The Intricacies of Femoroacetabular Impingement Syndrome: The Most Researched Condition in Sports Medicine Today?

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Overview

- Background/History/Problem
- Etiology
- Anatomy/Pathomorphology
- Prevalence
- Clinical Presentation and Exam
- Differential Diagnosis/Osteoarthritis
- Imaging
- Treatment/Rehabilitation
Femoroacetabular Impingement (FAI)

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........
Pathological hip condition characterized by:

ABNORMAL CONTACT BETWEEN FEMORAL HEAD/NECK AND ACETABULUM

Osseous lesions can create contact within normal hip ROM

Repeated abutment of bony structures leads to labral and/or articular cartilage damage

All this over time may lead to early development of:

OSTEOARTHRITIS (OA) (Ganz, 2003; Lung, 2012; Hansen, 2013)
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)

These observations, especially IN YOUNGER PATIENTS, prompted 2 questions……

1. Why so many labral tears/intra-articular damage?
2. Why so much OA?

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 15 years of significant publishing!

➢ 2016 – Egger & Rosneck → One of the most researched conditions in sports medicine today!!
FAI is a SYNDROME!

➢ Warwick Agreement – 23 experts gathered in 2016 to write an International Consensus Statement (Griffin et al, 2016)

➢ New working definition –

“FAI syndrome is a motion-related clinical disorder of the hip with a triad of symptoms, clinical signs and imaging findings. It represents symptomatic premature contact between the proximal femur and acetabulum.”
Warwick Agreement (Griffin et al, 2016)

“5 essential elements” of FAI Syndrome

- 1. Abnormal morphology of the femur and/or acetabulum
- 2. Abnormal contact between these 2 structures
- 3. Especially vigorous supraphysiological motion that results in such abnormal contact and collision
- 4. Repetitive motion resulting in the continuous insult
- 5. Presence of soft tissue damage
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 significant Hx
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
Etiology of FAI

➢ FAI can occur in NORMAL hips as a result of repetitive, extreme/forced ROM (especially flexion, adduction, internal rotation)

➢ Predisposing sports/activities
  • Hockey (especially goalies)
  • Hurdlers
  • Weight lifting
  • Soccer
  • Martial arts
  • Equestrian
  • Dance
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 joint loads increase to 8x BW (Crowninshield, 1978)
    - Provide seal for joint capsule to keep synovial fluid from leaking out, thus maintain joint 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


Pathomorphology - Cam

- **FEMORAL** morphology described many ways:
  - Incomplete spherocity/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

→ Typically seen more in younger, active males
Pathomorphology - Cam

Pistol Grip Deformity

**Remember this when we get to x-rays**
Pathomorphology - Cam

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Pathomorphology - Cam

NORMAL

CAM
Pathomorphology - Cam
Pathomorphology - Cam

→ Damage pattern
Pathomorphology - Pincer

- **ACETABULAR** morphology described many ways:
  - Acetabular socket is deeper
  - Socket is abnormal but femoral head shape is normal
  - *Overcoverage* of anterorsuperior 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

NORMAL

PINCER
Pathomorphology - Pincer
Pathomorphology - Pincer

→ Damage pattern
Kissing Lesion

Damage Pattern

Espinosa et al, 2006
Review of CAM and PINCER Lesions

Normal  Cam Lesion  Pincer Lesion
Pathomorphology - Mixed

➢ Combination of both morphologies
  - Head/neck prominence  **AND** acetabular overcoverage

