An Algorithmic Approach to the injuries and pathology of the non-arthritic hip

Center for Hip Arthroscopy

A.V. PAPAVASILIOU BSc, MD, PhD

ESSKA-EHPA Vice Chair 2022-4

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Disclosures

- Consultant ConMed
- ConMed EMEA Hip Arthroscopy Training Centre
- Consultant Smith & Nephew

ESSKA CORE CURRICULUM WEBINAR


SET THE
SCENE

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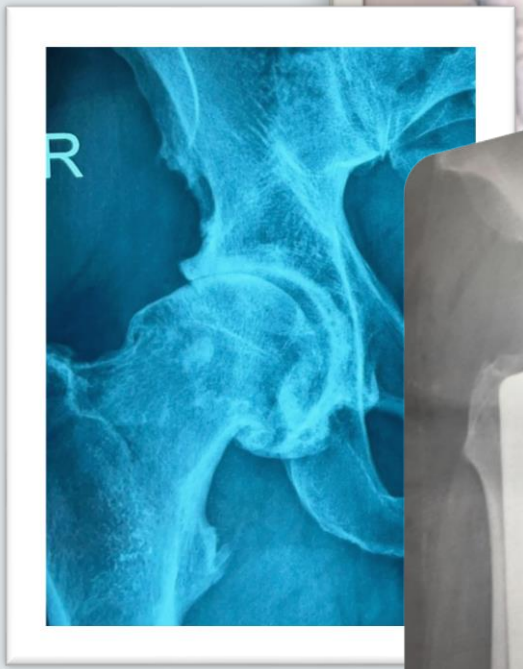

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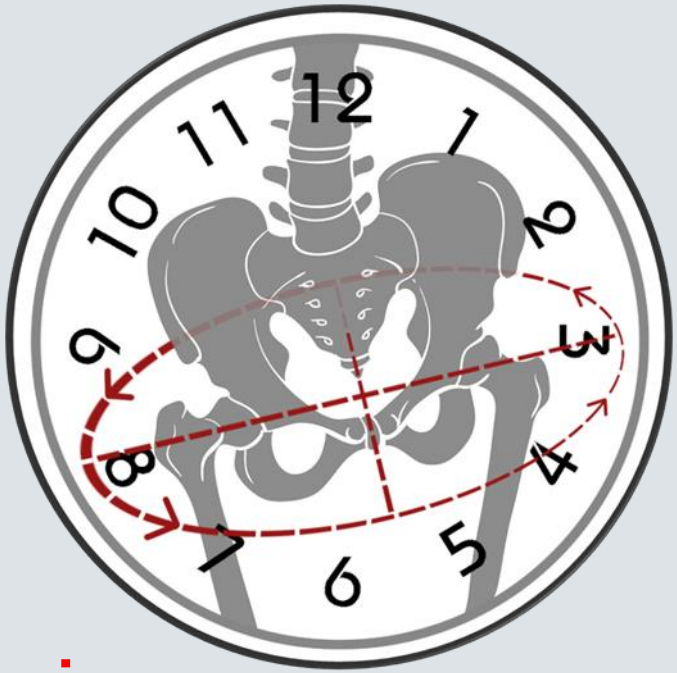
CORRECT clinical DIAGNOSIS can be difficult:

-Variable history
-Clinical Examination not conclusive
-Multiple pathologies with similar clinical signs or nonspecific symptoms
-Imaging is not always conclusive



- Which symptoms are benign
- Intra or Extra articular origin

Table 1 Differential diagnosis of pain around the hip joint

Intra-articular causes	Extra-articular causes
Labral tears	Extra-articular bony impingement
Chondral injury	Trochanteric-pelvic impingement
Ligamentum teres tears	Ischio-femoral impingement
Femoroacetabular impingement (cam, pincer, or combined)	Subspine impingement
Synovitis	Capsular problems
Loose bodies—tumors (SOC, PVNS, OCD, DJD, and AVN)	Capsular laxity or atraumatic instability
	Adhesive capsulitis
	Snapping hip
	Internal (iliopsoas over iliopectineal eminence, FH, or LT)
	External (posterior border of ITB or anterior GM tendon over GT)
	Snapping bottom (proximal hamstring over ischial tuberosity)
	Lateral hip pain
	Recalcitrant trochanteric bursitis
	Gluteus medius and minimus tears
	Piriformis syndrome/deep gluteal syndrome
	Pubic pain
	Osteitis pubis
	Athletic pubalgia/sports hernia/Gilmore's groin
	Sacroiliac joint pain
	Myotendinous injuries about the hip and pelvis
	Proximal adductor
	Rectus femoris
	Proximal hamstring
	Avulsion injuries (ASIS, iliac crest, AIIS, pubis, ischial tuberosity, GT, and LT)
	Stress fracture
	Nerve compression syndromes

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History

- **Mechanism of Injury if any**
- **Duration of pain**

-Location of pain

Primary / referred

- **Aggravating activities**

-sitting, walking, standing, sport

- **Mechanical symptoms**

-clicking, catching, locking, giving way

(psoas, ITB)

- **Paediatric Orthopaedic history**
- **Previous surgery**

-hip, hernia, spine

- **Medication**
- **Physical therapy** (duration, where, improvement)

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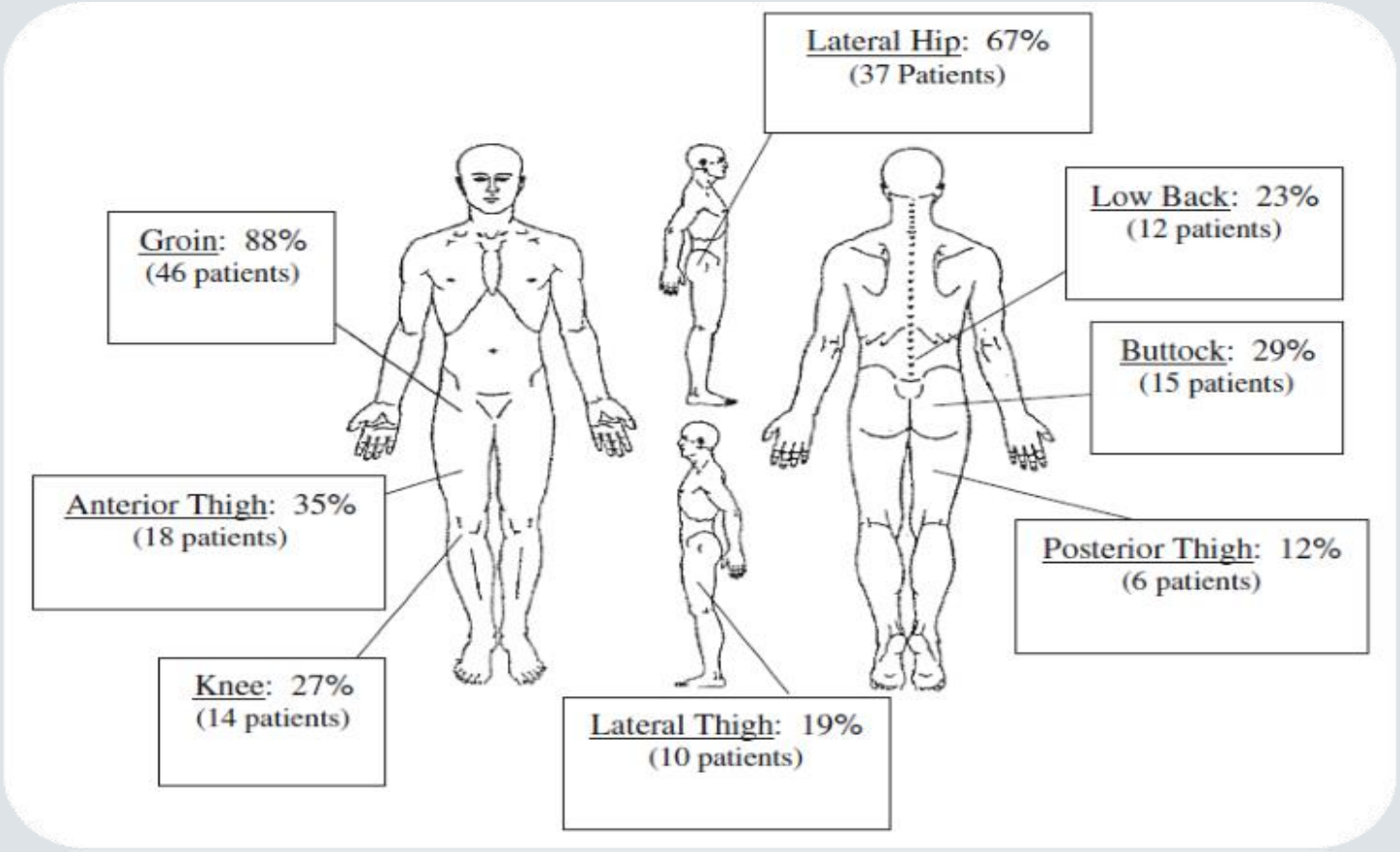
CLINICAL EXAMINATION


Lateral Hip: 67%
(37 Patients)
Groin: 88%
(46 patients)
Low Back: 23%
(12 patients)
Buttock: 29%
(15 patients)
Anterior Thigh: 35%
(18 patients)
Posterior Thigh: 12%
(6 patients)
Knee: 27%
(14 patients)
Lateral Thigh: 19%
(10 patients)

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Examination

- Antalgic Gait
- Trendelenburg's +ve
- Single Leg Hop Test +ve
- Restriction in ROM
- Positive Impingement test
- FABER Test

Arthroscopy: The Journal of Arthroscopic and Related Surgery, Vol 26, No 2 (February), 2010: pp 161-172

The Pattern and Technique in the Clinical Evaluation of the Adult Hip: The Common Physical Examination Tests of Hip Specialists

Hal D. Martin, D.O., Bryan T. Kelly, M.D., Michael Leunig, M.D., Marc J. Philippon, M.D., John C. Clohisy, M.D., RobRoy L. Martin, Ph.D., P.T., C.S.C.S., Jon K. Sekiya, M.D., Ricardo Pietrobon, M.D., Ph.D., Nicholas G. Mohtadi, M.D., Thomas G. Sampson, M.D., and Marc R. Safran, M.D.

There are variations in the testing that hip specialists perform to examine and evaluate their patients, but there is enough commonality to form the basis to recommend a battery of physical examination maneuvers that should be considered for use in evaluating the hip.

Minimum Clinical Exam

- **Limp (Yes No)**
- **BMI**
- ***ROM:***
  - ***IR @ 90 degrees flexion***
  - Flexion
  - External Rotation
  - Extension
  - Abduction in supine position
  - Craig's Test
- ***Provocative Pain***
  - Impingement (FADIR)
  - Sub-Spine Impingement Sign (Anterior Pain with Flexion)
  - Superolateral impingement (Anterolateral pain with flexion / ER)
  - Trochanteric Pain Sign (Posterolateral pain in FABER)
  - Lateral Rim Impingement (Pain with abduction)
  - Instability (Extension / ER with Anterior Pain)
  - Posterior Impingement (Extension / ER with Posterior Pain)
  - Ischio-Femoral Impingement Sign (Post pain with Ext / IR)

pelvis stable

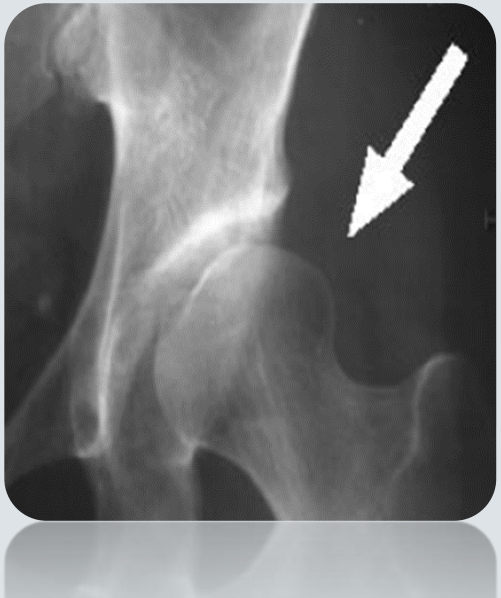
- Perls

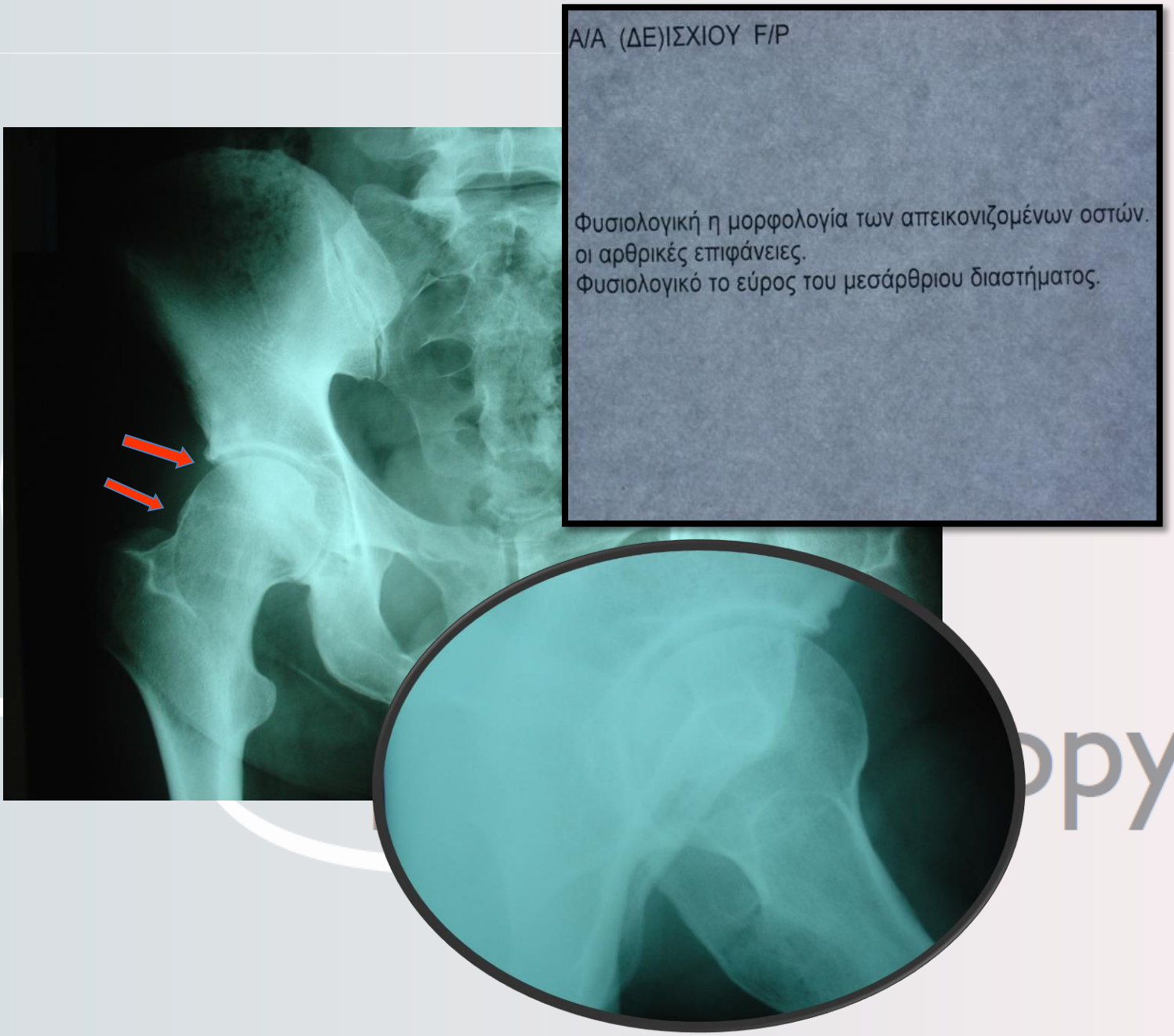
-Check Iliopsoas (SI and LB involvement)

-RoM

restriction / hyperlaxity

(xray)

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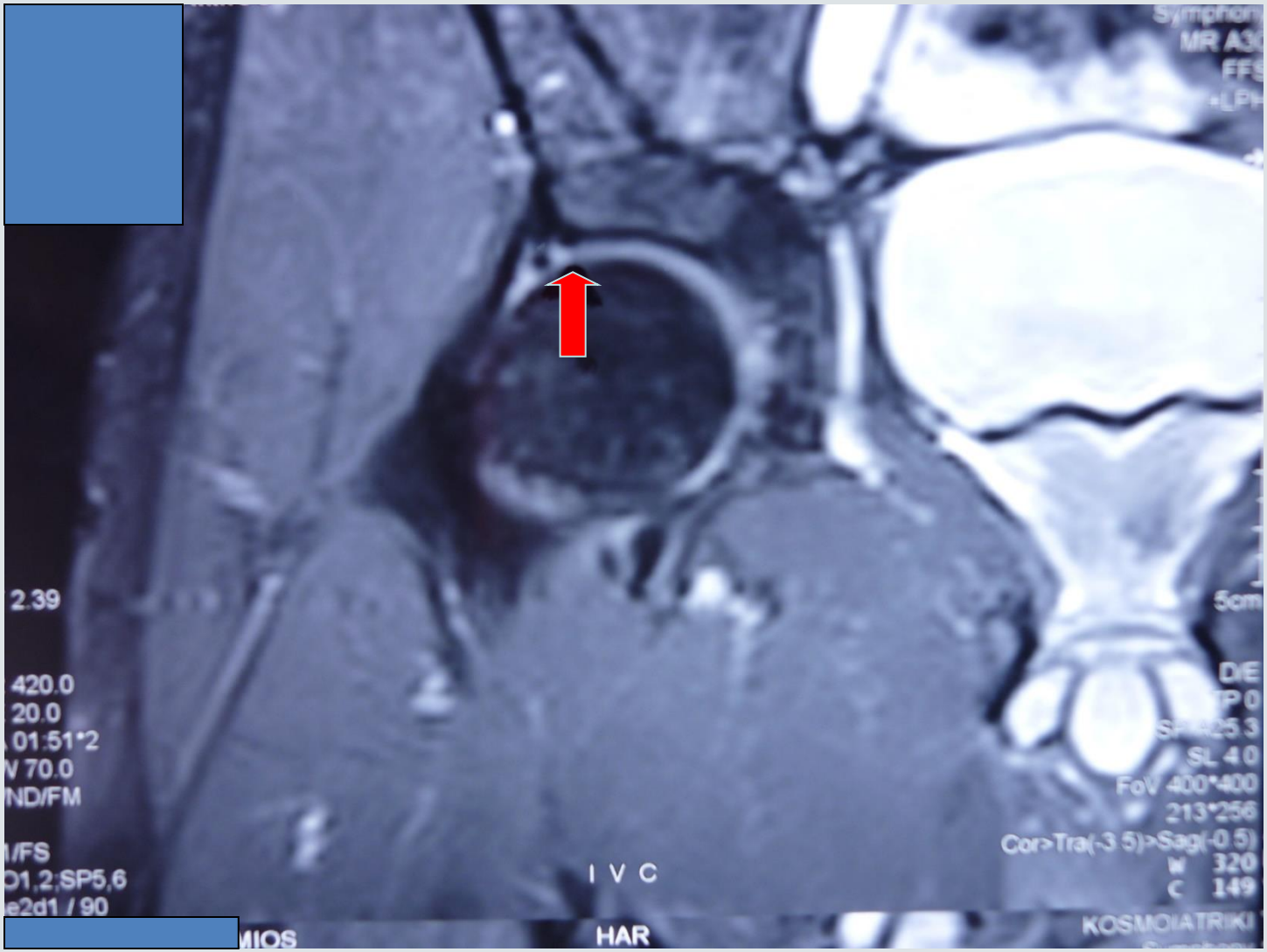
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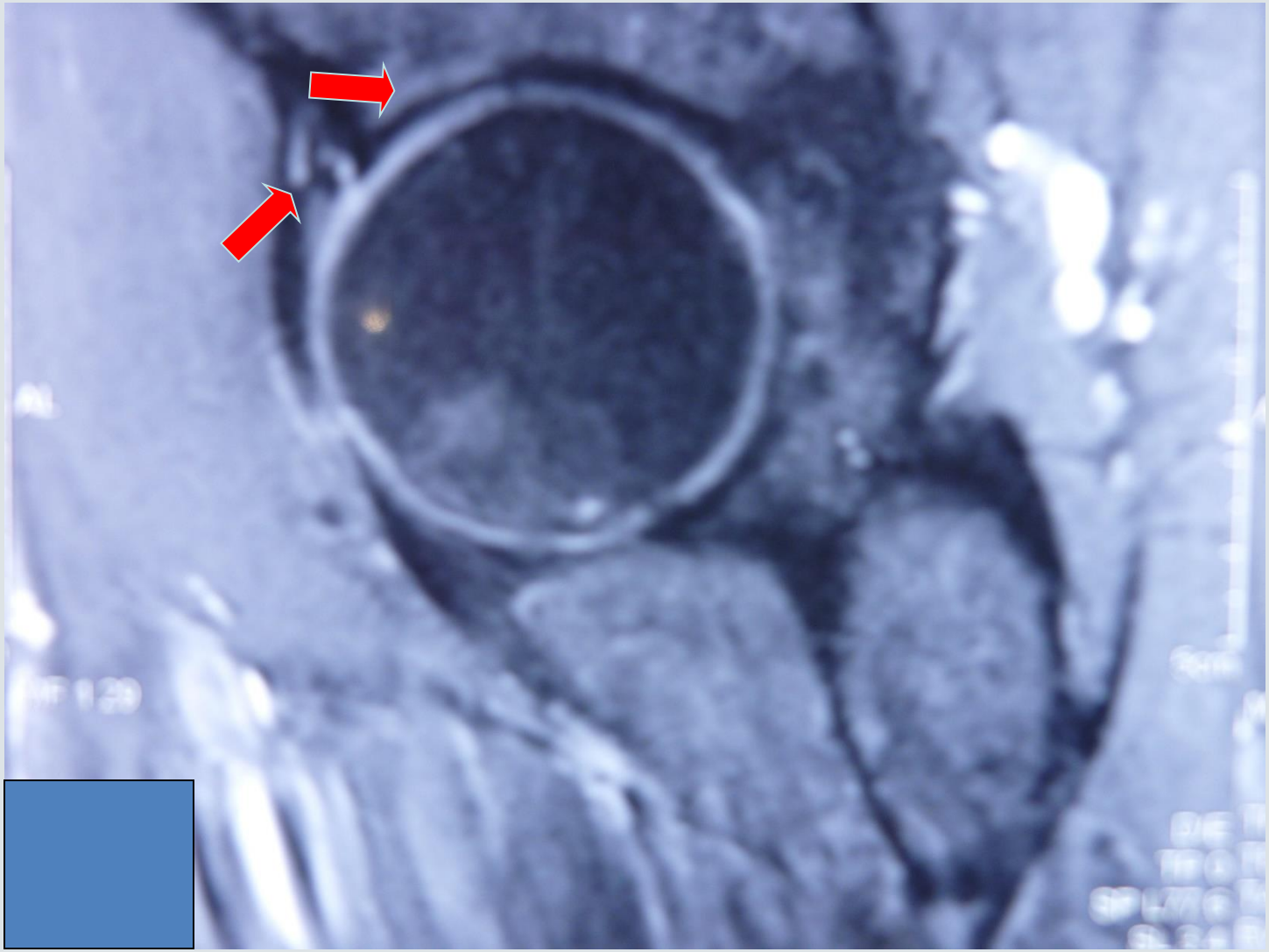

