a predisposing factor in traumatic low energy posterior hip dislocation (PHD)?
  - Most traumatic PHD are high energy MOI's (MVA, fall from height, etc)
- But low energy PHD's still occur in sports....why?
- Many authors have found evidence of FAI while treating their low energy PHD patients (Lax-Perez et al, 2012, Philippon et al, 2009, Liska et al, 2011)

**\*\*Remember this...we will come back to it shortly!**



# Anatomy of the Acetabular Labrum

(Keogh & Batt, 2008)

- An incomplete fibrocartilagenous ring lining the acetabulum
  - 2 inferior ends attached by the transverse ligament
- **Functions:**
  - Deepen socket to increase surface area of femoral head contact
  - Enhance weight bearing stability of joint
  - Act as shock absorber to dissipate forces as head moves within the acetabulum
    - During jogging, hip jt. loads increase to 8x BW (Crowninshield, 1978)
  - ➔ Provide seal for jt. capsule to keep synovial fluid from leaking out, thus maintain jt. lubrication and nutrition
- **Blood Supply**
  - Peripheral 2/3 = avascular, inner 1/3 = highly vascular

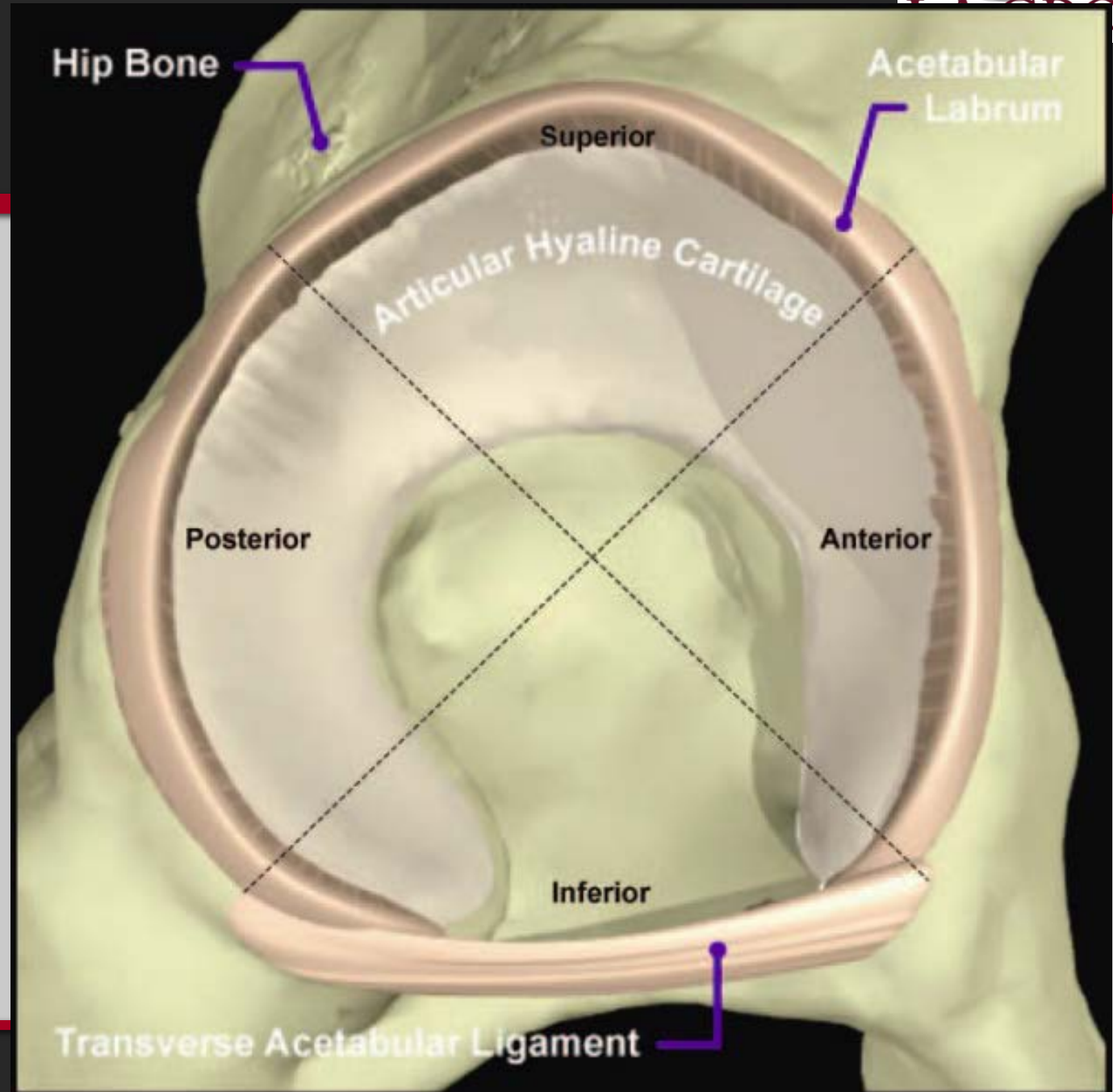


“Everyone has a labral tear.....”

Larson, 2015

65 FAI arthroscopic hips = all had labral tears!

Philippon et al, 2012



# Pathomorphology of FAI

The system of describing and classifying lesions of FAI primarily come from the published works of Ganz, et al

- Ganz, Gill, Gautier, et al. Surgical dislocation of the adult hip: a technique with full access to the femoral head and acetabulum without risk of avascular necrosis. *J Bone Joint Surg Br.* 2001;83:1119-24.
- Ganz, Parvizi, Beck, et al. Femoroacetabular impingement: a cause for osteoarthritis of the hip. *Clin Orthop Relat Res.* 2003;417:20-33.
- Et al.....



# Pathomorphology - Cam Impingement

- **FEMORAL morphology described many ways:**
  - Incomplete sphericity/asphericity of femoral head-neck junction
  - Excessive prominence of head/neck
  - Non-spherical femoral head with prominent femoral neck
  - Flattened head/neck junction previously described as **Pistol Grip Deformity**
- **Bony abutment results in:**
  - Acetabular articular cartilage delamination, labral fraying/tearing and/or avulsion from rim



# Pathomorphology - Cam Impingement

## Pistol Grip Deformity



**\*\*Remember this  
when we get to  
x-rays!!**



# Pathomorphology - Cam Impingement

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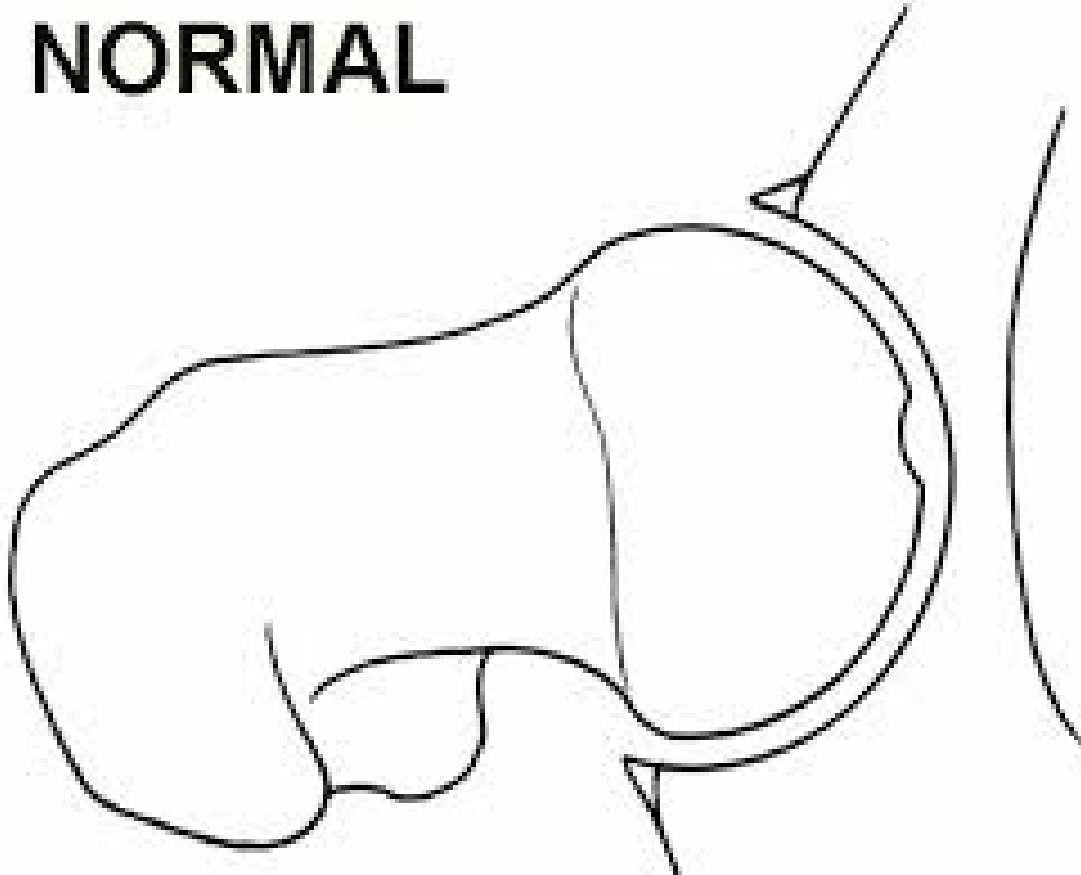
➔ Typically seen more in younger, active males



