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Acetabulum Case Presentations

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INJURY PREVENTION TEAM
Charity Hospital
PRIDE
TRAUMA TEAM

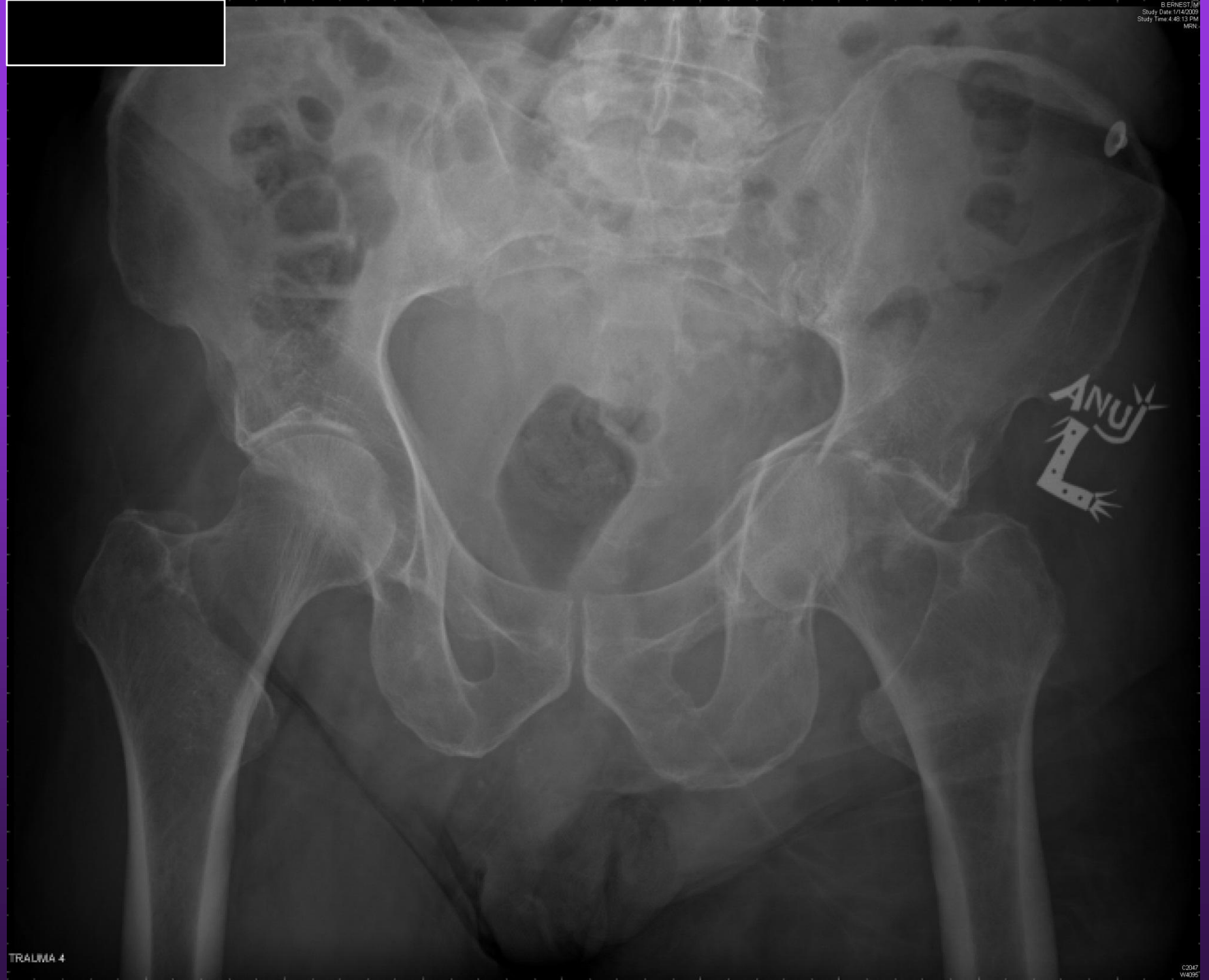
"A MAN'S GOT TO KNOW HIS LIMITATIONS"

Geriatric Acetabular Surgery: Letournel's Contraindications Then and Now – Data From the German Pelvic Registry

Pohleman et al, JOT 2019 Feb

Findings

- Letournel's initial 129 pts 30 years ago – no patients over 60 yo
- Registry 50% > than 60 yo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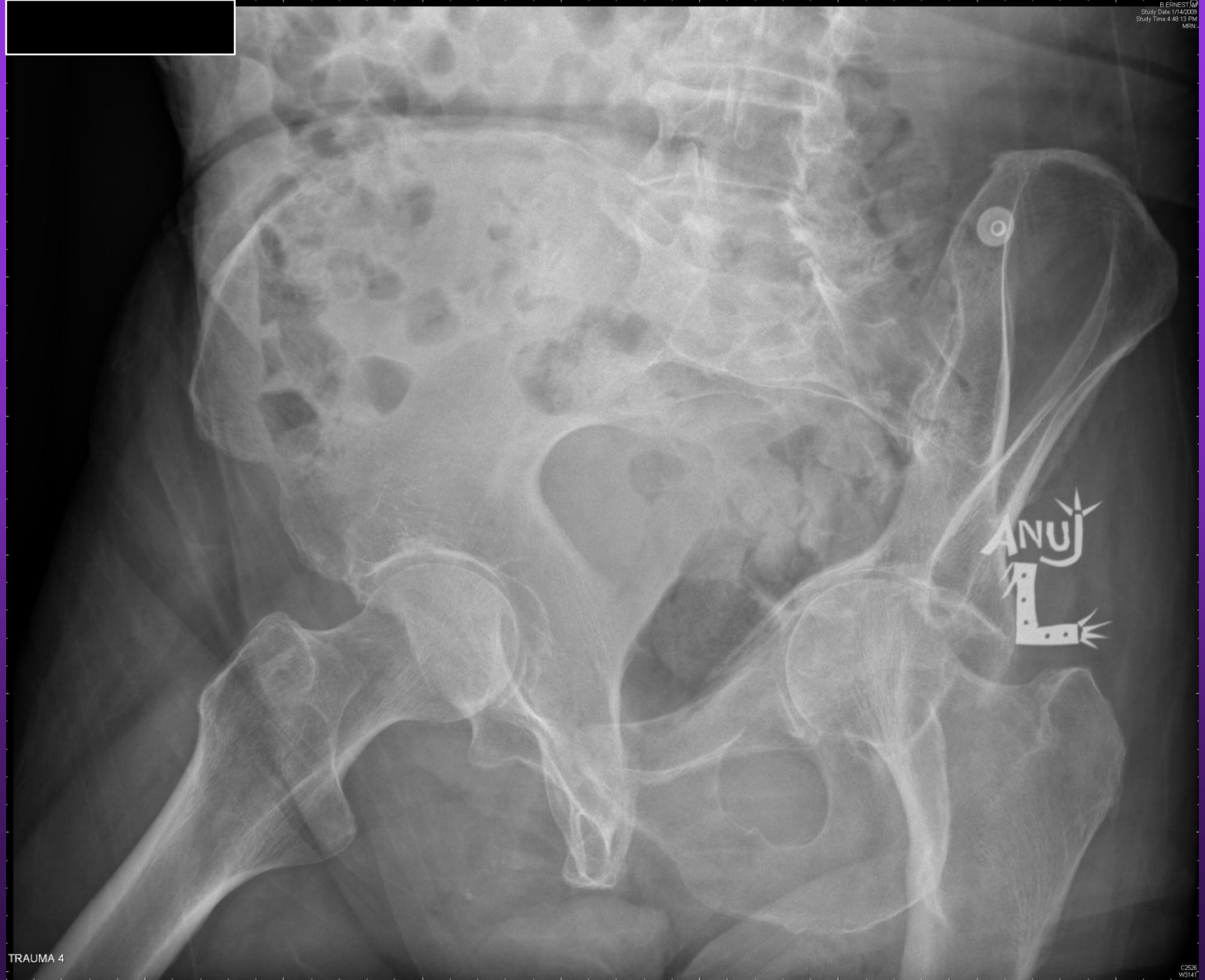
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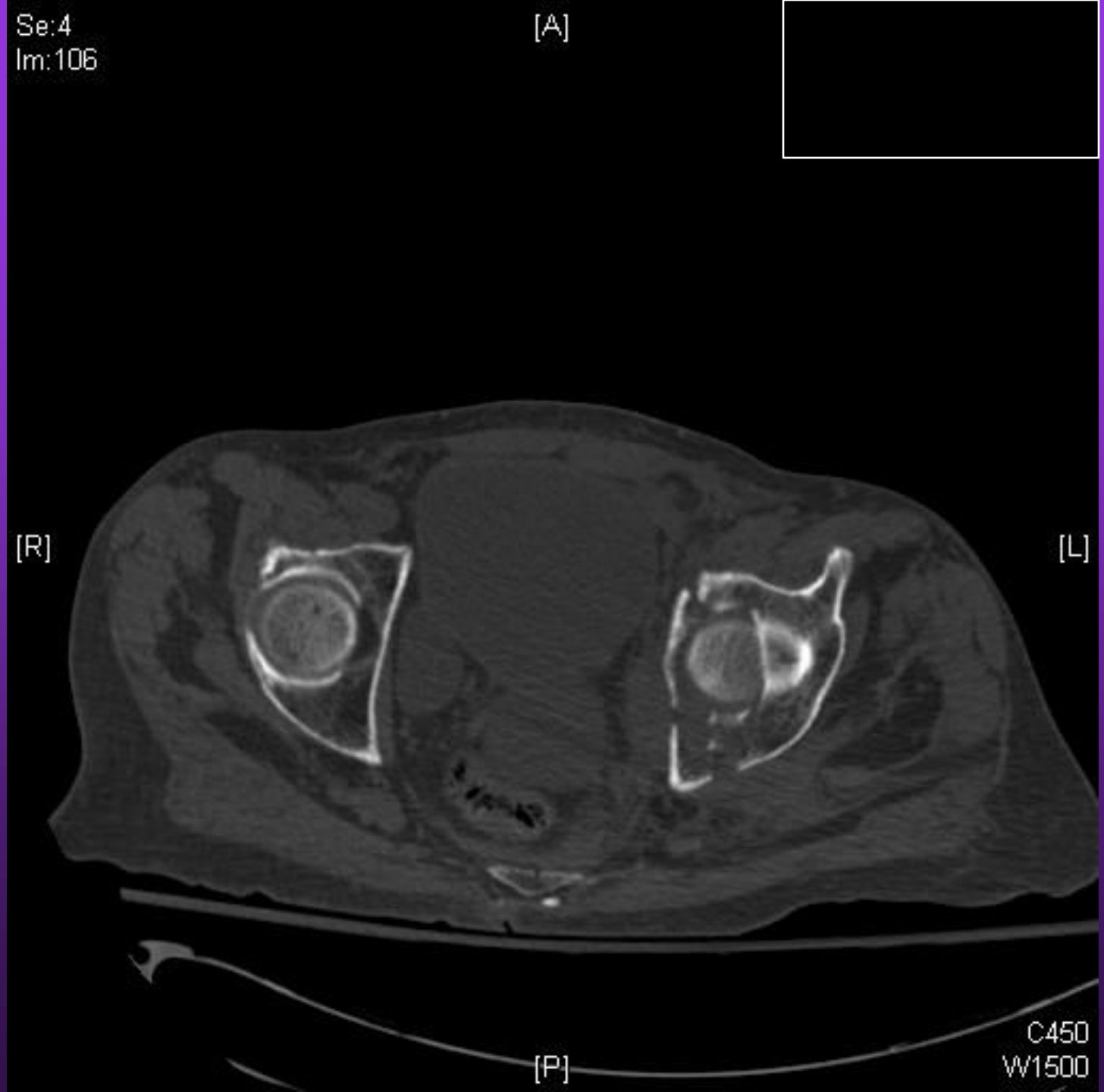
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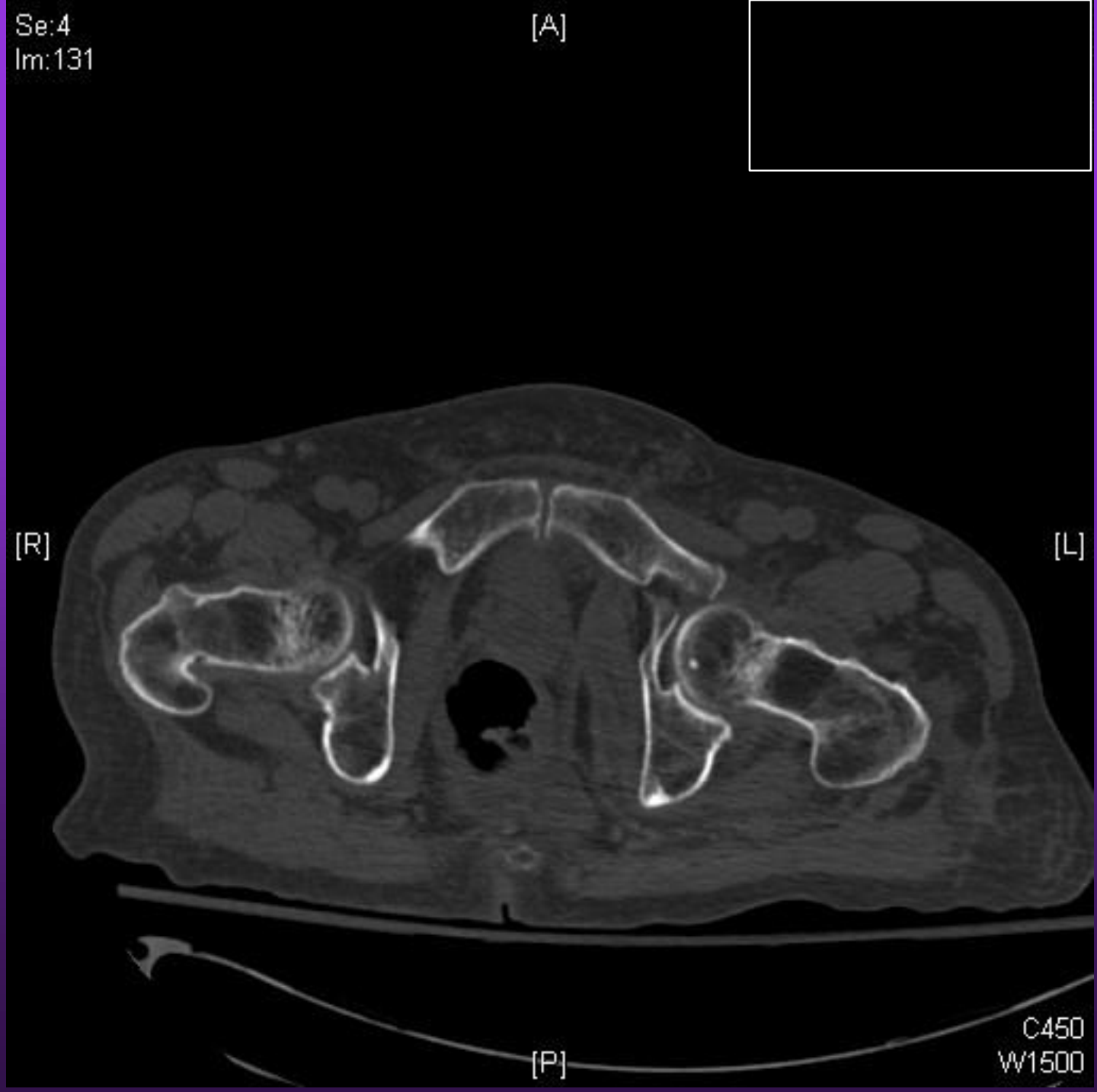
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W2000