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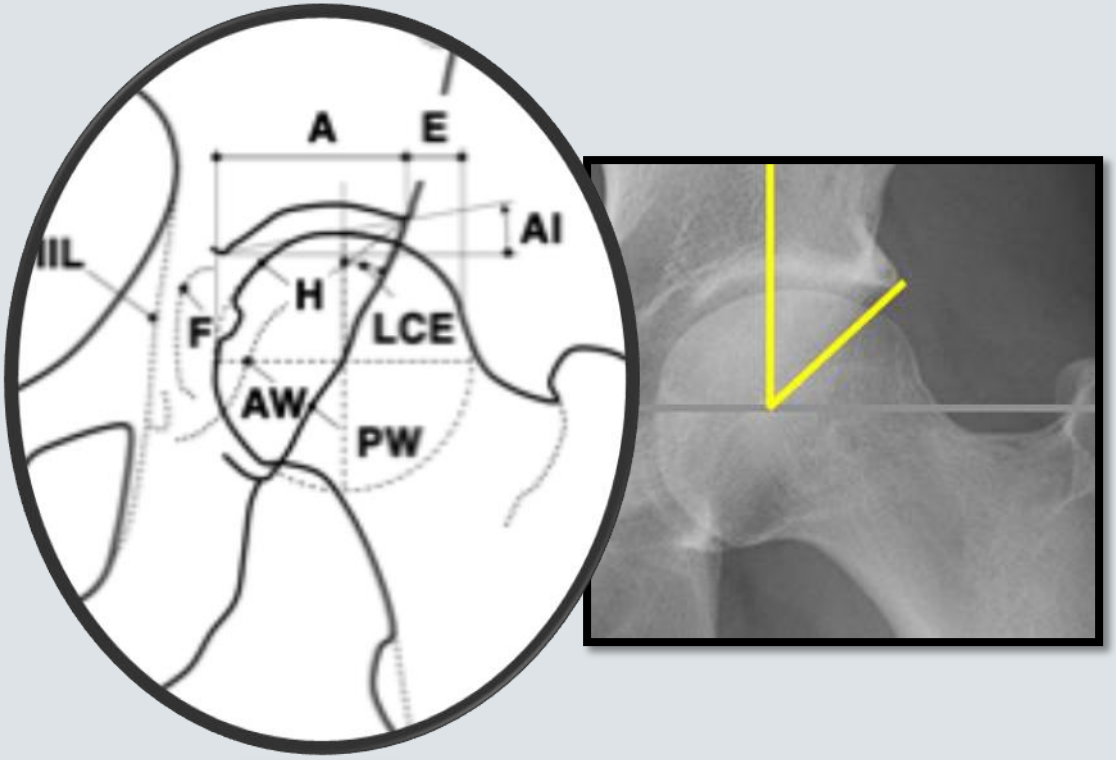
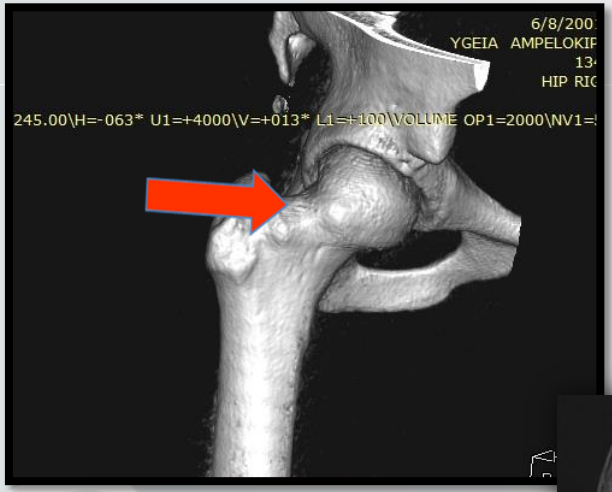
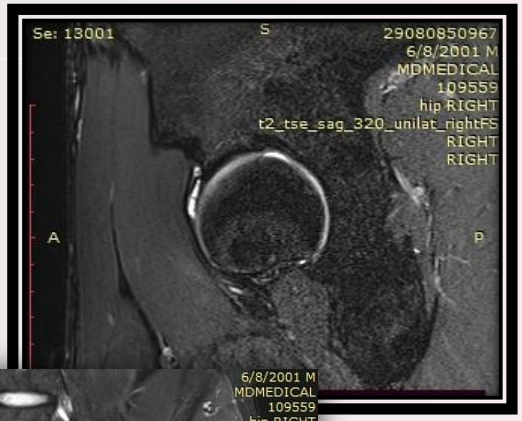
Lateral center edge angle

- **Lateral center edge angle**
- Normal is between 25 and 39 degrees
- Increases with deeper acetabulum and more overcoverage







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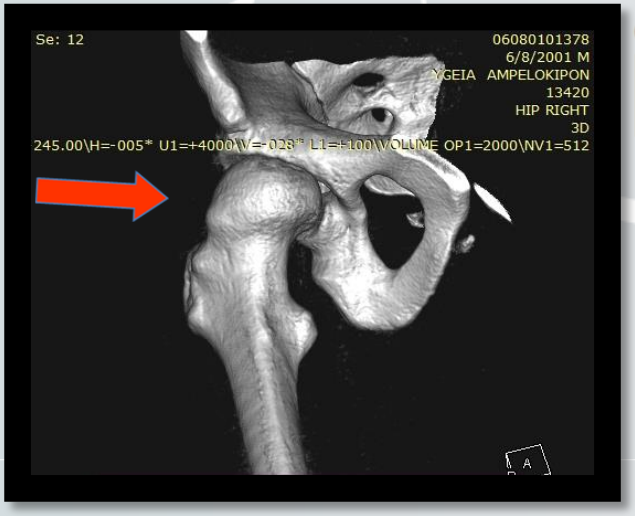

Editorial Commentary: Treating Hip Impingement Without a Computed Tomography Scan? You Might as Well Operate With a Blindfold

Tigran Garabekyan, M.D., and Omer Mei-Dan, M.D.

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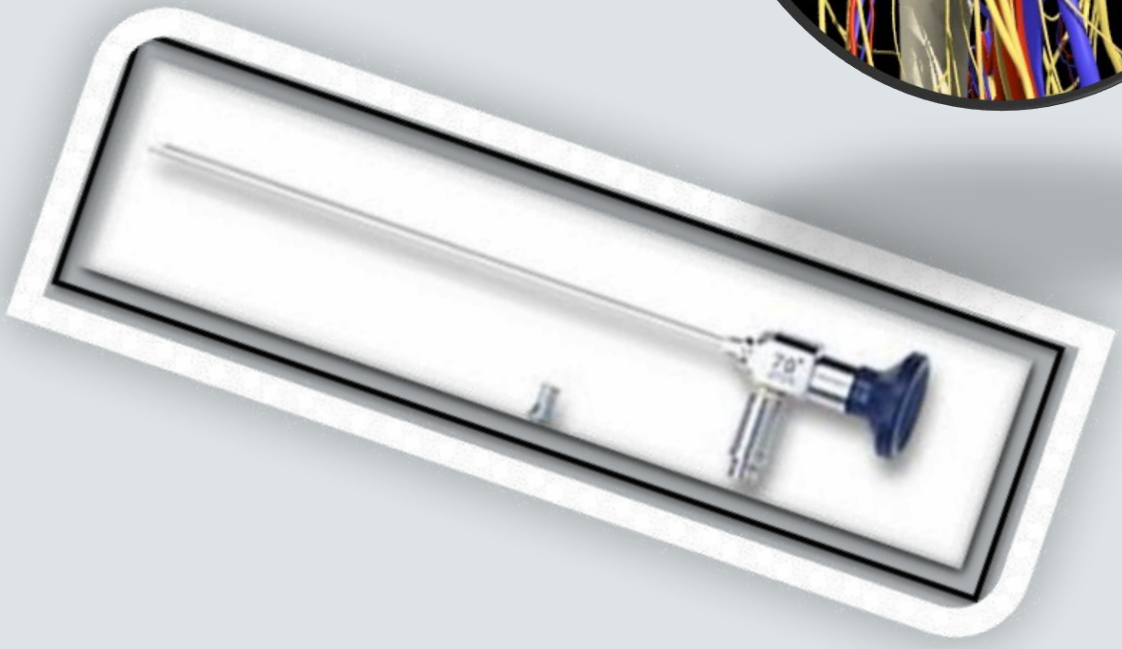
hip arthroscopy is not an operation, it is a technique.



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FAI

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VOL. XVIII, NO. 4, OCTOBER 1936

TREATMENT OF MALUM COXAE SENILIS, OLD SLIPPED UPPER FEMORAL EPIPHYSIS, INTRAPELVIC PROTRUSION OF THE ACETABULUM, AND COXA PLANA BY MEANS OF ACETABULOPLASTY*

BY M. N. SMITH-PETERSEN, M.D., BOSTON, MASSACHUSETTS
Chief of Orthopaedic Service, Massachusetts General Hospital; Clinical Professor of Orthopaedic Surgery, Harvard Medical School

In February 1935 a patient, aged fifty-five, was admitted to the Orthopaedic Ward of the Massachusetts General Hospital with the diagnosis of "bilateral intrapelvic protrusion of the acetabulum". The case was discussed on ward rounds and the general opinion was that nothing could be done for this patient, and that she would have to adapt her life to the hip-joint condition. This did not seem a constructive attitude, and the patient was allowed to stay on the ward in the hope that some operative procedure might be developed which would give her relief from pain.

The question to be answered was this: "What is the source of this patient's pain?" The answer was: "The impingement of the femoral neck on the anterior acetabular margin". Such impingement would result in "traumatic arthritis" with characteristic changes of the joint surfaces as well as of the synovia. Since the joint surfaces have no nerve

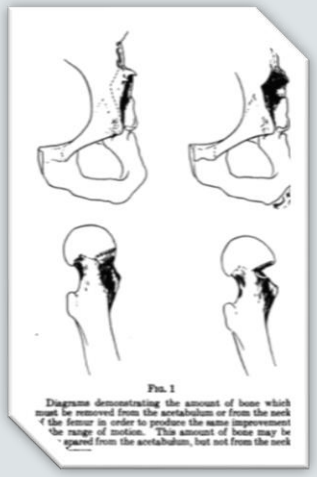

FIG. 1

Diagrams demonstrating the amount of bone which must be removed from the acetabulum or from the neck of the femur in order to produce the same improvement in the range of motion. This amount of bone may be spared from the acetabulum, but not from the neck

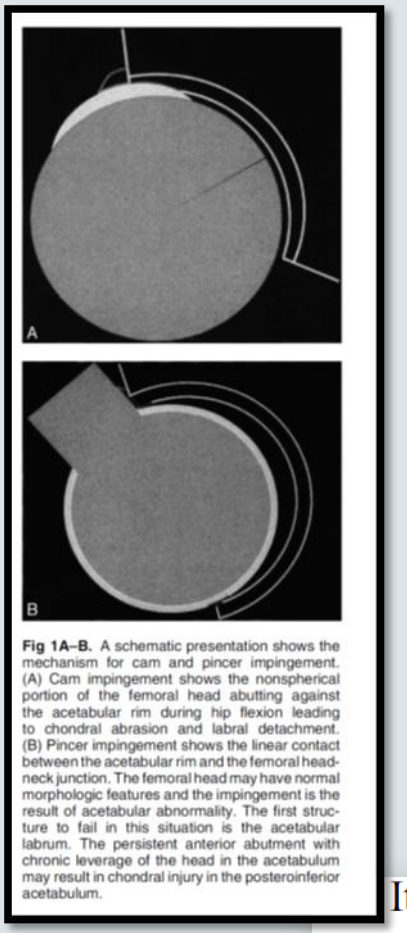

Fig 1A–B. A schematic presentation shows the mechanism for cam and pincer impingement. (A) Cam impingement shows the nonspherical portion of the femoral head abutting against the acetabular rim during hip flexion leading to chondral abrasion and labral detachment. (B) Pincer impingement shows the linear contact between the acetabular rim and the femoral head-neck junction. The femoral head may have normal morphologic features and the impingement is the result of acetabular abnormality. The first structure to fail in this situation is the acetabular labrum. The persistent anterior abutment with chronic leverage of the head in the acetabulum may result in chondral injury in the posteroinferior acetabulum.

CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
Number 417, pp. 112–120

Femoroacetabular Impingement

A Cause for Osteoarthritis of the Hip

Reinhold Ganz, MD*; Javad Parvizi, MD**; Martin Beck, MD*; Michael Leunig, MD*; Hubert Nötzli, MD*; and Klaus A. Siebenrock, MD*

It is proposed that recognition of this entity and early intervention before the degenerative process is advanced, is likely to have a considerable impact on the natural history of the disease, delaying the onset of end-stage arthritis in this young group of patients.

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PubMed | hip arthroscopy | Search

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Indications for **Hip Arthroscopy**.
Ross JR et al. Sports Health. (2017)

Hip arthroscopy: Indications, outcomes and complications.
Jamil M et al. Int J Surg. (2018)

Outcomes of **Hip Arthroscopy** in the Older Adult: A Systematic Review of the Literature.
Griffin DW et al. Am J Sports Med. (2017)

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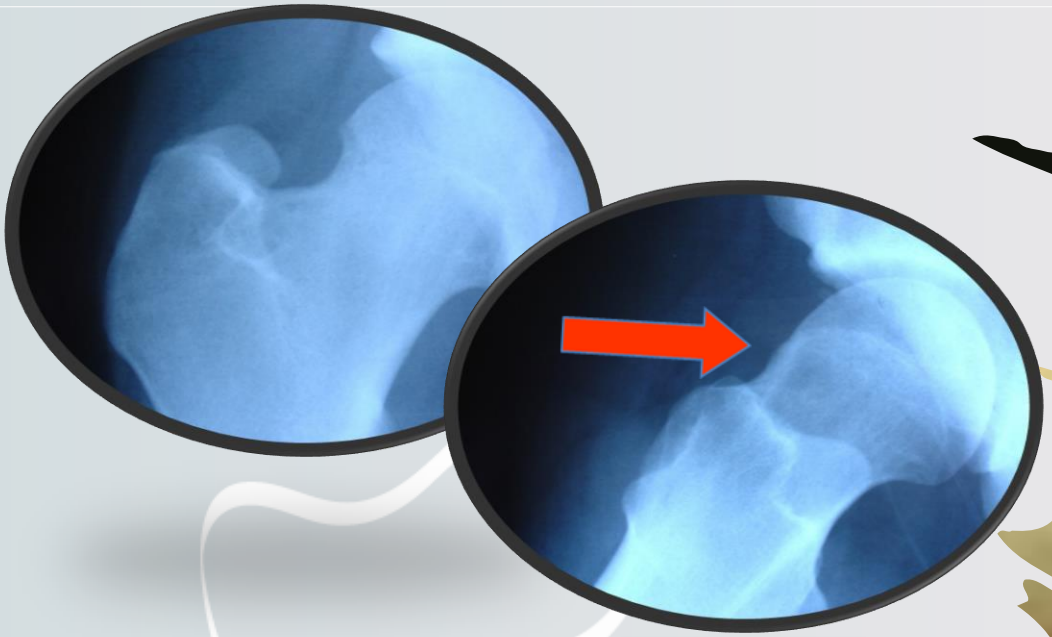
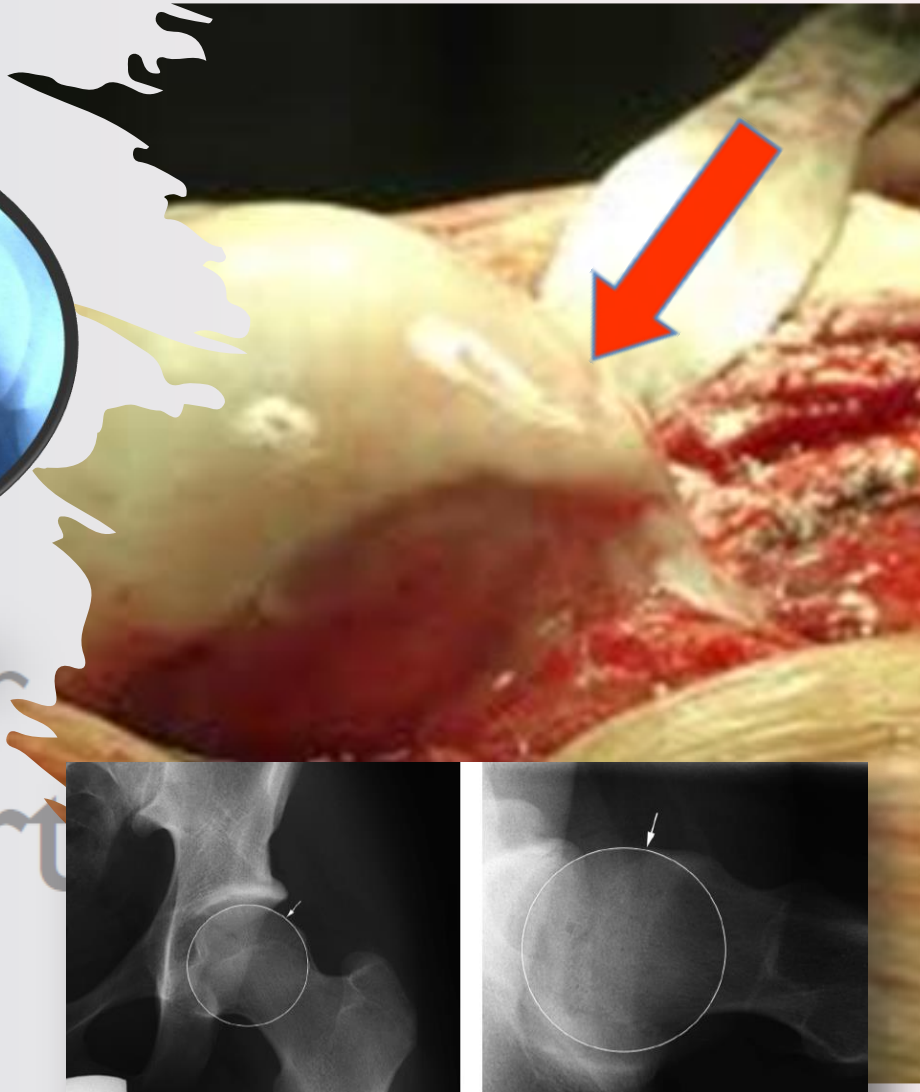
Cam





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You might not seen it but it has seen you !