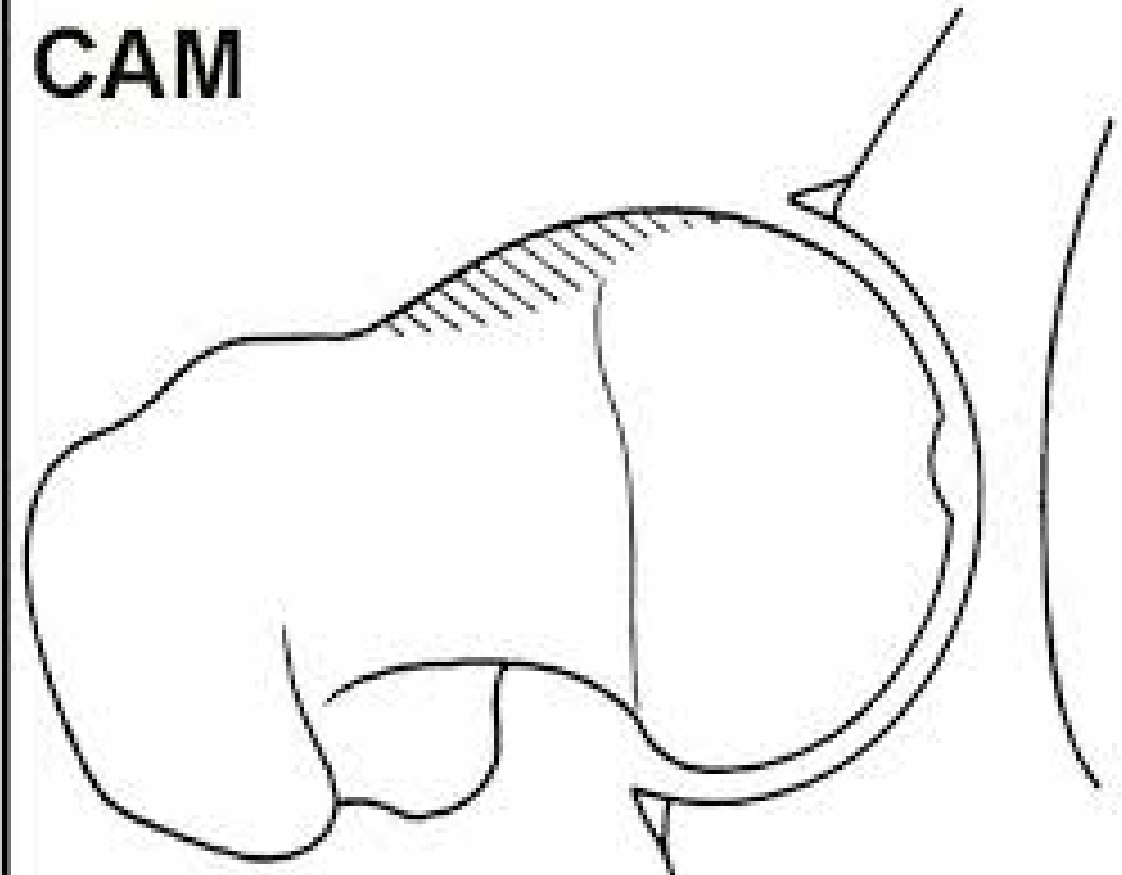


# Pathomorphology - Cam Impingement

**NORMAL**

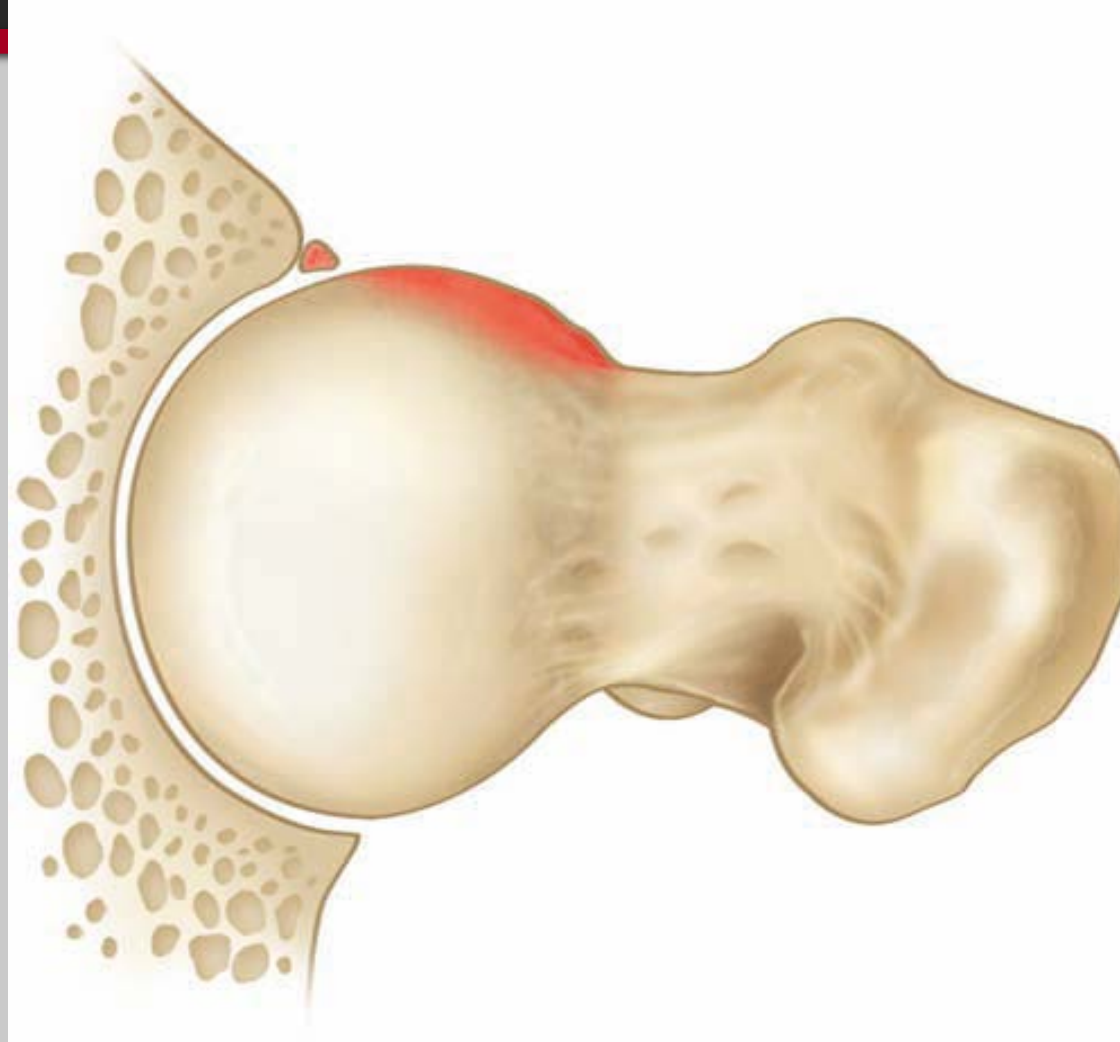


**CAM**



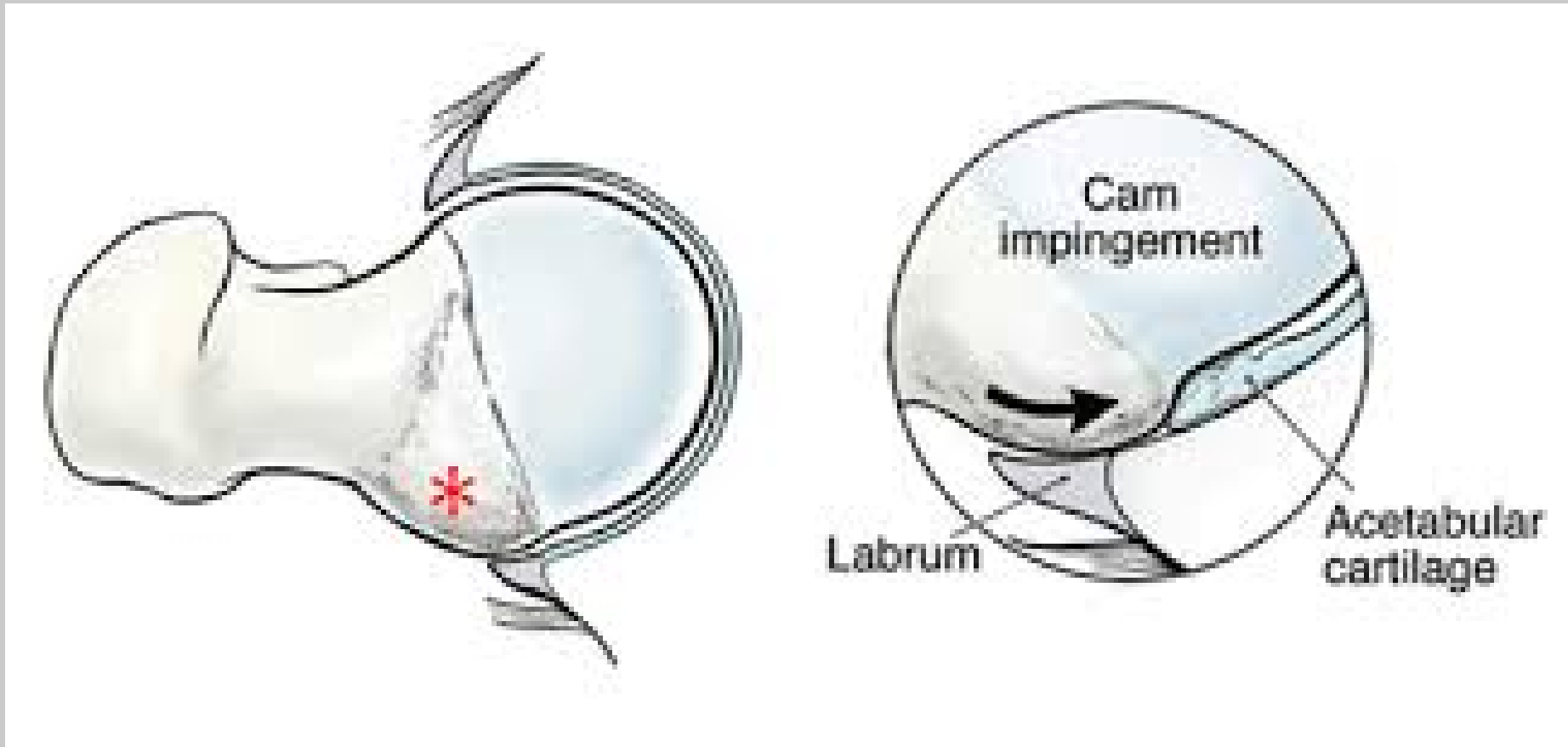


# Pathomorphology - Cam Impingement



# Pathomorphology - Cam Impingement

→ Damage pattern



# Pathomorphology - Pincer Impingement

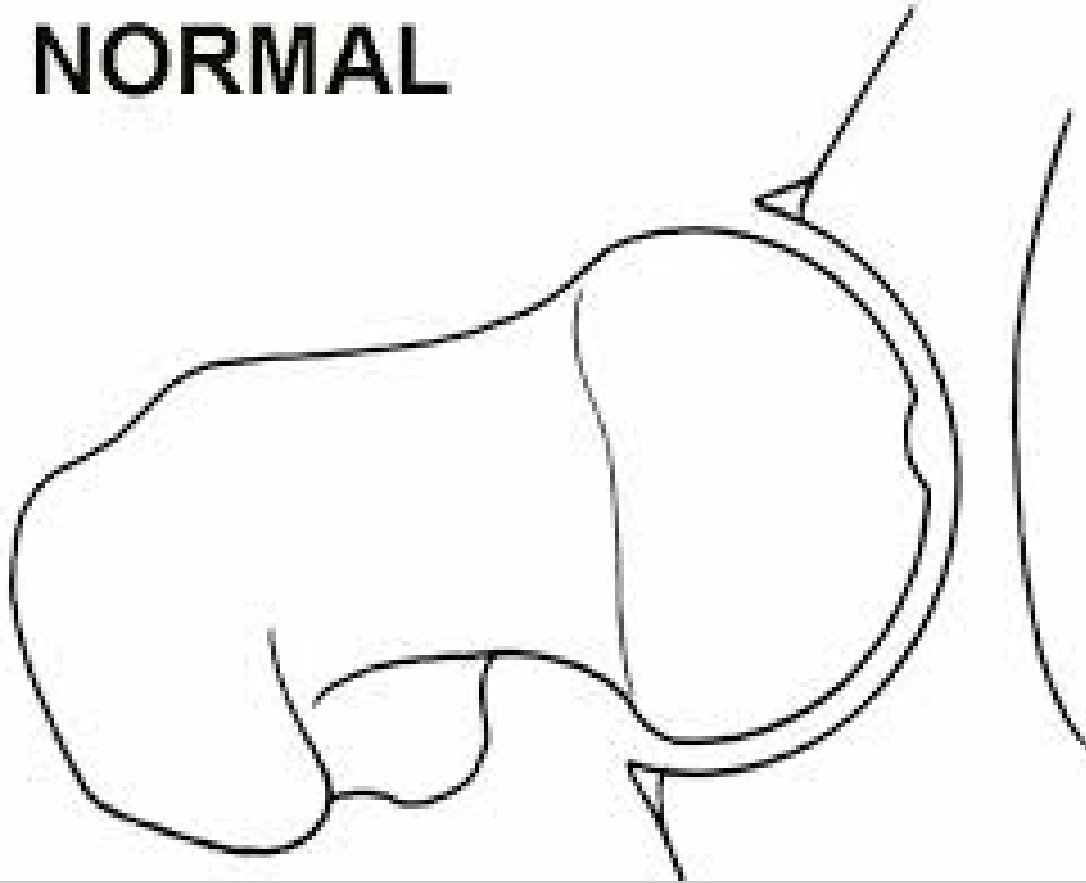
- **ACETABULAR morphology described many ways:**
  - Acetabular socket is deeper
  - Socket is abnormal but femoral head shape is normal
  - Overcoverage of anterosuperior acetabular wall
- **Bony abutment results in:**
  - Labral damage, osteophyte formation and eventual articular cartilage damage but no delamination as seen in Cam lesions
  - Focal overcoverage (acetabular retroversion)
  - Global overcoverage (coxa profunda or protrusion)
  - “Kissing Lesions” – indentation of femoral neck by acetabular rim