➢ This is the most common pathomorphology!
Pathomorphology - Mixed

NORMAL

MIXED

FAIS - Pincer + CAM deformities
Review of all 3 lesions

- Normal
- Cam
- Pincer
- Mixed
Prevalence of Morphology - Overall

Mascarenhas et al, 2015

<table>
<thead>
<tr>
<th></th>
<th>Cam Only</th>
<th>Pincer Only</th>
<th>Mixed</th>
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<tbody>
<tr>
<td>Athletes n = 1389 hips</td>
<td>66.4 %</td>
<td>51.2 %</td>
<td>57.1 %</td>
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<tr>
<td>Asymptomatic n = 7282</td>
<td>22.4 %</td>
<td>57.0 %</td>
<td>8.8 %</td>
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<tr>
<td>Symptomatic n = 4169</td>
<td>49.0%</td>
<td>28.5 %</td>
<td>40.2 %</td>
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Radiographic evidence of morphology
Prevalence – Symptomatic Patients

Beck et al, 2005
- Analyzed 302 FAI hips
- Isolated CAM impingement only = 26 patients (8.6%)
- Isolated PINCER impingement only = 16 patients (5.3%)
- MIXED accounted for the remaining 86.1% of affected hips

Nepple et al, 2012
- NFL combine players with hip pain = 94% had radiographic evidence of morphology
Prevalence – Asymptomatic Patients

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 morphology
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)
C-Sign is a clinical sign of intra-articular hip pathology (Clohisy et al, 2009)
Clinical Presentation of FAI

- 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.
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 for 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 (Ege et al, 2015)
- Complaints of catching, clicking, locking or giving way indicating labral pathologies (Ege et al, 2015)
- Decreased function (ADL’s and/or performance)
- Unilateral presentation is typical but bilateral is not uncommon
  - If bilateral, usually one hip more symptomatic
Warwick Agreement (Griffin et al, 2016)

“The primary symptom of FAI syndrome is motion-related or position-related pain in the hip or groin. Pain may also be felt in the back, buttock or thigh. In addition to pain, patients may also describe clicking, catching, locking, stiffness, restricted ROM or giving way.”
Differential Diagnosis (Hansen et al, 2013)

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

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

- Osteoarthritis
Osteoarthritis

➢ Many hip 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
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)
  - Actual FAI Syndrome
Cam Morphology vs. Impingement

Agricola et al, 2013, Kilj et al, 2018

- **Cam Morphology = No OA (no labral or articular damage)**
  - Morphology very common in athletes and non-athletes
  - AQUIRED during in adolescence while skeleton is maturing
    - Due to loading patterns in sports (especially hockey, basketball, soccer)
  - Prevalence in skeletally mature NON-athletes = 9%
  - Prevalence is skeletally mature ATHLETES = 89%
Cam Morphology vs. Impingement

Agricola et al, 2013, Kilj et al, 2018

- **Cam Impingement = OA**
  - This is FAI whereas the morphology alone is not the syndrome of FAI
  - OA develops due to damage pattern of delamination of articular cartilage and labral pathology
Pincer Morphology vs. Impingement

Agricola et al, 2013, Kilj et al, 2018

- **Pincer Morphology** = No OA
  - Evidence shows that this morphology might even have a protective effect?
  - The different damage pattern (labral tears) is not related to OA

- **Pincer Impingement** = Maybe OA
  - Actual Pincer impingement MAY lead to OA but to a much lesser extent than Cam Impingement

*REMEMBER* – Most FAI is MIXED but this data is only lesions in ISOLATION!

NO current data on the development of OA in Mixed FAI but expert opinion believes high rates of OA with mixed pathology as well
Clinical Examination of FAI

➢ History and exam are KEY in diagnosing ANY etiology of hip pain!

➢ Several pearls to be taken from this section

➢ Although FAI causes pain, you cannot palpate it!
Clinical Examination – ROM & Strength

  - Flexion*
  - Internal rotation*
  - Adduction*
  - External Rotation

- **Limited Strength especially in:** (Casartelli et al, 2012, Freke et al, 2017, Frasson et al, 2018)
  - Flexion*
  - Adduction*
  - Abduction*
  - Extension
  - External Rotation

**All compared to healthy controls**
Clinical Examination – ROM & Strength

- Impaired TFL activation (Casartelli et al, 2012)

