

Hip Pain in Athletes

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PAOS

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Indianapolis, IN



Objectives

- **Be comfortable working up an athlete with hip pain.**
- Recognize hip injuries in athletes.
- Understand the role hip morphology plays in hip pathology.
- Understand the role of arthroscopy in treating the injured athlete.
- Expectations for the athlete with non arthritic hip pain
- Expected rehab course and progress for athletes following hip surgery

Team Approach



Avoid This

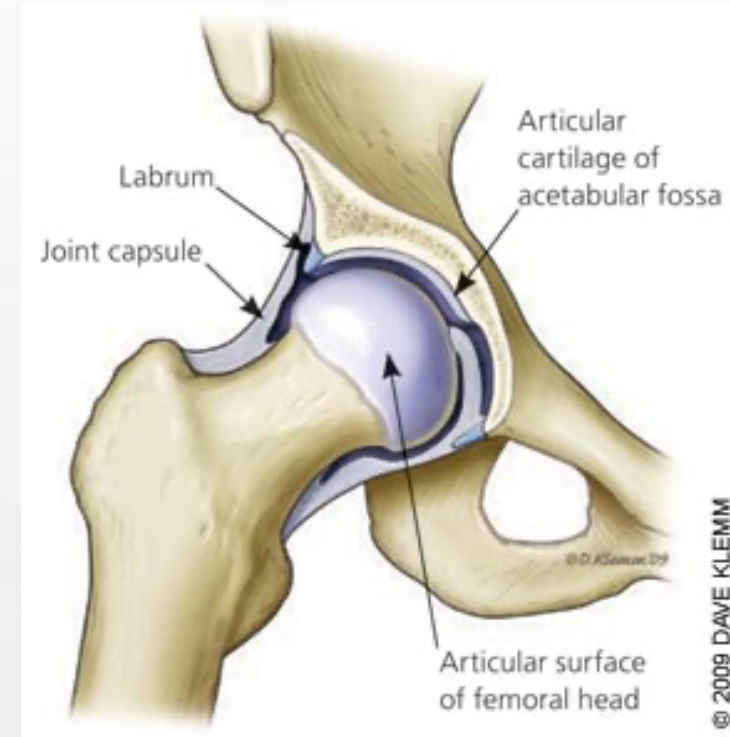
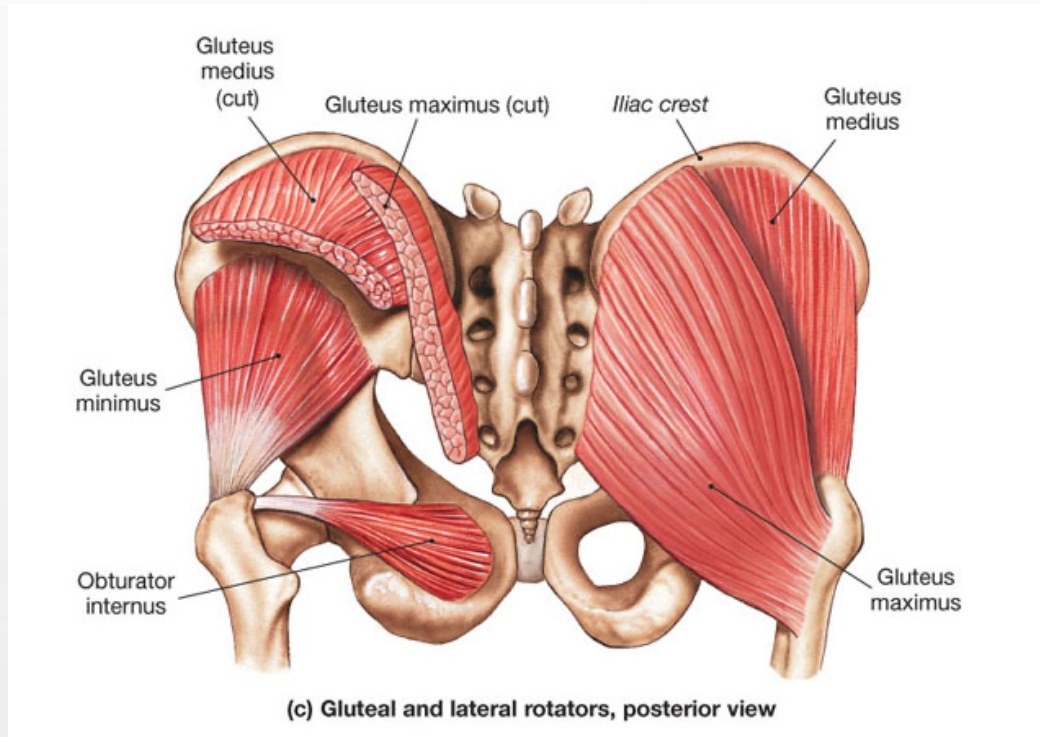


Hip Injuries in Athletes

- Can be difficult to diagnose
 - Insidious onset
 - Vague symptoms
- Often lead to frustration
 - Player
 - Medical staff
 - Coaches



Basic Anatomy



When is a groin strain not a groin strain?



Diagnosis

- Age of the athlete
- Sport
- Location of pain
- Mechanism of injury
- Timing – acute vs. chronic



Differential Diagnosis

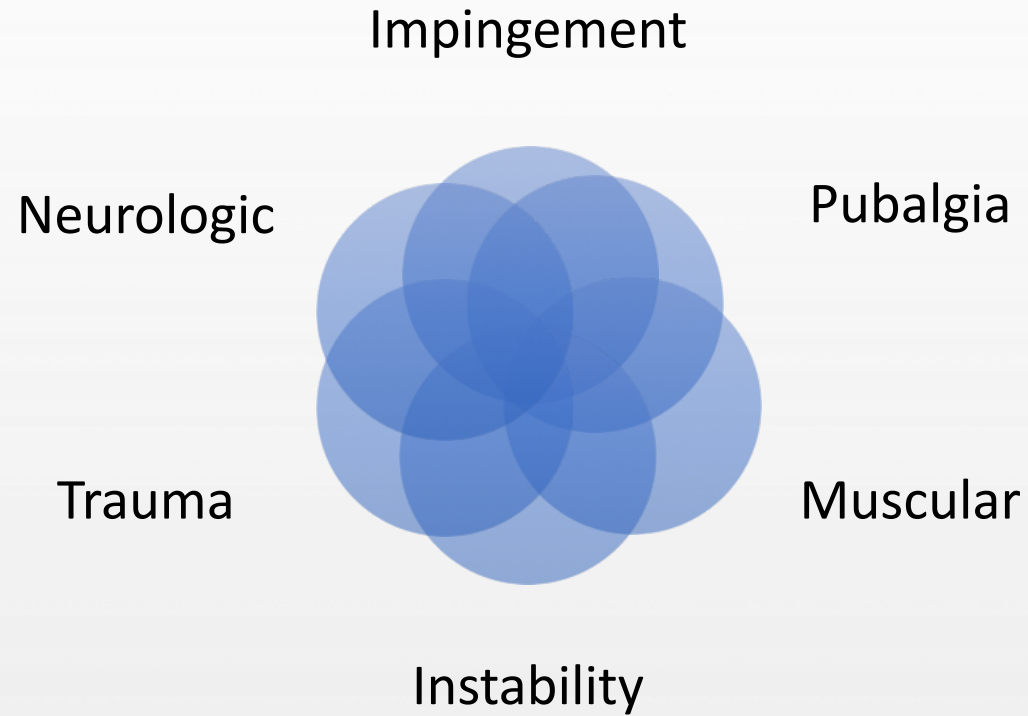
- Extra-articular
 - Apophyseal fractures
 - Musculotendinous (Rectus, gluteus medius and minimus, adductor)
 - Pubalgia
 - Neurogenic
 - Coxa Saltans
 - “Trochanteric Bursitis”
 - Deep gluteal space
 - Ischiofemoral Impingement
- Intra-articular
 - Labral tear
 - Chondral damage
 - Loose bodies
 - FAI
 - Osteonecrosis
 - Synovial disease
 - Ruptured LT
 - Instability
 - Adhesive capsulitis
 - Dysplasia
 - Arthritis

Less Common Diagnoses

- Osteonecrosis
- Arthritis
- Loose Body
- Trochanteric Bursitis
- Chondrolysis



Multifactorial



Presentation

- Duration of symptoms
- Location
- Mechanism of injury
- Aggravating activities
- What relieves their symptoms
- Response to prior treatment



Symptoms

- Groin Pain
- C – Sign
- Shoes and socks
- Stairs
- Prolonged sitting
- Rotational movements
- Mechanical symptoms
- Snapping
- Dyspareunia

An advertisement for a golf drill featuring three sequential images of golfer Rory McIlroy in a light green shirt and dark pants, captured at different stages of a golf swing. The background is a soft-focus outdoor setting. The text 'Rory McIlroy Hip Tip' is prominently displayed at the top in a large, black, sans-serif font. Below the images, a white text box contains the message: 'Learn How To Control Your Hips Through The Hitting Area For Speed and Power.' At the bottom of the advertisement, a black banner with white text reads: 'Watch Now - Use This Rory McIlroy Drill To Improve Now'.