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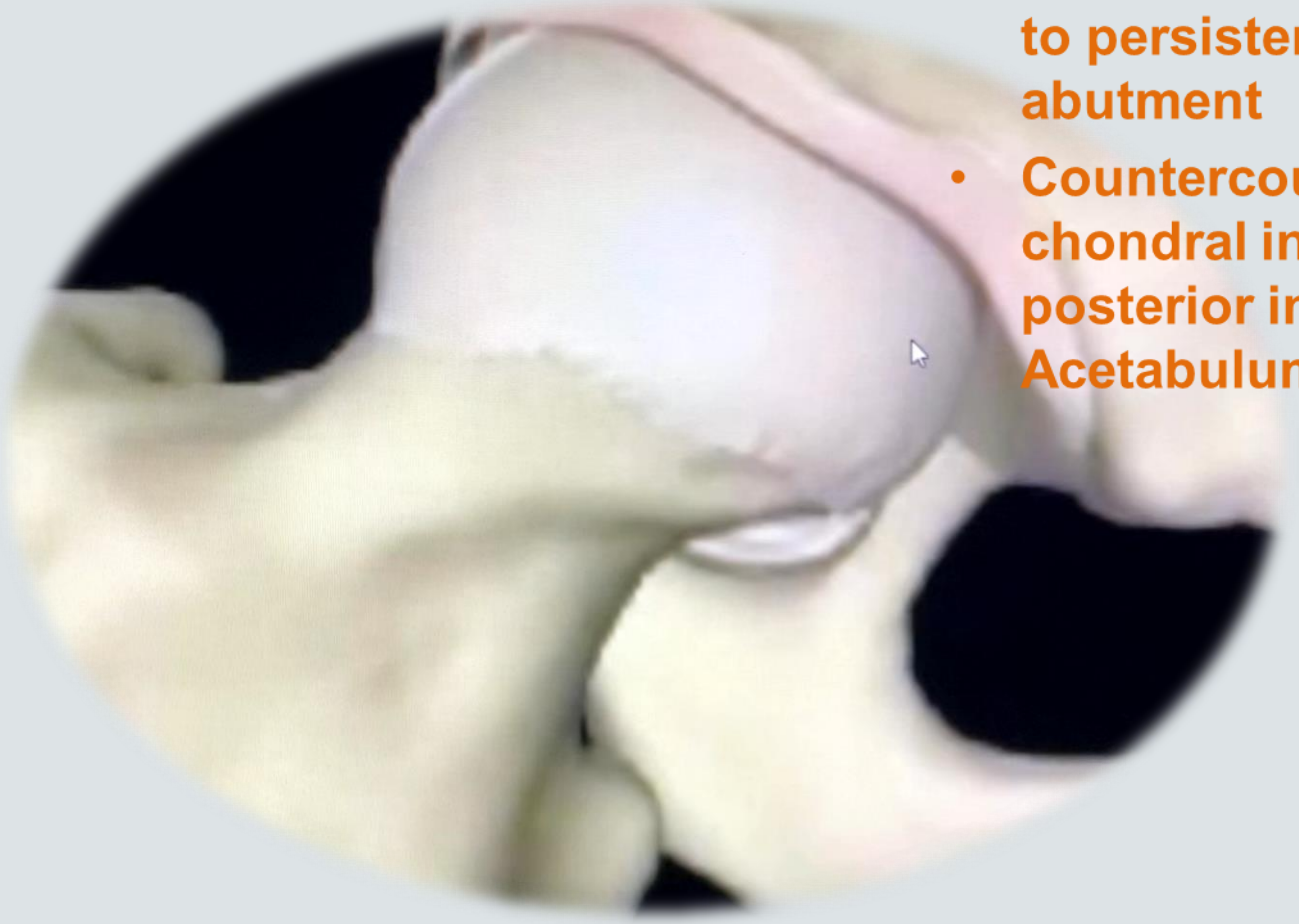
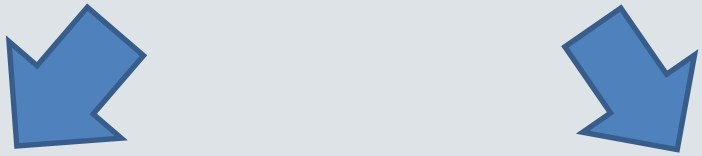
Pincer

- Acetabular over coverage
- Chronic leverage of the FH to Ac leading to persistent anterior abutment
- Countercoup chondral injury to posterior inferior Acetabulum



Acetabular causes of FAI

Overcoverage



Local

Retroversion

Global

Protrusio Acetabuli

Coxa profunda

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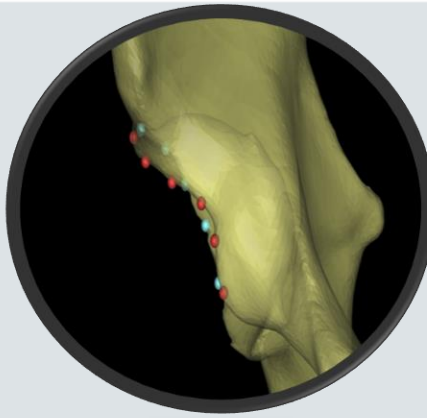
Posterior wall sign

- **Posterior wall sign**
- PW line should descend through center of femoral head
  - Medial – deficient
  - Lateral – prominent

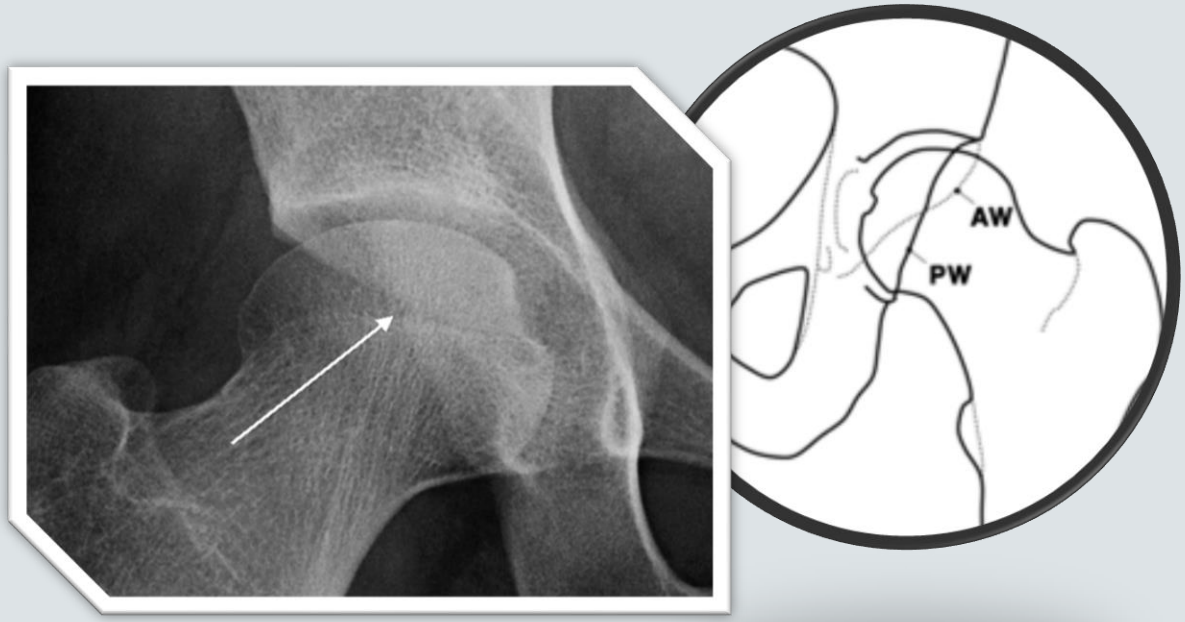
  Problem is with the Ac orientation – if posterior coverage is diminished consider **PAO**

Anterior Overcoverage



Focal anterior overcoverage

1. positive cross-over sign (Anterior rim prominence results in projected overlap with posterior wall), 2. negative posterior wall sign (PW runs thru center of rotation of FH) , and 3. LCE of greater than 25 degrees



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FAI Treatment

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THE LANCET

Hip arthroscopy versus best conservative care for the treatment of femoroacetabular impingement syndrome (UK FASHIoN): a multicentre randomised controlled trial

Damian R Griffin, Edward J Dickenson, Peter D H Wall, Felix Achana, Jenny L Donovan, James Griffin, Rachel Hobson, Charles E Hutchinson, Marcus Jepson, Nick R Parsons, Stavros Petrou, Alba Realpe, Joanna Smith, Nadine E Foster, on behalf of the UK FASHIoN Study Group*

Interpretation Hip arthroscopy and personalised hip therapy both improved hip-related quality of life for patients with femoroacetabular impingement syndrome. Hip arthroscopy led to a greater improvement than did personalised hip therapy, and this difference was clinically significant. Further follow-up will reveal whether the clinical benefits of hip arthroscopy are maintained and whether it is cost effective in the long term.

Arthroscopic hip surgery compared with physiotherapy and activity modification for the treatment of symptomatic femoroacetabular impingement: multicentre randomised controlled trial

Antony J R Palmer,[1] Vandana Ayyar Gupta,[1] Scott Fernquest,[1] Ines Rombach,[2] Susan J Dutton,[2] Ramy Mansour,[3] Simon Wood,[3] Vikas Khanduja,[4] Tom C
Karen L Barker,[1] Tony J M D Andrade,[5] Andrew J Carr,[1]
on behalf of the FAIT Study Group

This study suggests that arthroscopic hip surgery is superior to physiotherapy and activity modification at improving symptoms in patients referred to secondary or tertiary care with FAI syndrome

Not all patients benefit from surgery, and the decision to operate must follow a detailed discussion between patients and surgeons

The results inform management decisions made by patients, clinicians, and policymakers, but further research is required to identify patients most likely to benefit from intervention

thebmj | *BMJ* 2019;364:l185 | doi: 10.1136/bmj.l185

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Surgery that requires thought

- FAI is NOT painful
- It is a mechanism
- Understanding pathology and what to correct is critical - Bad surgery can do as much damage to the hip as nature in years
- Be careful with bony correction it can risk dysplasia or femoral offset
- Be careful with capsular management !

Surgery corrects STRUCTURES not PAIN

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What do we know??

1.

Data confirms link between FAI hip pain and osteoarthritis

2.

Safety and efficacy of surgery in improving symptoms and function (early-mid term f/u)

3.

FAI is not a disease but a process by which the human hip can fail

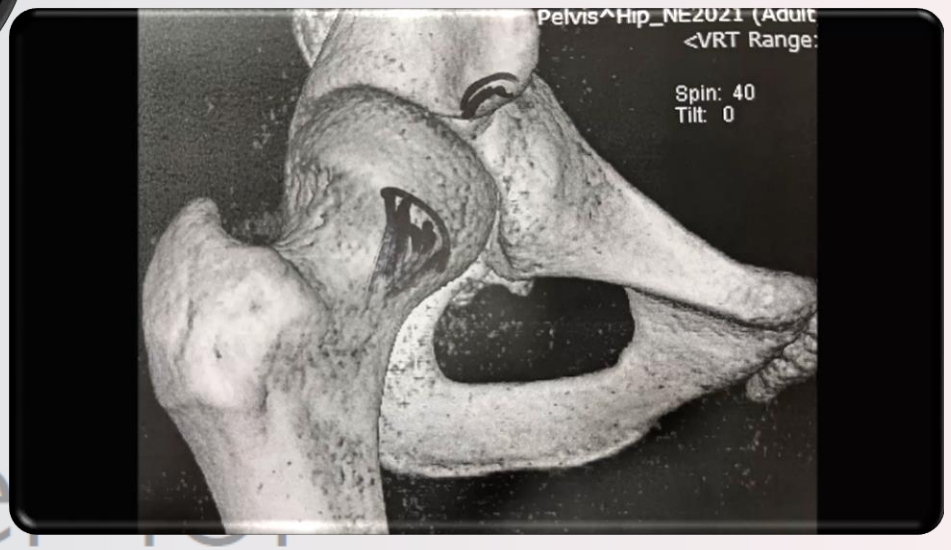
4.

Some understanding of mechanism / Cam type deformity is not rare-It is common in asymptomatic subjects

5.

It is not prophylactic surgery

Is there a biological factor?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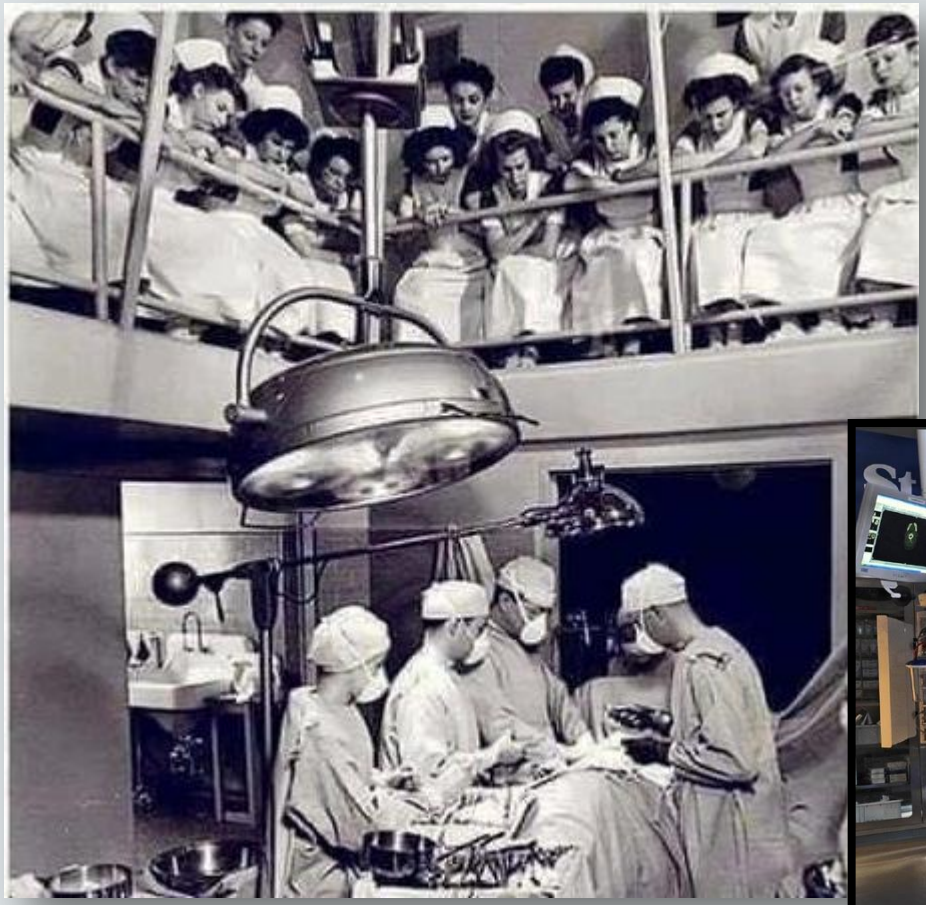

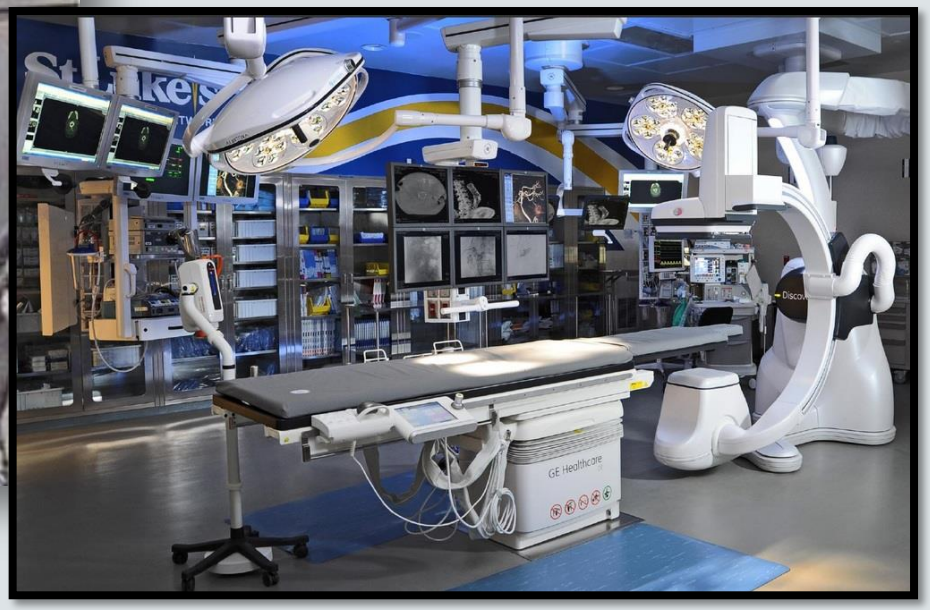

- **STATE OF THE ART**

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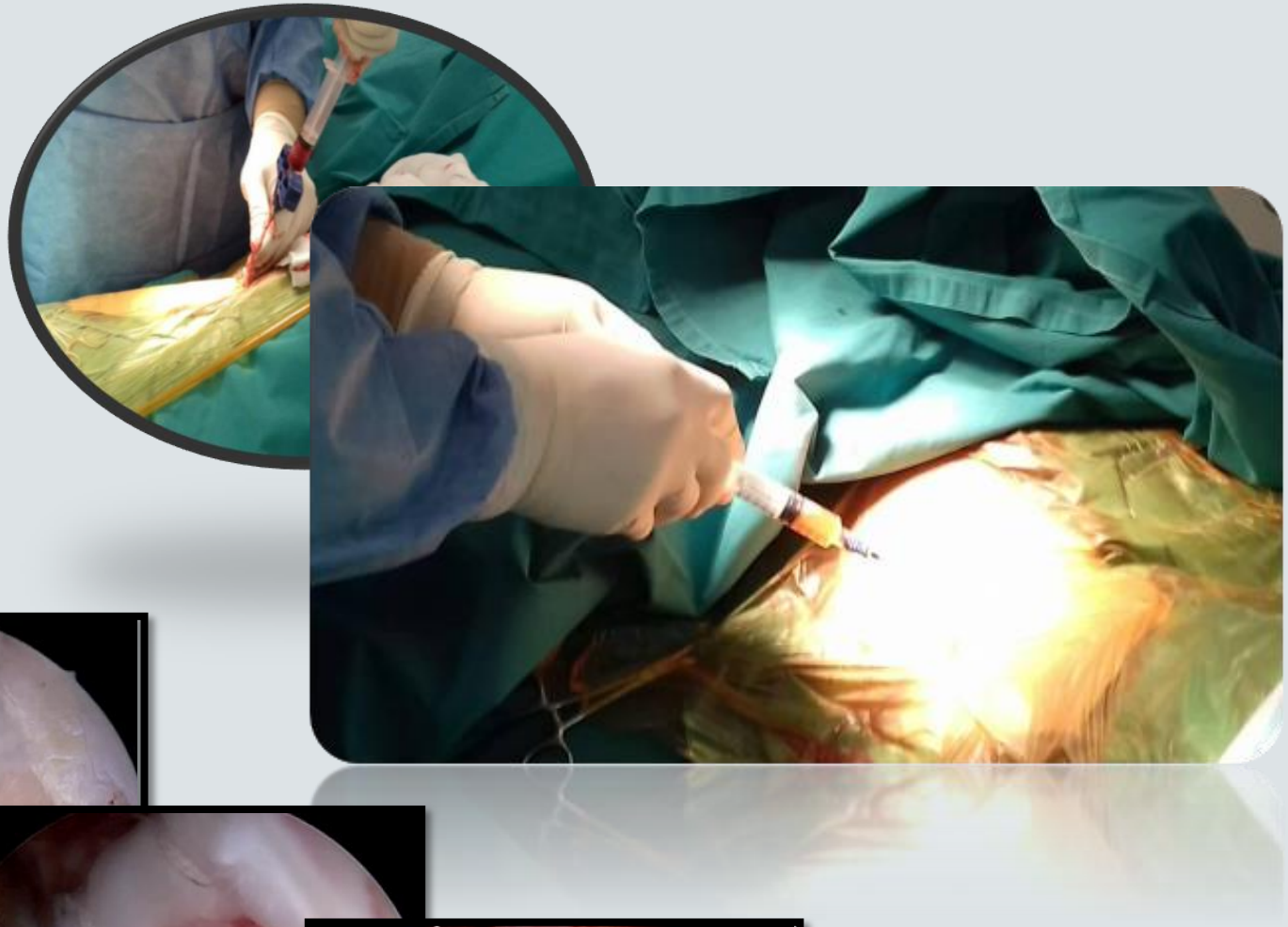