- Gluteus Maximus speed of activation improves significantly after arthroscopic correction of CAM FAI (Seijas et al, 2018)
  - GM was significantly slower preoperatively than 1 yr post op
How lesions limit ROM? = bony block

Normal

Pincer

Cam
Clinical Examination – Altered Movement Patterns

➢ Antalgic or Trendelenburg gait due to pain, decreased ROM and strength (Ege et al, 2015, Carsartelli et al, 2018)

➢ Specific GAIT alterations are different between sexes (Lewis et al, 2018) (Compared to healthy controls)
  - In MALES with FAI
    - 6° more hip flexion, 8° less hip extension, 5.3° more anterior pelvic tilt,
  - In FEMALES with FAI
    - 1.9° less hip extension, 3.8° more hip adduction, 3.2° less hip abduction, no differences in pelvic tilt

➢ Single-Leg Step-Down Maneuver (Lewis et al, 2018)
  - M/F w/ FAI – performed maneuver with 4.9° more hip flexion, 4.1° more anterior pelvic tilt
  - Female w/ FAI – performed maneuver with 6.1° more hip flexion, 5.8° more anterior pelvic tilt, 4.8° more hip adduction 2.7° more thigh adduction
Clinical Examination – Special Tests

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 = Flexion, Adduction, Internal Rotation

➢ Supine, hip and knee at 90 degrees
➢ Adduct and internally rotate
➢ (+) test includes pain, decreased ROM, replication of S/S
➢ Replicates bony abutment
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

➢ Martin et al, 2008
  - Sensitivity = 78%
  - Specificity = 10%
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 = 3.3
  - Negative predictive value = .53
Reiman et al, 2015 (Meta-analysis)
- Used 4 studies including 319 hips
- Diagnostic values
  - Sensitivity = 99%
  - Specificity = 5%
  - Positive predictive value = 1.04
  - Negative predictive value = .14

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 tables edge
- Hip is extended and externally related
- (+) 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

➢ No published diagnostic values
  • Occasionally positive (Ganz et al, 2003)

➢ 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 = Flexion, Abduction, External Rotation
  - 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

➢ Martin et al, 2008
  • Sensitivity = 60%
  • Specificity = 18%
  • + Likelihood Ratio = .73
  • - Likelihood Ratio = 2.2

**Many authors also observed no arthroscopic evidence of direct mechanical impingement with this test
  • THEORY = (+) 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…yet?

➢ Byrd, 2007
  - Most specific test to rule out hip joint pathology (true negative)
  - (+) in many irritated hips regardless of pathology (highly sensitive for any hip 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...yet?
Clinical Examination – McCarthy Sign (Test)

Thanks again, Julia!
“Diagnosis of FAI syndrome does not depend on a single clinical sign; many have described and are used in clinical practice. Hip impingement tests usually produce the patient’s typical pain; most commonly used test (FADIR) is sensitive but not specific. There often is limited hip ROM, typically restricted internal rotation and flexion.”
Imaging

- Very important part in detecting FAI
- Depending on the imaging technique, often misinterpreted, thus delaying diagnosis
- Many imaging techniques to assist in ruling in/ruling out FAI
Imaging – Plain Radiographs

- Very, very helpful → initially but....

- Often read as normal = a negative x-ray does NOT rule out FAI
  - Findings can be very subtle and often missed on initial reading

- Combine physical exam findings and patient dysfunction with thorough reading of x-ray MUST 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

Pistol Grip Deformity
Imaging – MRI Arthrogram (MRA)

- Gold standard for labral tear diagnosis (Ross et al, 2014)
  - 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

➢ 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
Warwick Agreement (Griffin et al, 2016)

“Symptoms, clinical signs and imaging findings MUST present to diagnose FAI syndrome!”
Treatment – Goals

➢ 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

- Conservative = non-surgical, rehab only

- Surgery = arthroscopic vs. open dislocation with rehab
Treatment – Conservative