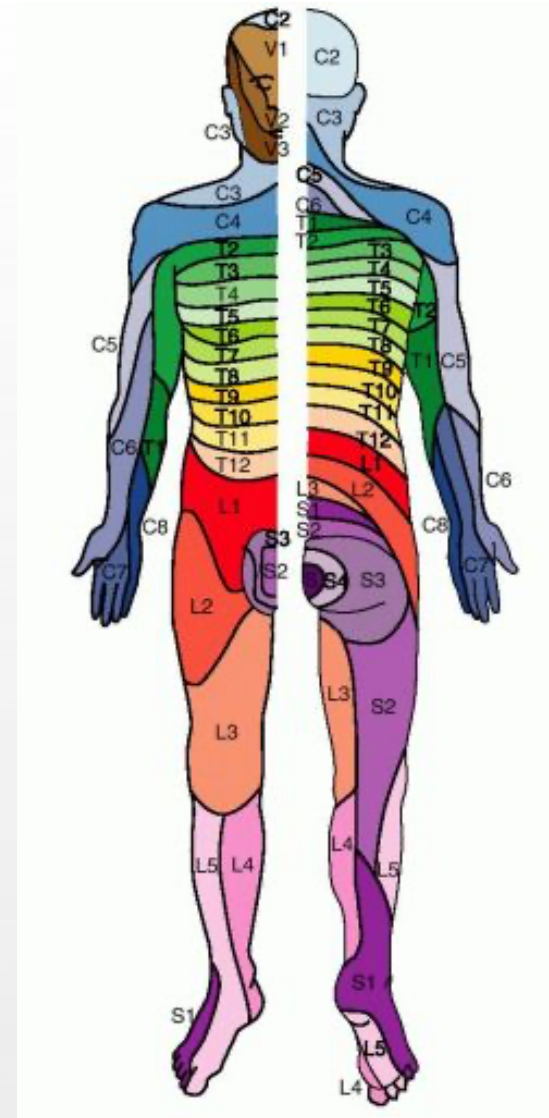
Rory McIlroy Hip Tip

Learn How To Control Your Hips Through The Hitting Area For Speed and Power.

Watch Now - Use This Rory McIlroy Drill To Improve Now

Hiltons Law

- The nerve supplying the muscles extending directly across and acting at a given joint also innervate the joint.
- L2 dermatome
- L3 dermatome



Physical Exam

- Inspection
- Palpation
- Neurovascular exam
- ROM
- Strength testing
- Dynamic testing



Log roll test

- Most specific
- Least sensitive



Internal and External Rotation



FADDIR

- “Impingement test”
- Almost always painful
- Compare to contralateral side



Psoas exam/Faber



Trochanteric region

- Tenderness
- Trendelenberg sign
- Weakness



Instability



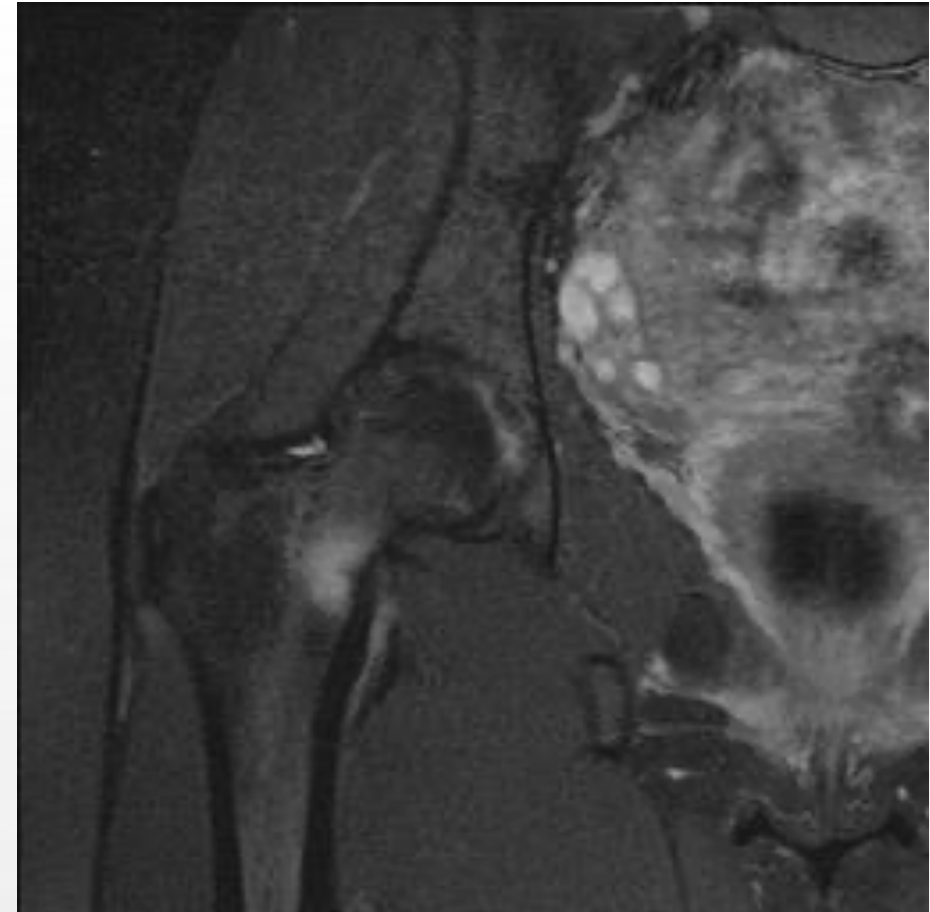
Imaging Studies

- Plain radiographs
 - AP Pelvis
 - Lateral of the affected hip
- “What are they going to show?”
 - Fracture
 - Avulsion
 - Dysplasia
 - Impingement



Imaging Studies

- MRI
- Prefer 3T scan (min 1.5T)
- Hip coil
- Coronal, sagittal, axial and oblique axial cuts
- Do not order MR arthrogram



Objectives

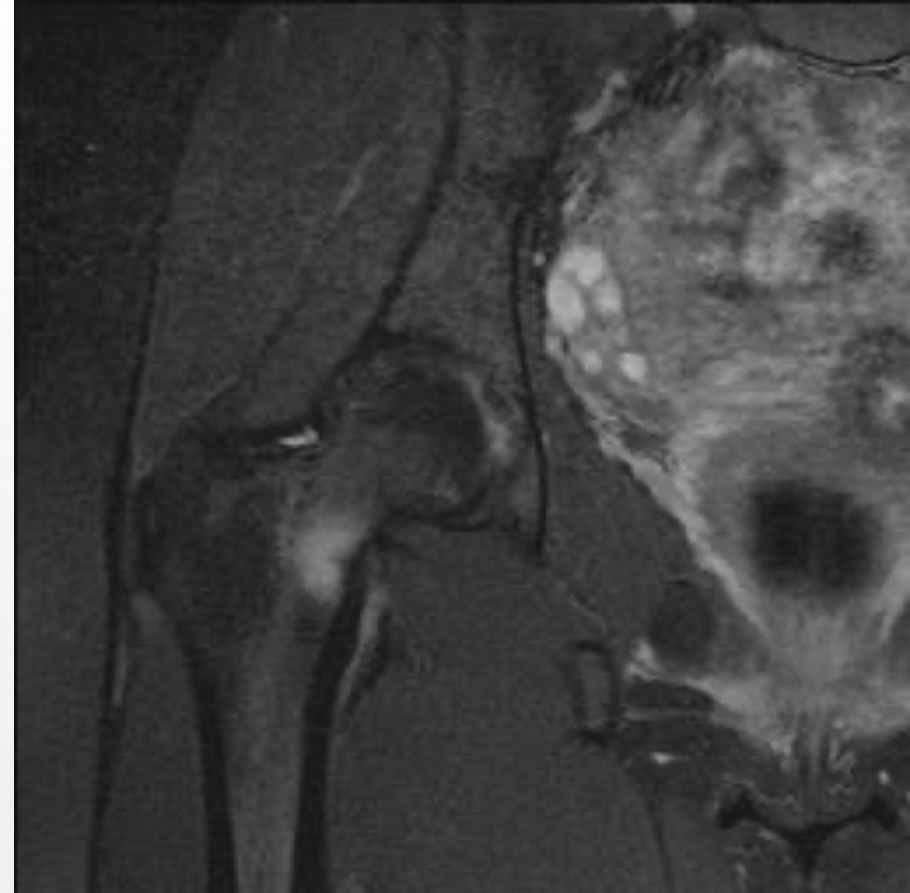
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Case Studies



21 year old women's basketball player.

- African American
- 4 weeks of right hip pain.
- Hurts all the time
- Aggravated by running, jumping and impact
- Lateral movement and straight plane movement equally painful.



Femoral neck stress fracture

- Risk factors

- Ammenorhea
- History of previous stress fractures
- Rapid increase in training
- Vitamin D deficiency