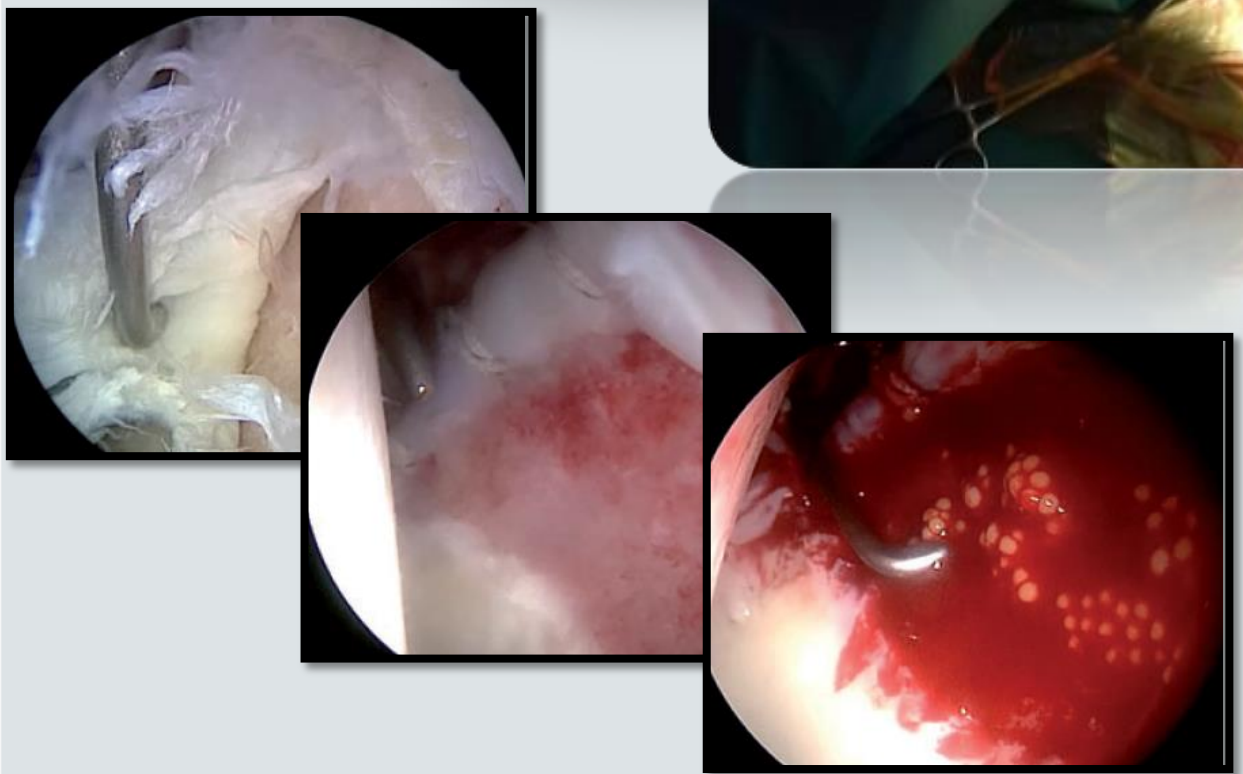

Picking Winners - Stratification

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Registry Outcomes

Knee Surgery, Sports Traumatology, Arthroscopy
https://doi.org/10.1007/s00167-022-07042-y

HIP

Check for updates

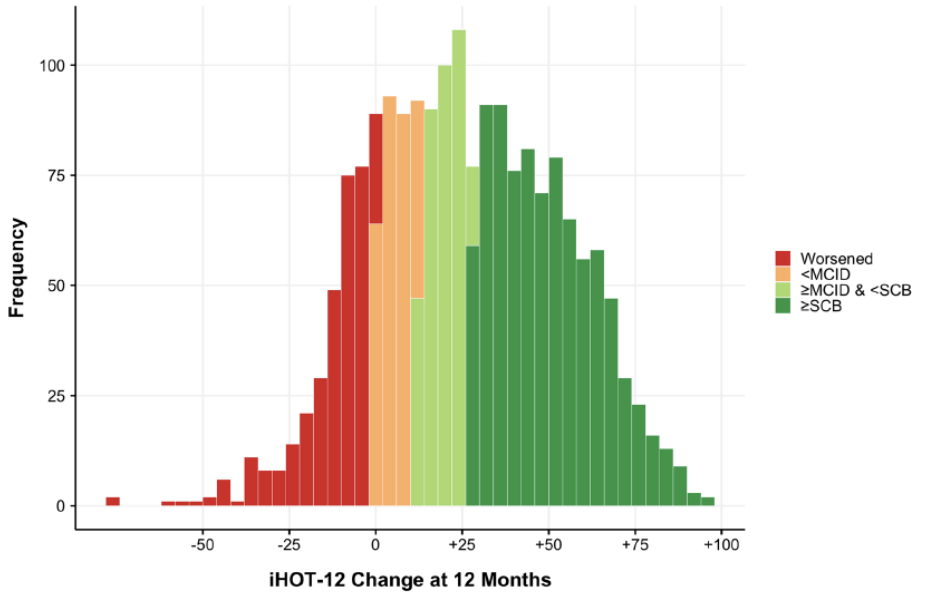
Hip arthroscopy for femoroacetabular impingement is associated with significant improvement in early patient reported outcomes: analysis of 4963 cases from the UK non-arthroplasty registry (NAHR) dataset

Richard Holleyman[1] · Mark Andrew Sohatee[2] · Stephen Lyman[3] · Ajay Malviya[2] · Vikas Khanduja[4] · NAHR User Group

Received: 21 September 2021 / Accepted: 9 June 2022

Non-Arthroplasty Hip Registry

Outcomes may not be universally successful
Age
BMI
Pincer
DYSPLASIA



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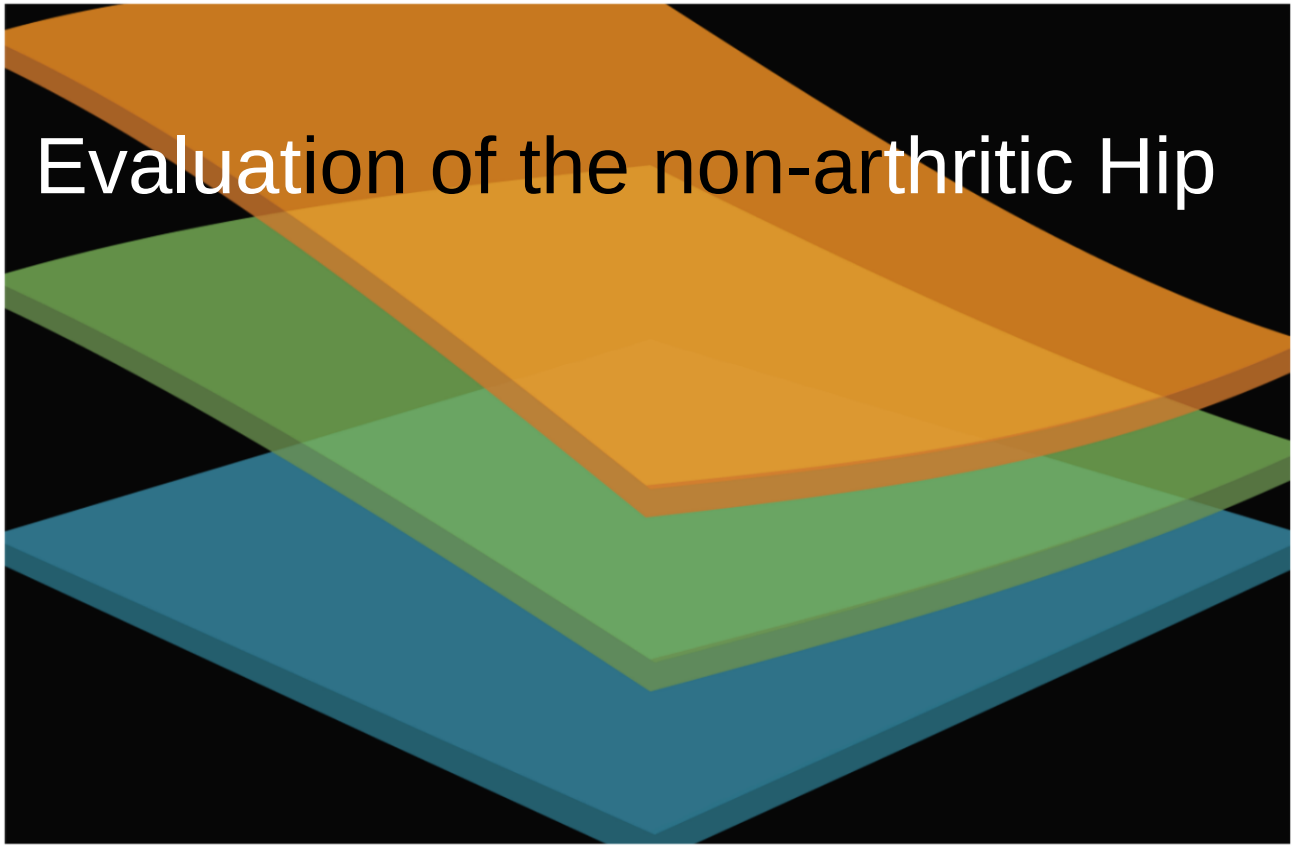

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HSSJ (2012) 8:213–224
DOI 10.1007/s11420-012-9304-x

HOSPITAL FOR
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CURRENT TOPICS CONCERNING JOINT PRESERVATION AND MINIMALLY INVASIVE SURGERY OF THE HIP

An Algorithmic Approach to Mechanical Hip Pain

The layer concept: utilization in determining the pain generators, pathology and how structure determines treatment

Peter Draovitch · Jaime Edelstein · Bryan T. Kelly

THE BONE & JOINT JOURNAL

■ INSTRUCTIONAL REVIEW: HIP

A. Bedi,
B. T. Kelly,
V. Khanduja

Arthroscopic hip preservation surgery

CURRENT CONCEPTS AND PERSPECTIVE

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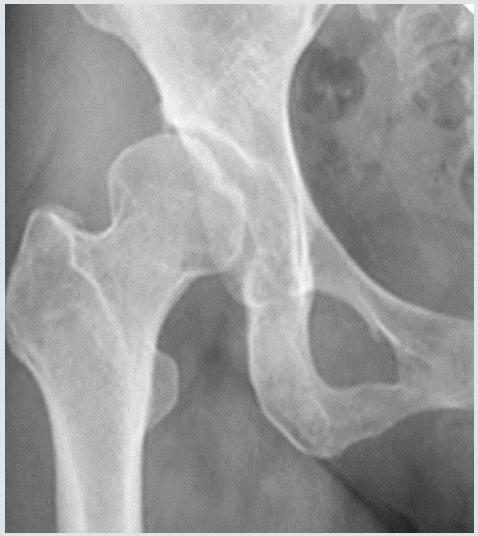
LAYER I
OSSEOUS LAYER

Structures: femur, acetabulum, pelvis

Purpose: joint congruence & normal osteo/arthrokinematics

Developmental
-Dysplasia, femoral & acetabular version, Coxa vara – valga

Dynamic
-Cam impingement –rim impingement



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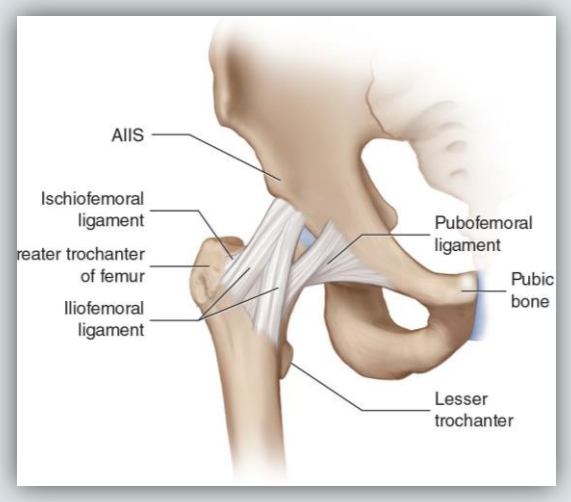
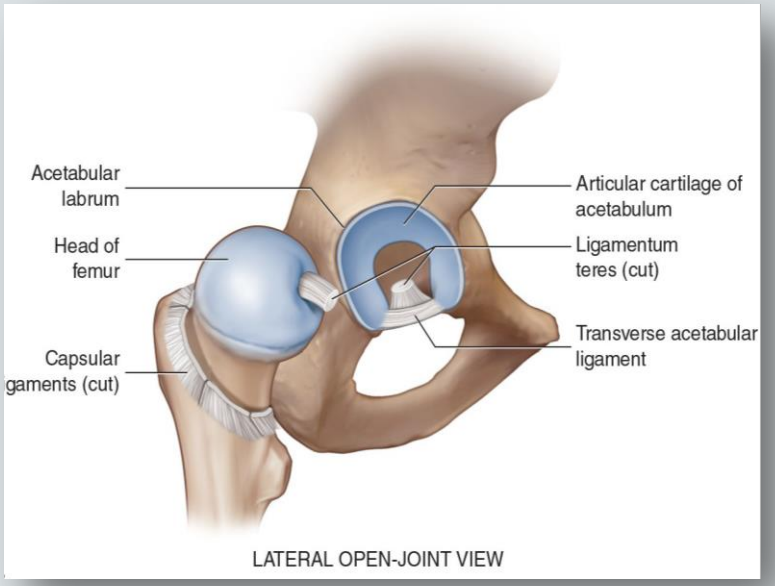
LAYER II
INERT LAYER



Structures: labrum, capsule, ligamentus complex

Purpose: static stability of the joint

-Labral tear
-Cartilage lesion
-Capsular (synovitis, adhesive capsulitis)



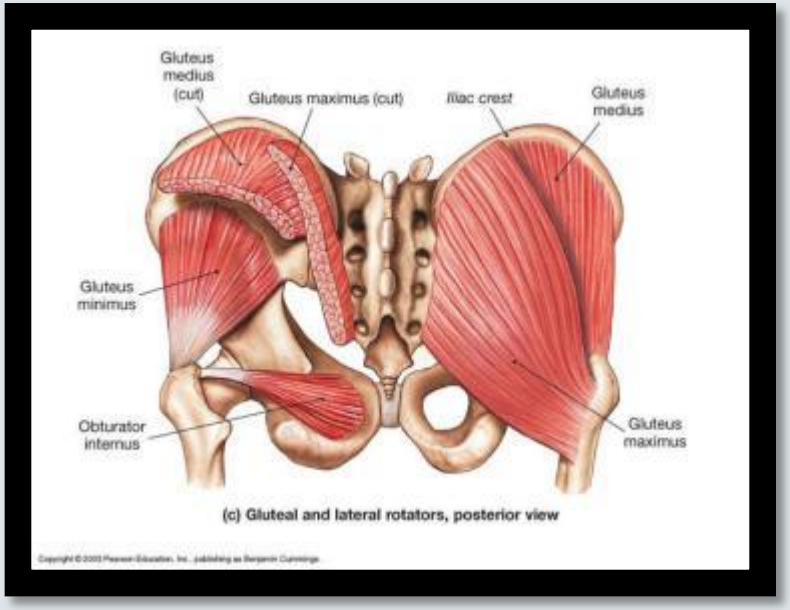
LAYER III
CONTRACTILE LAYER

Structures: all musculature (trunk and pelvic floor)–including lumbosacral

Purpose: Dynamic stability

MULTIPLE PATHOLOGIES (ACUTE OR OVERUSE)

-athletic pubalgia
-abductor failure/ITB pain
-proximal hamstrings syndrome
-Hip flexor tendinitis
-psoas dysfunction



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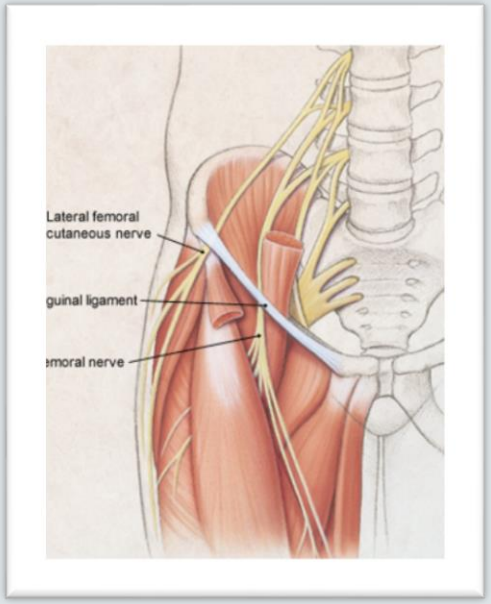
LAYER IV
NEUROMECHANICAL LAYER

Structures: TLS plexus, lumbopelvic structures

Purpose: neuromauscular linking and functional control of the entire segment as it functions within its environment

-nerve compression syndromes
-pain syndromes
-spine referral patterns



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Hip muscle weakness in patients with symptomatic femoroacetabular impingement

N.C. Casartelli, N.A. Maffiuletti*, J.F. Item-Glatthorn, S. Staehli, M. Bizzini, F.M. Impellizzeri, M. Leunig

Neuromuscular Research Laboratory, Schulthess Clinic, Zurich, Switzerland

Osteoarthritis and Cartilage 19 (2011) 816–821

FAI patients had significantly lower Max Voluntary Contraction strength than controls for hip adduction (28%), flexion (26%), external rotation (18%) and abduction (11%). TFL EMG activity was significantly lower in FAI patients compared with controls (P=0.048), while RF EMG activity did not differ significantly between the two groups (P=0.056).

Demonstrate CONTRACTILE DYSFUNCTION as a result of structural pathology and pain

- Layer IV
- Layer III

Re-education of core and hip stabilizers

Kinematic chain must be addressed (i.e. hypermobility, restriction pelvic obliquity can cause muscle imbalance)

- Layer II

Resolve muscle restrictions

Layer I
The most challenging

- **Develop routine**

History/examination

Layer algorithmic approach as guidance

- **You cannot visualize pain – THINK OF HIP BLOCK**

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Case Study 1

Atraumatic Instability

Patients with generalized ligamentus laxity (hypermobility syndroms)

The hip is considered an inherently stable joint by virtue of its bony geometry.

Static & Dynamic soft tissue stabilizers are important in maintaining joint congruity.