➔ Typically seen more in middle-aged athletic females

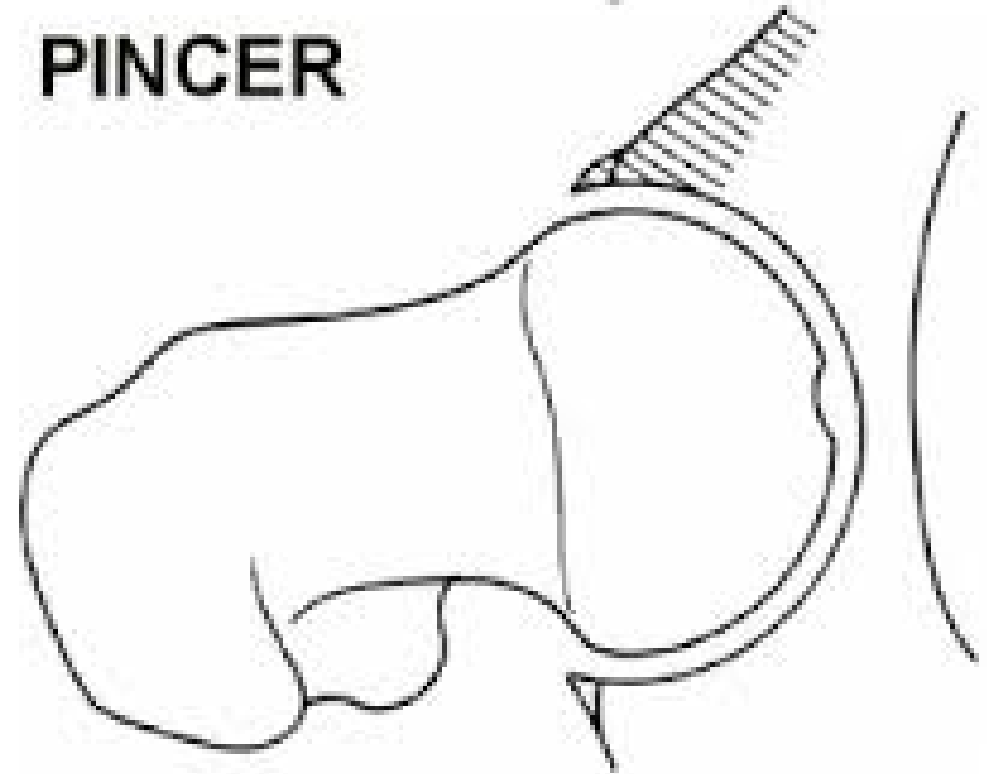


# Pathomorphology - Pincer Impingement

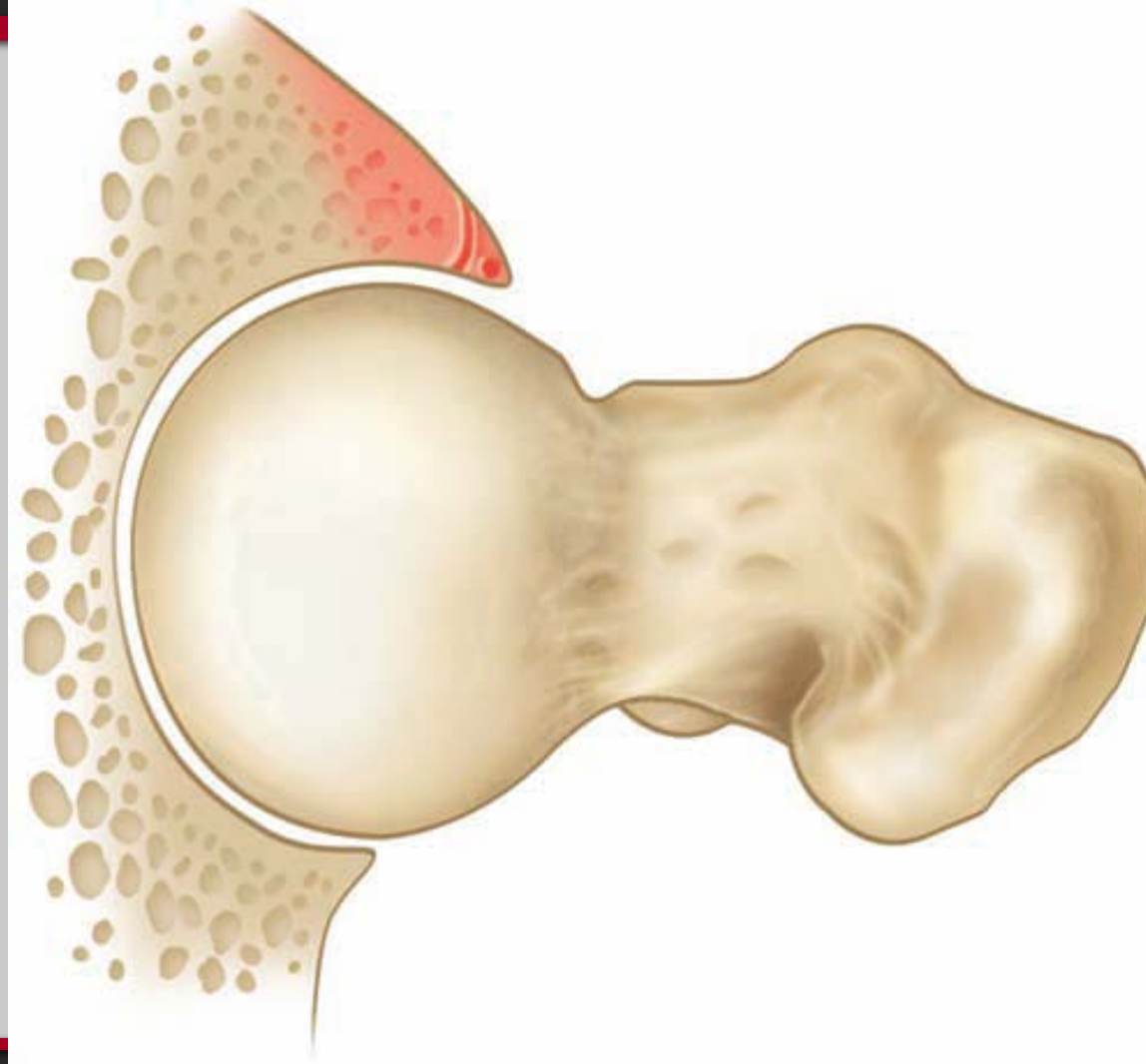
**NORMAL**



**PINCER**

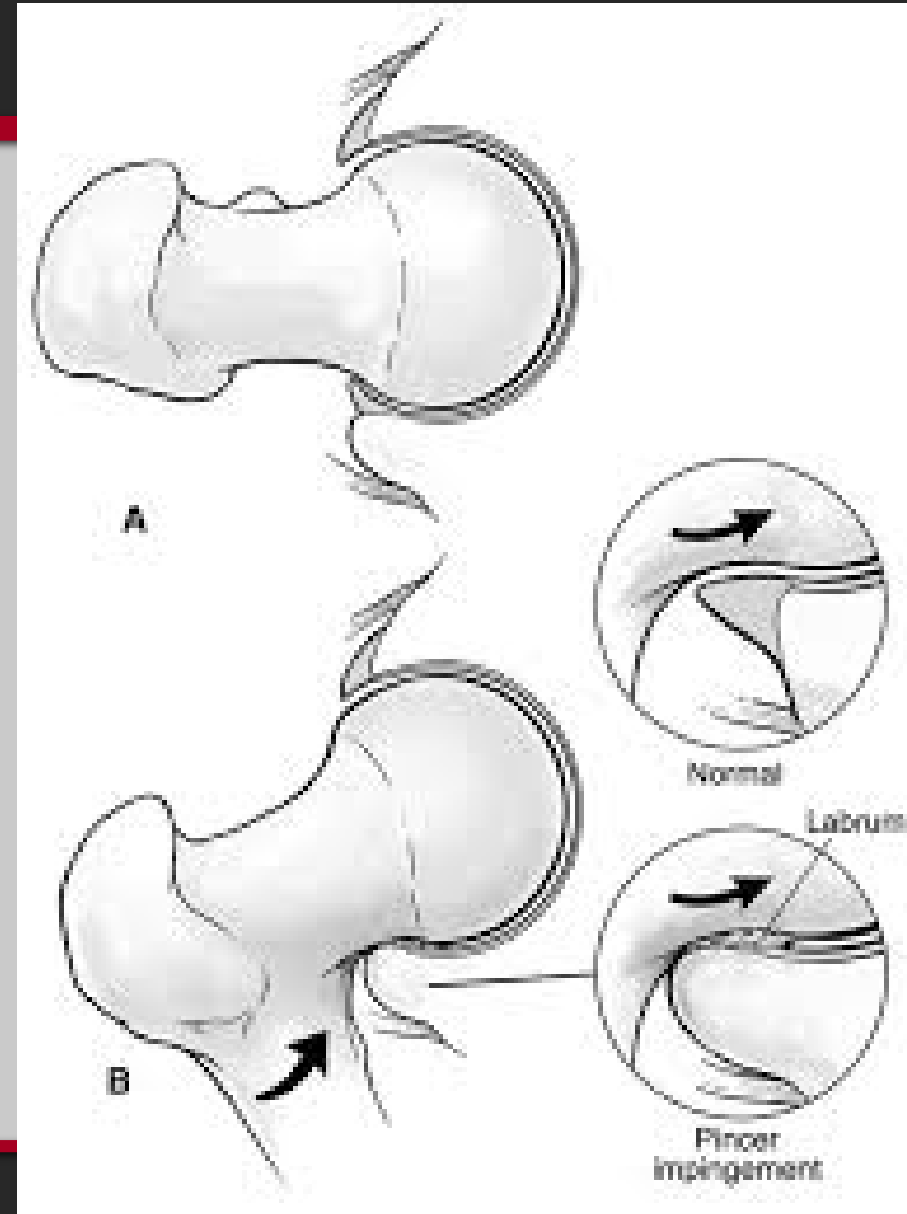


# Pathomorphology - Pincer Impingement



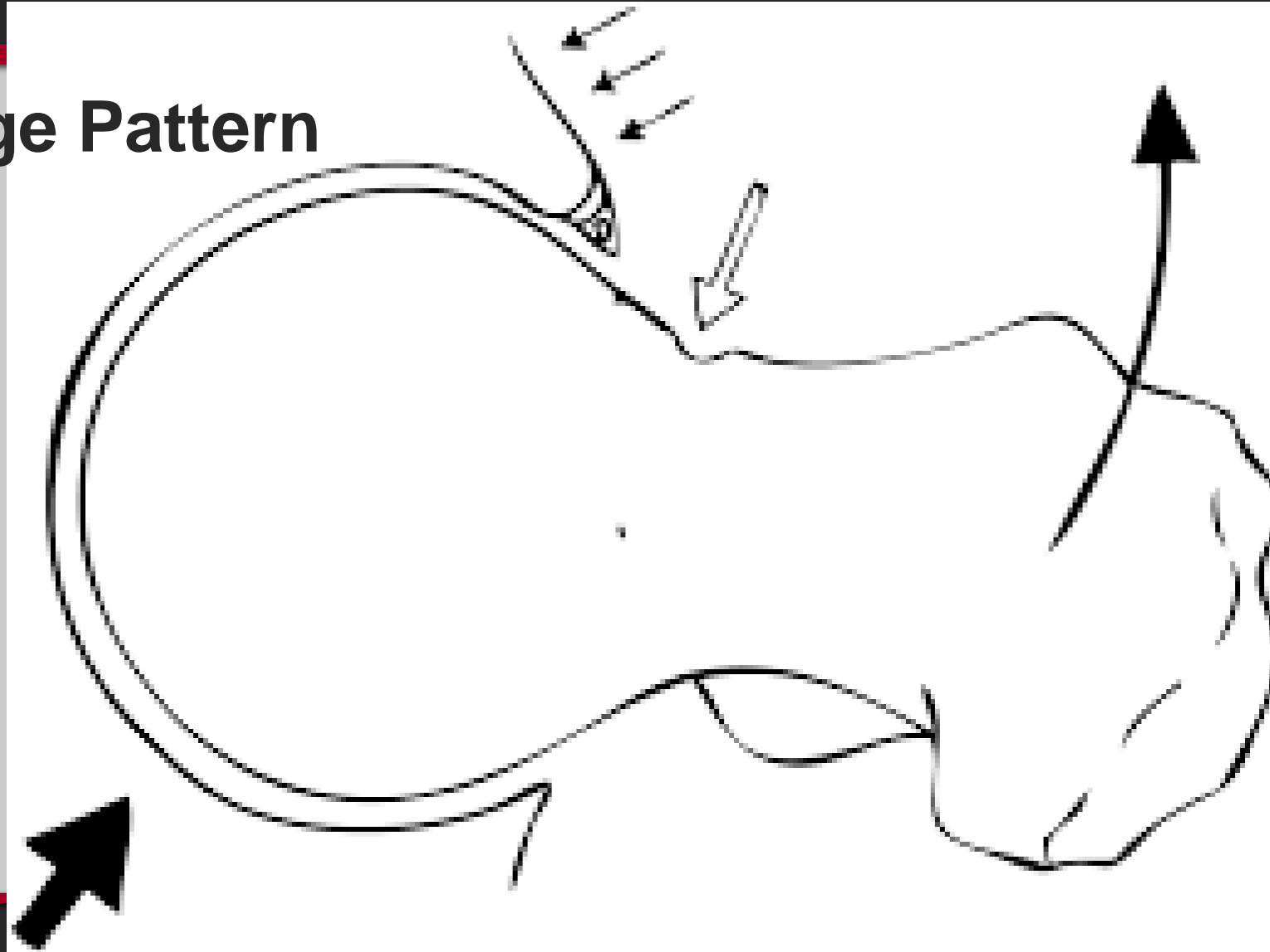
# Pathomorphology - Pincer Impingement

→ Damage pattern



# Kissing Lesion

→ Damage Pattern



Espinosa et al,  
2006

# Review of CAM and PINCER Lesions



Normal



Cam  
Lesion



Pincer  
Lesion





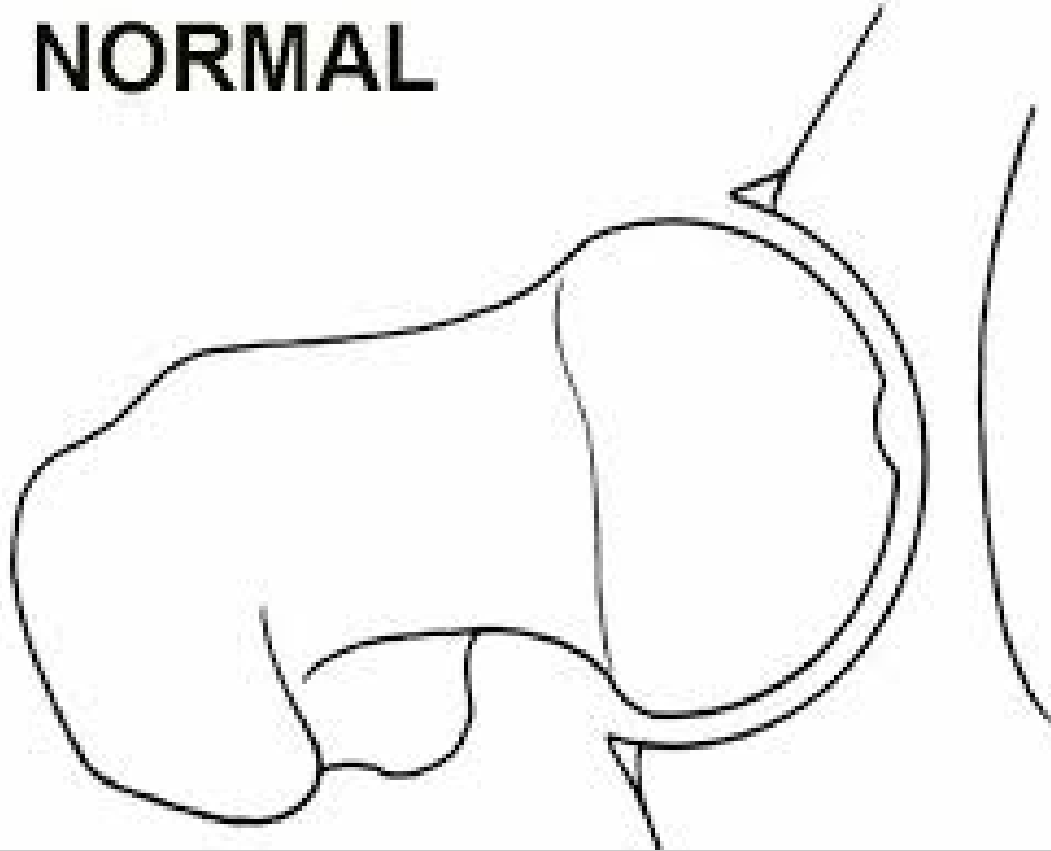
# Pathomorphology - Mixed Impingement

- **Combination of both morphologies**
  - Head/neck prominence AND acetabular overcoverage
- **This is the most common pathomorphology**
  - ➔ **Currently, no data on prevalence in males vs. females**