Case

- Classification?
- Treatment?
  - Approach?
  - Reduction?
  - Fixation?


R
2 2


R
2 2


R
22

- Any Problems?

EB

- 72 yo with “T” type acetabulum with central dome impaction
- Poorly reduced with post op subluxation
- Anterior THA using the femoral head as medial bone graft


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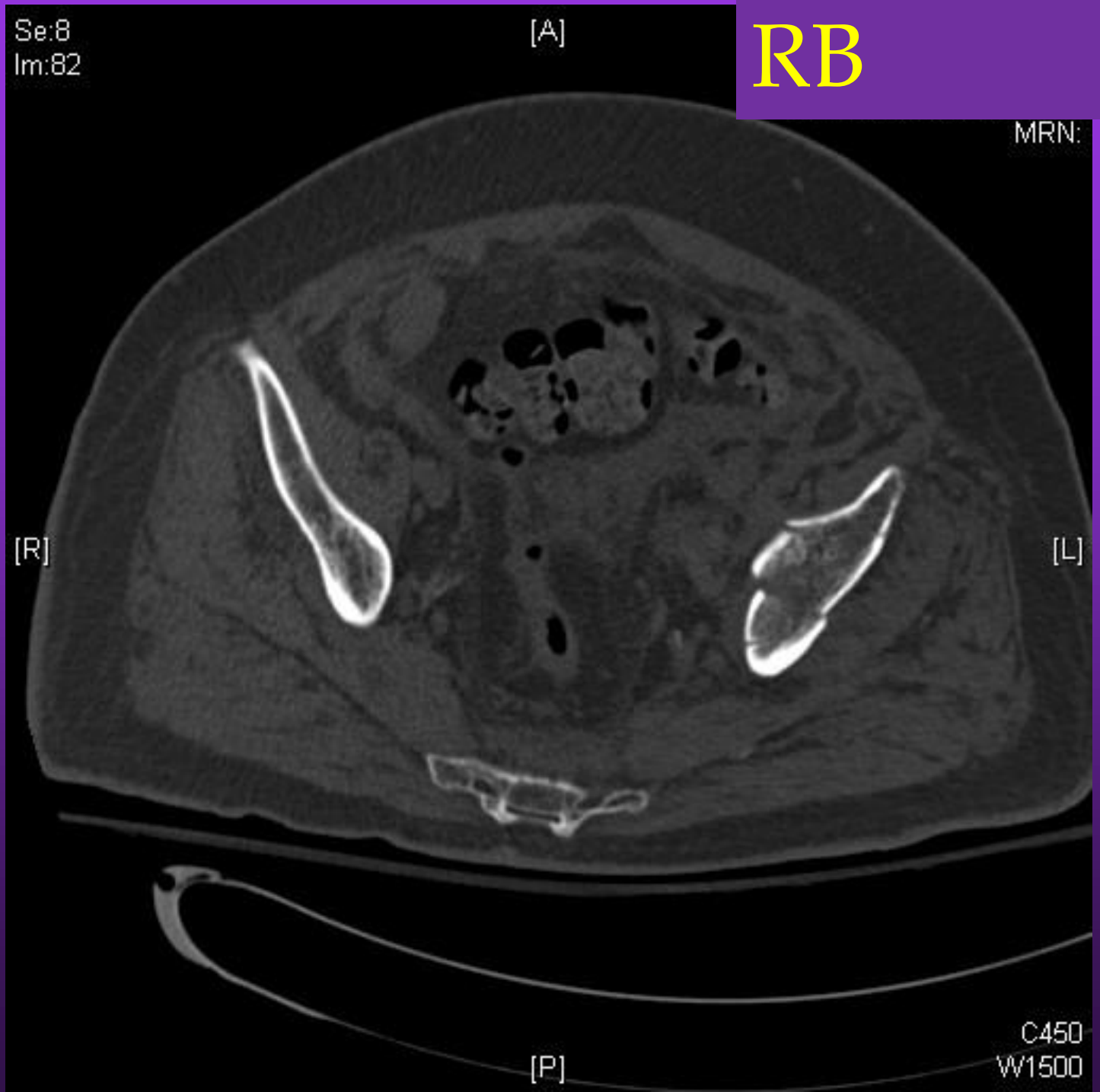
RB