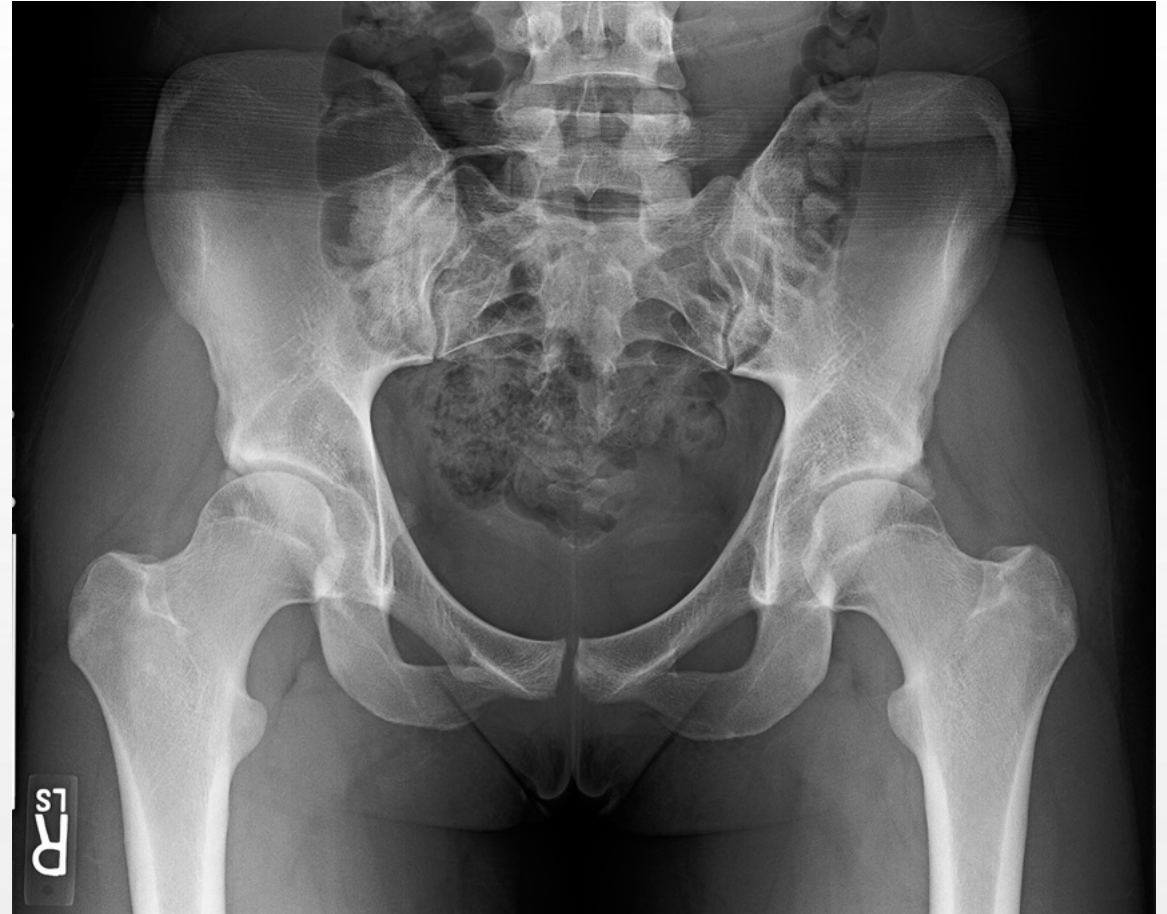
- Treatment

- Closed pinning for tension sided fracture
- Crutches and PWB until asymptomatic.
- Bike or swim to maintain cardiac fitness – ASx?
- Progress to upright cardio
 - Alter G
 - Pool treadmill/aqua jogger
 - Elliptical
 - Stairmaster
- Running progression
- Functional progression
- May take 3 months to recover

20 year old women's soccer player

- Groin pain for 1 year
- Progressively worse over the last 2-3 months
- Cutting, opening up, kick all aggravate it.
- Now has pain with sitting in class, on the bus etc...
- Extensive treatment with training staff