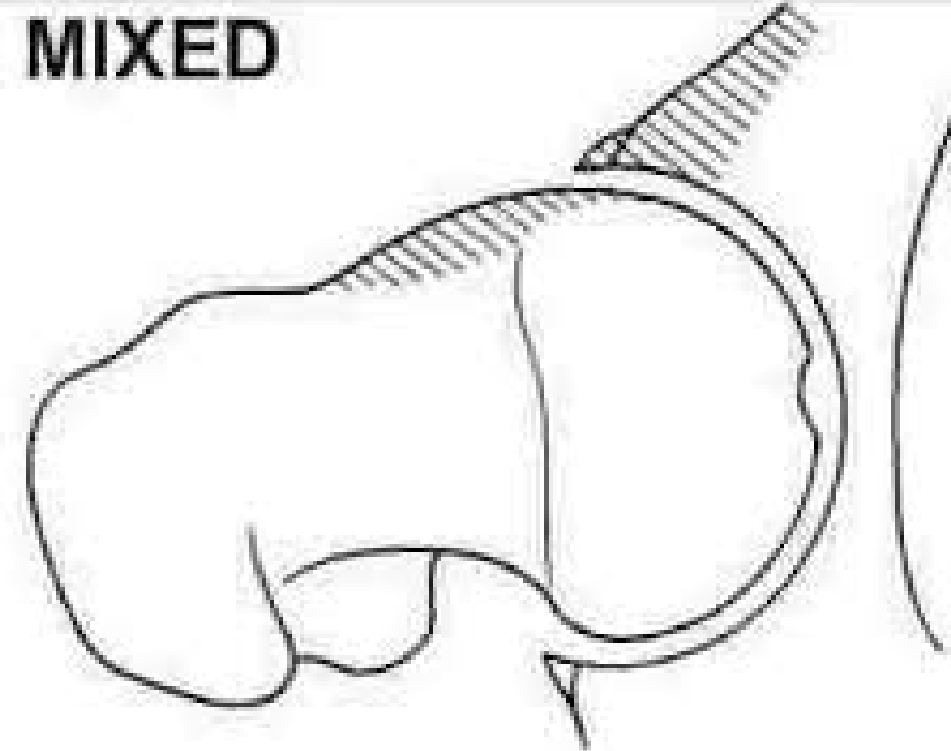


# Pathomorphology - Mixed Impingement

**NORMAL**



**MIXED**

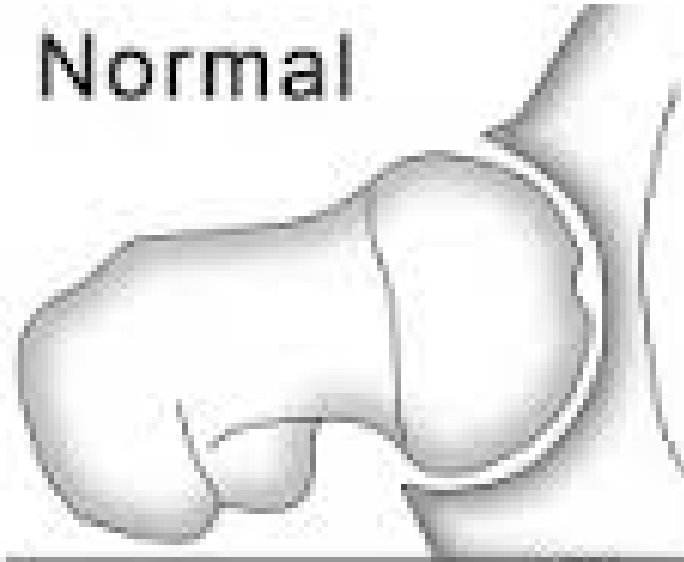


FAIS - Pincer + CAM deformities

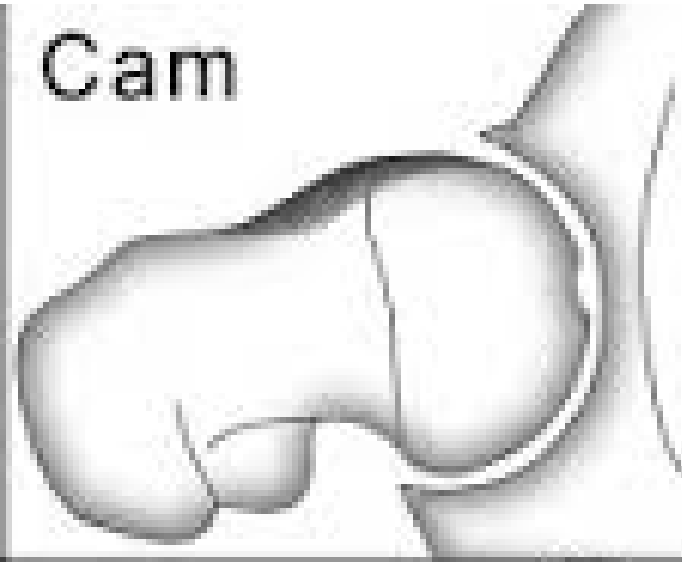


# Review of all 3 lesions

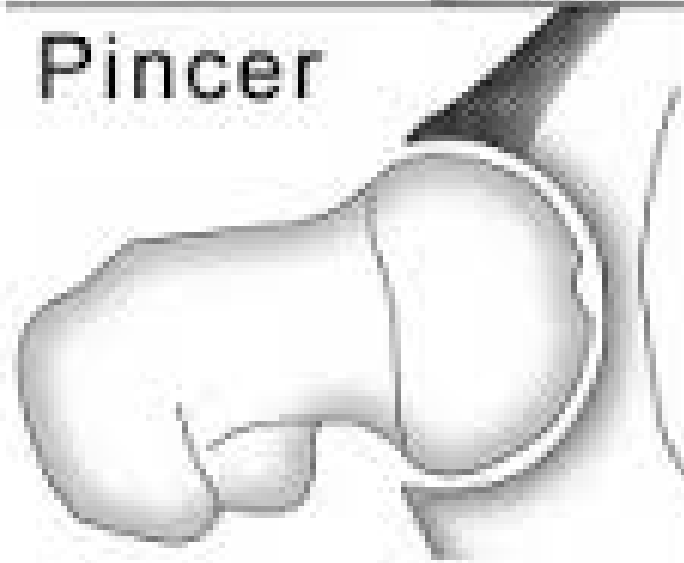
Normal



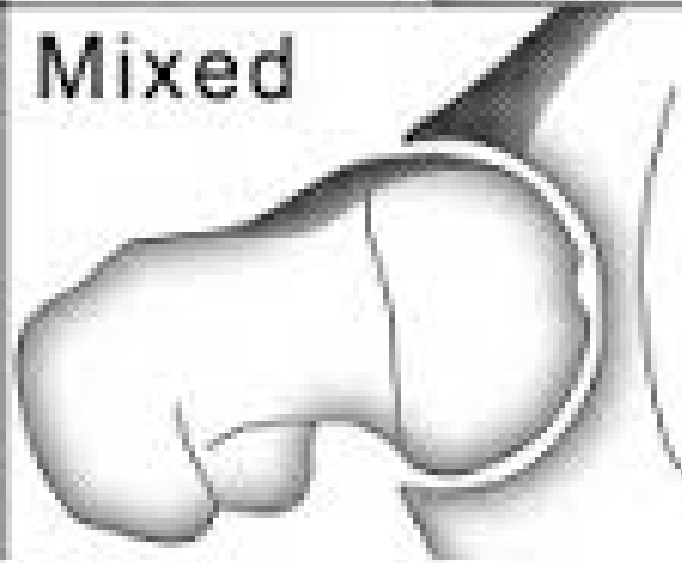
Cam



Pincer



Mixed



# Relationship of FAI to Posterior Hip Dislocation (Revisited)

Stepphacher et al, 2013

- Compared 53 PHDs with 85 normal hips
- Found significantly higher incidence of FAI in PHD group
- Concluded that acetabular retroversion and CAM Impingement were more associated to PHD
- Proposed mechanism = bony abnormalities “leverage or act as a fulcrum” to dislocate the head posteriorly