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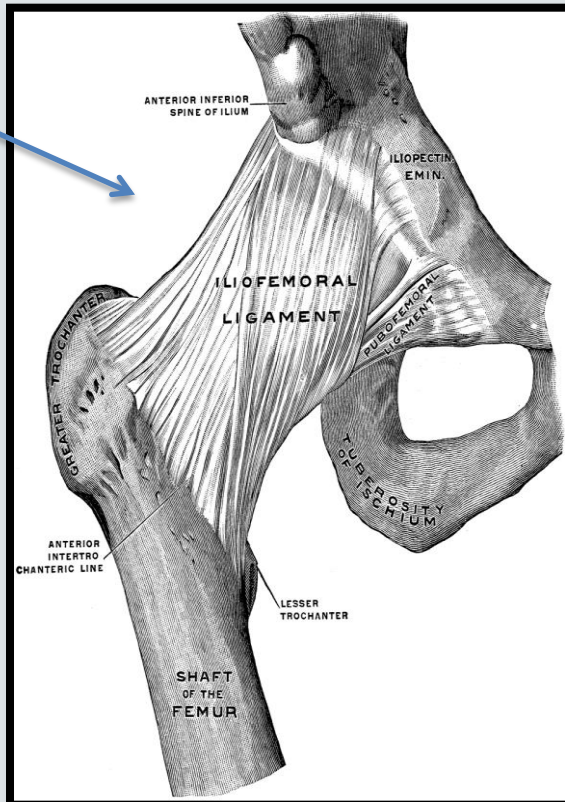
CAPSULAR ANATOMY

The anterosuperior portion of the capsule is the thickest – maximal stress at standing

-Iliofemoral Ligament (λαγονομηριαίος-Y ligament of Bigelow)-restricts extension/allows upright posture without constant muscle action

-Ischiofemoral Ligament- ισχιομηριαίος
-resist IR & adduction



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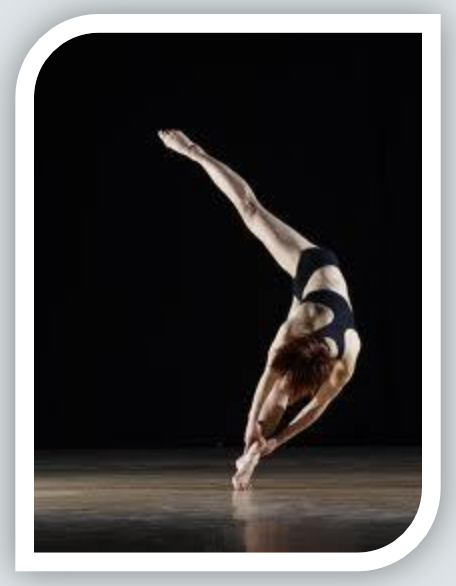
Result of dynamic overuse – repetitive rotation and axial loading



This leads to strain and possible plastic deformity of the anterior capsular stabilizers

Microinstability (laxity with symptoms)

The dynamic stabilizers overwork (iliotibial band tightness, iliopsoas tendinitis)

The result of motion patterns can progress to labral and chonral injury

Hip dysplasia – greater demands on the capsule and labrum

1. Hypertrophic labrum
2. Enlarged LT
3. Thickening of the capsule
4. Capsular redundancy

Soft tissue strain around the hip

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Case Study 2

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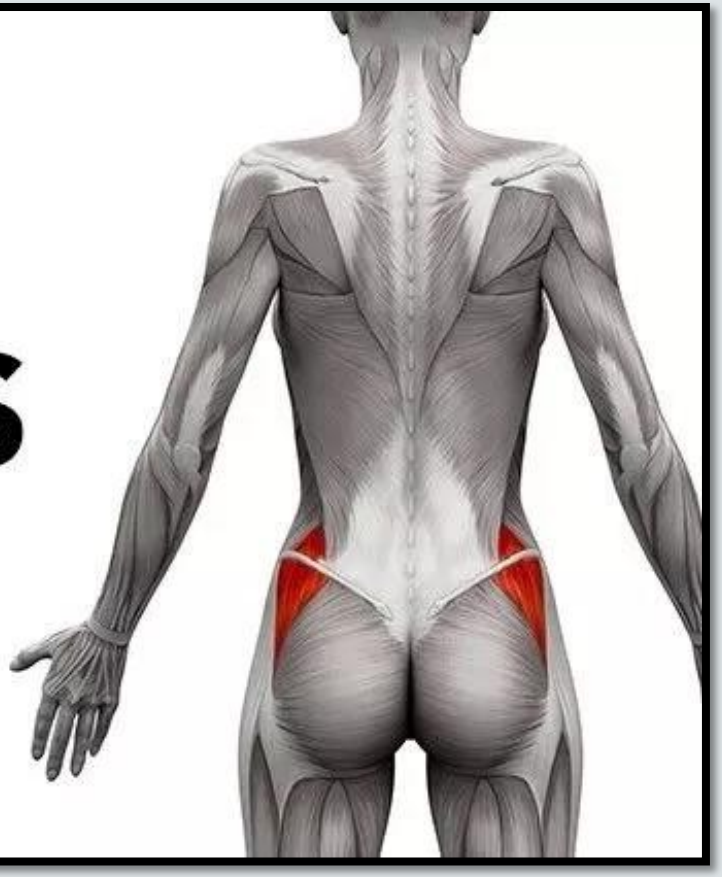
The rotator cuff of the hip

THE ABDUCTORS

muscle of the month



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Epidemiology and Presentation

Lateral pain is the main symptom

frequent at nights when lying down on a bed or early in the morning

activities like long walks, stairs, and slopes
Trochanteric hypersensibility

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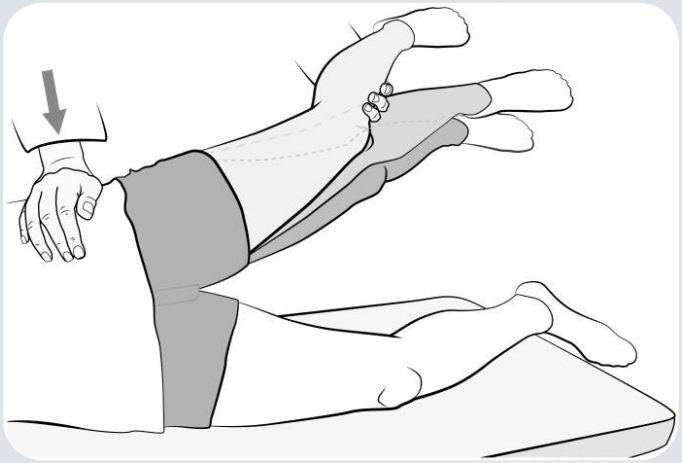
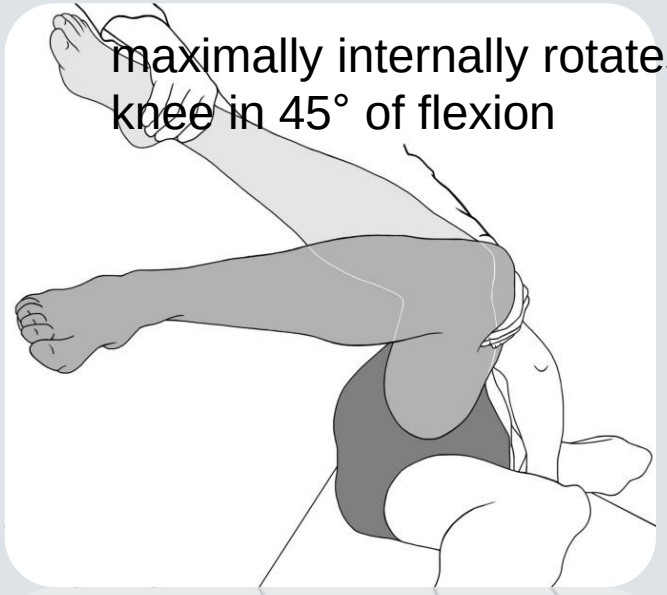
The hip lag sign



passively extends the hip 10°, abducts 20



maximally internally rotates the hip with the knee in 45° of flexion

slight or moderate limping
Trendelenburg sign
30-s single leg stance

evaluation of **muscle strength**
neurologic status
lumbar spine
If **THA**, the stability /integrity of the prosthetic joint must also be checked.

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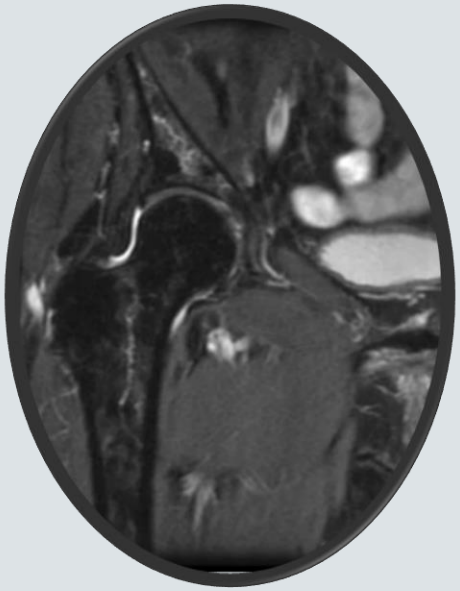
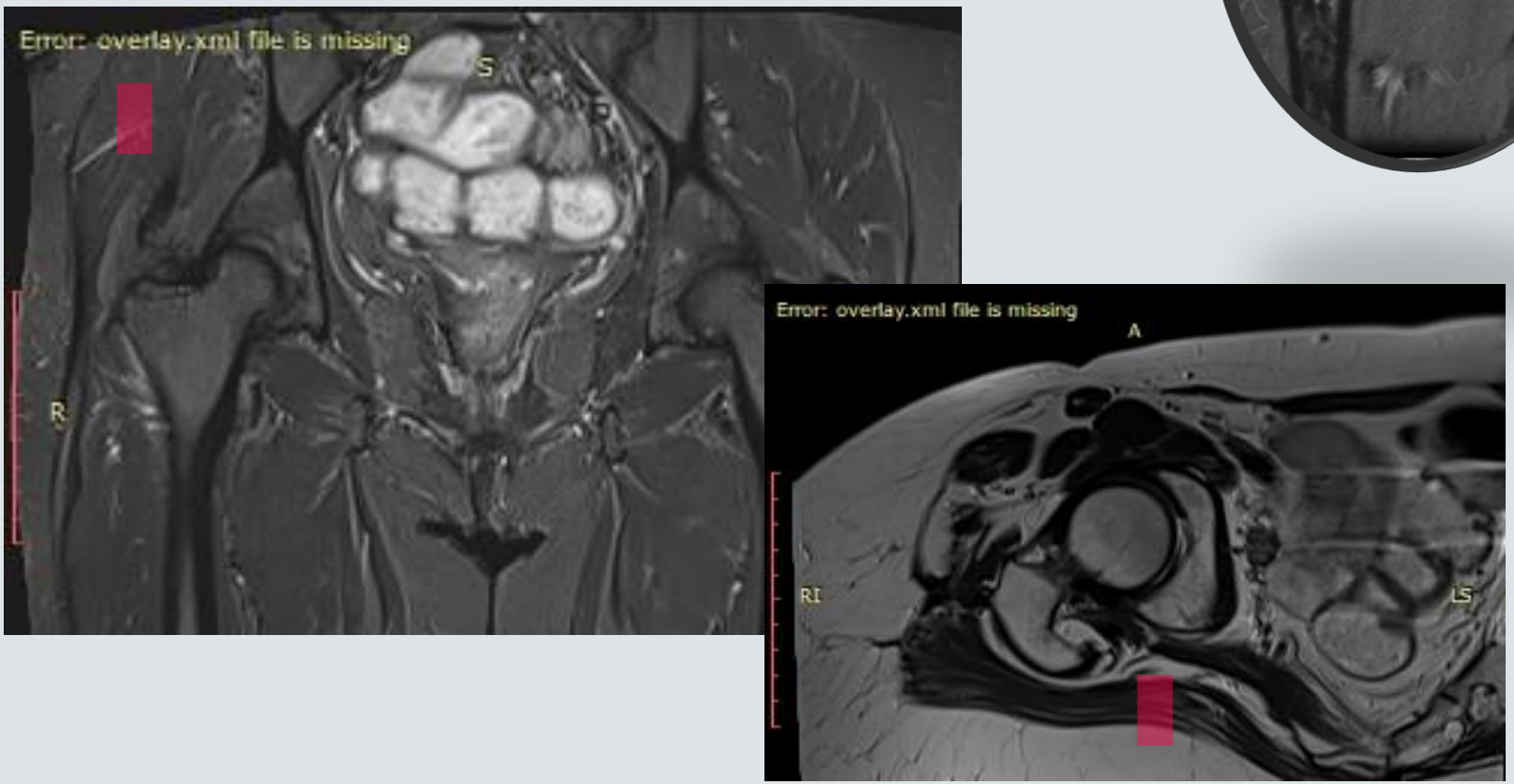
Imaging

MRI is the gold-standard examination of the anatomy and pathology of the abductor muscles and tendons. (sensitivity 73% and specificity 95%)





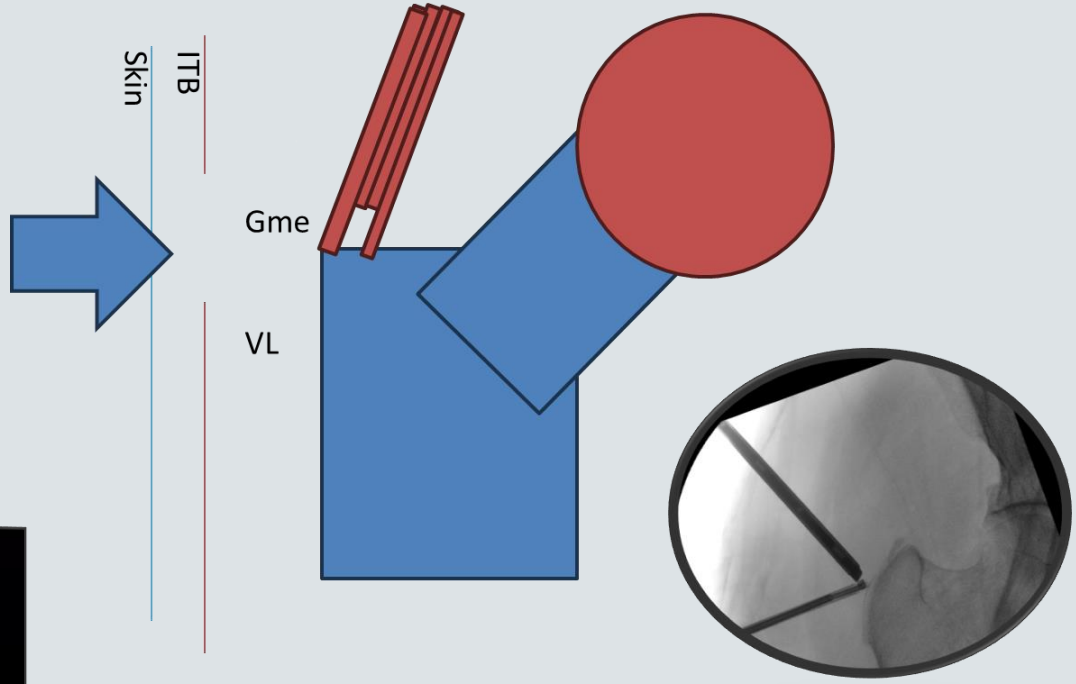
Degenerative chronic tears:
intermittent pain
age-related
poor tissue quality/fatty atrophy/diminished vascularity
Iatrogenic tears:
Secondary to lateral—transtendinous hip approaches.
Traumatic tears: An uncommon presentation or acute on chronic

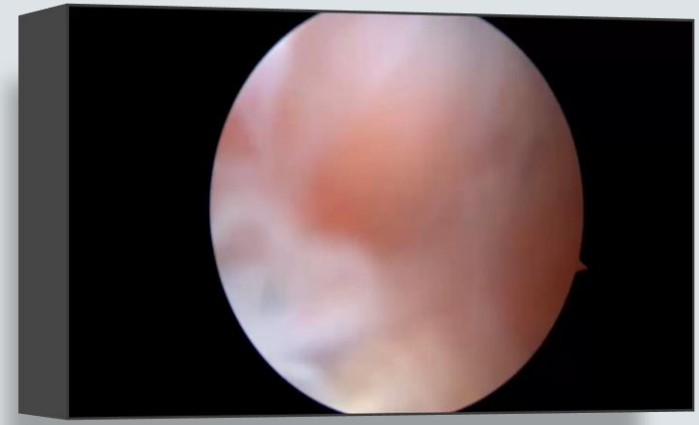
Grade 1: mild	0%-25% tear
Grade 2: moderate	26%-50% tear
Grade 3: severe	51%-99% tear
Grade 4: severe	Full-thickness tear

In patients with small- and medium-size tears and mild retraction when conservative treatment failed

PARTIAL THICKNESS & SMALL FULL THICKNESS Gme TEAR

The trochanderic bursa is excised to reveal the GT tendons of Gme and Vastus Lateralis





If tear not apparent = lies on deep surface a longitudinal split with beaver knife
Debride the pathological tissue

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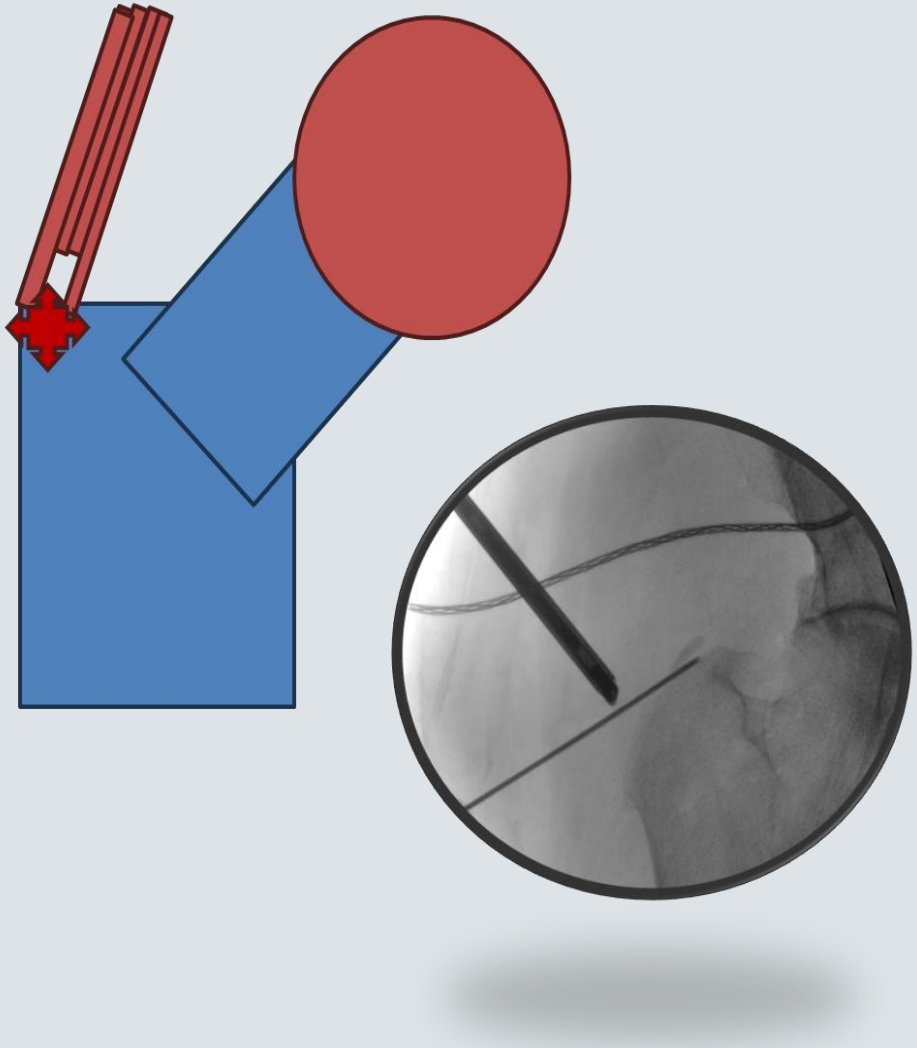
Identify tear – footprint
Resect enthesophyte – bone spur
A bleeding bed is created to enhance healing
Burr – microfracture – rasp
Remember SOFT BONE