Soccer player



20 year old women's soccer player

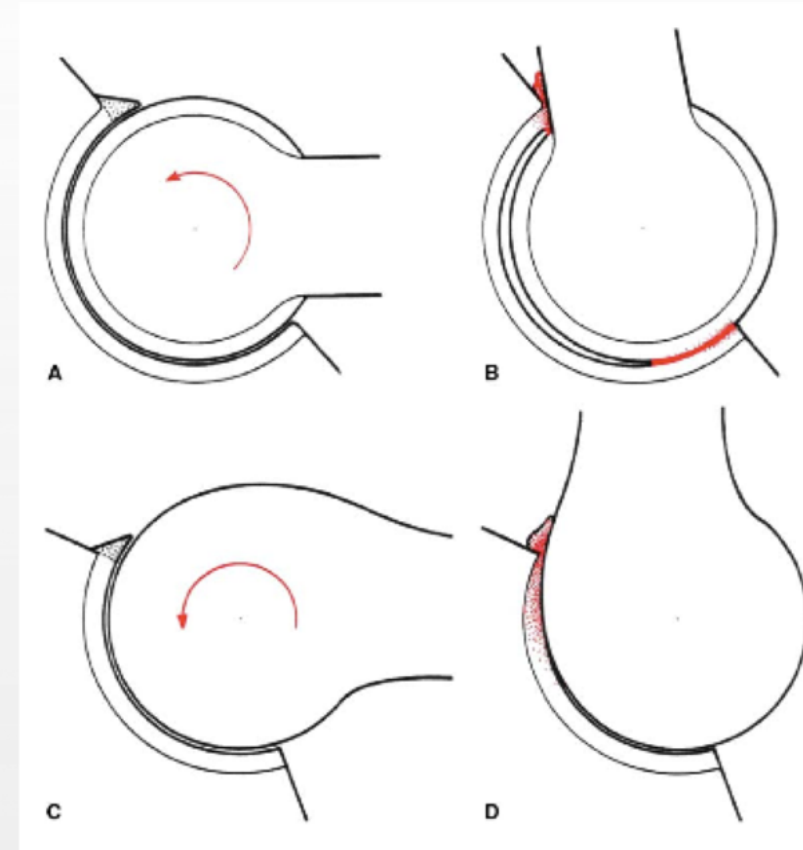
Femoroacetabular Impingement

Cam Impingement

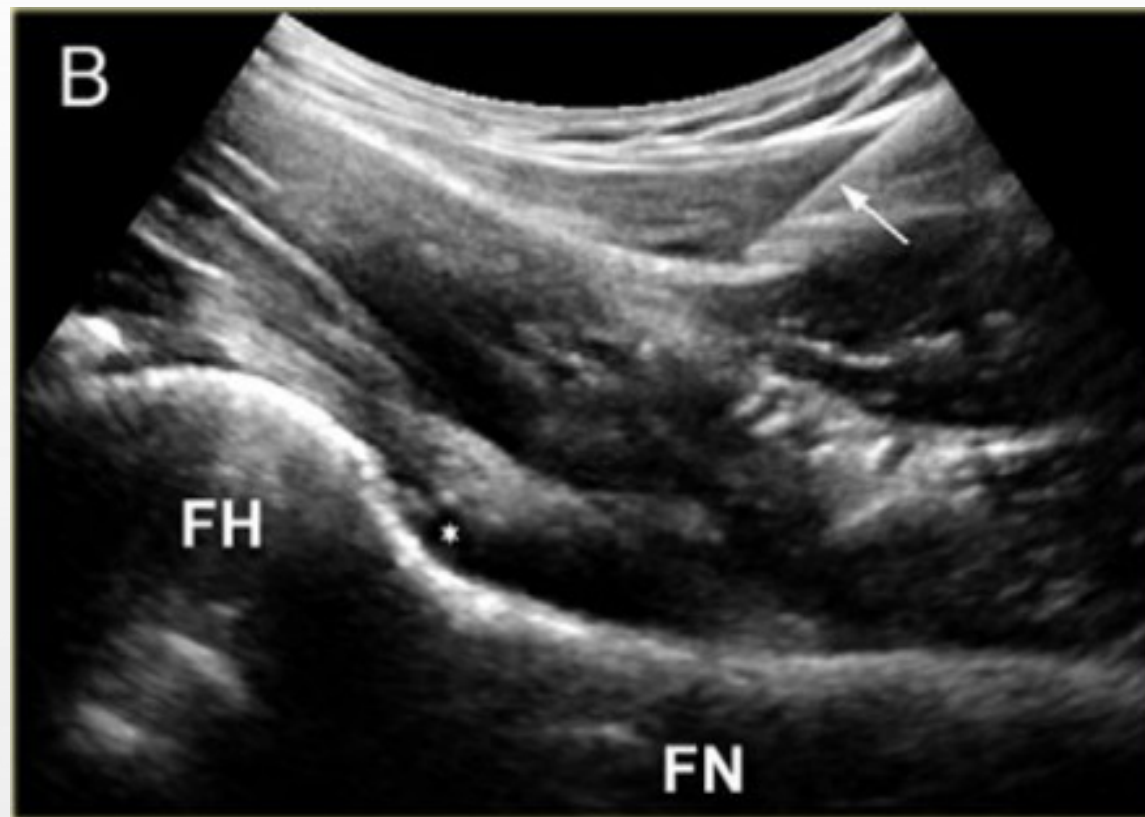
Pincer Impingement

Mixed Impingement

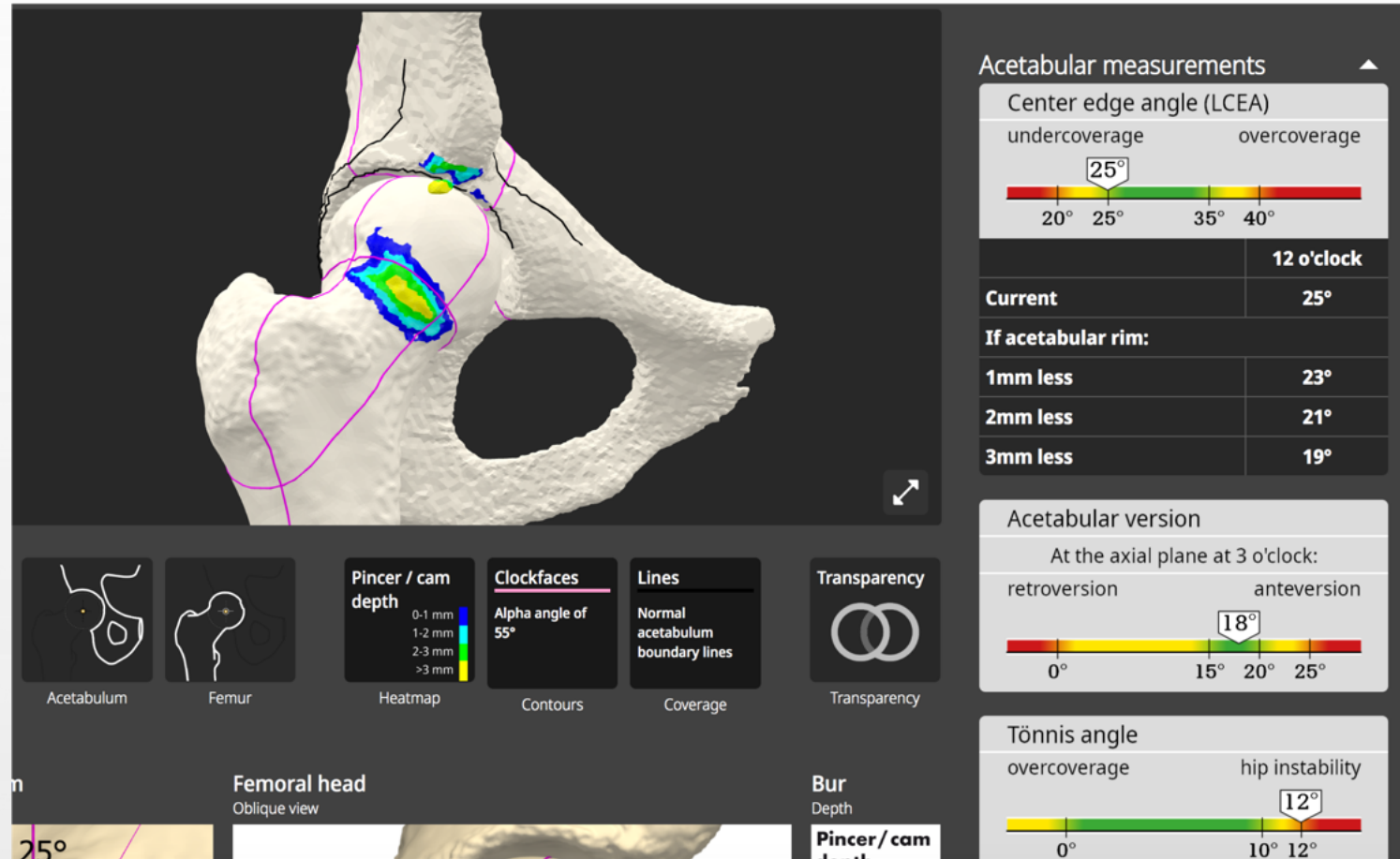
20-90% of an active population



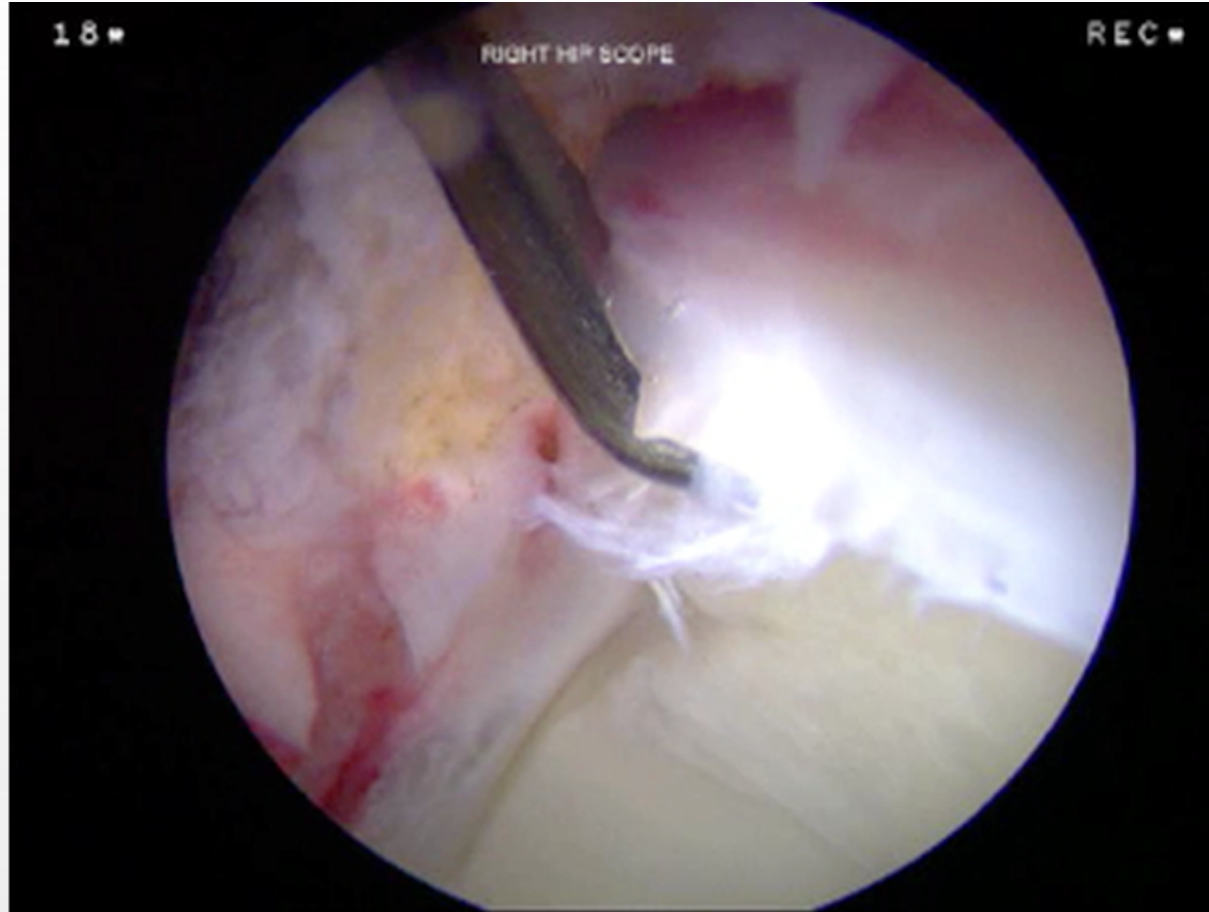
US guided injections



Pre-operative planning



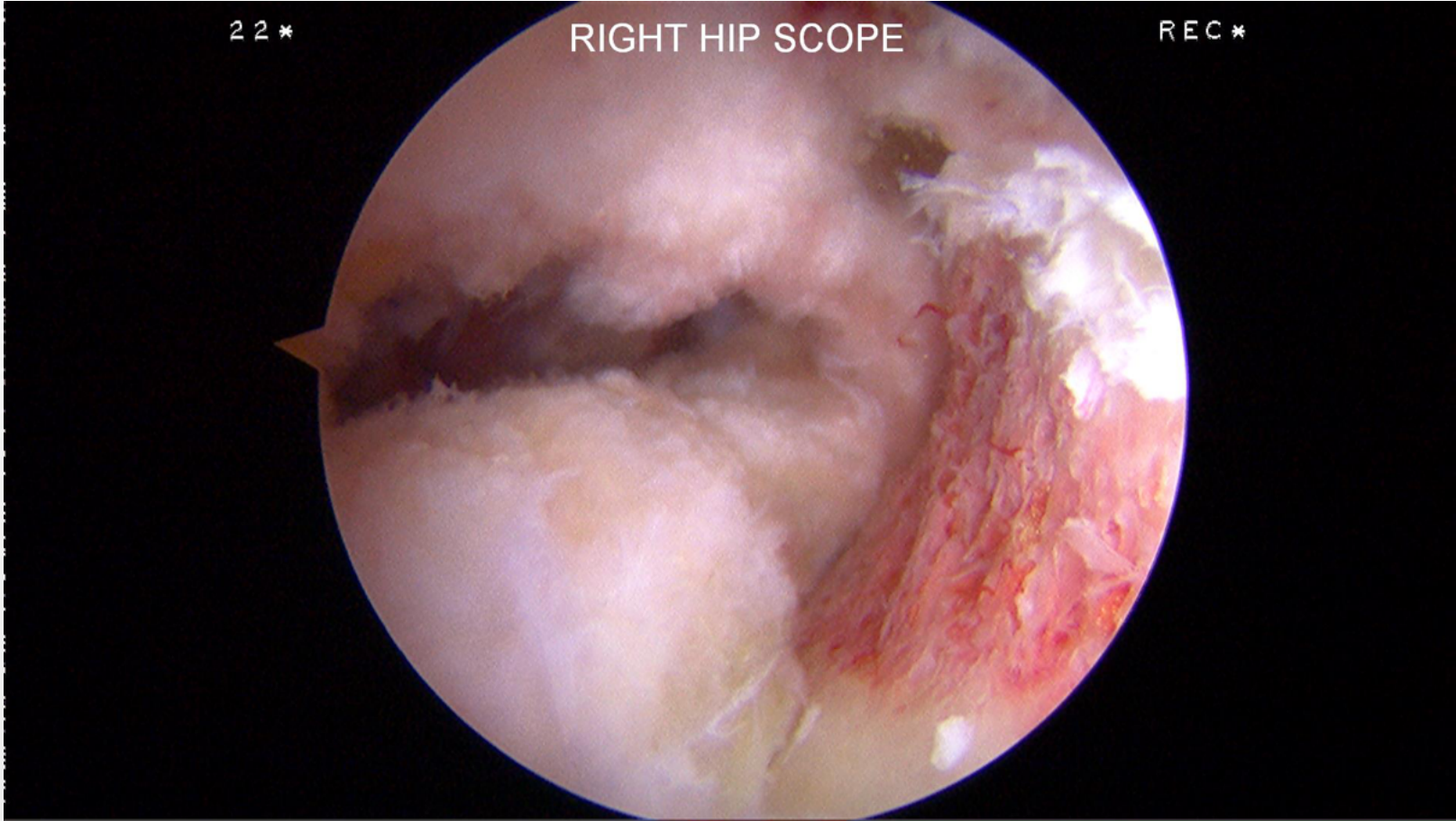
Mixed FAI



22 *

RIGHT HIP SCOPE

REC *



Post Op Films



Post Op protocol

- WBAT w/crutches
- Quiet for 3 days
- Gentle ROM
- Circumduction
- Gluts
- AVOID SLR