# Relationship of FAI to Posterior Hip Dislocation

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Larson & Stone et al, 2013

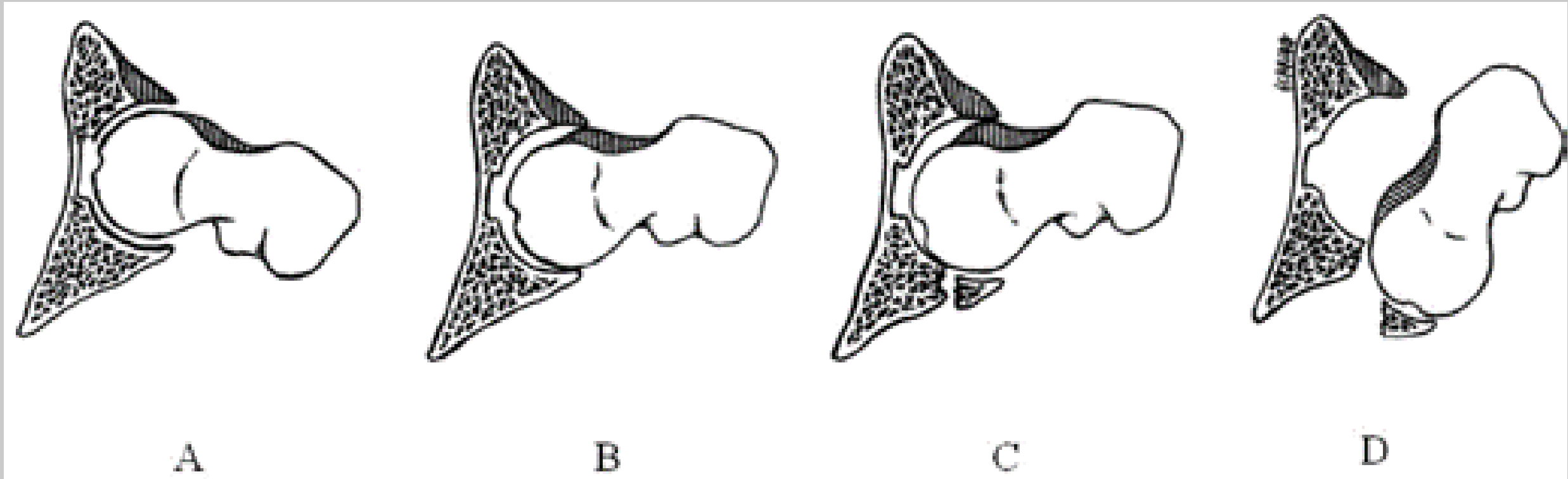
This CAM deformity that can lever against the anterior rim in flexion with resultant posterior subluxation/dislocation they termed....

”Impingement Induced Instability”



# Relationship of FAI to Posterior Hip Dislocation

Anterior



Posterior



# Prevalence of FAI

## Beck et al, 2005

- Analyzed 302 FAI hips
- Isolated CAM impingement only found in 26 patients (8.6%)
- Isolated Pincer impingement only found in 16 patients (5.3%)
- MIXED accounted for the remaining 86.1% of affected hips
- Also observed that overall area of cartilage damage in isolated CAM lesions was far greater than the damage seen in isolated Pincer lesions



# Prevalence of FAI

## Gosvig et al, 2010

- Studied 4151 radiographs of asymptomatic patients
- CAM impingement
  - 19.6% of men
  - 5.2% of women
- PINCER impingement
  - 15.2% of men
  - 19.4% of women





# Prevalence of FAI

## Hack et al, 2010

- Analyzed 200 asymptomatic hips with MRI
- 14% with at least one hip with CAM impingement
- 3.5% had bilateral lesions
- 79% of all CAM lesions found in men



# Prevalence of FAI

## Weir et al, 2011

- Analyzed 68 hips with X-ray and clinical exam
  - 44 hips had long standing adductor related groin pain (other 24 hips served as asymptomatic controls)
- 94% had radiological evidence of FAI (64/68)
- Long standing adductor related groin pain should highly raise the suspicion of FAI!!



# Prevalence of FAI

## Larson et al, 2013

- 39 asymptomatic professional hockey players, MRI revealed
- 64% had hip pathology
- 56% had labral tears
  
- NFL combine (unpublished data)
  - 90% had x-ray evidence of FAI



# Prevalence of FAI

## Frank, et al, 2015 = Systematic Review

- In 2,114 ASYMPTOMATIC Volunteers from 26 studies (from 237 possible studies)
  - Average age =  $25.3 \pm 1.5$  yrs
  - Overall CAM prevalence = 37%
    - Prevalence in athletic vs. general populations (54.8% vs. 23.1%)
  - Overall PINCER prevalence = 67%
    - Prevalence in athletic vs. gen pop (49.5% vs. 50.5%)
  - Overall labral pathology = 68%
- 4 studies showed nearly all patients with labral tears had some degree of FAI



# Clinical Presentation of FAI

- Commonly presents in healthy, active teenagers to adults up to 50 yo
- C/C is deep intermittent discomfort/pain during or post activity as indicated by **“C” sign** (Philippon et al, 2007)
- Kaplan et al, 2010 cautions that it is often years between onset of S/S and a definitive diagnosis
- Often misdiagnosed as a groin strain early on leading to weeks, months, years of inappropriate management and frustration
- Thomas et al, 2013 recommends thorough comprehensive pain history



# C-Sign



# Clinical Presentation of FAI

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- Thomas et al, 2013 recommends thorough comprehensive pain history



# Clinical Presentation of FAI

- C/C is deep intermittent discomfort/pain during/post activity progressing to constant pain as condition worsens
  
- Pain is exacerbated by:
  - Hip flexion activities
  - Prolonged sitting, especially in lower chairs
  - Sexual intercourse, especially in women (dyspareunia)
  
- Pain often described in “groin,” lateral hip or buttock





# Clinical Presentation of FAI

- Pain possibly referred to the anterior thigh, pubic symphysis, knee and ipsilateral testicle in men
- Night pain has also been reported
- Decreased function (ADL's and/or performance)
- Unilateral presentation is typical but bilateral is not uncommon
  - If bilateral, usually one hip more symptomatic



# Differential Diagnosis

Hansen et al, 2013

- Sacroiliitis
- Degenerative disc disease
- Adductor strain
- Femoral head necrosis
- Psoas tendinopathy
- Pubic rami fracture
- Stress fracture



# Differential Diagnosis

Hansen et al, 2013

- Trochanteric bursitis
- Sports Hernia
- Athletic pubalgia
- Snapping hip syndrome
- Traumatic acetabular labral tears
- **Osteoarthritis**



# Osteoarthritis

- There are many conditions that can lead to OA
- FAI is major player in OA development as these patients age and do NOT get diagnosed early OR treated properly! (Ganz et al, 2003)
- Hansen et al, 2013 describes FAI as a *“Pre-arthritic State”*
- Lung et al, 2012 retrospectively studied pre-op x-rays of 82 patients (<55 yo, ave = 49 yo) who had total hip replacement surgery for OA!!
  - 36% had definite FAI
  - 33% definitely did NOT have FAI
  - Remaining 31% had possible FAI (probably??)



# Osteoarthritis

## ➤ OA Risk factors include:

- Age > 50 yo
- Males
- Obesity
- Childhood hip dysplasia (LCP, SCFE, etc)
- Ligamentous instability
- Heavy manual labor
- Previous injury (i.e. posterior hip dislocation)
- Anatomical abnormalities i.e. **FAI**....



# Clinical Examination of FAI

- History and exam are very important in diagnosing etiology of hip pain!
- Several pearls to be taken from this section
- Although FAI causes pain, you cannot palpate it!

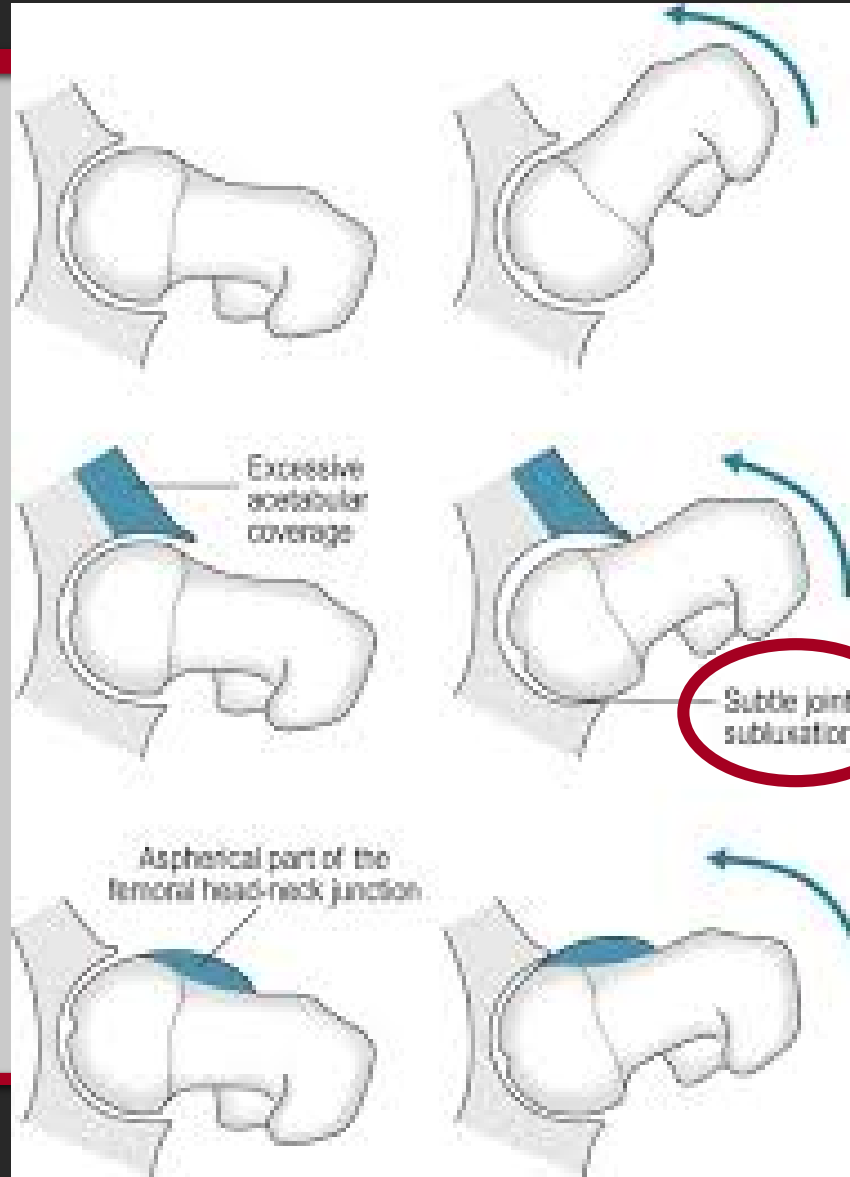


# Clinical Examination - ROM

- **Limited ROM especially in**
  - Flexion
  - Internal rotation
  - Adduction
  - Abduction as well, but not as common
  
- **Antalgic or Trendelenburg gait**



# How lesions limit ROM



**Normal**

**Pincer**

**Cam**





# Clinical Examination – Special Tests

## ➤ Can be very helpful in detecting FAI

- Anterior Impingement Test
- Posterior Impingement Test
- FABER Test
- Log Roll Test
- McCarthy Sign