- 71 yo fall
- Htn, DM, CAD, s/p CABG


Right
TRAUMA 1

RB

RB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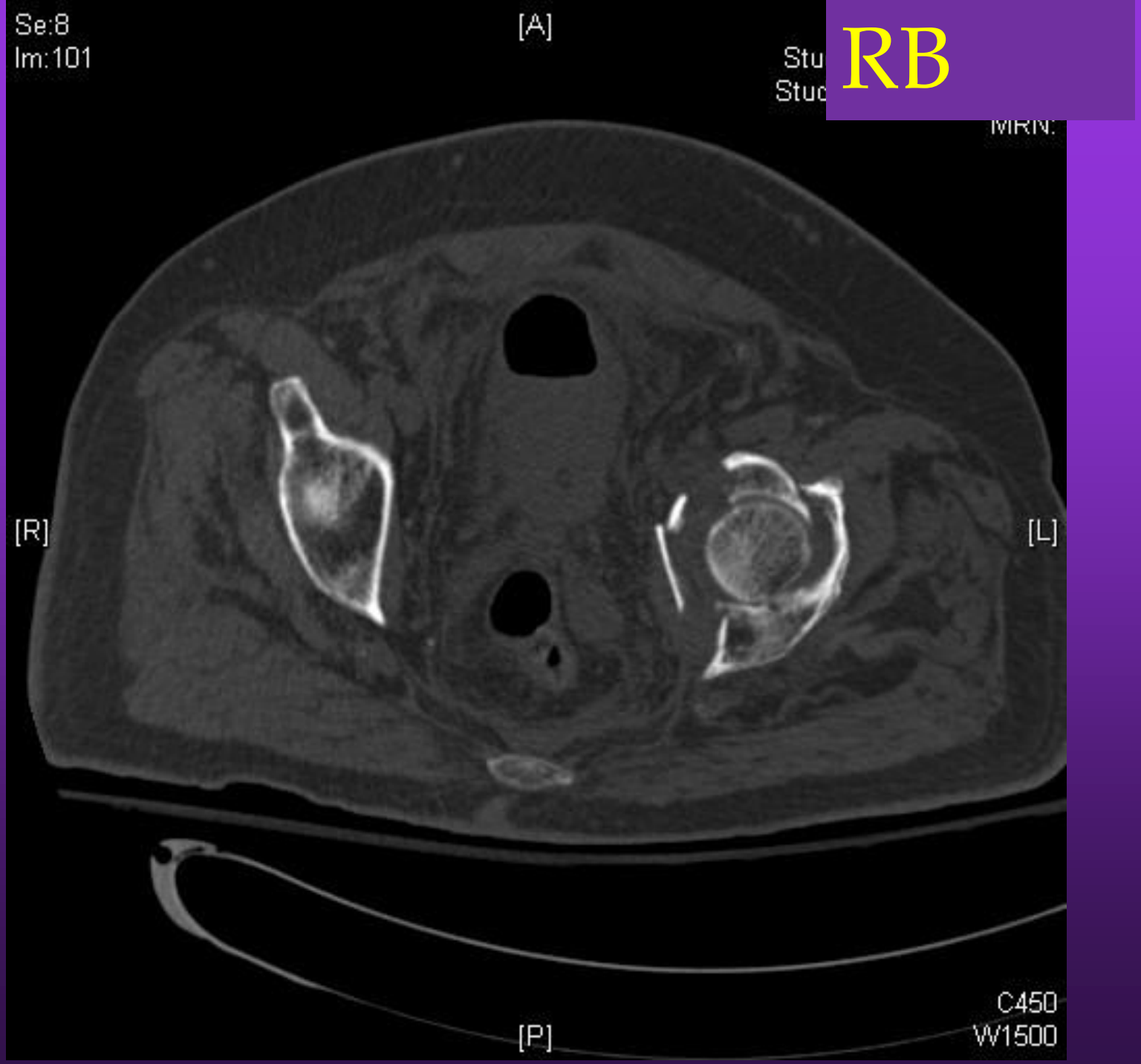
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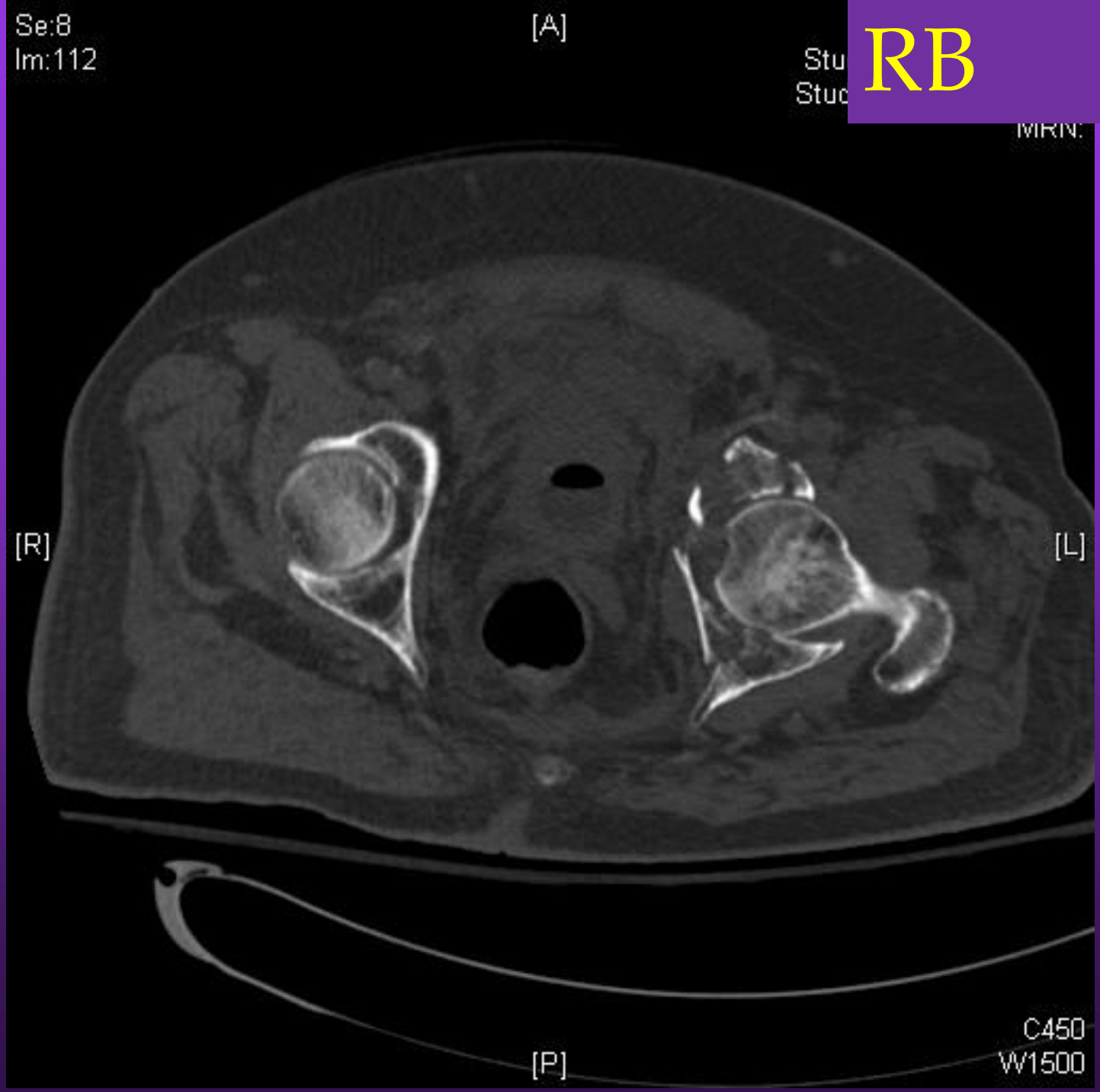
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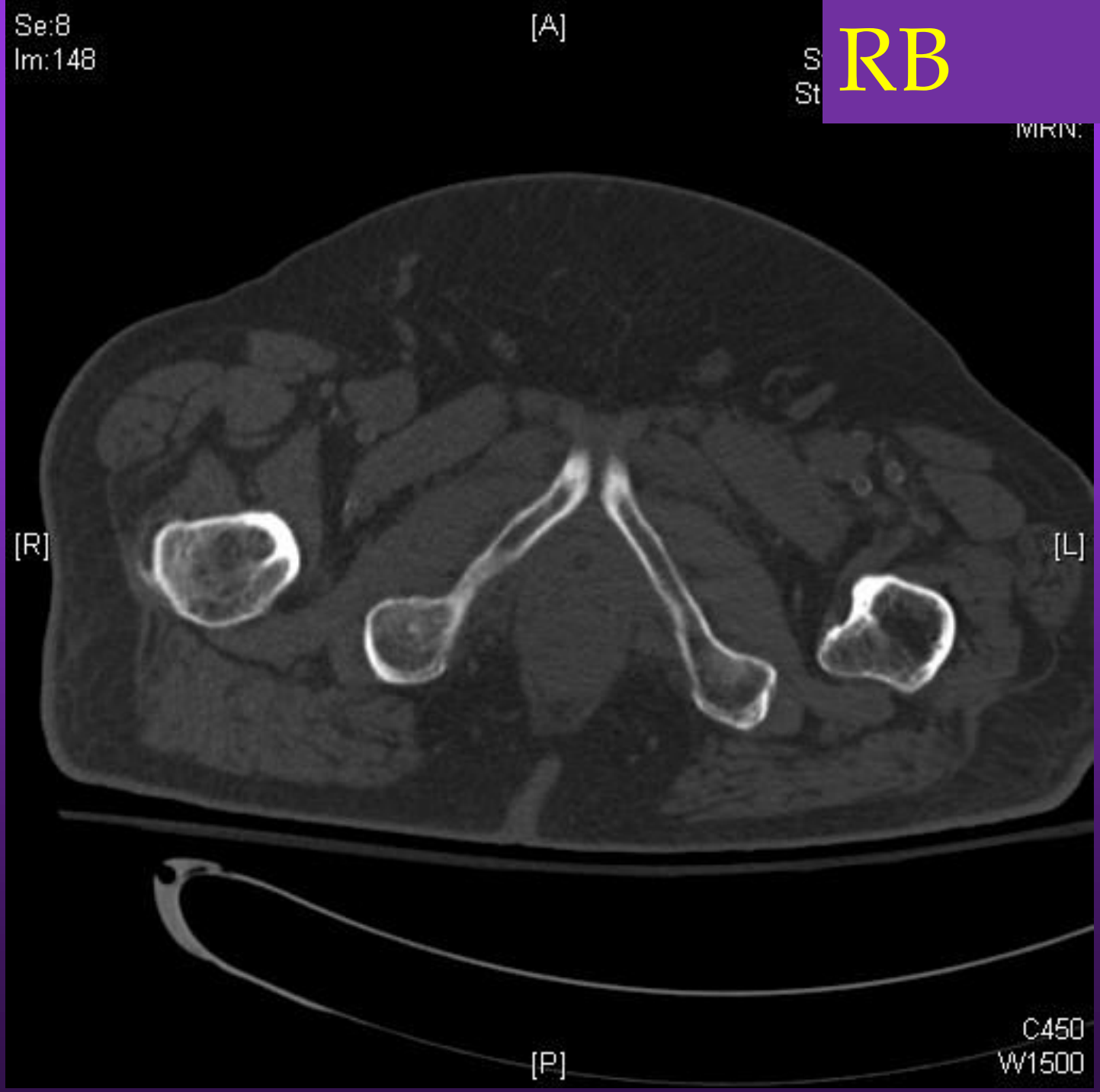
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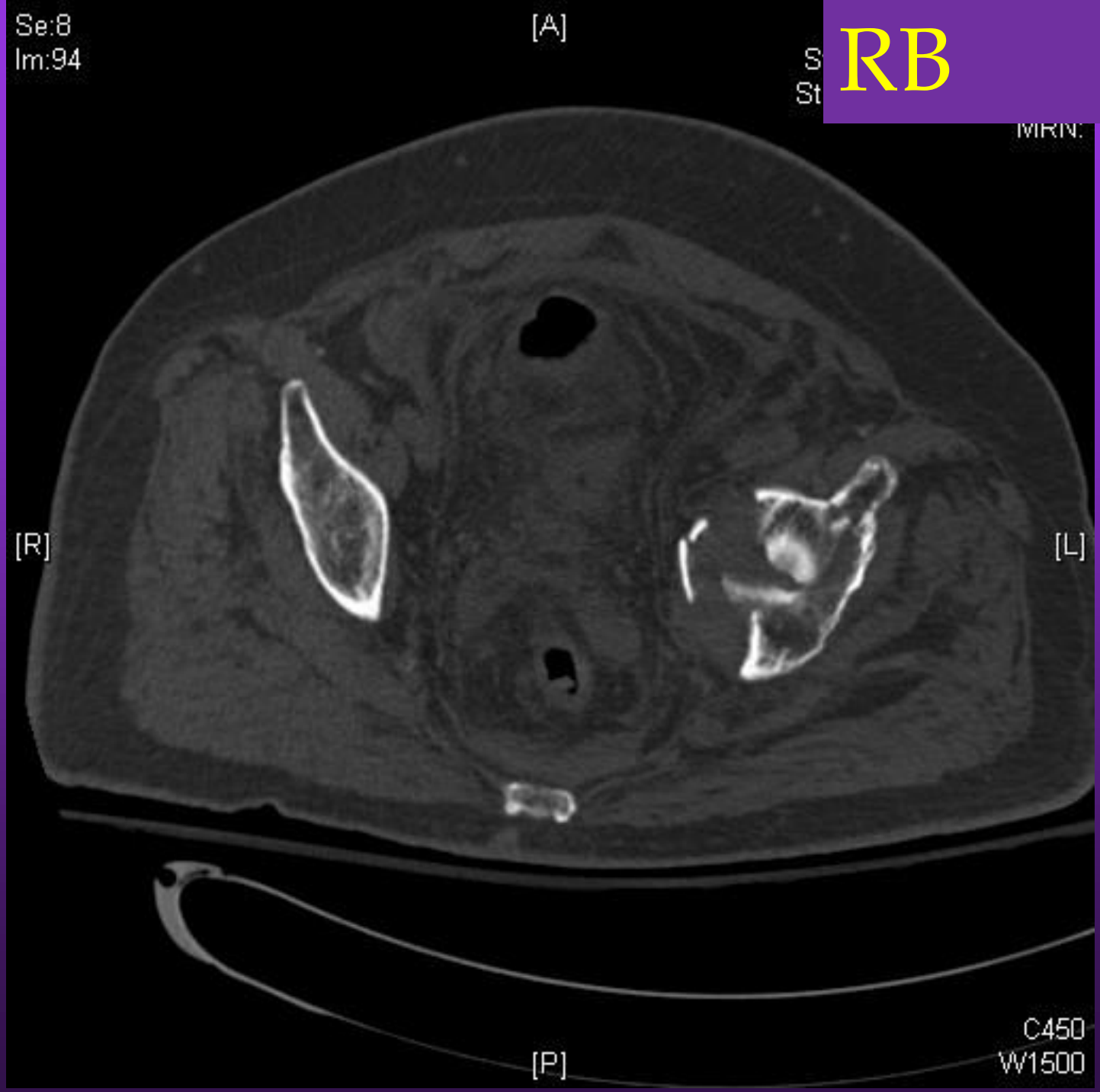
Case