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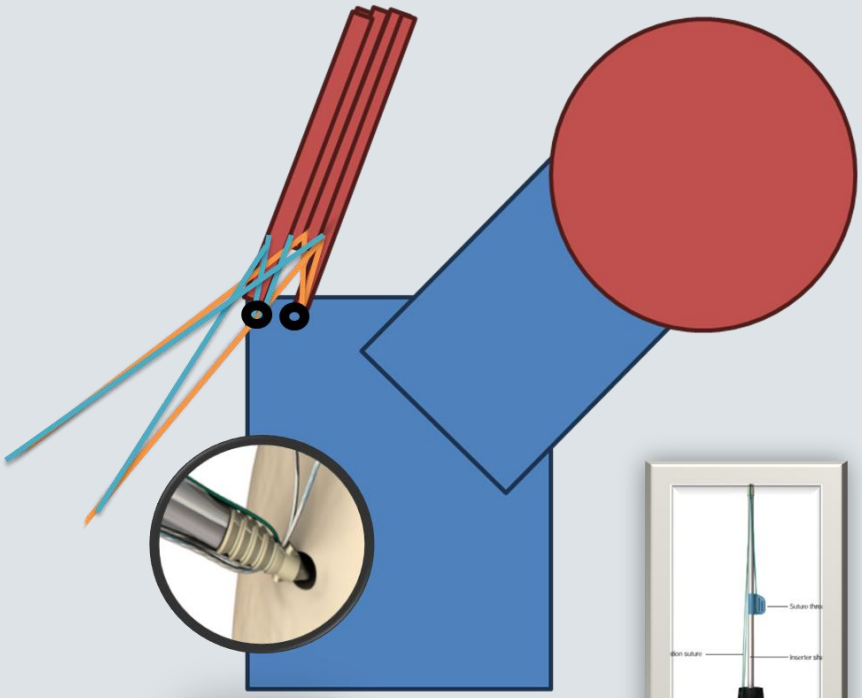
Anchor should be placed in the lateral facet of GT thru the split – use II
Usually, 2 anchors
DISTAL & PROXIMAL to lateral facet

Pass each suture individually thru the tendon and the anterior portal



Thru anterior portal grasp one suture from
Each of the two anchors pulling it out

- Lateral hip pain
- MR – special sequence
- PRP
- Home physio (12 m)

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CASE STUDY 3

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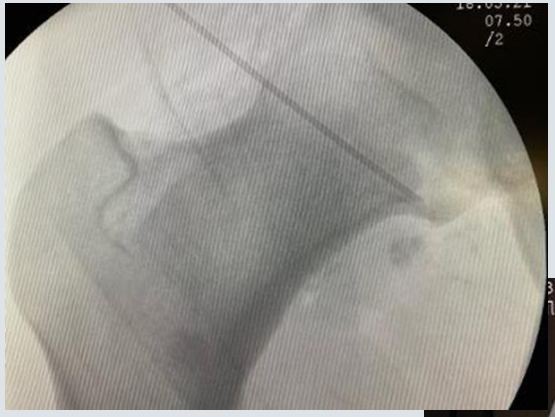
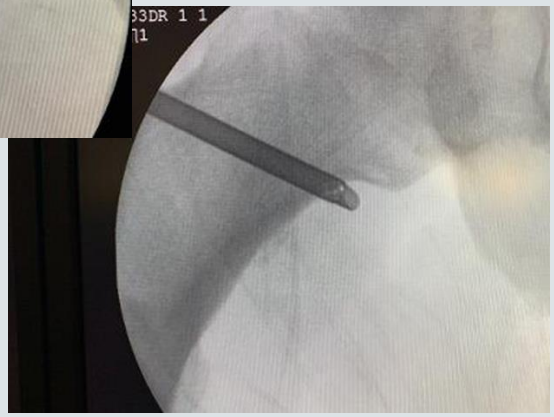
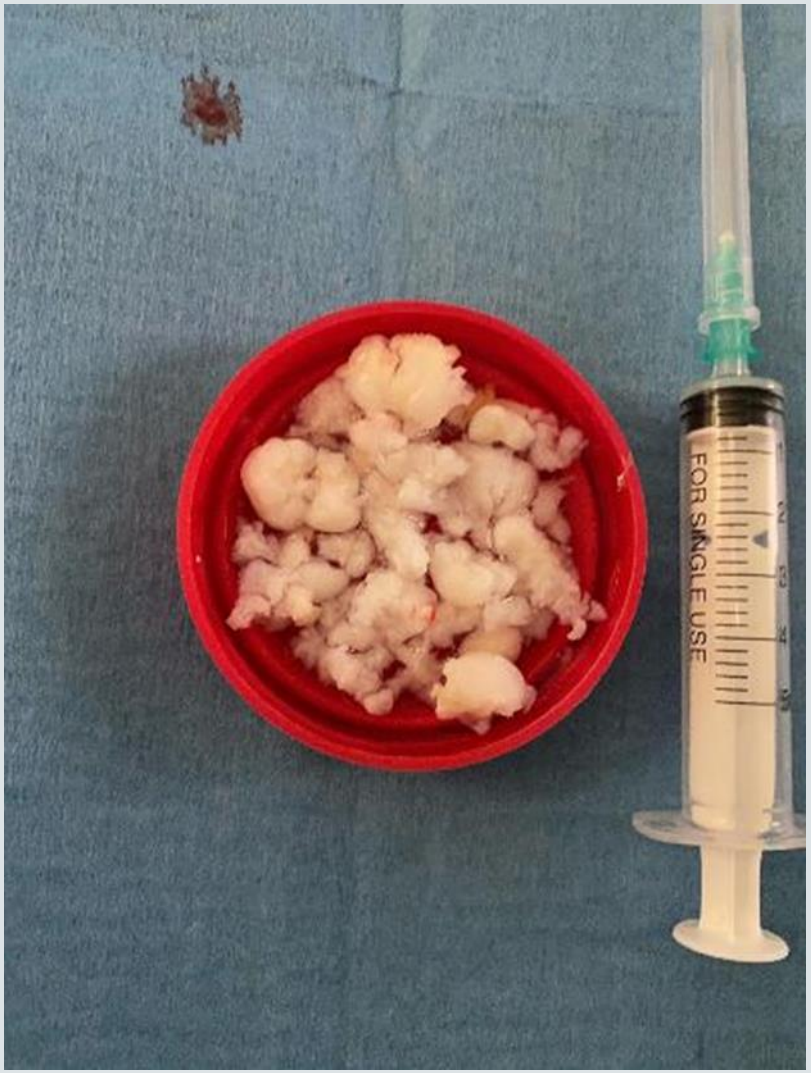
Osteochondromatosis







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Chondrocalcinosis

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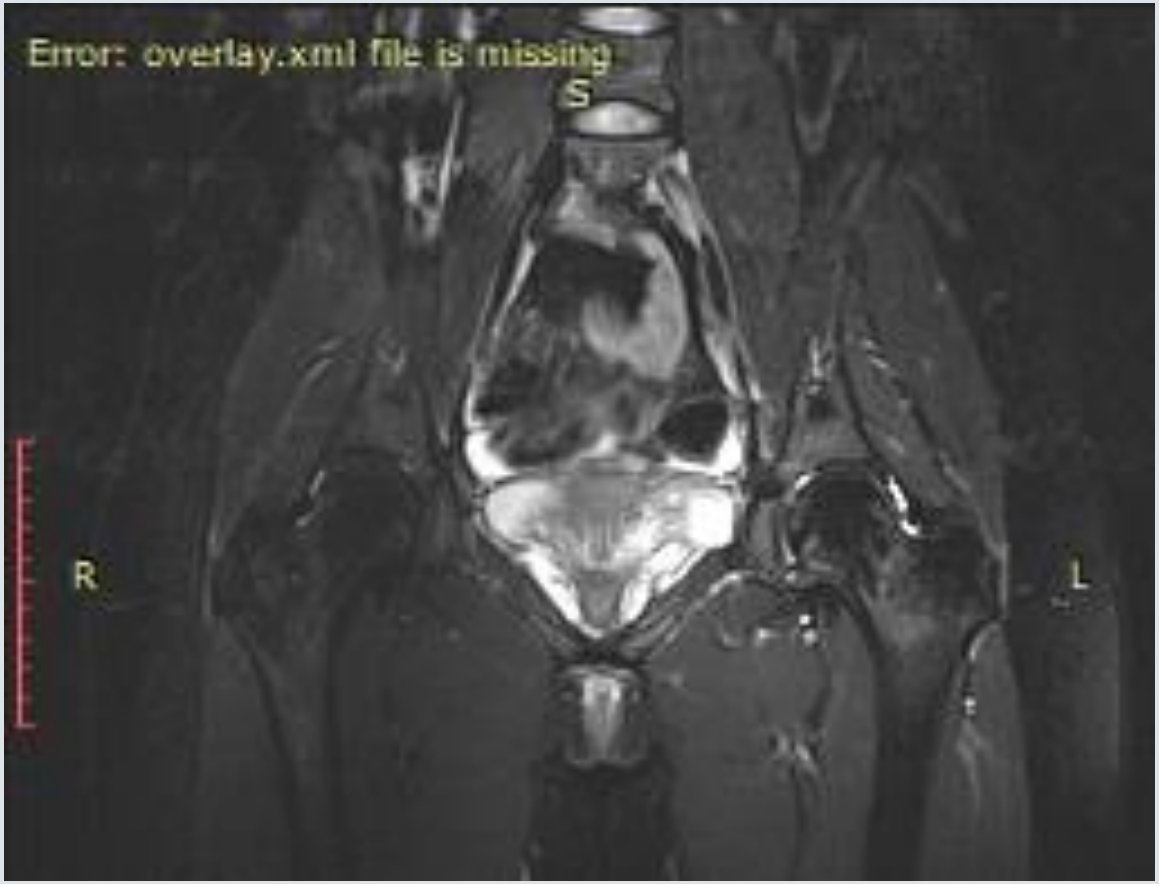
PVNS – Giant cell tumor

2001



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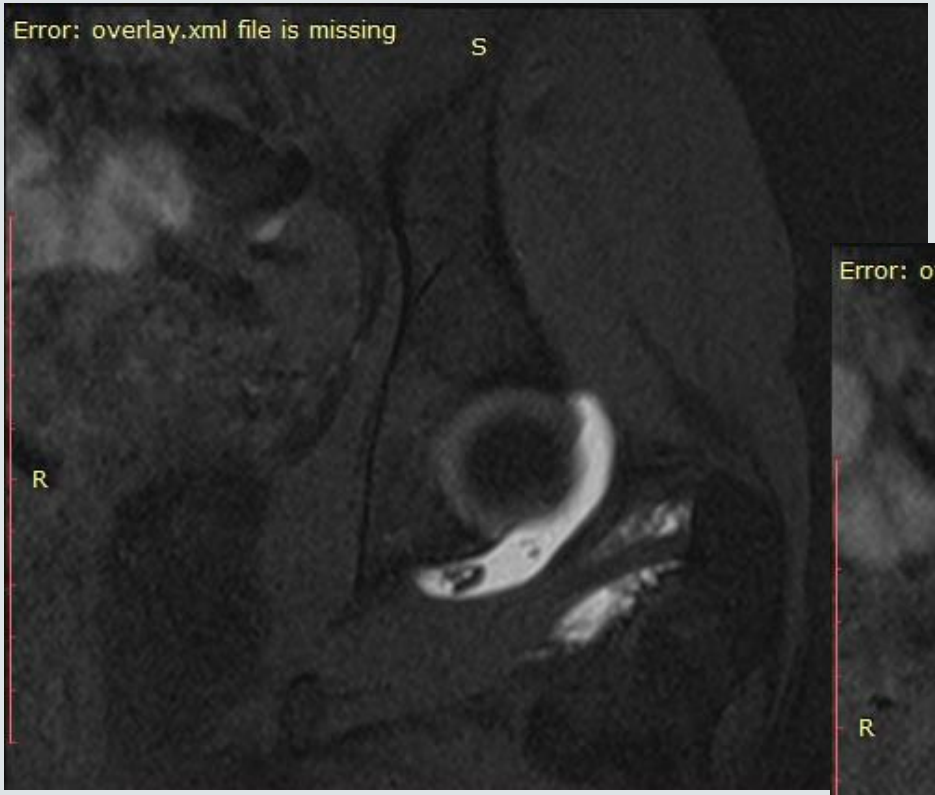

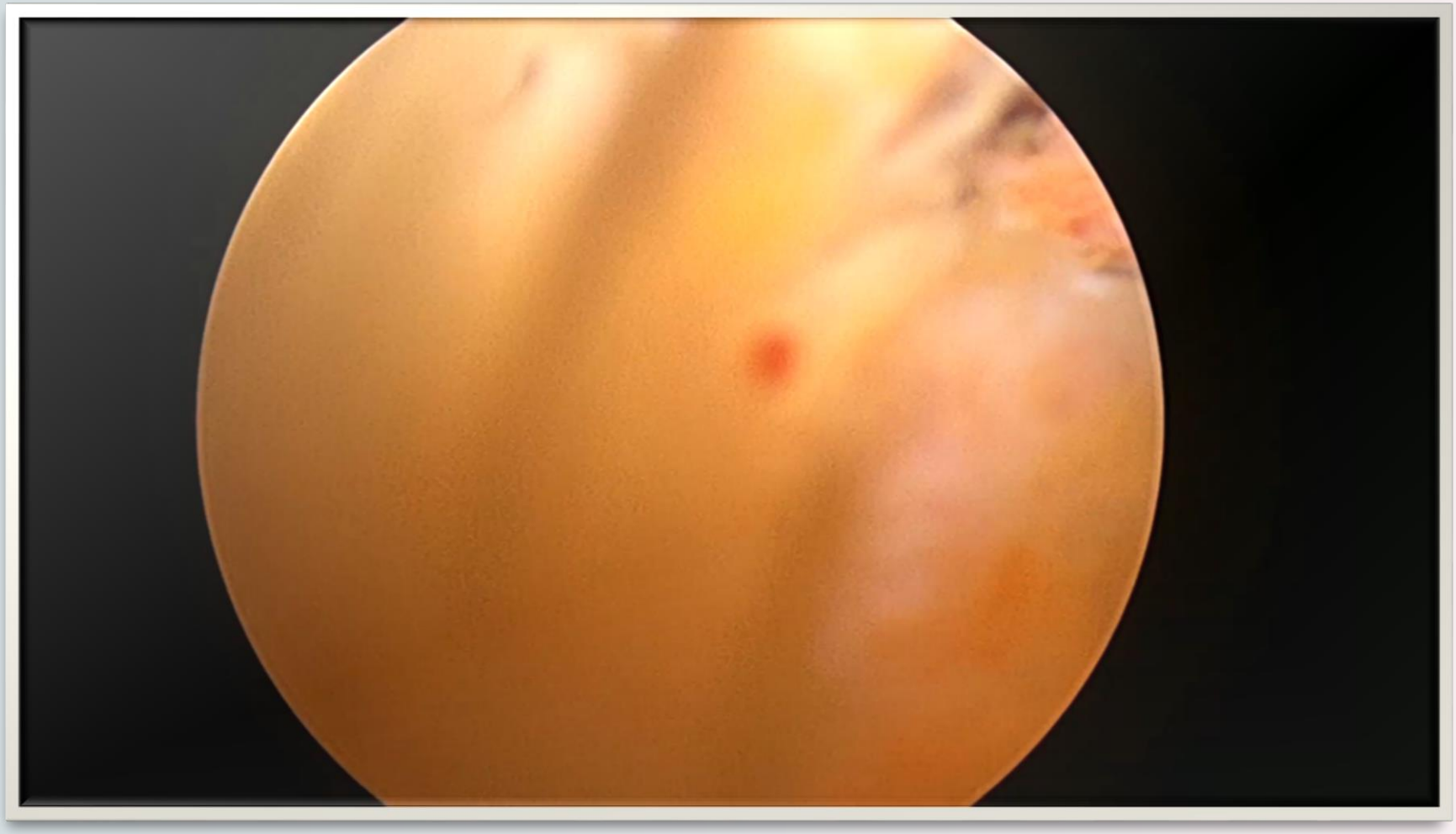

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Osteoid Osteoma


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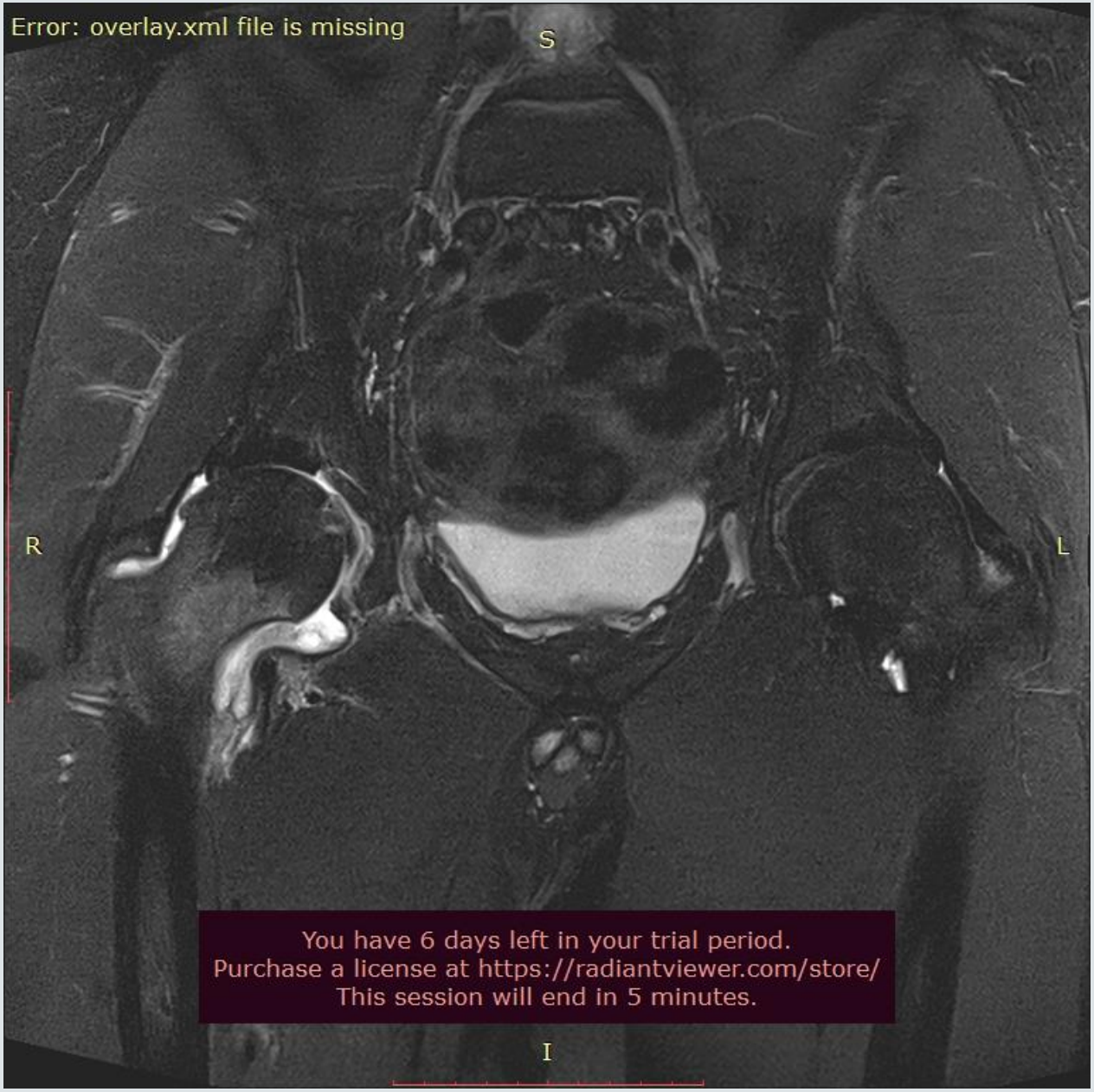
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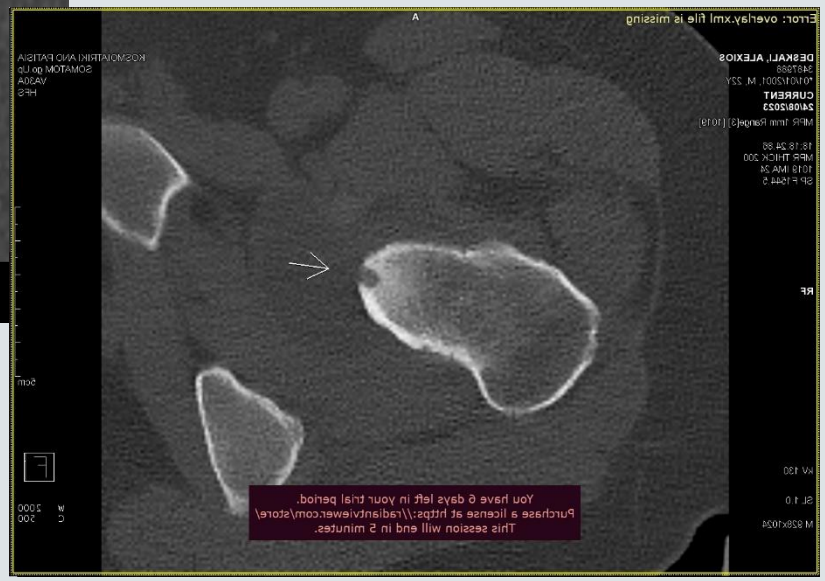