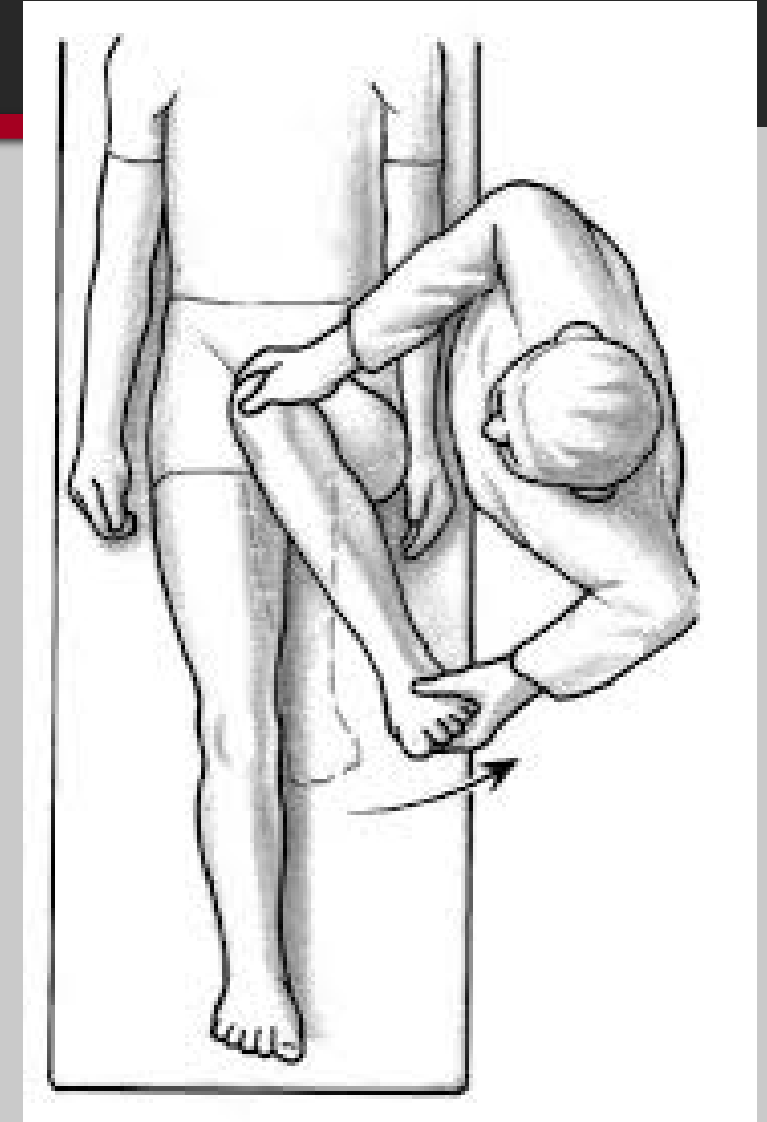
# Clinical Examination – Anterior Impingement Test

AKA - Impingement Test or **FADIR** = **F**lexion, **A**dduction, **I**nternal **R**otation

- Supine, hip and knee at 90 degrees
- Adduct and internally rotate
- (+) test includes pain, decreased ROM, replication of S/S
- Detects FAI



# Clinical Examination – Anterior Impingement Test



# Clinical Examination – Diagnostic Accuracy of Anterior Impingement Test

## ➤ Byrd, 2007

- More sensitive for FAI but it is often uncomfortable in most irritated hips

## ➤ Philippon et al, 2007

- 301 surgically treated FAI hips
- 99% had a (+) Impingement Test
- Also found an average 9° degree deficit in flexion ROM



# Clinical Examination – Diagnostic Accuracy of Anterior Impingement Test

## ➤ Hananouchi et al, 2012

- Examined 107 hips (normal, painful, FAI confirmed, and dysplastic)
- Diagnostic values for all hips
  - Sensitivity = 50.6%
  - **Specificity = 88.9%**
  - **Positive predictive value = 95.7%**
  - Negative predictive value = 26.7%

## ➤ Conclusion: Anterior Impingement Test can be useful in detecting FAI, enough so to solicit further testing to rule in/rule out the pathology



# Clinical Examination – Posterior Impingement Test

## AKA – Apprehension Test

- Supine with legs hanging over table edge
- Hip is extended and externally rotated
- (+) test includes pain or clicking
- Proposed to detect labral tears or chondral lesions??



# Clinical Examination – Posterior Impingement Test



# Clinical Examination – Diagnostic Accuracy of Posterior Impingement Test

- **Very limited published diagnostic values**
  - Occasionally positive (Ganz et al, 2003)
  - 22% positive (Clohisy et al, 2009)
- **Virtually nothing in the literature about this test for FAI but some info for labral tears/chondral lesions**





# Clinical Examination – FABER Test

- AKA - Patrick's Test, Figure 4 Test
- **FABER** = **F**lexion, **AB**duction, **E**xternal **R**otation
  - Supine with ipsilateral ankle above contralateral knee (figure 4 position)
  - Apply force on ipsilateral ASIS while performing downward displacement of knee
  - (+) test is asymmetry of the distance between the knee and table top
    - Greater than 4cm difference (Philippon, et al, 2012)



# Clinical Examination – FABER Test

Negative



Positive



Thanks Julia!

# Clinical Examination – Diagnostic Accuracy of FABER Test

- **Philippon et al, 2007**
  - 301 surgically treated FAI hips
  - 97% had a (+) FABER Test
- **Authors also observed no arthroscopic evidence of direct mechanical impingement with this test**
  - (+) test is probably due to patient apprehension due to provocation of pain??



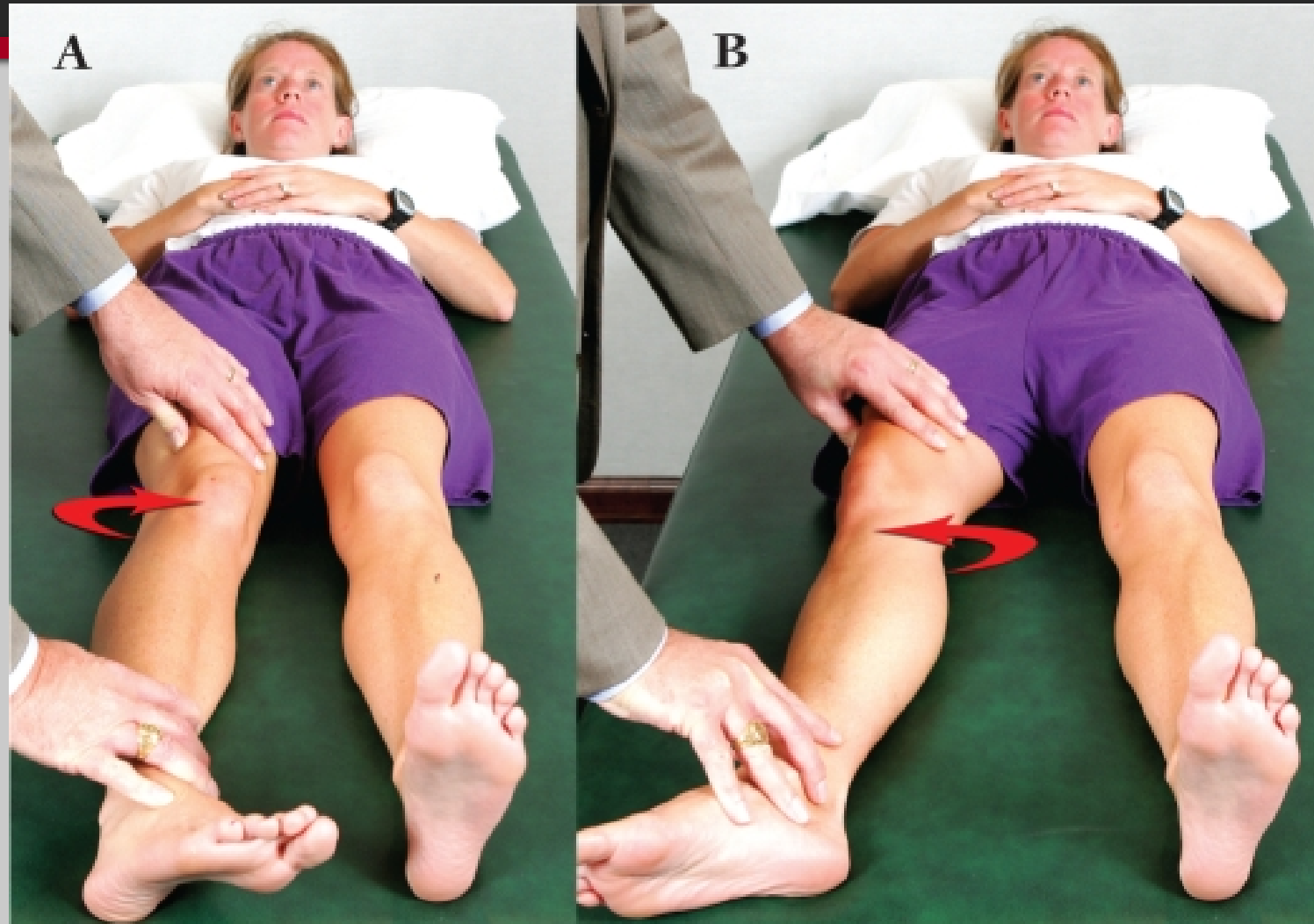
# Clinical Examination – Log Roll(ing) Test

- Patient supine
- Start with foot/ankle perpendicular to table
- Maximally roll “leg” between IR and ER
- Compare bilaterally for ROM deficit/pain
- (+) test indicated by increased ER or reproduction of “groin” pain during IR
- Detects labral tears, chondral lesions, general pathology??





# Clinical Examination – Log Roll Test



(Byrd, 2007)



# Clinical Examination – Diagnostic Accuracy of Log Roll Test

➤ No published diagnostic values

➤ **Byrd, 2007**

- Most specific test for hip jt. pathology
- (+) in many irritated hips regardless of pathology

➔ “Absence of a positive log roll test does not preclude the hip as a source of symptoms, but its presence greatly raises the suspicion.”



# Clinical Examination – McCarthy Sign (Test)

AKA – Hip flexion to extension maneuver

- Patient supine with both knees flexed up to chest
- While holding unaffected side, slowly lower affected hip into extension (similar to Thomas Test)
- (+) test indicated by reproduction of painful click/catch
- Proposed to detect labral tears??
- No published diagnostic values



# Clinical Examination – McCarthy Sign (Test)



Thanks again, Julia!





# Review of Clinical Exam Tests

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- Anterior Impingement and FABER tests should ALWAYS be performed to rule in/out FAI
- Others tests performed = possibly assist with **clinical diagnosis?**



# Typical Presentation – Clohisy et al, 2009

## ➤ 52 hips with FAI (57% male, ave age 37 yo)

- 65% insidious onset and activity related
- 83% described as “groin” pain
- Ave time to diagnosis = 3.1 years
- Ave HCPs seen until Dx = 4.2
- 65% had aggravation/pain with sitting
- (+) FABER test = 98.7%
- (+) Anterior Impingement Test - 88%
- (+) Log Roll test = 30%
- Ave ROM deficit = 9°



# Imaging

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- Very important in detecting FAI
- Depending on the study, often misread, thus delaying diagnosis
- Many techniques in the toolbox to rule in/rule out FAI