- Classification?
- Treatment?
  - Approach?
  - Reduction?
  - Fixation?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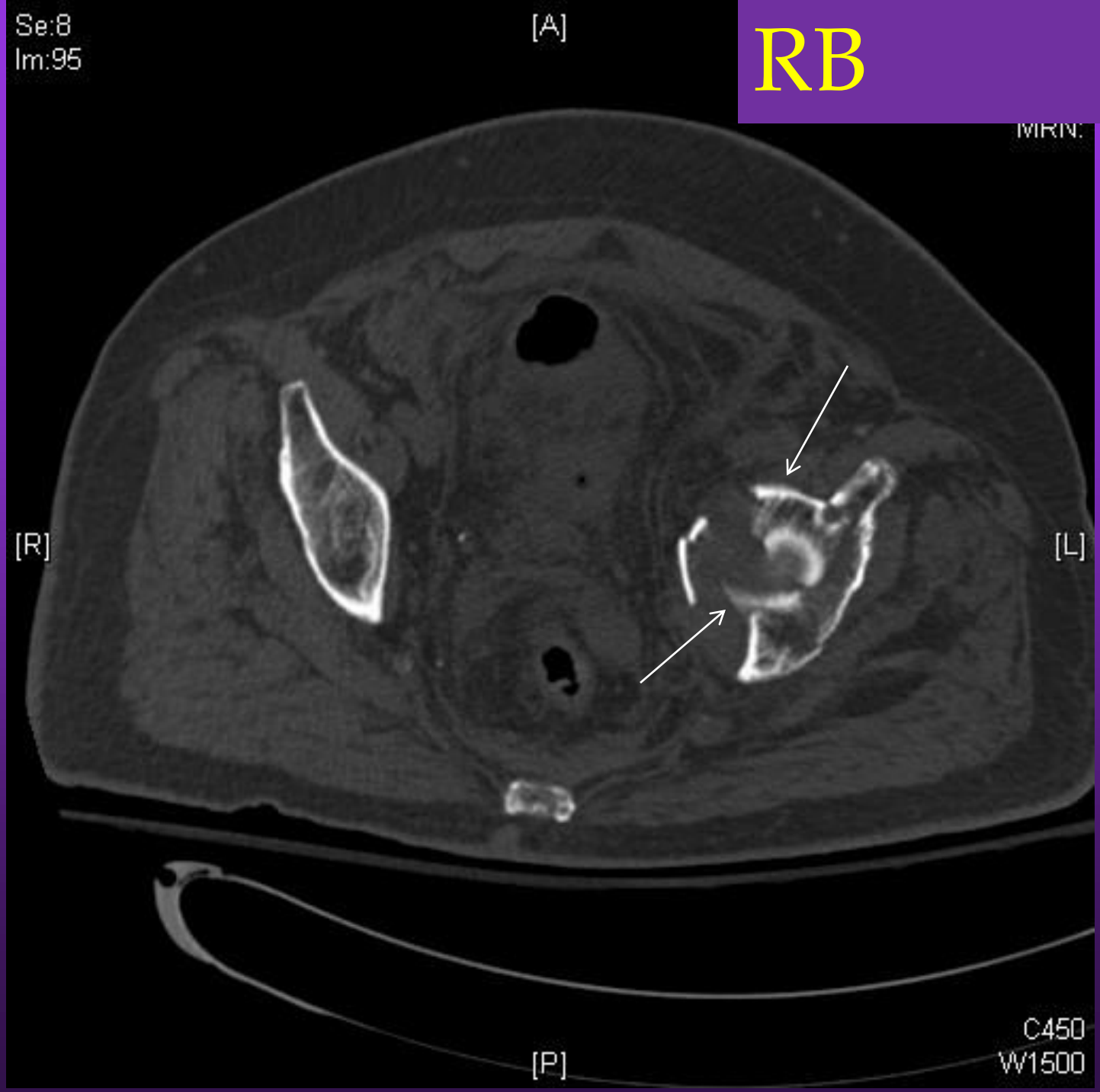
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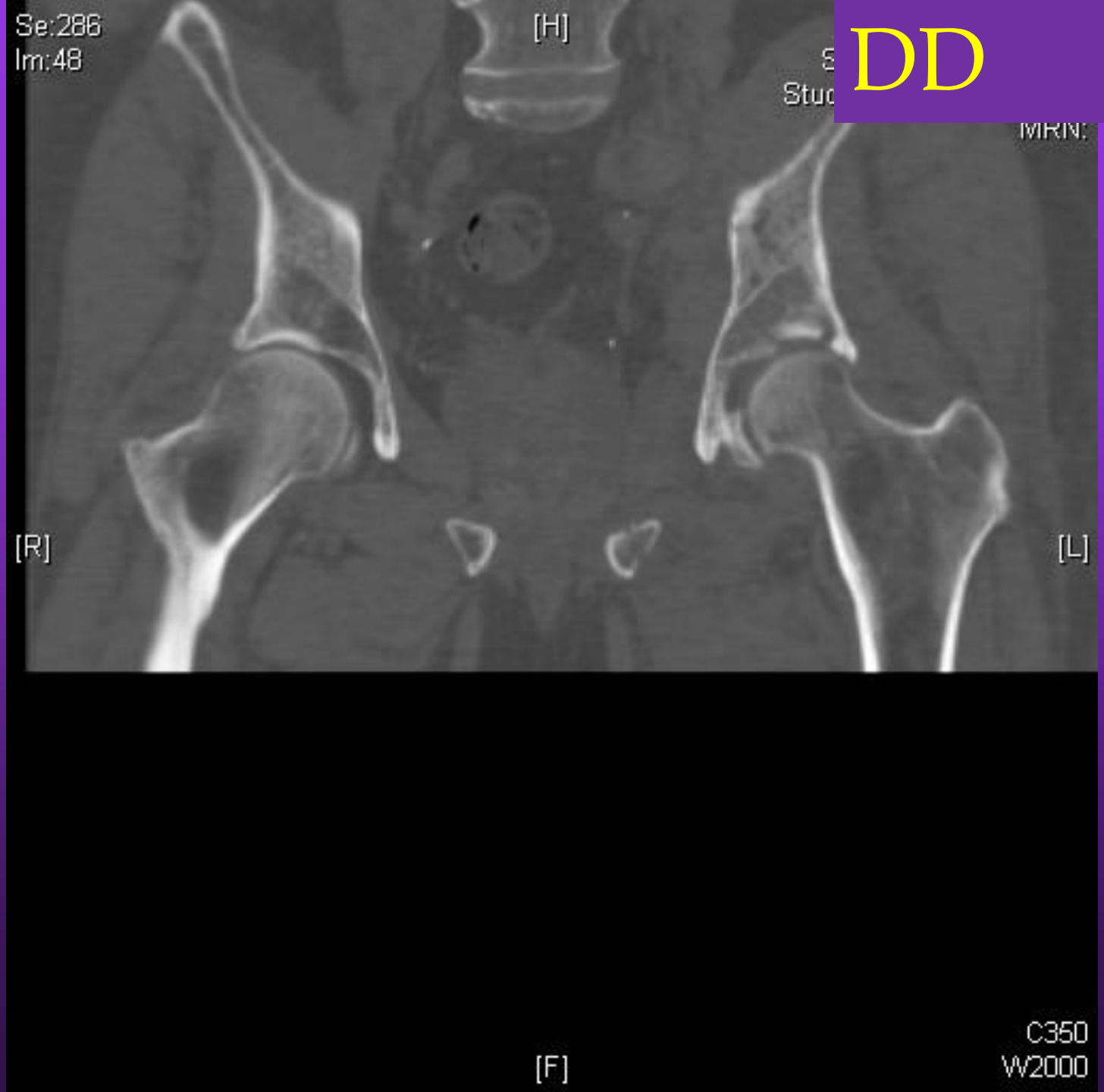
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RB

- 71 yo fall
- Htn, DM, CAD, s/p CABG
- L AC/AW elevation and impaction of dome vs elevation of AW or AC


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PEAK CONTACT STRESSES IN ABNORMAL HIPS