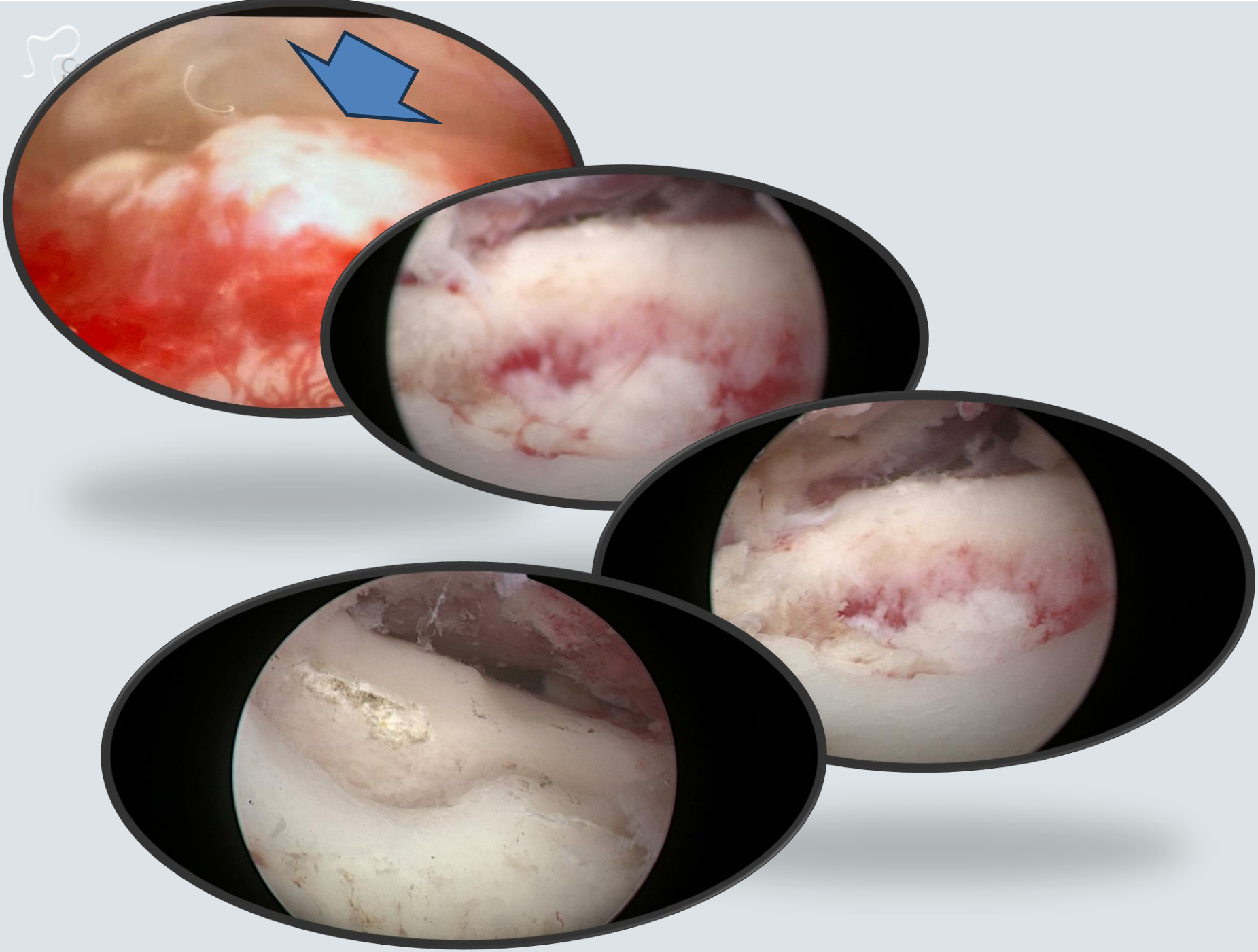

Ημερομηνία Δειγματοληψίας: 22/9/2023
Ημερομηνία Παραλαβής Περιστατικού: 22/9/2023
Ημερομηνία Έγκρισης Πορίσματος: 26/9/2023

Ιατρός: κ. ΠΑΠΑΒΑΣΙΛΕΙΟΥ ΑΘΑΝΑΣΙΟΣ

Κωδ.Εισαγωγής: 616894
ΑΜΚΑ: 20090102771
Αριθμός Παρασκευάσματος: 8628/23 & D11261/23

Συμπέρασμα: Οστεοειδές οστέωμα.
Τεμάχια οργόνου υμένα με παρουσία αλλοιώσεων χρόνιας φλεγμονής.
Λόγω της παρουσίας άφθονων πλασματοκυττάρων καθώς και λεμφοζιδίων συνιστάται ο περαιτέρω έλεγχος για την πιθανότητα ρευματοειδούς αιτιολογίας.

Ο Ιατρός

ΘΕΜΙΣΤΟΚΛΗΣ ΚΩΝΣΤΑΝΤΙΝΙΔΗΣ
ΙΑΤΡΟΣ - ΠΑΘΟΛΟΓΟΑΝΑΤΟΜΟΣ
ΑΜΚΑ: 29086003778
Α.Μ. ΤΣΑΥ: 71437

Ο Ιατρός

Δρ. ΘΩΜΑΣ ΖΑΡΑΜΠΟΥΚΑΣ
ΑΝ. ΚΑΘΗΓΗΤΗΣ
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ΙΑΤΡΙΚΗΣ ΣΧΟΛΗΣ Α.Π.Θ.
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ΚΩΔΙΚΟΣ ΠΕΡΙΣΤΑΤΙΚΟΥ: D11261/23 ΣΕΛΙΔΑ:1 ΑΠΟ 1

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THR

TYPES OF HIP REPLACEMENT

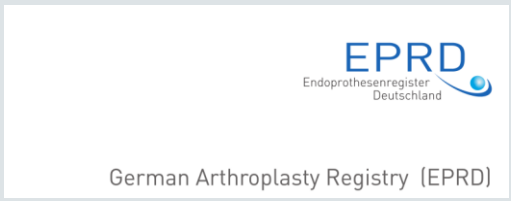
And why do they exist

Where is the decision of which what when is or should be based on
Current trends (robotics etc)


20th
Anniversary
National
Joint Registry
Working for patients, committed to excellence for 20 years


Australian
Orthopaedic
Association
National
Joint
Replacement
Registry
AOANJRR


SWEDISH HIP ARTHROPLASTY REGISTER


EPRD
Endoprothesenregister
Deutschland
German Arthroplasty Registry (EPRD)

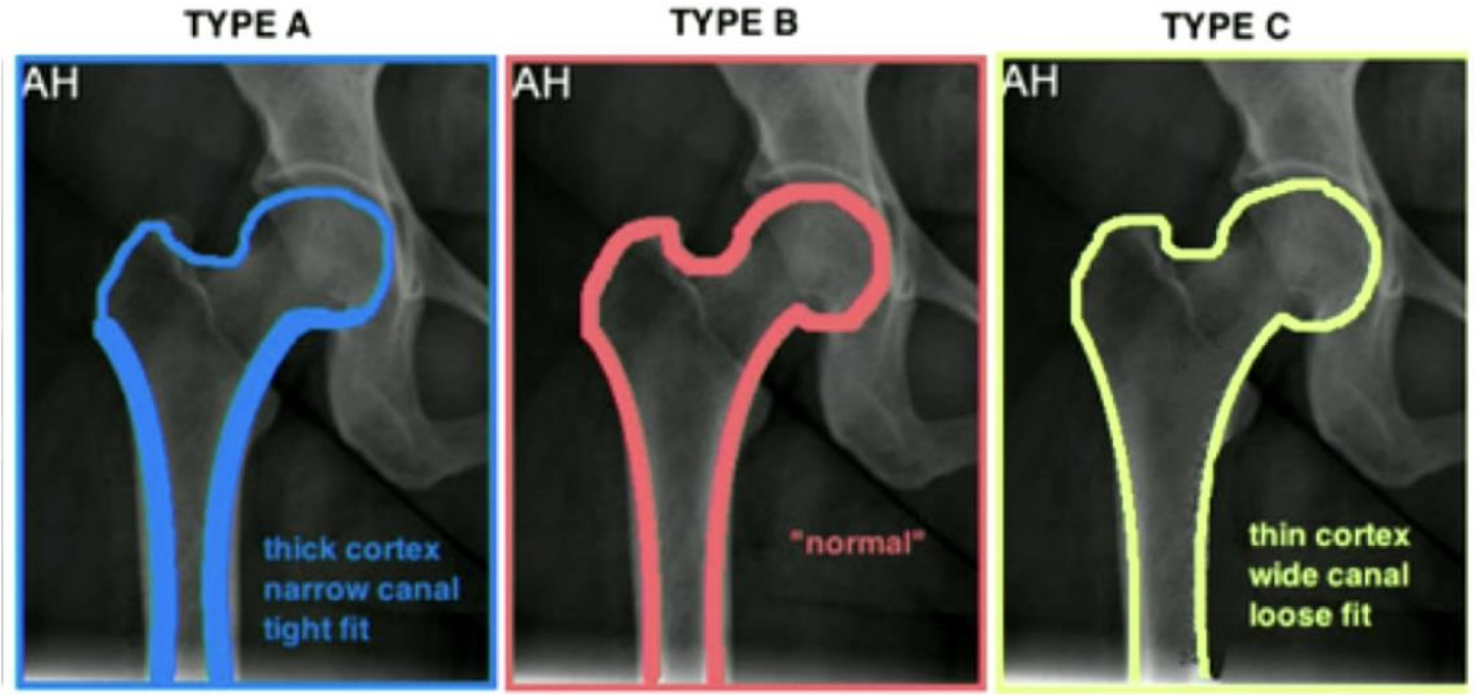

AAOS
American Academy of
Orthopaedic Surgeons
AJRR
American
Joint Replacement
Registry

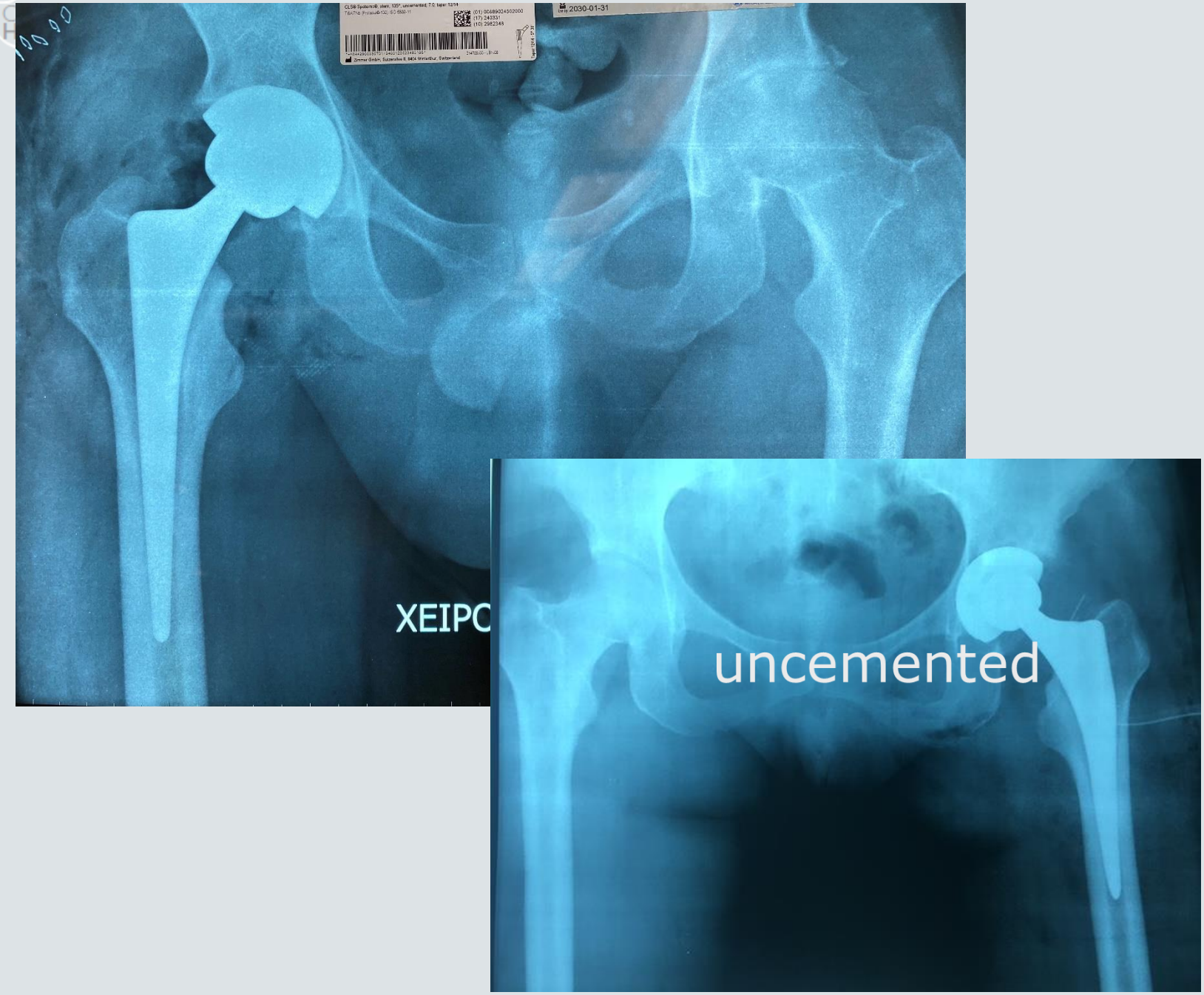
Center for Hip Arthroscopy

FIXATION

Diakonie Klinikum Stuttgart

Dorr Canal Type A / B / C

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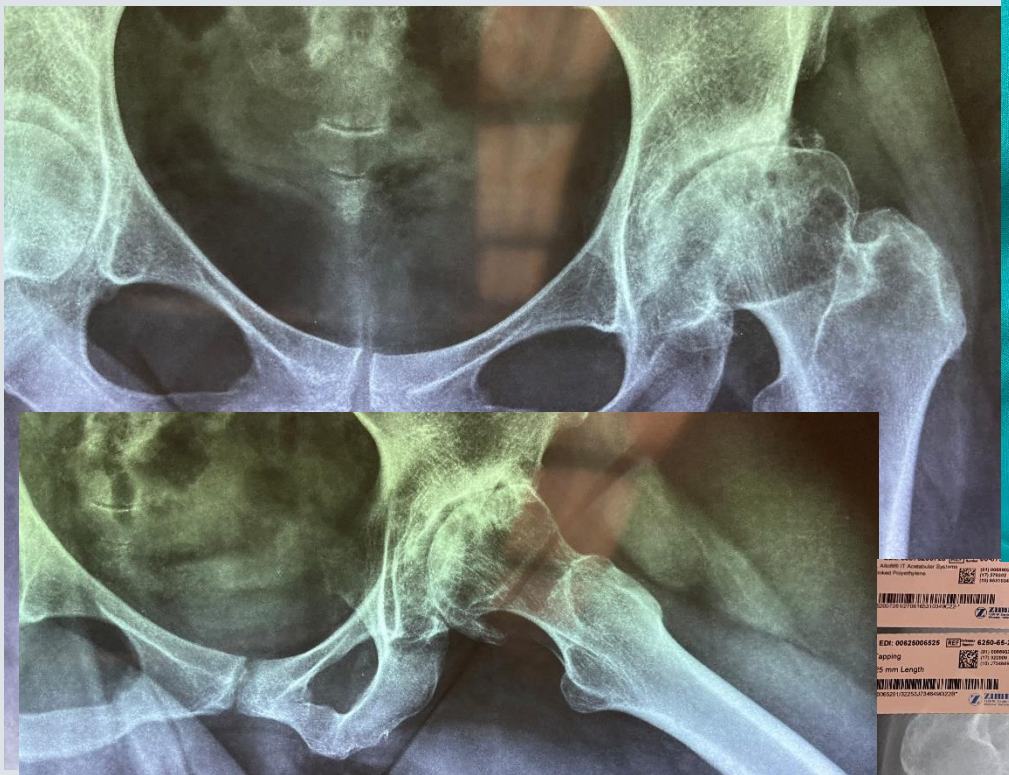

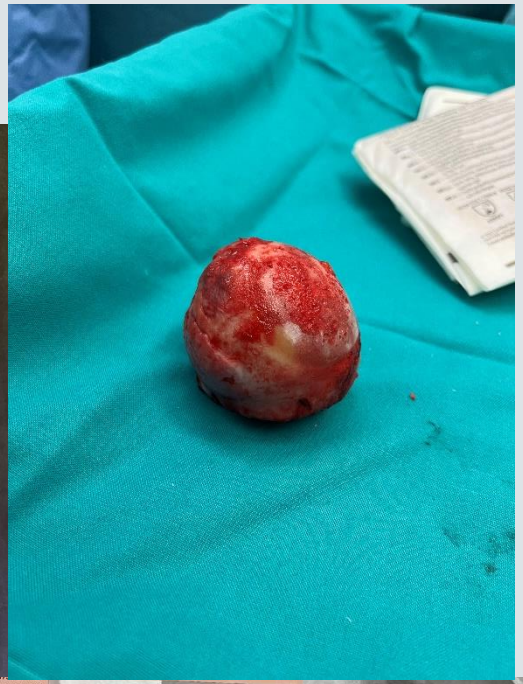

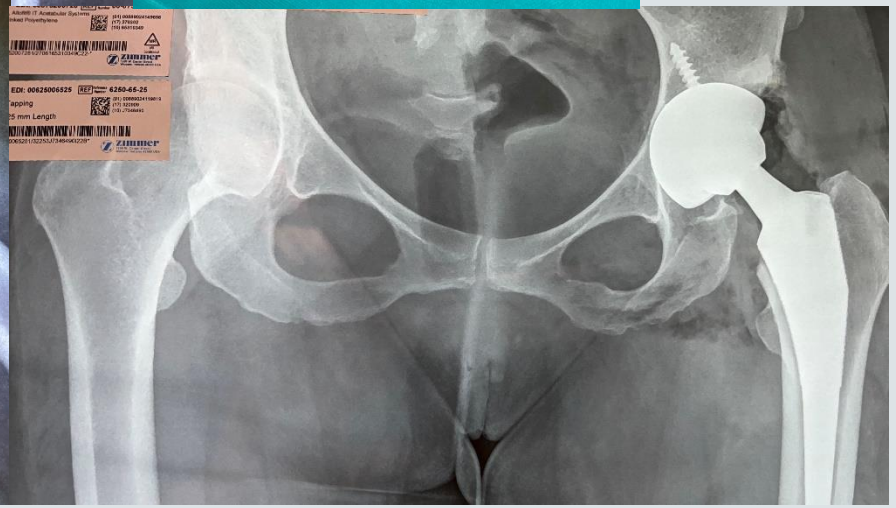

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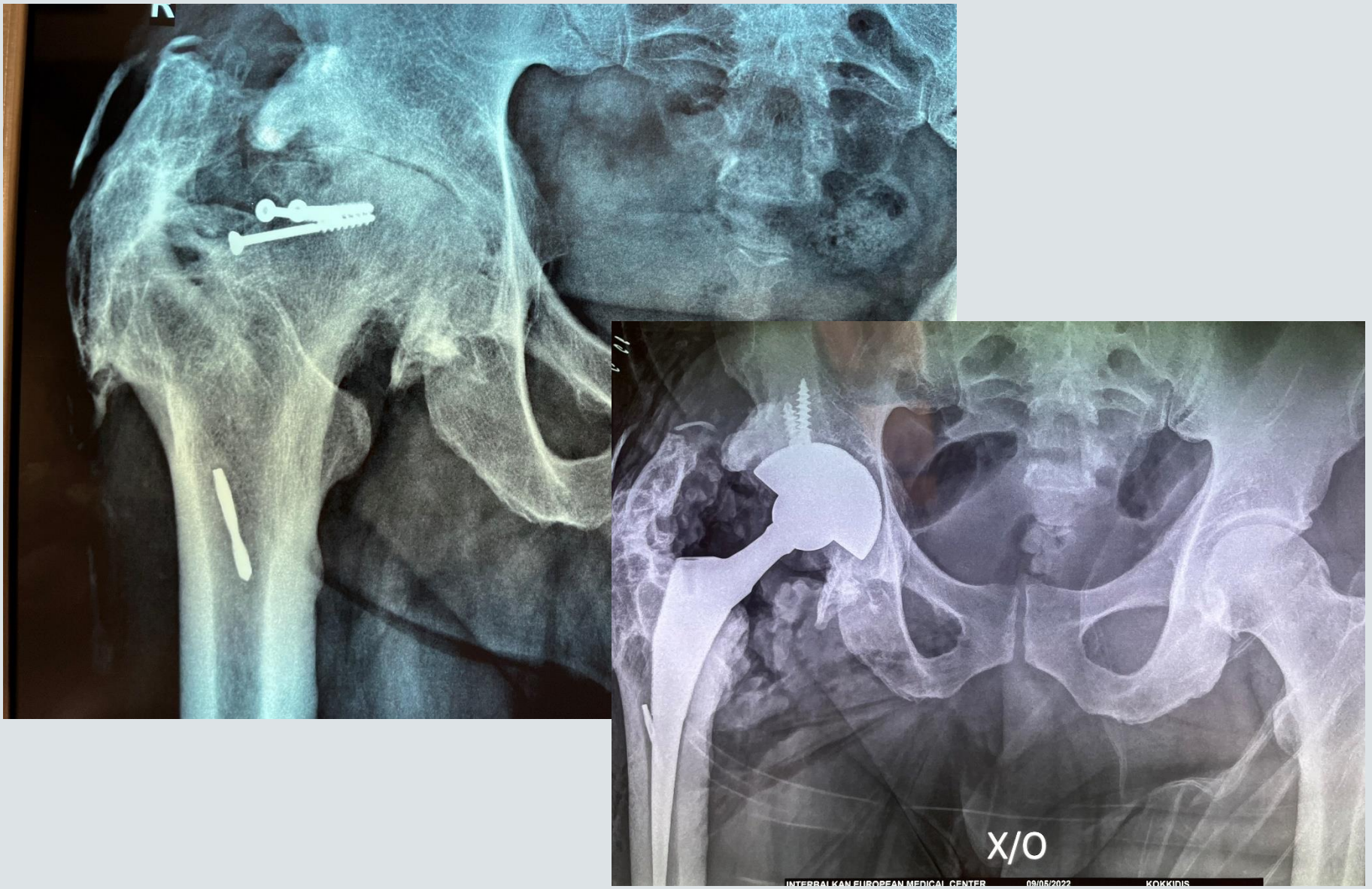