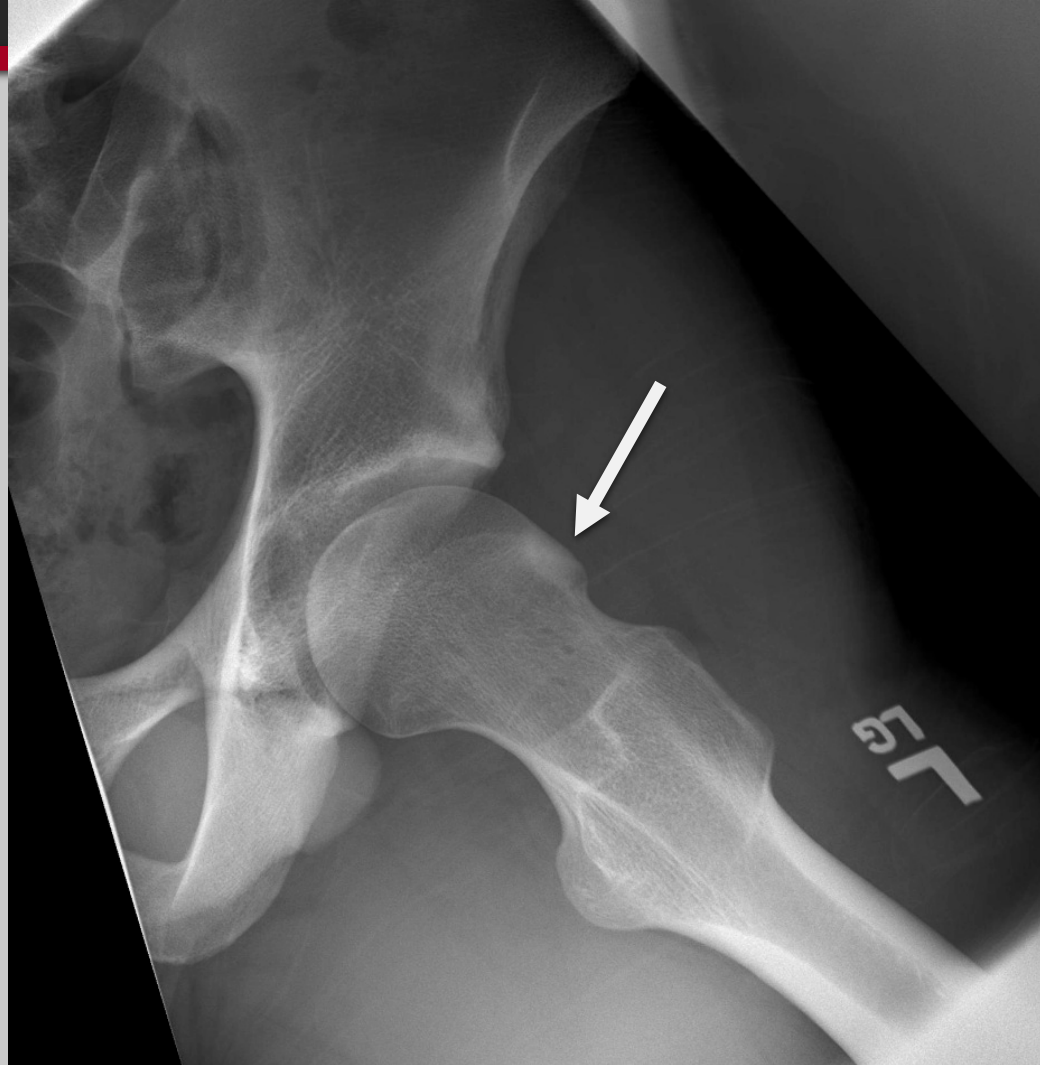
# Imaging – Plain Radiographs

- Very, very helpful → diagnosis can be made right here!
- However, often read as normal = a negative x-ray does NOT rule out FAI
  - Findings can be very subtle and often missed on initial x-ray
- Combine physical exam findings with thorough reading of x-ray should dictate further course of action



# Imaging – Plain Radiographs

**CAM**



# Imaging – Plain Radiographs

**CAM**



# Imaging – Plain Radiographs

**CAM**





# Imaging – Plain Radiographs

**PINCER**





# Imaging – Plain Radiographs

**MIXED**



# Imaging – MRI Arthrogram (MRA)

- **Gold standard for labral tear diagnosis**
  - Either confirming clinical diagnosis or actually making the initial diagnosis
- **Contrast dye easily visualizes lesions**
- **Remember function of labrum was to seal the joint from synovial fluid leakage??**



# Imaging – MRA

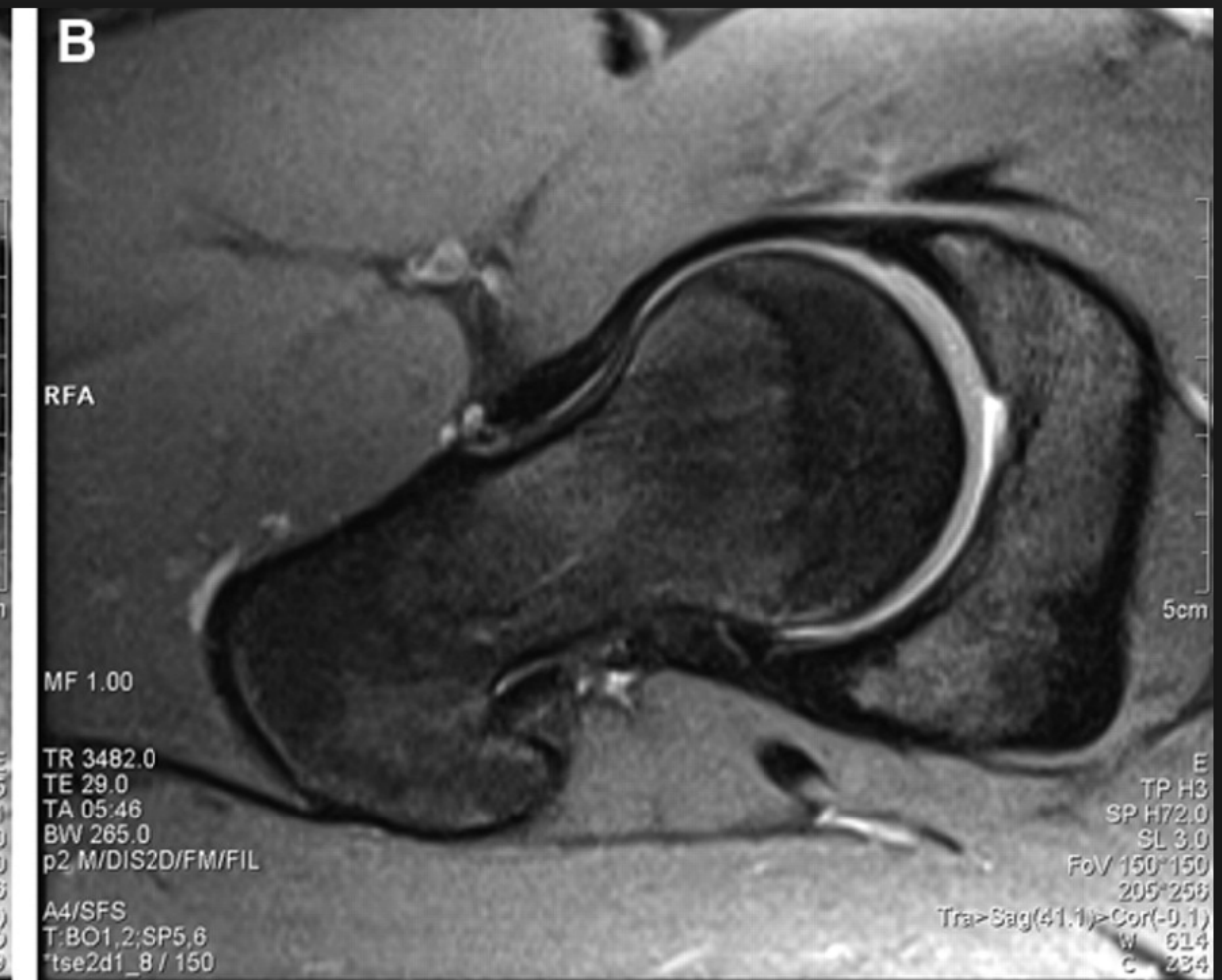
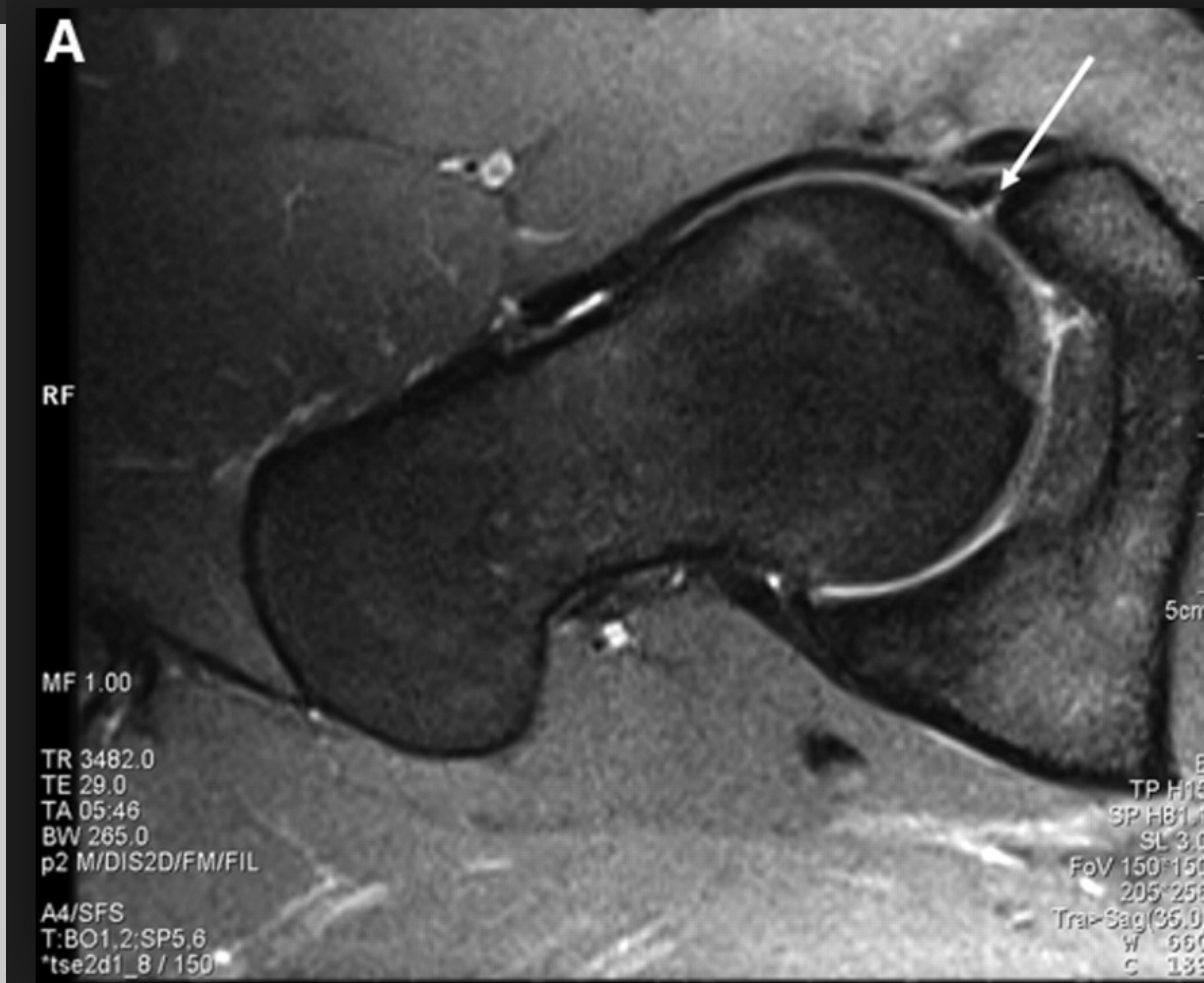


# Imaging – MRA





# Imaging – MRA



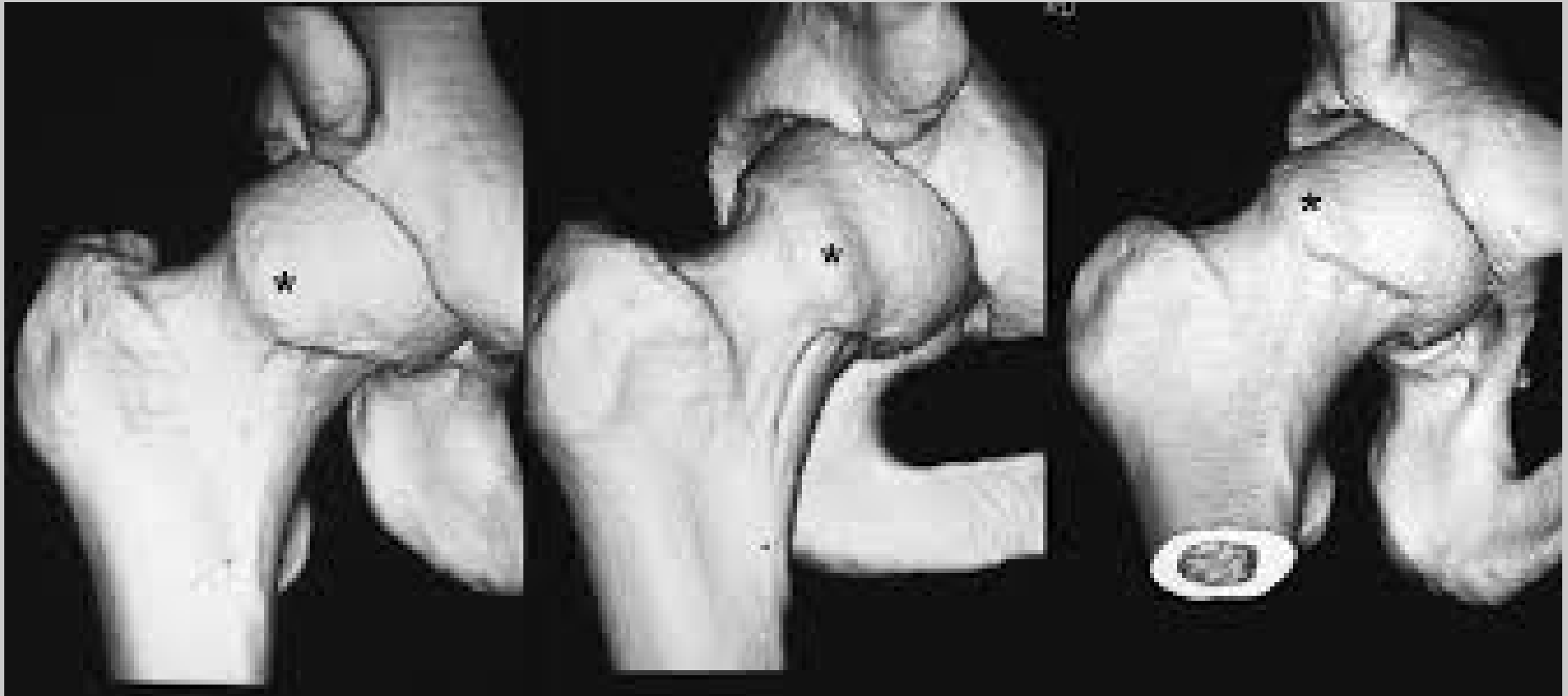
# Imaging – CT in 3D

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- Gold standard for detecting CAM lesion (Ross et al, 2014)
- Can be very helpful in very subtle cases
- Also used preoperatively in planning complex surgical cases