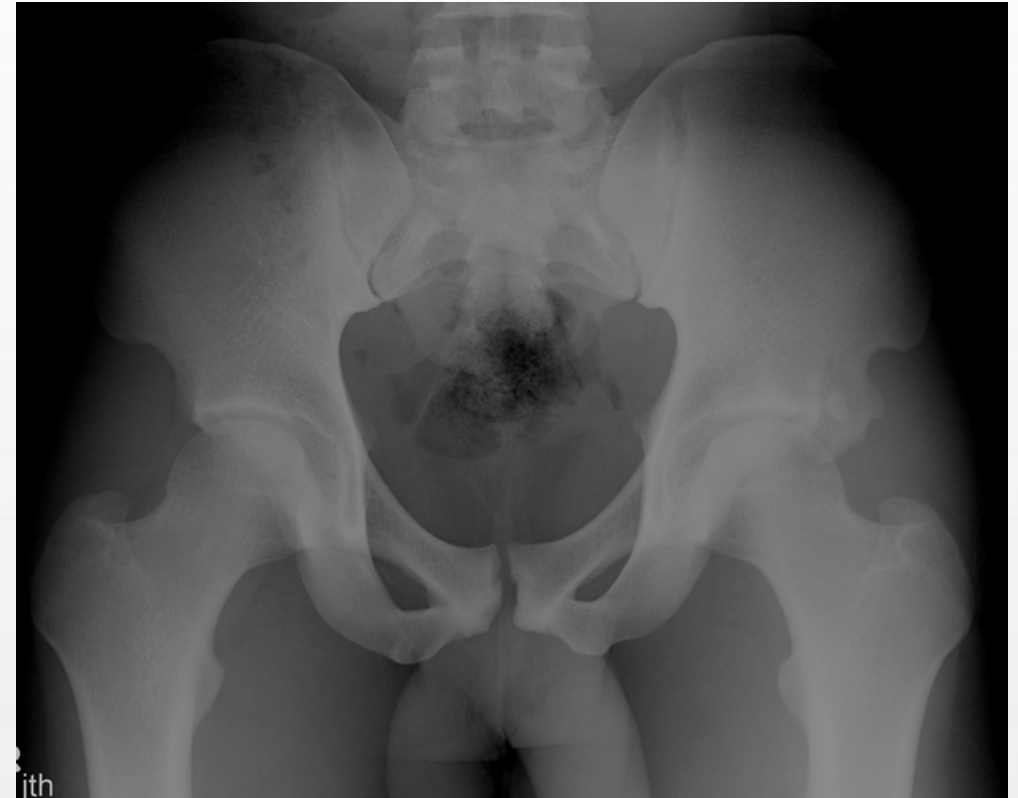
Progression

- Bike – almost immediately
- 4 weeks – Elliptical
- 6 weeks – stairmaster/alter G
- 8 weeks running progression
- 12 weeks – Functional progression
- 4-6 months RTP

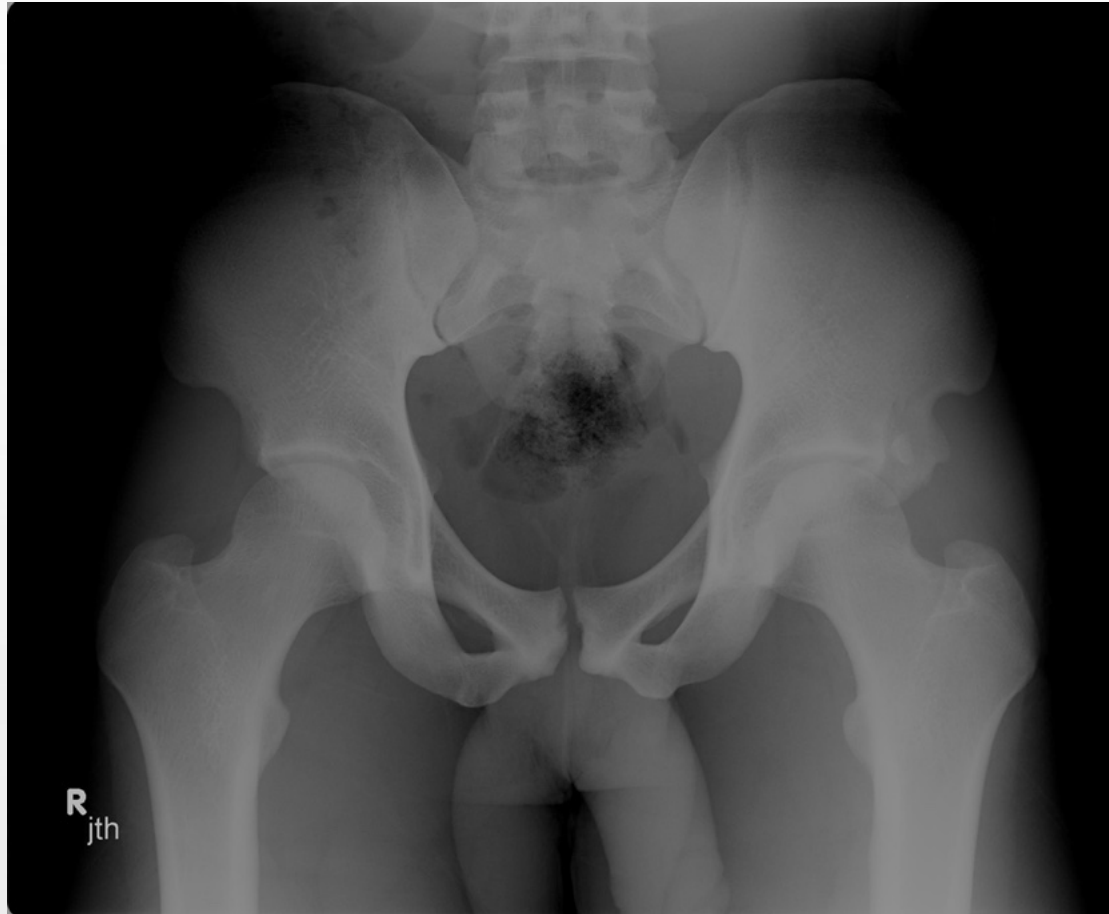


20 year old sprinter/long jumper

- C/o left groin pain for 6 months.
- Extensive treatment with training staff
- Unable to long jump, “saving his hip for sprints”
- Feels like his hip is holding hip back
- 2nd team All American



Sub-spine Impingement



Apophyseal Injuries

Table 1. Timing of ossification and fusion of pelvic apophyses

Apophysis	Age at appearance, y	Age at closure, y
Iliac crest	13–15	21–25
Anterior superior iliac spine	13–15	21–25
Anterior inferior iliac spine	13–15	16–18
Ischial tuberosity	13–15	20–25
Lesser trochanter	9–13	15–17

Table 2. Muscular attachment onto pelvic apophyses

Apophysis	Muscle	Muscle action
Anterior inferior iliac spine	Rectus femoris (straight head)	Hip flexion, knee extension
Anterior superior iliac spine	Sartorius and tensor fascia lata	Hip flexion, knee flexion
Iliac crest	External oblique and abdominal obliques	Trunk rotation
Ischial tuberosity	Hamstrings	Knee flexion, hip extension
Lesser trochanter	Iliopsoas	Hip flexion
Pubic symphysis	Adductor group	Hip adduction

Mechanism of Injury

- Forceful eccentric contraction.
- Acute onset “pop”
- Males 90%
 - 80% athletes



AIIS avulsion

- Acute onset
- Weakness in hip flexion
- Tender to palpation anterior



Treatment

- Initial period of rest 1-2 weeks
 - Allows physis to stabilize
- Compression shorts
- Maintain cardiovascular fitness
- Begin functional progression
 - Nontender
 - No pain with resisted flexion
- Return to play 4-6 weeks

Treatment

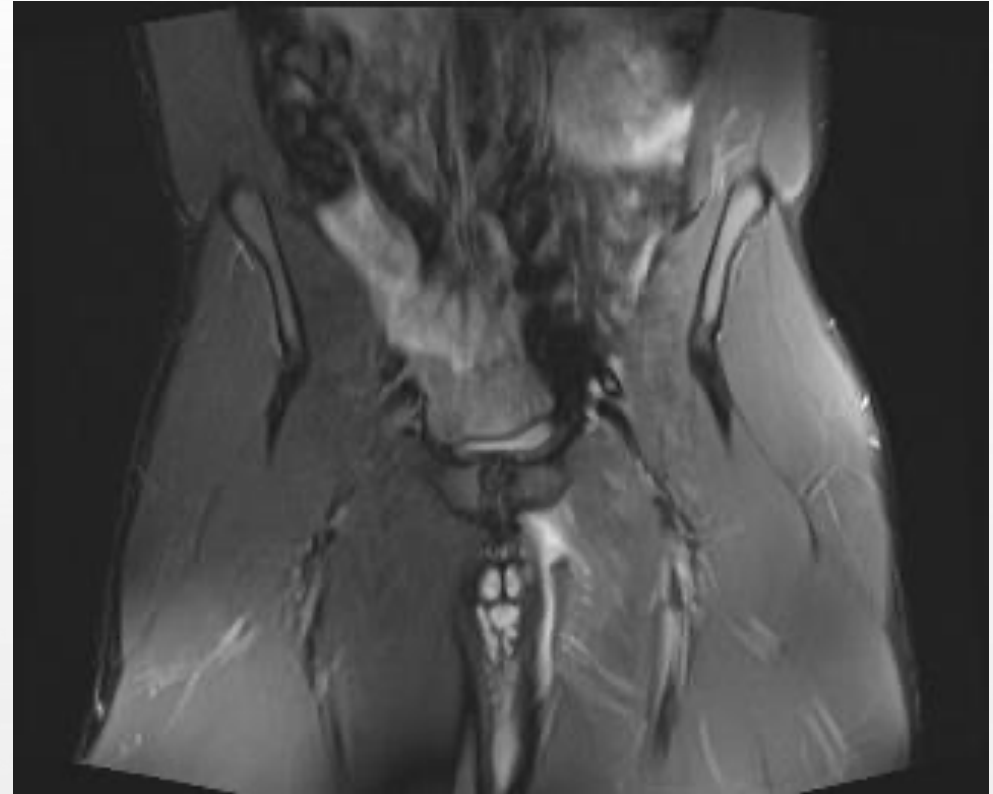


Extra-articular Injuries



24 yo professional soccer player

- Felt “Pop” in his groin
- Difficulty walking/bearing weight.
- Acute swelling and burning in his groin



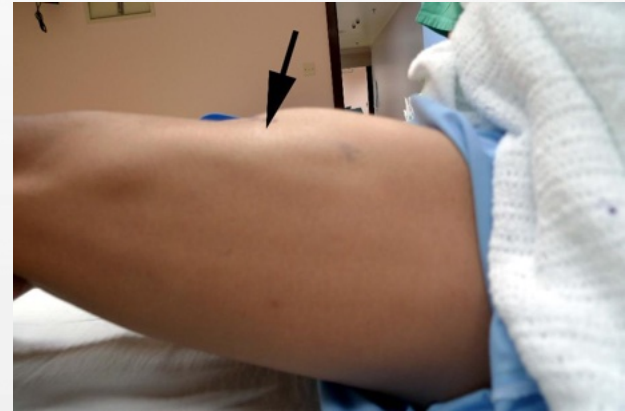
Treatment

- Traditional treatment is non operative
- RICE
- Gradual return to sports
- ~ 6 weeks
- Emerging trend of direct repair – [more info to come](#)