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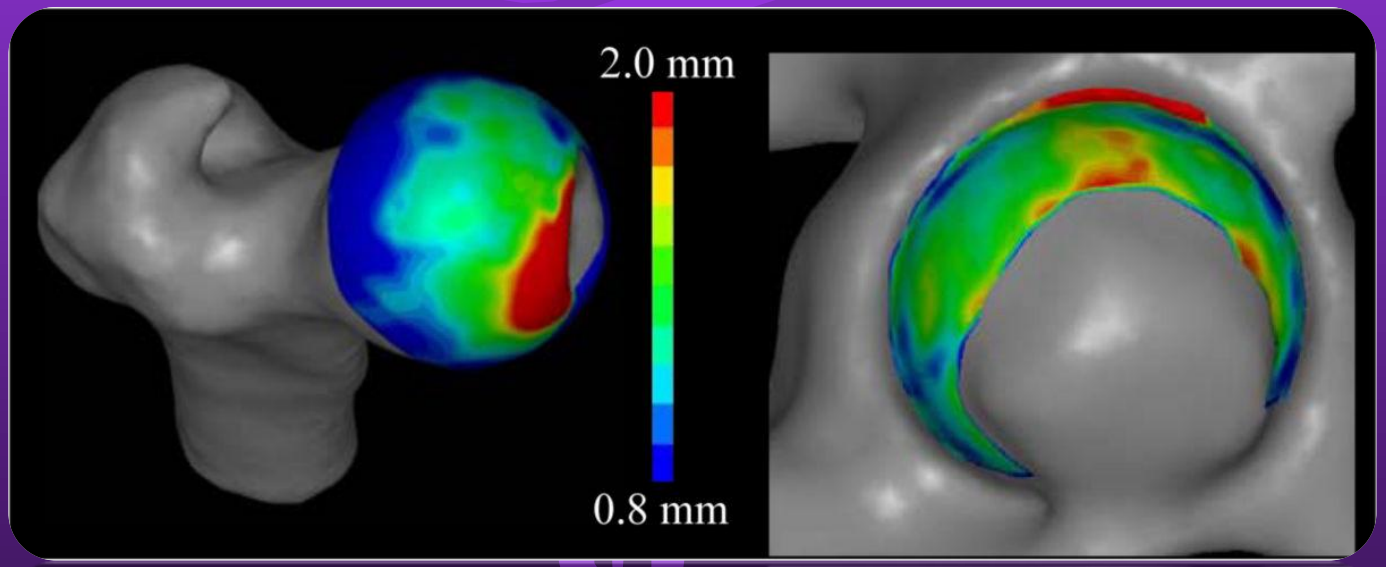
Michaeli 1997 (101)	5-8*	1-2.5*			
Hak 1998 (76)	7.5-9.0				6.0-20.5
Tsumura 1998 (77)	2.5	5.3			
Hipp 1999 (53)	2.1-5.0	2.6-6.5			
Zupanc 2001 (102)				1.1-4.3	
Mavcic 2000 (46, 103)	2.3	4.6			

BRAND, HIP INTERNATIONAL / VOL. 11 NO. 3, 2001 / PP. 117-126

AREAS DE CONTACTO



"A MAN'S GOT TO KNOW HIS LIMITATIONS"