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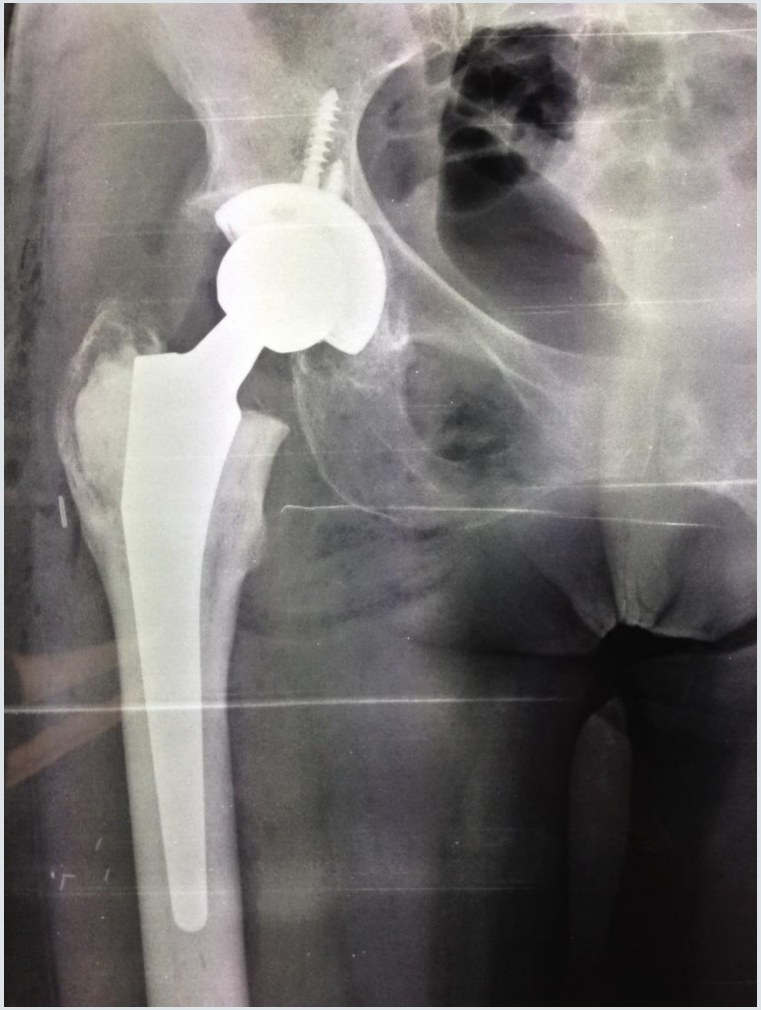
Hybrid



Reverse hybrid

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cement


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1/7/1992
Age:27 years
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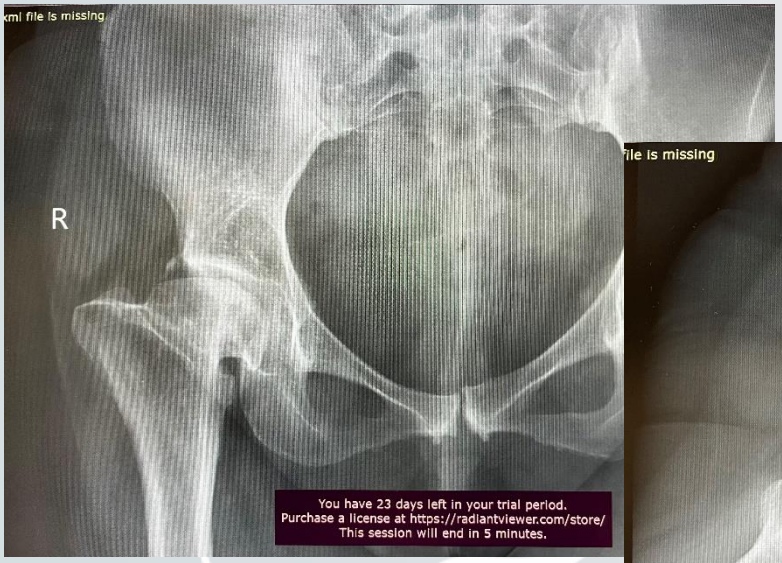
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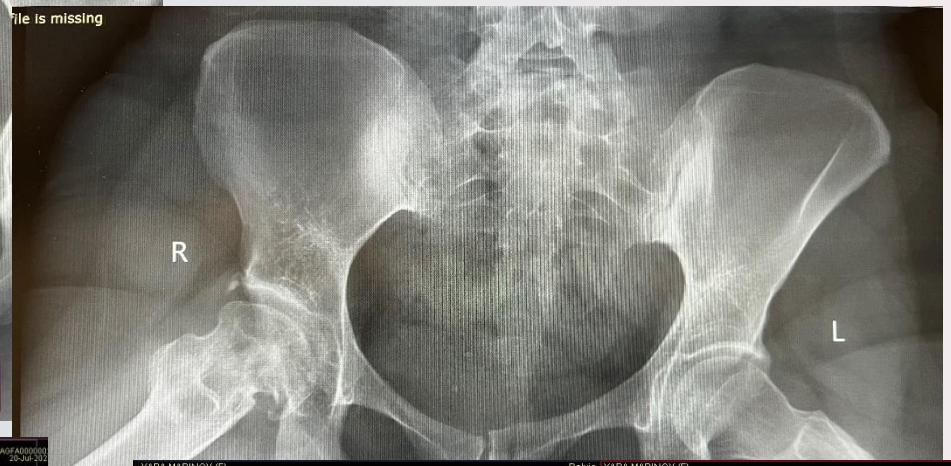
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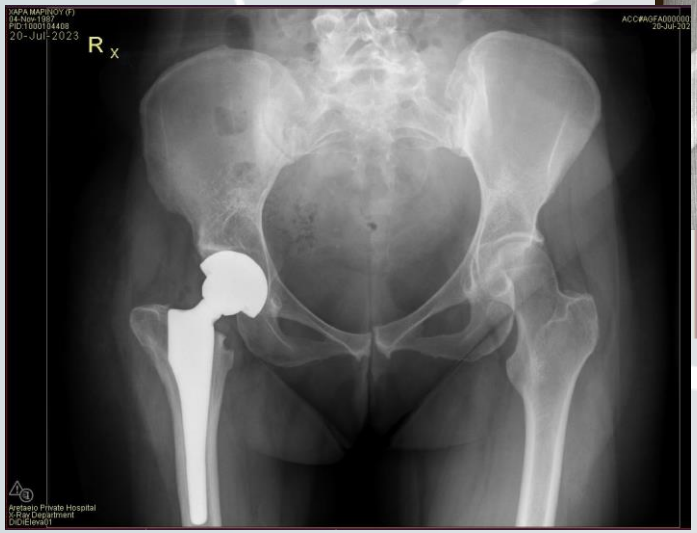
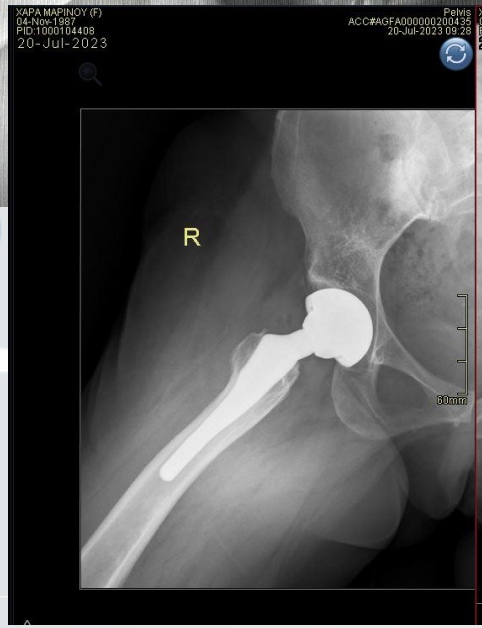

XAPA MAPINOY (F)
04-Nov-1987
PID:1000104408
20-Jul-2023
R x
Aretaxio Private Hospital
X-Ray Department


XAPA MAPINOY (F)
04-Nov-1987
PID:1000104408
20-Jul-2023
Pelvis
ACC#AGFA0000002004 35
20-Jul-2023 09:28
R
60mm


XAPA MAPINOY (F)
04-Nov-1987
PID:1000104408
20-Jul-2023
Pelvis
ACC#AGFA0000002004 35
20-Jul-2023 09:29
L
40mm

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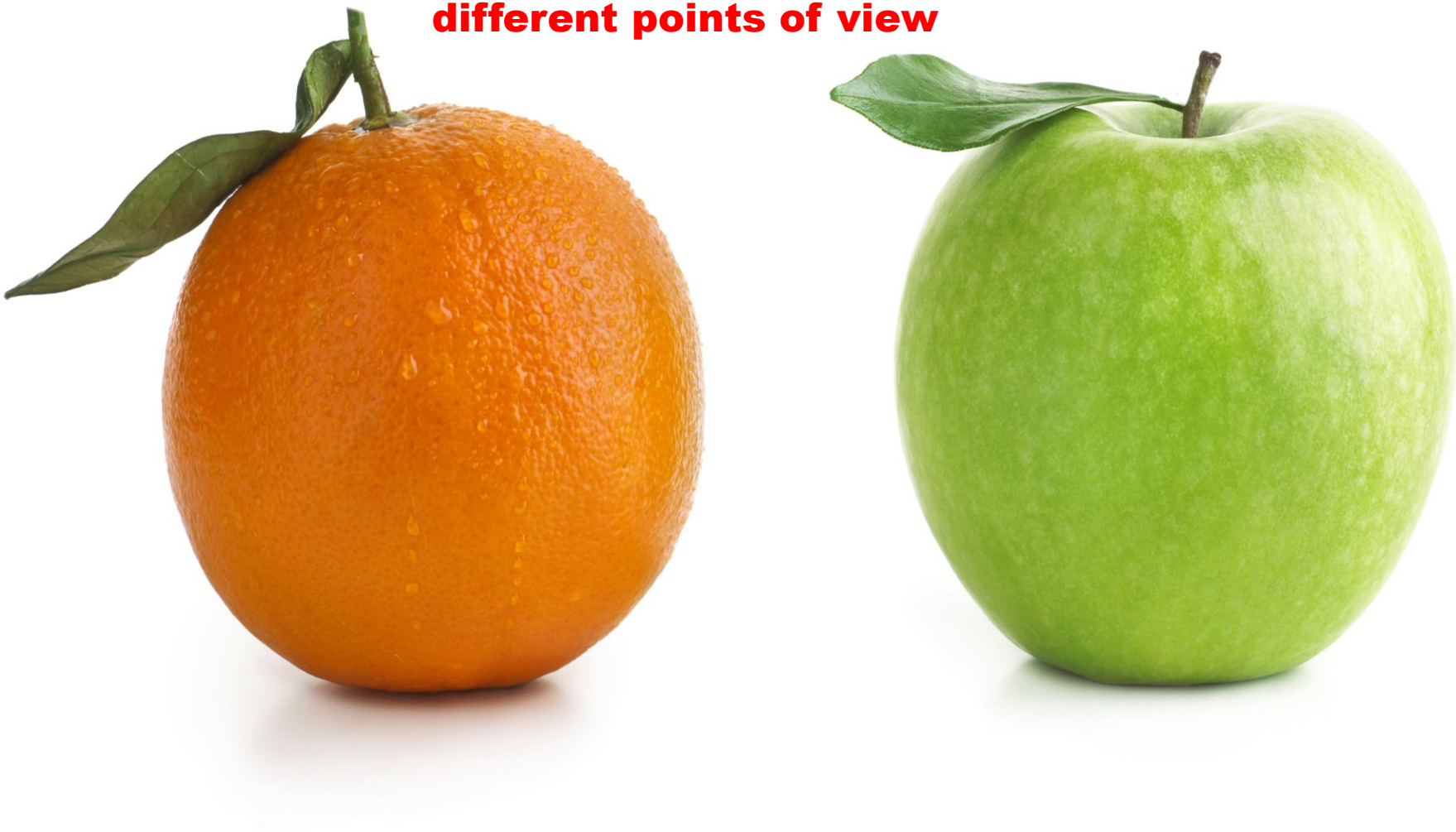
what do any of us mean when we say an operation works?

patient/surgeon

surgeon/surgeon

} disconnect

simply because we see things from different points of view



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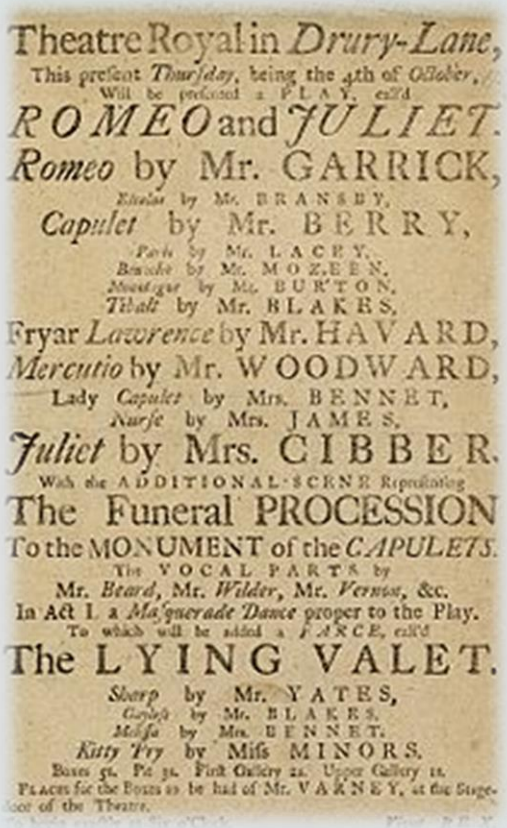
What's in a name?

That which we call a rose by any other word would smell as sweet…..

Wil Shakespeare

In Act II, Scene II



Theatre Royal in *Drury-Lane*,
This preſent *Thurſday*, being the 4th of *October*,
Will be preſented a PLAY, call'd
ROMEO and *JULIET*.
Romeo by Mr. GARRICK,
Mercutio by Mr. BRANSBY,
Capulet by Mr. BERRY,
Paris by Mr. LACEY,
Benvolio by Mr. MOZEEN,
Montague by Mr. BURTON,
Tibalt by Mr. BLAKES,
Fryar *Lawrence* by Mr. HAVARD,
Mercutio by Mr. WOODWARD,
Lady *Capulet* by Mrs. BENNET,
Nurſe by Mrs. JAMES,
Juliet by Mrs. CIBBER.
With the ADDITIONAL SCENE Repreſenting
The Funeral PROCESSION
To the MONUMENT of the *CAPULETS*.
The VOCAL PARTS by
Mr. *Beard*, Mr. *Wilder*, Mr. *Vernon*, &c.
In Act I. a *Maſquerade Dance* proper to the Play.
To which will be added a *FARCE*, call'd
The LYING VALET.
Sharp by Mr. YATES,
Gayleſs by Mr. BLAKES,
Melliſa by Mrs. BENNET,
Kitty Pry by Miſs MINORS.
Boxes 5s. Pit 3s. Firſt Gallery 2s. Upper Gallery 1s.
PLACES for the Boxes to be had of Mr. VARNEY, at the Stage-door of the Theatre.

Center for Hip Arthroscopy

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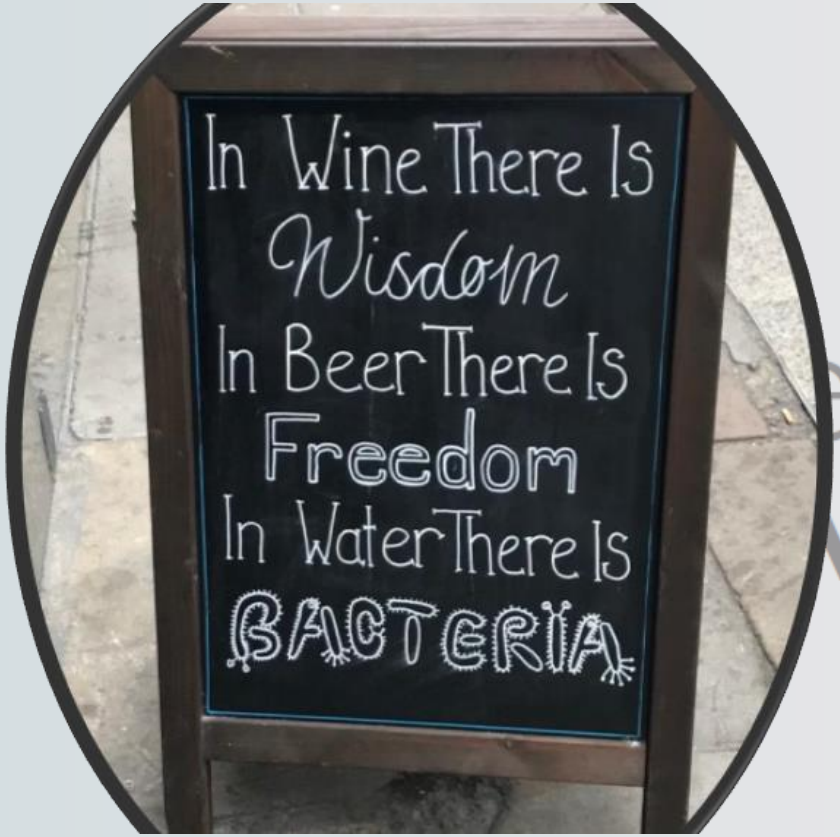
What determines patient satisfaction with surgery? A prospective cohort study of 4709 patients following total joint replacement

D F Hamilton,[1] J V Lane,[2] P Gaston,[3] J T Patton,[3] D MacDonald,[1] A H R W Simpson,[1] C R Howie[3]

-satisfactory pain relief satisfactory

-hospital experience

-meeting preoperative expectations


In Wine There Is
Wisdom
In Beer There Is
Freedom
In Water There Is
BACTERIA


Thank you!
Gracias!
Danke!
Merci!