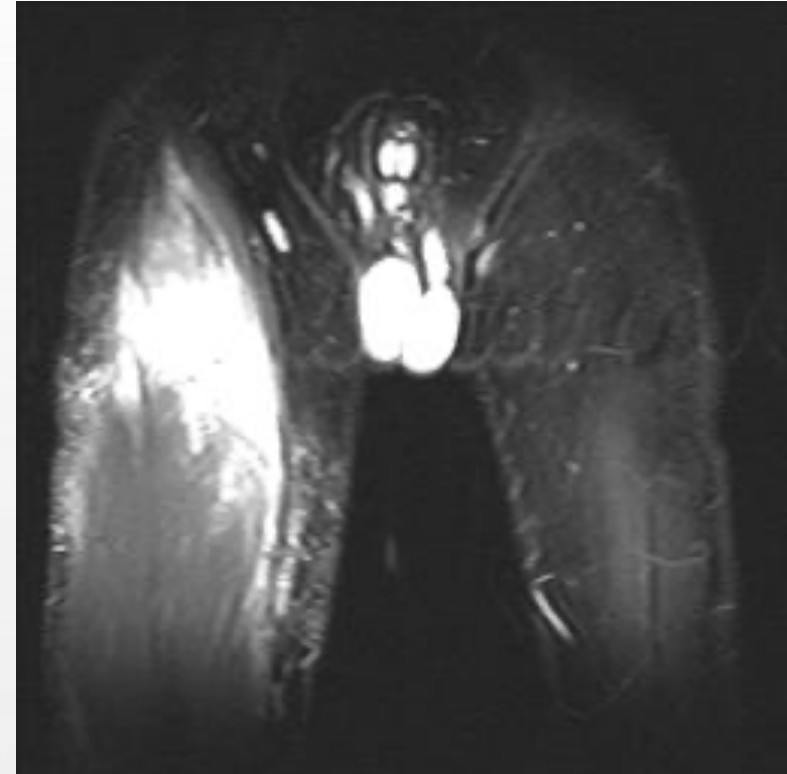
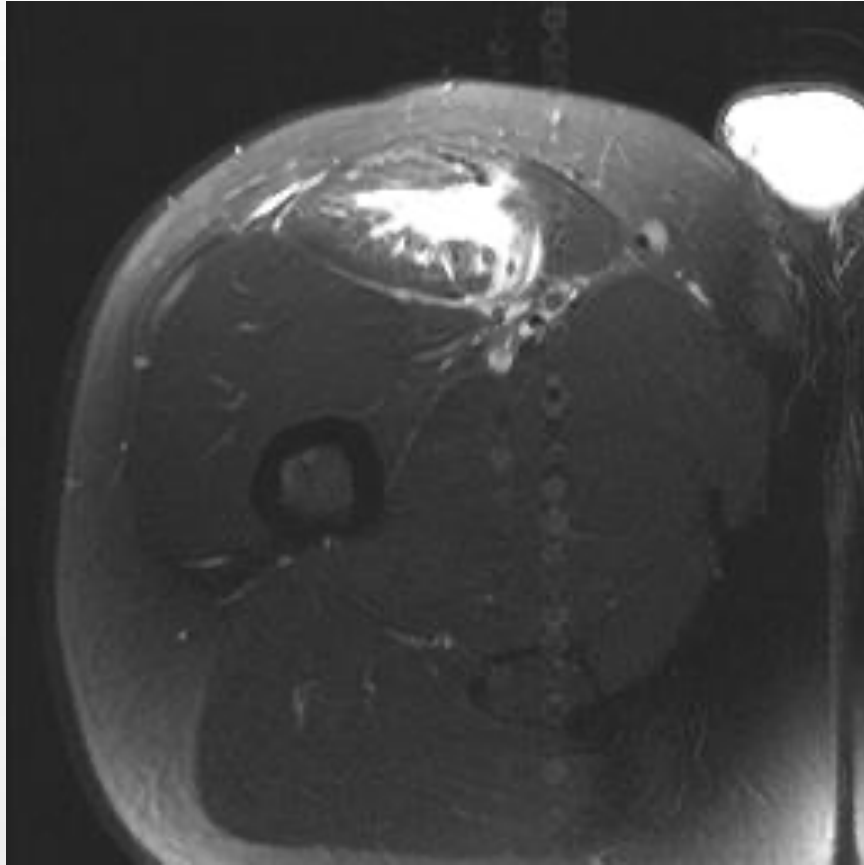


18 year old kicker

- Felt a pull in his quad during a kick
- Immediate pain
- “bulge” in his mid thigh



Rectus Intermedius rupture



Treatment

- US guided steroid injection
- Graston
- Kicking progression
- Rare operative treatment



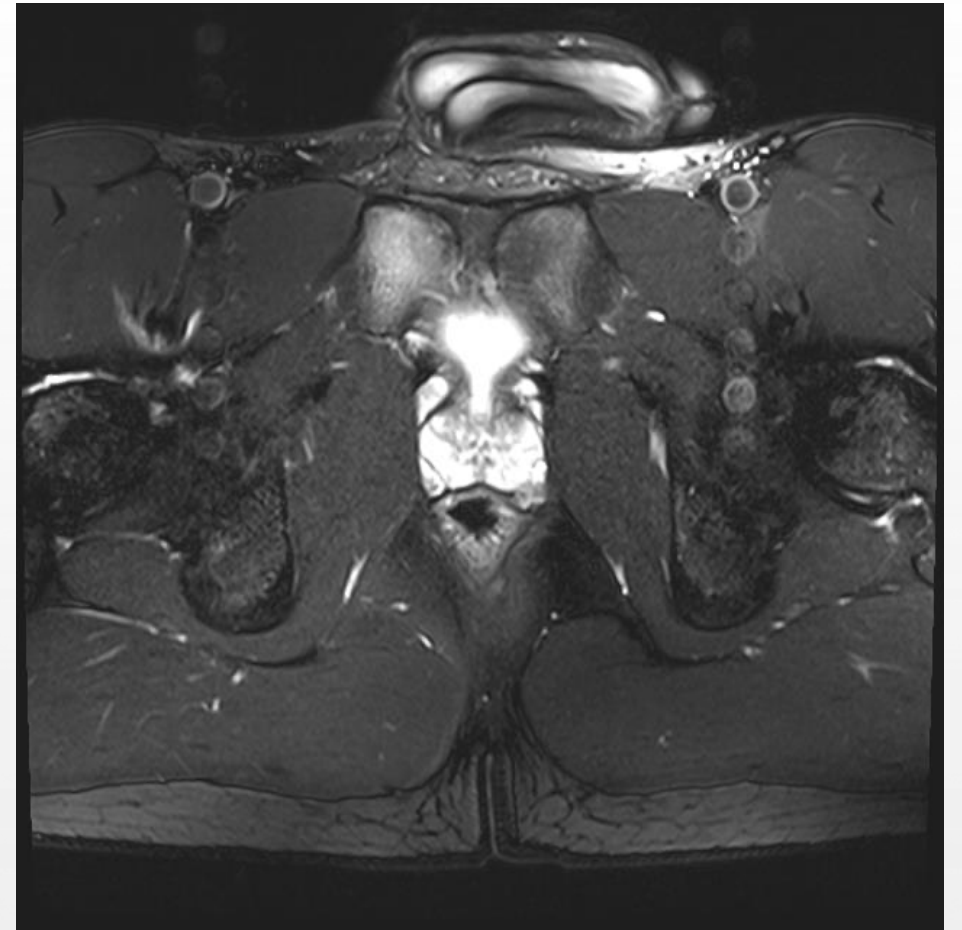
20 year old college wrestler

- Groin pain x several months
- Has always been stiff
- Difficulty with twisting and lateral movement
- Minimal soreness with hip exam bilaterally



Physical Exam

- Pain with resisted situp
- Pain with resisted adduction
- TTP pubic symphysis



Sports Hernia

- Core muscle injury
- Core program
- Pubic symphysis injection
- Consider operative repair
- Often coexists with FAI
 - May need to address both.

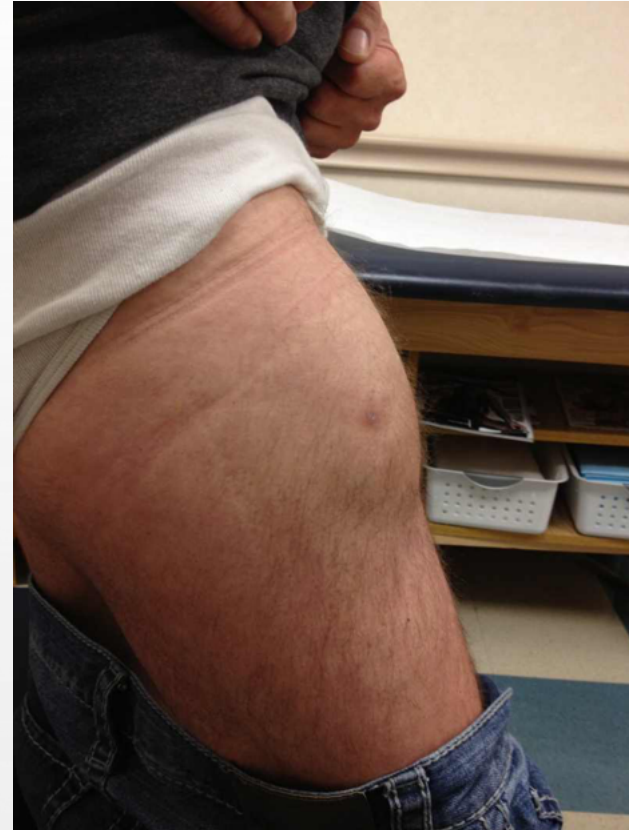
Sorry you tried to physically prove your manliness and got a hernia.