# Imaging – 3D CT



# Imaging – 3D CT





# Imaging – Ultrasound

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- **Becoming more commonly used especially for CAM Impingement diagnosis (Lerch, 2013)**
  - Less expensive
  - Quicker results



# Treatment – Goals

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- Provide symptomatic relief of S/S
- Provide functional improvement (ADLs and activity)
- Potentially modify the disease process
- Prevent/delay the onset of OA\*\*



# Treatment – Options

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- **Conservative = non-surgical mgmt**
- **Surgery = 2 options**
  - Arthroscopic vs. Open dislocation



# Treatment – Conservative

- **SOP = Non-surgical management should ALWAYS attempted on ALL patients**
- **Involves:**
  - Activity modification
  - NSAIDs to control S/S
- **Contraindications include:**
  - Stretching to increase ROM, especially flexion and internal rotation
  - Squatting below 45 degrees



# Treatment – Conservative

Emara et al, 2011

- 37 patients (27 males, 10 females) treated conservatively for mild FAI
- Tx involved avoidance of pain provoking activities, NSAIDs, stretching ABD, ER in extension, proper sitting mechanics (**figure 4 vs. W position**), avoidance of sitting with hip at 90 degrees, avoidance of cycling, et al.



# Sitting positions



**AVOID this one!**



**REPLACE with this one!**



# Treatment – Conservative

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Emara et al, 2011

- Harris Hip Scores improved significantly both at 6 mo and 24 mo follow-up
- Only 4 patients had surgery b/c conservative intervention failed



# Treatment – Conservative

Wall et al, 2013 states:

- Literature filled with recommendation of non-operative Tx despite weak evidence that it works = OPINION
  - Need RCT to figure this out

Ege et al, 2014 states:

- Conservative mgmt. consists of rest, NSAIDs, activity modification and NO PT!! And recommend surgery.....





# Treatment – Surgery

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- **Surgical procedures are now very common**
  - Even in adolescent patients
- **Being performed in an effort to improve quality of life**
- **Potentially decrease risk for OA development\*\***



# Treatment - Surgical Procedures

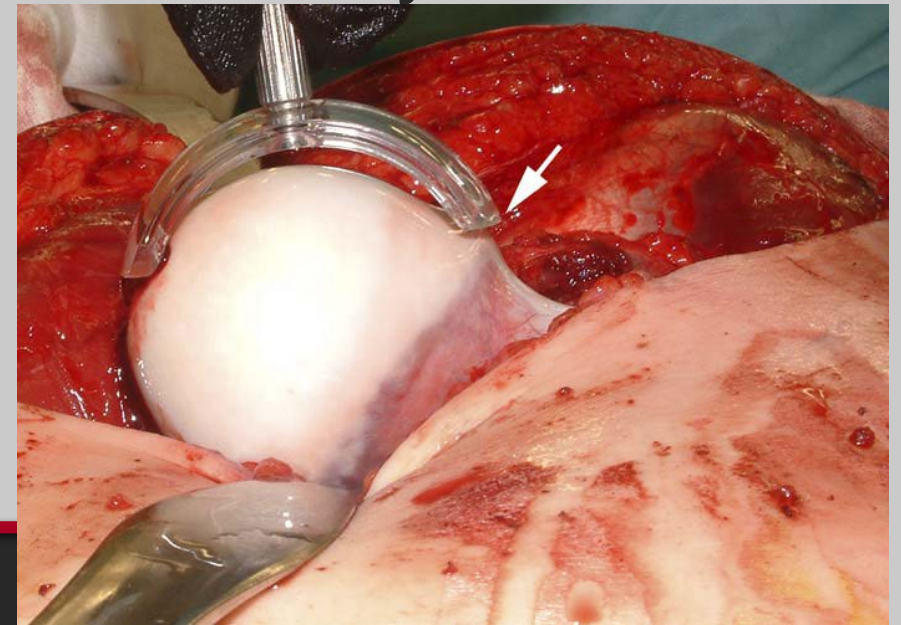
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- Bone reshaping
- Debridement
- Microfracture
- Resection
- Repair



# Treatment – Open Surgery

- Very invasive
- Involves open dislocation of hip joint
- Provides better access and visualization of the lesions
- All surgical procedures can be completed more easily
- Longer rehab
- Higher complication rate



# Treatment – Arthroscopy

- Minimally invasive
- Involves NO dislocation of hip joint
- Provides less access and visualization of the lesions
- All surgical procedures can be performed but with more difficulty
- Requires more skill and training to perform (steep learning curve)
- Shorter rehab
- Lower complication rate



# Treatment – Surgical Outcomes



Pre-Op

**CAM**



Post-Op





# Treatment – Surgical Outcomes



Pre-Op

**CAM**



Post-Op



# Treatment – Surgical Outcomes



Pre-Op

P  
I  
N  
C  
E  
R



Post-Op



# Treatment – Surgical Outcomes

- Surgical intervention works by reducing/eliminating S/S and increasing/returning to pre-op activity levels in the majority of patients (Ng et al, 2010)
- Certain FAIs best treated with scope while others treated with open procedure
- Most surgeons agree that repair/re-fixation is superior to resection/debridement for long term joint health and to prevent early onset OA (Meulenkamp et al, 2014; Larson, et al, 2009 & 2012: et al)
- Is arthroscopic better than open?
  - Currently, there is no significant difference in outcomes for either option (Bedi et al, 2008; Larson et al, 2014)





# Treatment – Surgical Outcomes



# Surgery – Who is a good candidate?

Larson, 2015

- Groin/Anterior hip pain with ROM testing
- Pain with sports/sitting/twisting activities
- (+) x-rays for deep socket, aspherical femur and NORMAL JT SPACE
- (+) Anterior Impingement Test
- Best candidate in teens and twenties
  - Rarely performed in > 60 yo range



# Surgery – Who is a poor candidate?

Larson, 2015

- Posterior hip/low back pain
- Predominant posterolateral palpable pain
- Constant aching pain at rest /night
- Regular use of narcotics for pain
- Using a cane or other assistive devices/Walking with a limp
- (+) x-rays for NARROWING/ABNORMAL JT SPACE
- Severely decreased hip ROM (advanced OA)



# Treatment – Rehabilitation

- **Protocols vary by surgeon and surgical procedure(s) but all include:**
  - Initial non or PWB for 2-8 weeks
    - Longer with microfracture and/or open procedures?
  - Increasing ROM safely
  - Increasing strength
  - Avoidance of positions creating impingement especially prolonged sitting
  - RTP = 3-6 months depending on specific circumstances
    - Full bony remodeling takes 3 months!!!
- **FOLLOW the surgeons directives – not very complicated**



# Treatment – Rehabilitation Samples

## ➤ **Byrd et al, 2010:**

- Avoid early extreme Flex and Ext Rot ROM
- PWB includes correct 4 point gait pattern
- No high impact or twisting in first 2-3 months
- Microfracture slows down the whole process

## ➤ **Bennel et al, 2014**

- Crutches prn until pain free and no limp (1-10 days)
- Avoid flexion beyond 90o for 6 wks
- No pivoting or twisting
- No prolong sitting



# Conclusions

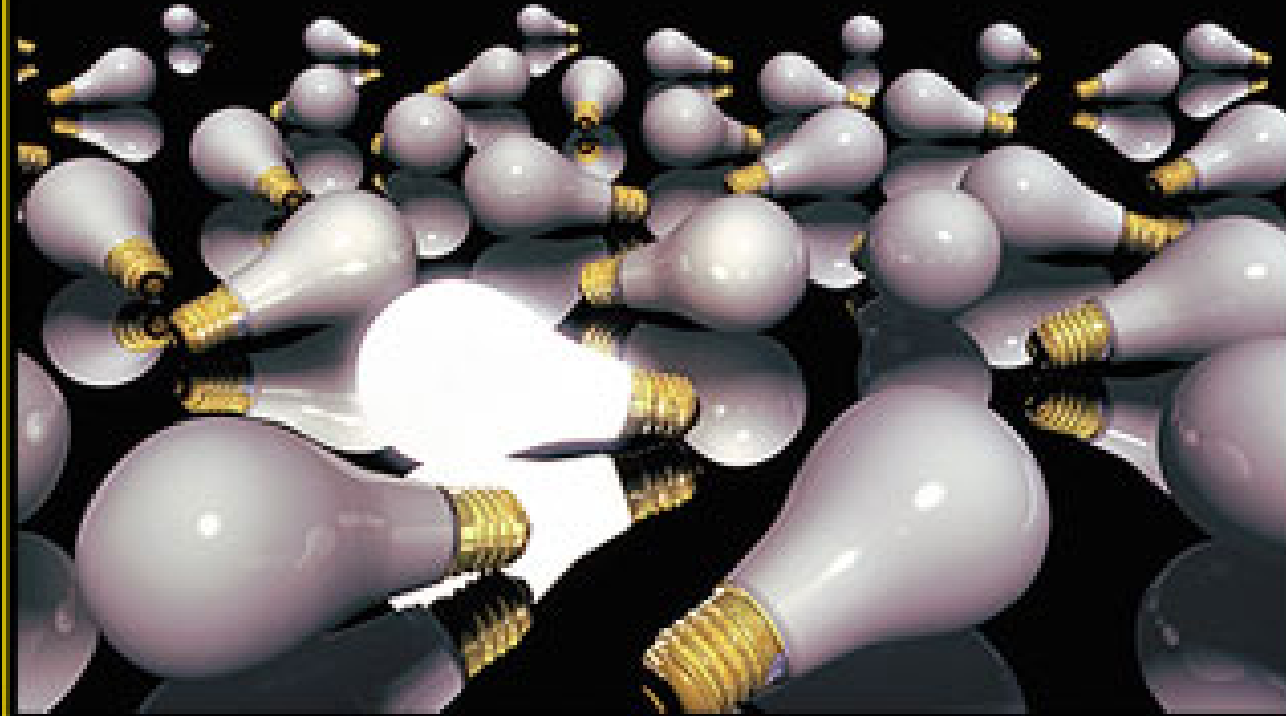
- FAI should must be suspected in young patients with hip pain
- FAI is quite common but NOT too difficult to diagnose
- FAI diagnosis must not be missed early on as delayed intervention causes more damage and higher chance of developing OA
- All patients should consider conservative management before considering surgery
- Surgical intervention is the definitive treatment



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*That's all Folks!*





# CLUELESSNESS

THERE ARE NO STUPID QUESTIONS,  
BUT THERE ARE A LOT OF INQUISITIVE IDIOTS.

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Scott T. Doberstein, MS, ATC, LAT ©2015





# Thank you.....

and enjoy the  
remainder  
of the symposium!