Impactions?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TRAUMA 4


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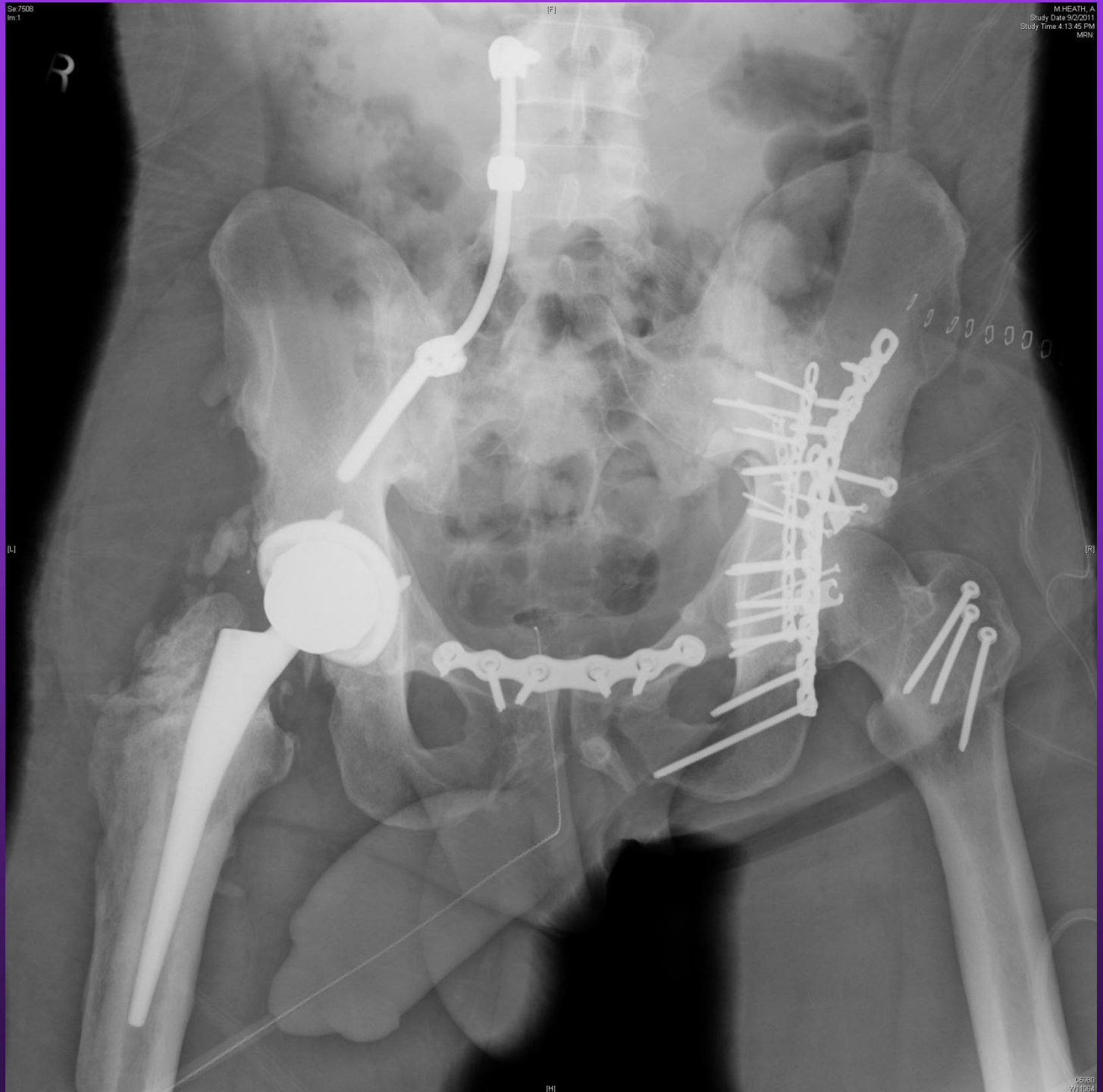
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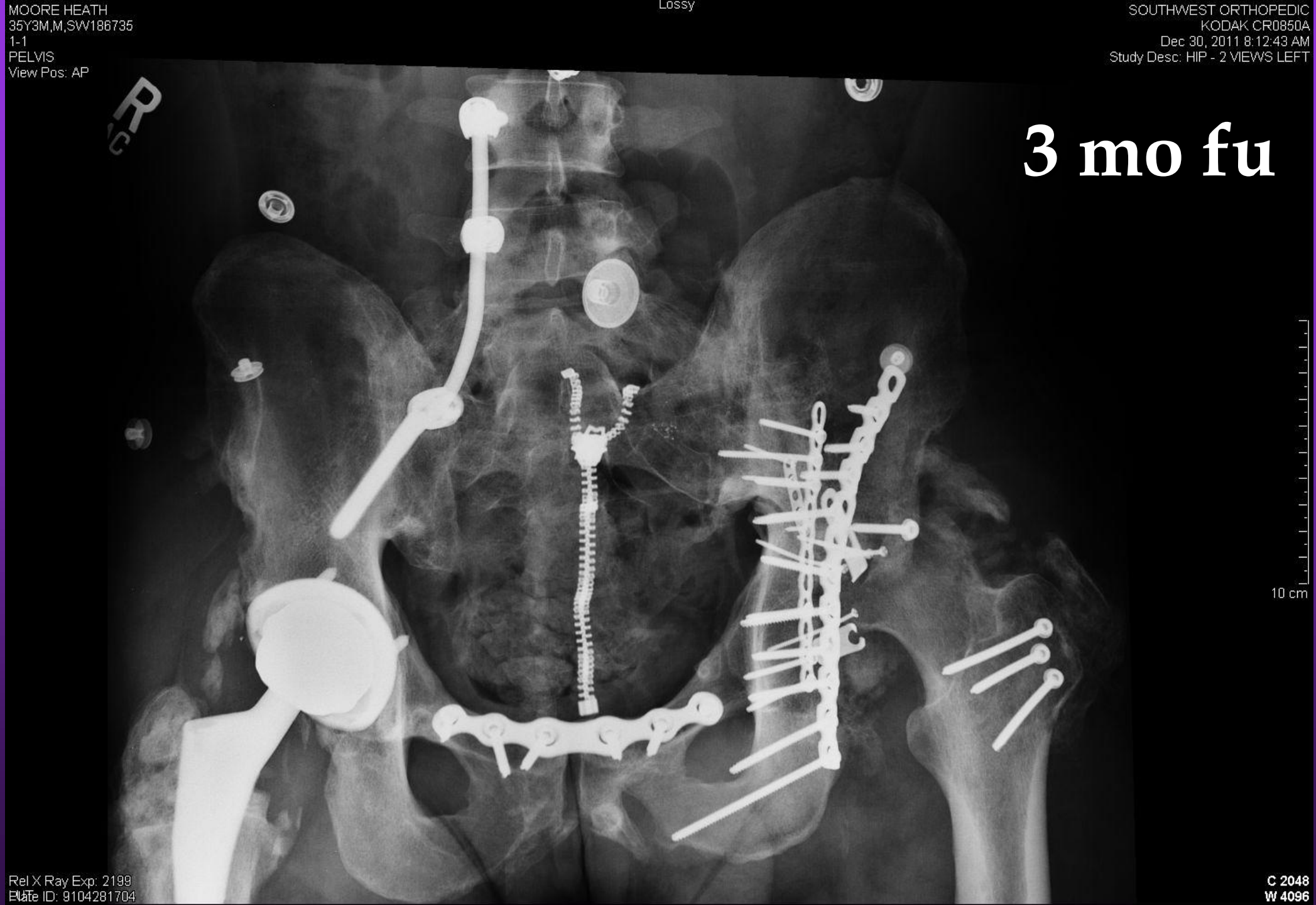
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PELVIS
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SOUTHWEST ORTHOPEDIC
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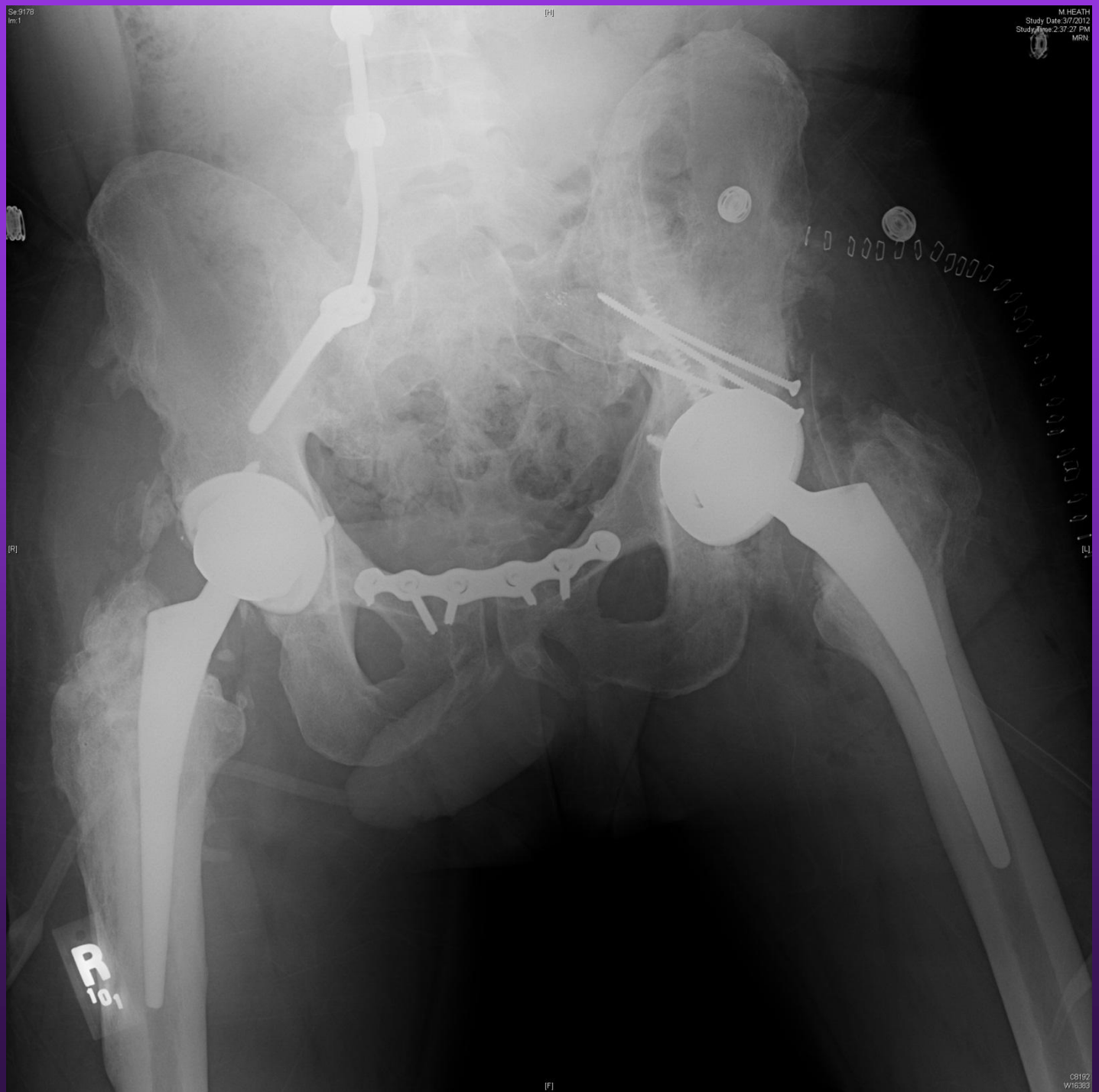