your  cards
someecards.com

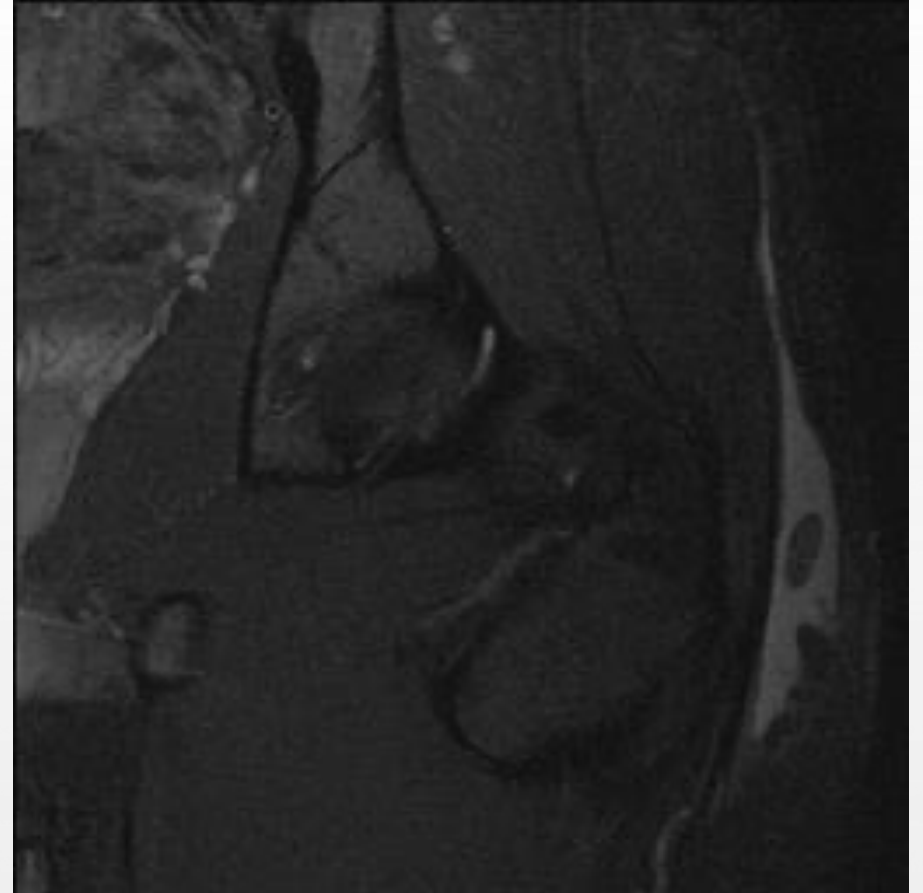
19 soccer goalie with lateral hip swelling

- Fluctuant mass over lateral hip
- Keeps landing on his hip
- Unable to play



Morel Lavallee lesion

- Internal degloving injury
- Compression
- Avoid re-injury
- Custom pad
- Rare surgery

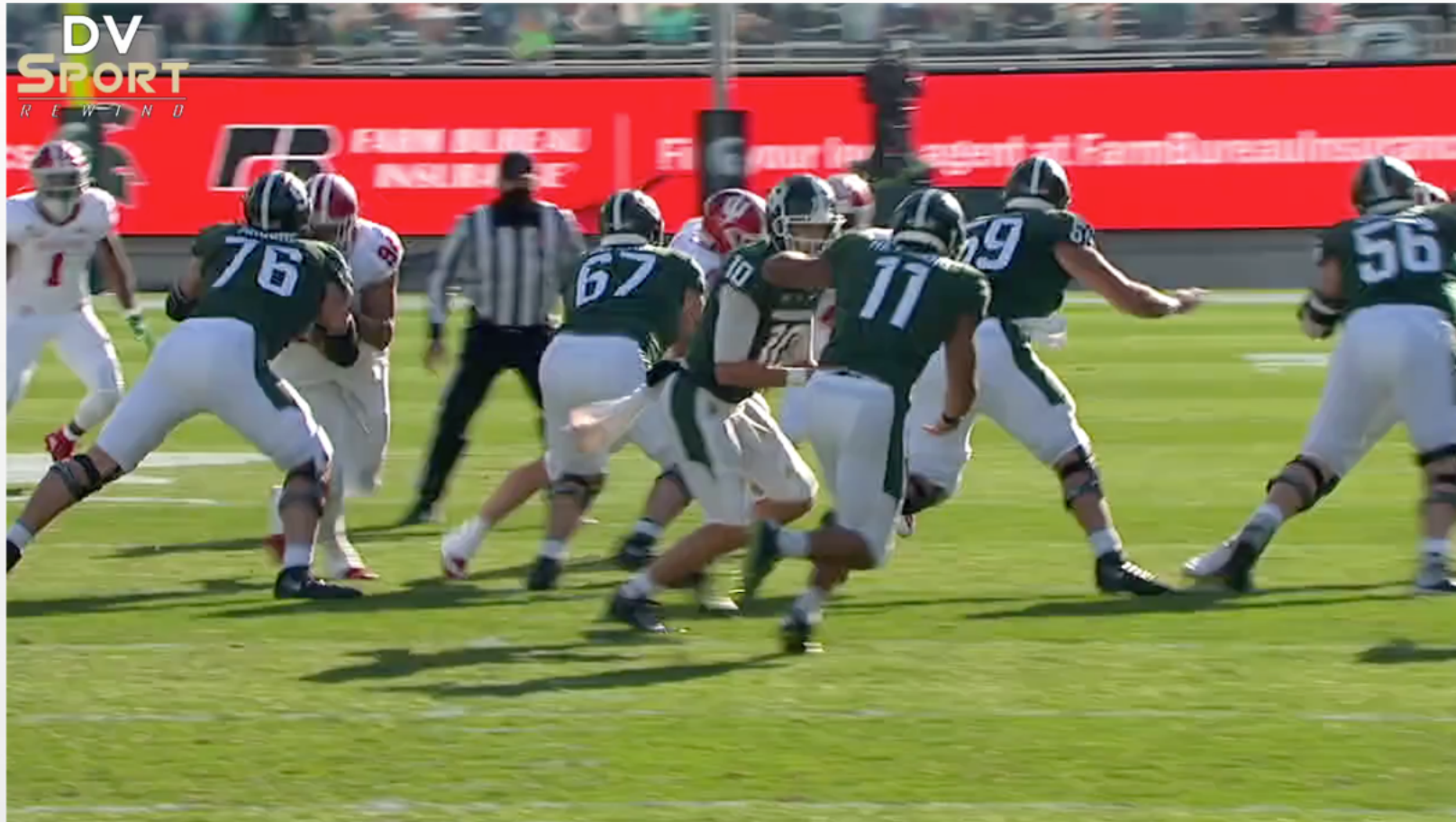


21 yo collegiate tennis player

- Acute onset of hip pain lunging for a ball
- Hip pain with all ROM
- MRI - loose bodies and posterior capsule injury