➢ Non-surgical management should ALWAYS attempted on ALL patients = SOP

➢ Involves:
  - Rest
  - Activity modification
  - NSAIDs to control S/S

➢ Do not include/allow:
  - Stretching to increase ROM, especially flexion and internal rotation
  - Squatting below 45 degrees
  - Prolonged sitting
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!
Emara et al, 2011

- 37 patients (27 males, 10 females) treated conservatively for mild FAI
- Harris Hip Scores improved significantly both at 6 mo and 24 mo follow-up
- Only 4 patients had surgery b/c conservative intervention failed
Kekatpura et al, 2017

- 83 patients (97 hips) – All had at least 3 months of rehab
- 56.4% returned to normal ADLs
- 43.6% had arthroscopic surgery to reach normal ADLs (conservative intervention failed)
- Both groups had no significant differences in clinical scores upon completion of return to ADLs post intervention
Currently this treatment option is NOT based on high level evidence, but….

RCTs are currently underway to determine its true value!!!!
Treatment – Surgery

➢ Most commonly cited pathology requiring arthroscopic intervention (Egger et al, 2016)

➢ Surgical procedures are now very common = In recent years, arthroscopy Tx has increased almost 400% (Kemp & Risberg, 2018)
  • More and more in younger and even in adolescent patients!

➢ On average, 87% of athletes RTP and 82% at same level before S/S started (Casartelli et al, 2015)

➢ Being performed in an effort to improve quality of life

➢ Potentially decrease risk for OA development?
Treatment - Surgical Procedures

- Bone reshaping
- Debridement
- Microfracture
- Resection
- Repair
Treatment – Open Surgery

Zaltz et al, 2014

➢ Very invasive but gold standard (Zaltz et al, 2014)
➢ Involves open dislocation of hip joint
➢ Provides better access and visualization of the lesions
➢ All surgical procedures can be completed more easily
➢ Prolonged rehab
➢ Higher complication rate
Treatment – Arthroscopy

Zaltz et al, 2014

- 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 but higher revision surgery rate
Treatment – Surgical Outcomes

Pre-Op

CAM

Post-Op
Treatment – Surgical Outcomes

Pre-Op

CAM

Post-Op
Treatment – Surgical Outcomes

Pre-Op

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)
Treatment – Surgical Outcomes

Zatlz et al, 2014

➢ BOTH options have similar results
➢ Patient’s individual circumstance should dictate their specific procedure(s)
  • Some will need and do better with open technique
  • Some will need and do better with arthroscopic technique
Treatment – Rehabilitation (surgery)

- Protocols vary by surgeon and surgical procedure(s) but all include:
  - Initial NWB or PWB for 2-8 weeks
  - Longer with microfracture and/or open procedures?
  - Increasing ROM safely
  - Increasing strength
  - Avoidance of positions creating impingement!
  - ETC……..

- FOLLOW the MDs directives – not very complicated
- Nothing earth shattering here….sorry…..
Treatment – Rehabilitation (conservative)

- Protocols vary by MD should all include:
  - Emphasis on activity modification
  - Avoid activities/movements that exacerbate S/S
  - NSAIDs
  - Increasing strength of all hip musculature
  - Increasing hip mobility (not flexion, adduction and internal rotation)
  - Also focus on posture, body control and core strength

- Nothing earth shattering here either…. 
“FAI syndrome can be treated with conservative care, rehabilitation or surgery. **Conservative care** may involve education, watchful waiting, lifestyle and activity modification. **Therapy led rehab** aims to improve hip stability, neuromuscular control, strength, ROM and movement patterns. **Surgery**, either open or arthroscopic, aims to improve hip morphology and repair damaged tissue. The **good management** of the variety of patients with FAI syndrome **requires the availability** of all of these approaches.”
Conclusions

➢ FAI should 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 try conservative management before considering surgery
➢ Surgical intervention can be the definitive treatment
That's all Folks!