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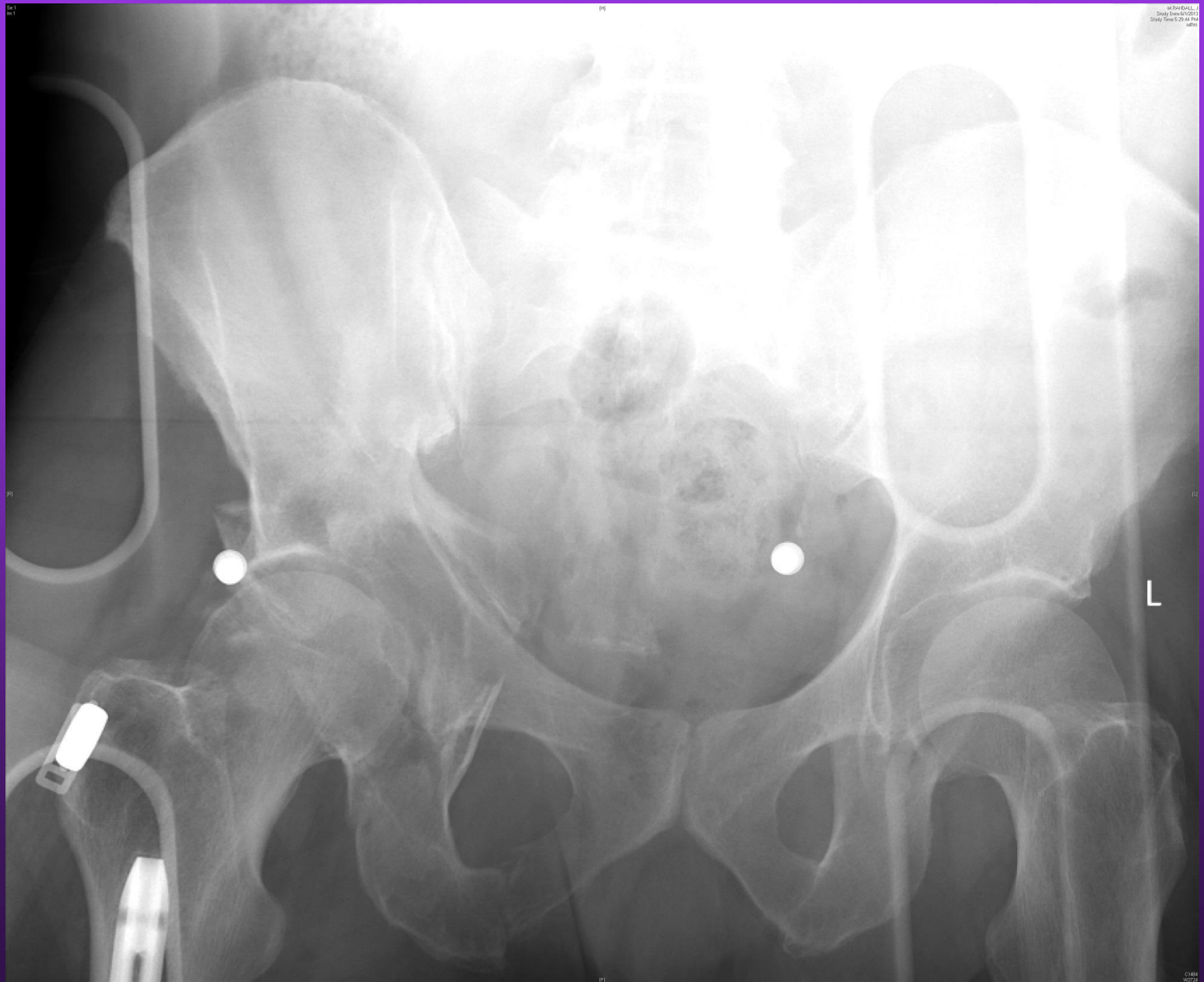
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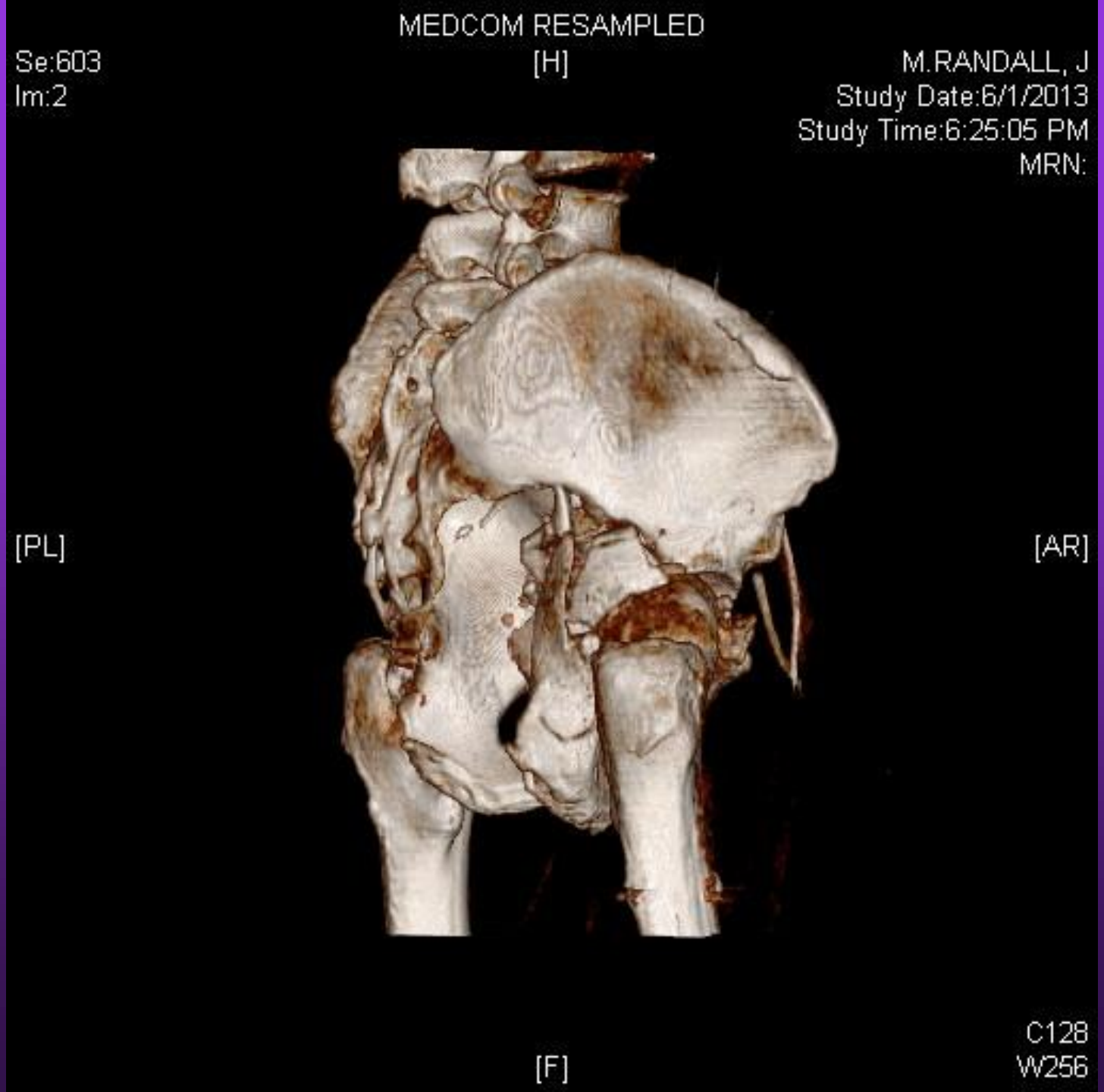
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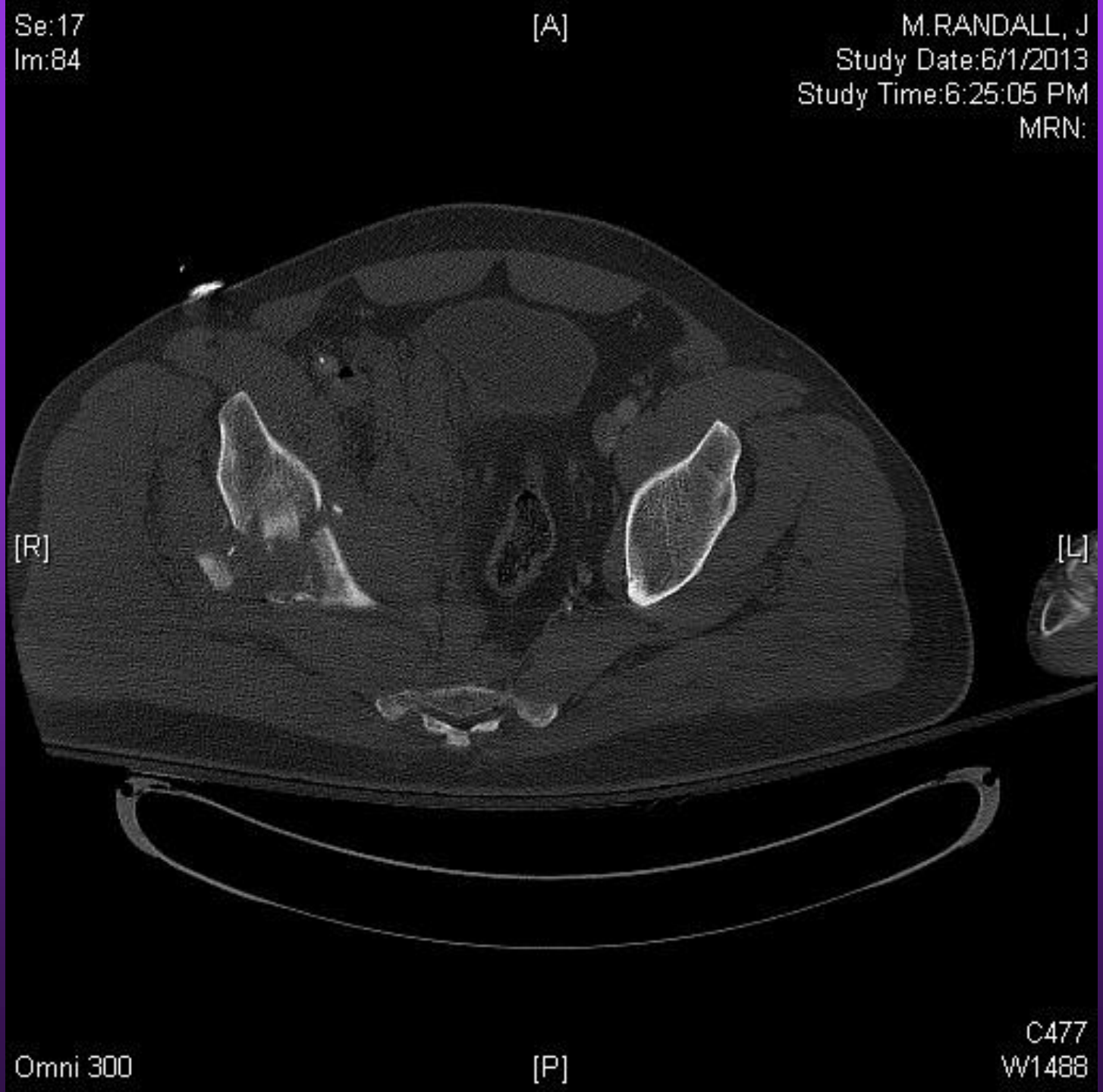
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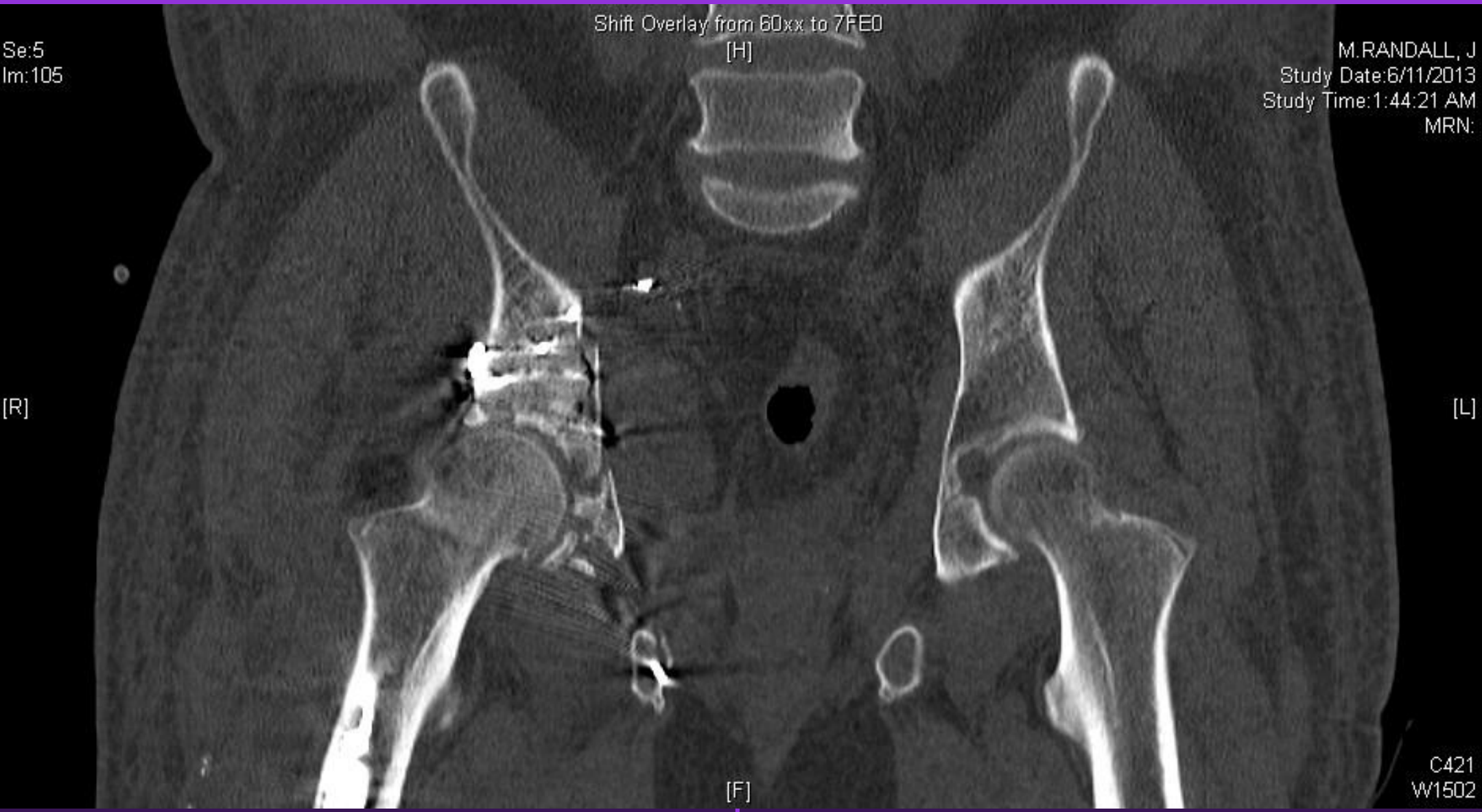
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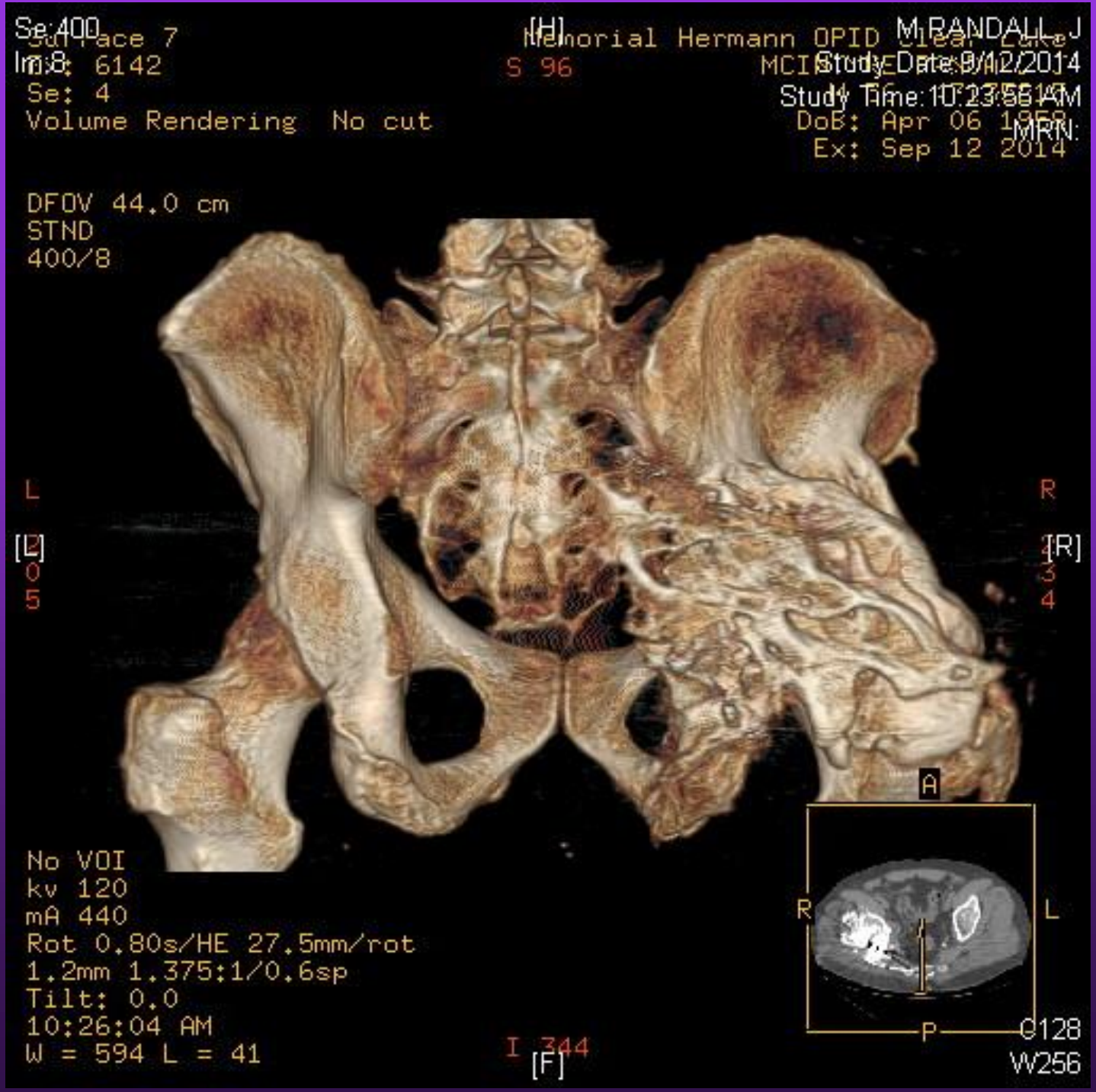
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W256