Hip Instability



Hip Dislocation

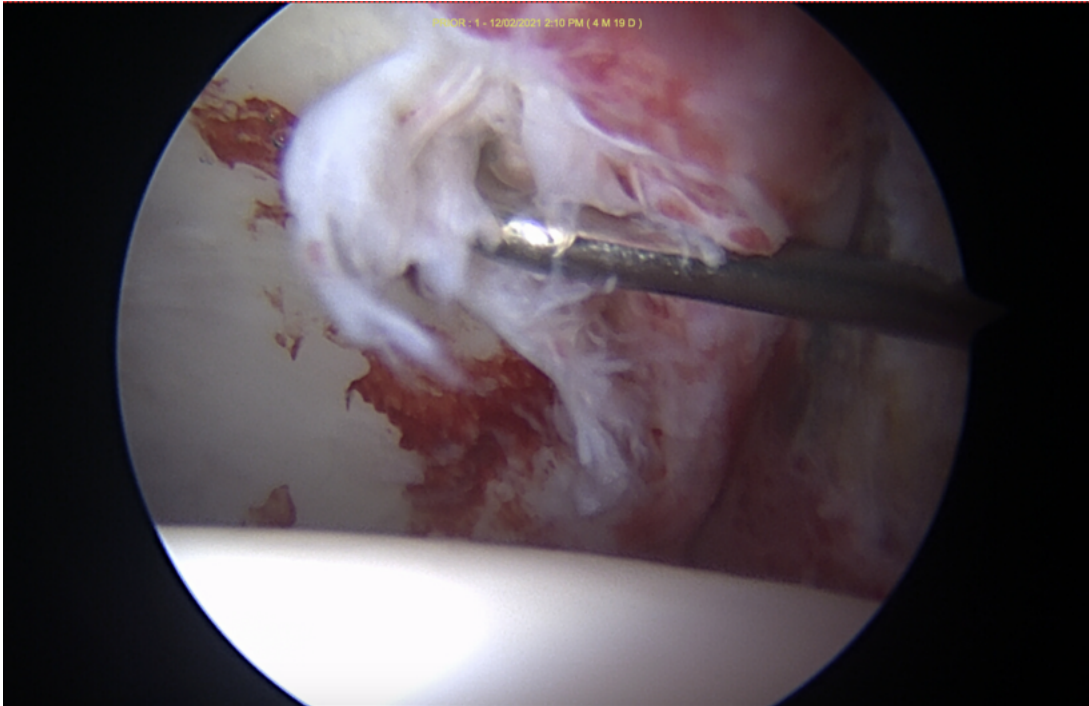


Post Op

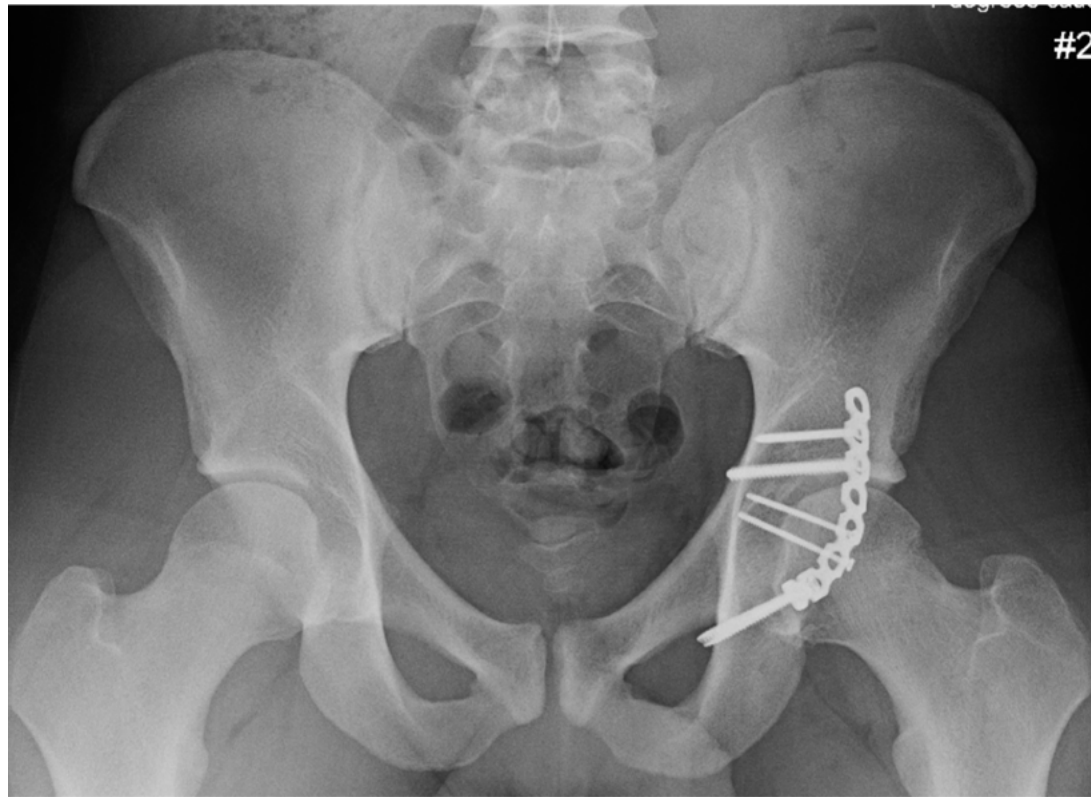


- Protected weight bearing
- Posterior hip precautions
- MRI to assess for AVN
- RTP 6 months

Scope 1 year later for mechanical symptoms



Post op

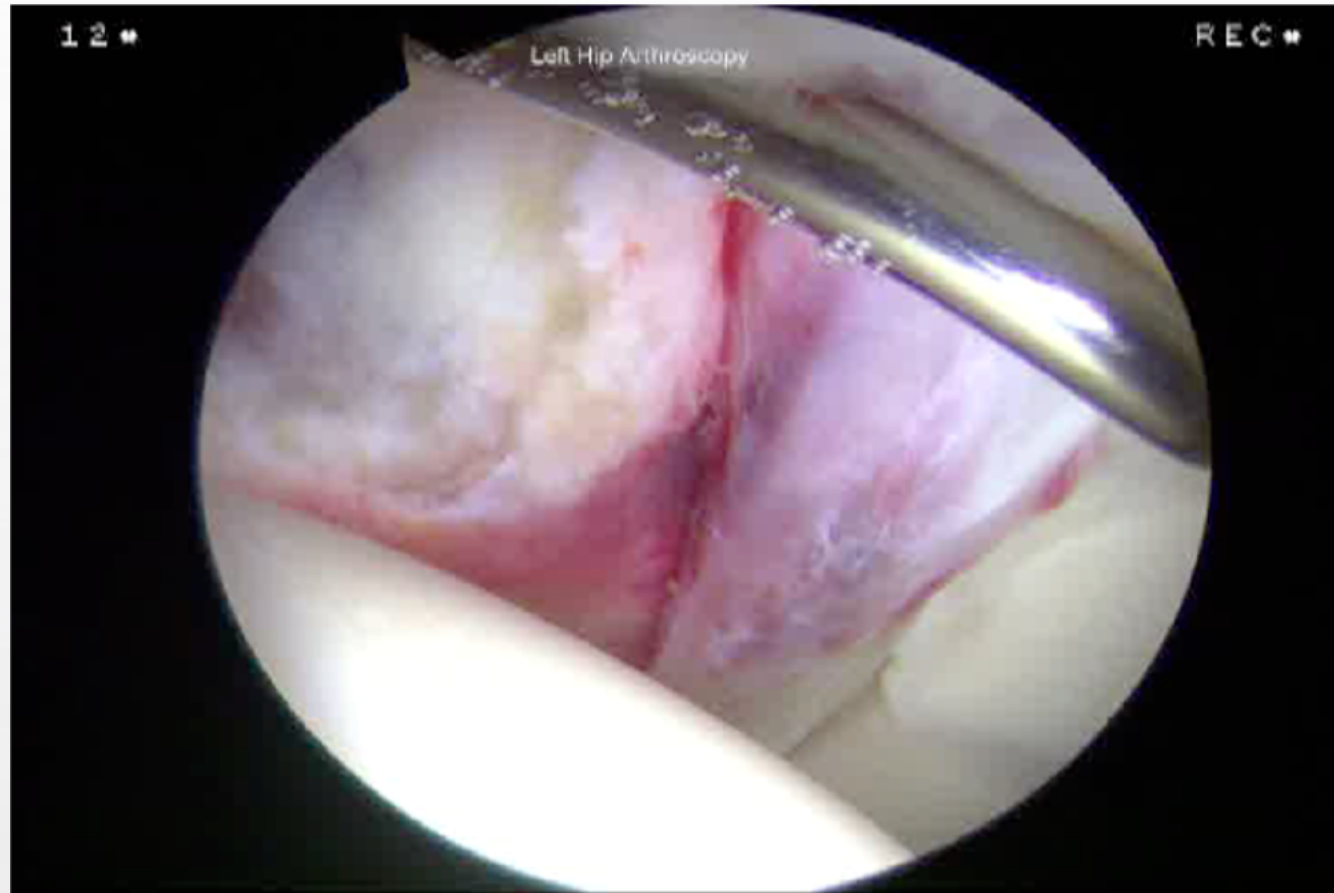


19 yo collegiate soccer player with painful snapping

- You can hear it from across the room
- Typically occurs going from a flexed to extended position.
- Painful
- FABER to Extension/IR



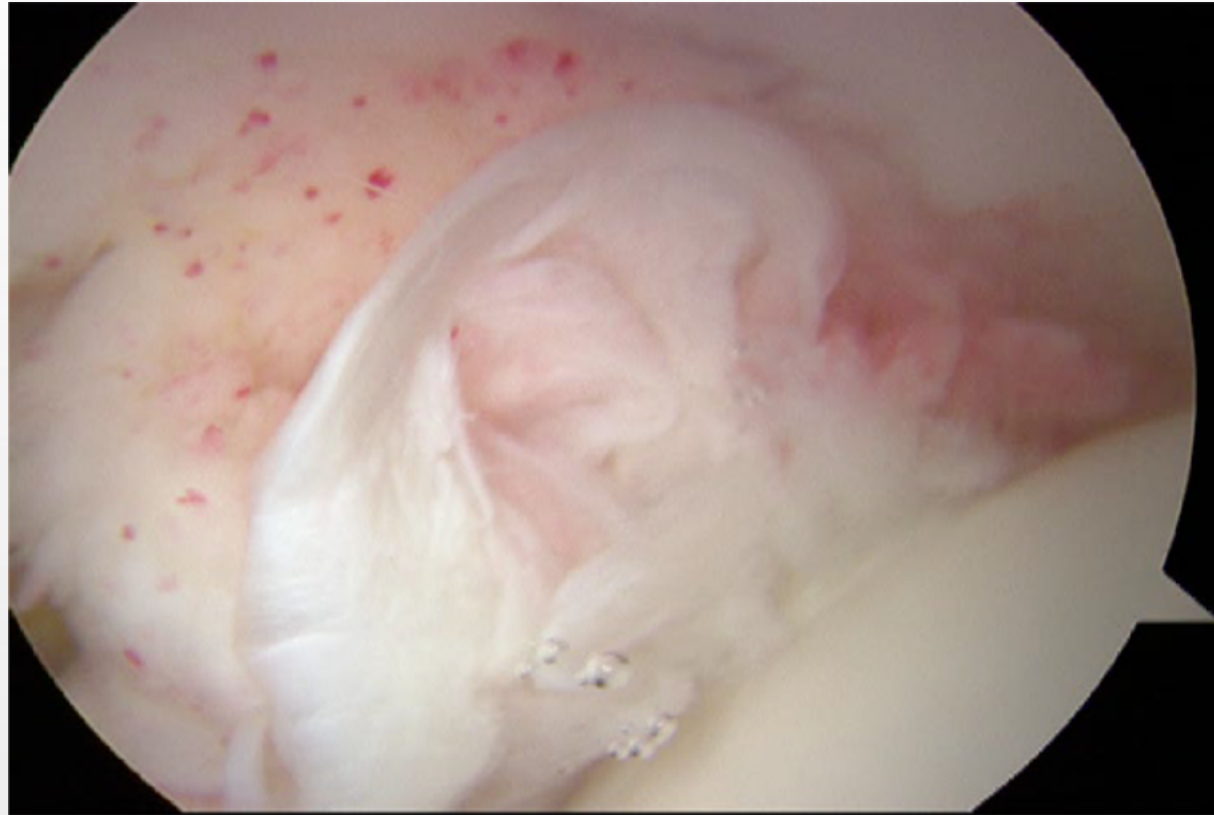
Psoas Impingement



Psoas tenolysis



19 year old gymnast with catching and locking
in her hip



Ligamentum Teres tear

- Arises from the center of the femoral head and inserts on the inferior aspect of the acetabulum and the TAL
- Tears as a result of a hyperabduction injury
- Often causes mechanical symptoms
- Types 1-3

Pearls for hip pain in athletes

- Listen to your patient, he will tell you everything you need to know.
 - Sir William Osler
- Be concerned when a “strain” is not acting like a strain.
- Don’t confuse abnormal morphology with pathology.
- Expect the unexpected.

Thank you



Forté
SPORTS MEDICINE
AND ORTHOPEDICS