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R
10 cm

ArthroplastyVersus Open Reduction Internal Fixation for Posterior Wall Aetabular Fractures in Middle-aged Patients

- Templeman et al, Feb JOT 2019

Methods

- 45-65 yo posterior wall
- Matched controls 2:1 32 ORIF vs 16 THA
- Marginal impaction, >3 fragments, osteoarthritis (narrowing, cysts, osteophytes)

Findings

- Similar Oxford Hip Score 44 vs 40 THA vs ORIF
- ORIF 37% conversion to THA (8%-24%)
- THA 13% revision rate (4x ↑ in loosening of cup over OA)
- Better Kaplan- Meier Survival with THA

Does Total Hip Arthroplasty Reduce the Risk of Secondary Surgery Following the Treatment of Displaced Acetabular Fracture in the Elderly Compared to ORIF

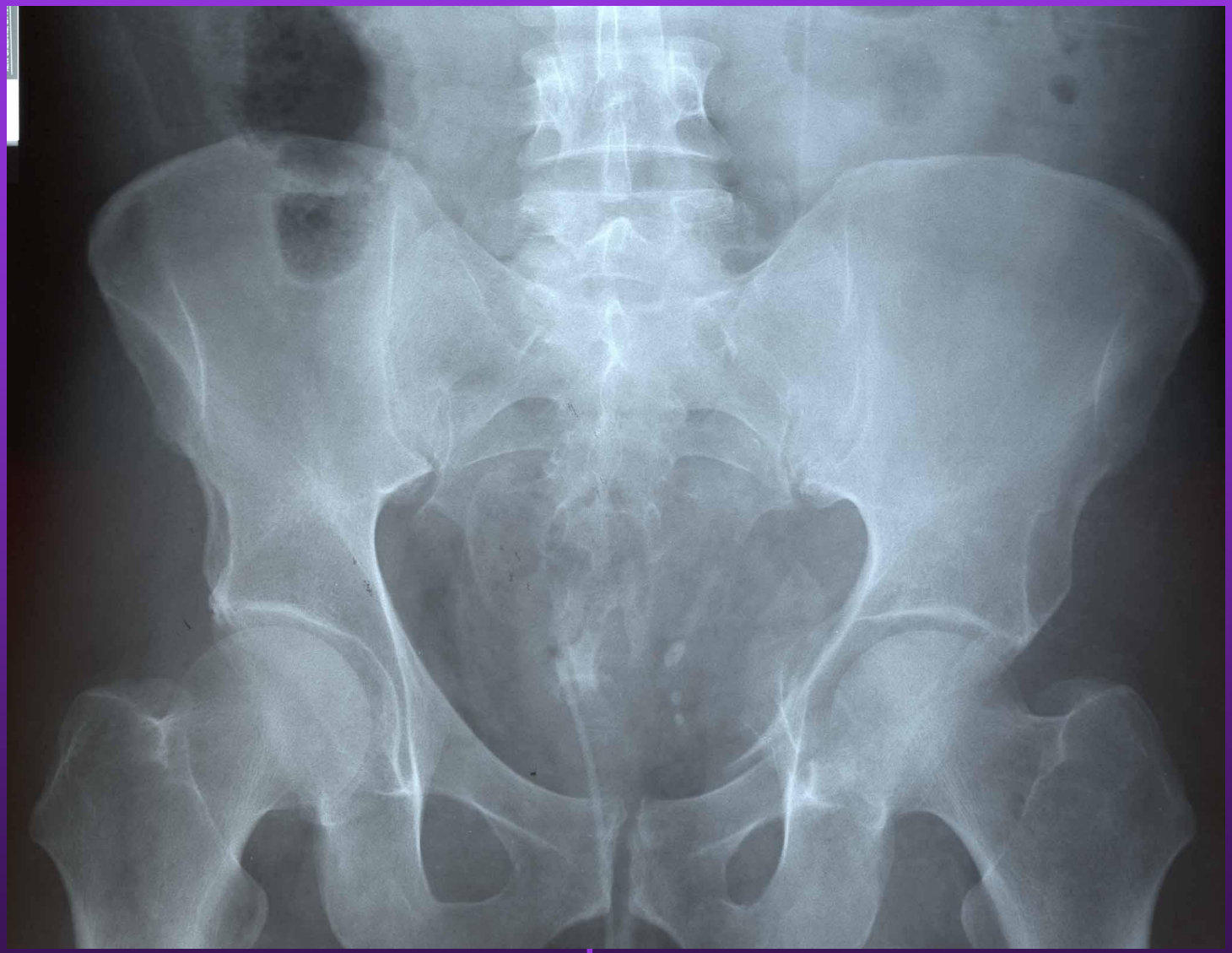
Vrahas et al

Findings

- 30% reoperation rate with ORIF
- 14% THA
- SF – 36 – 39 vs 48

Make it pertfect

JM – 8/10/00



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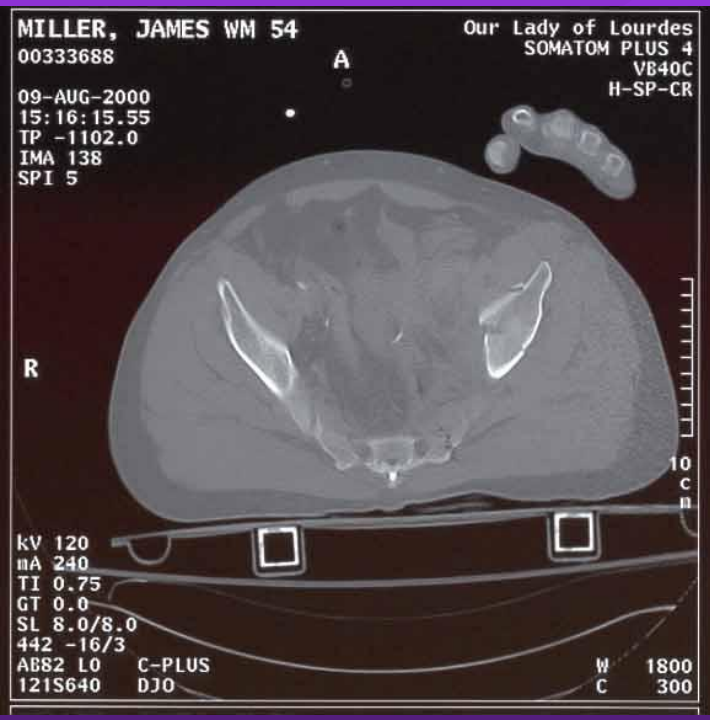
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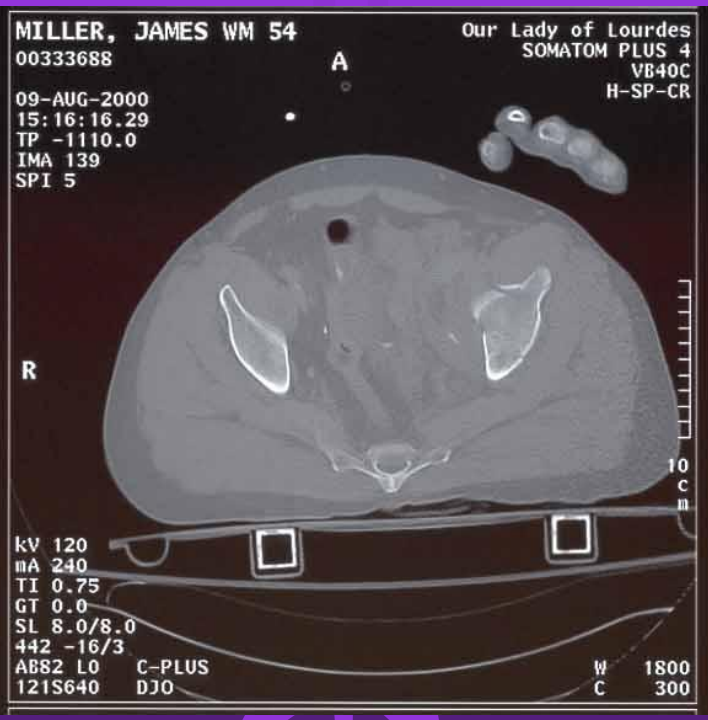
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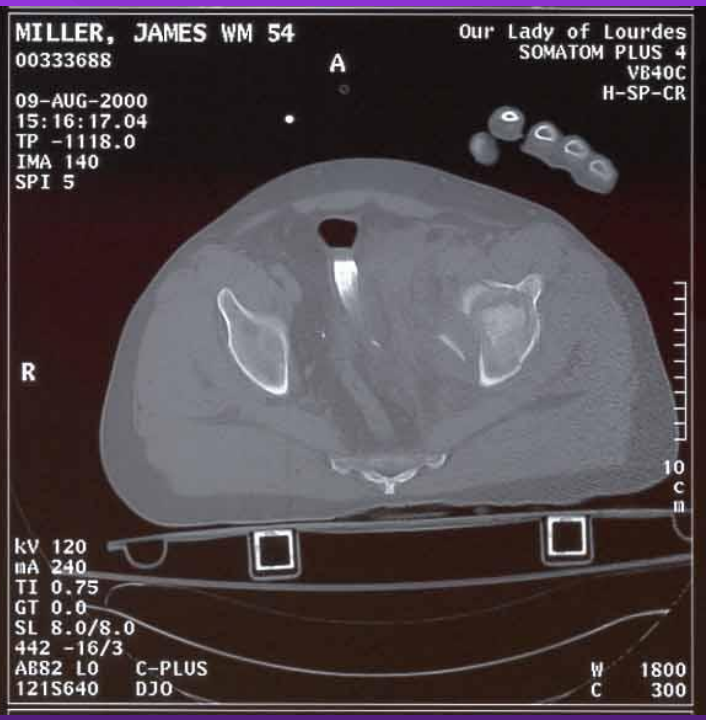
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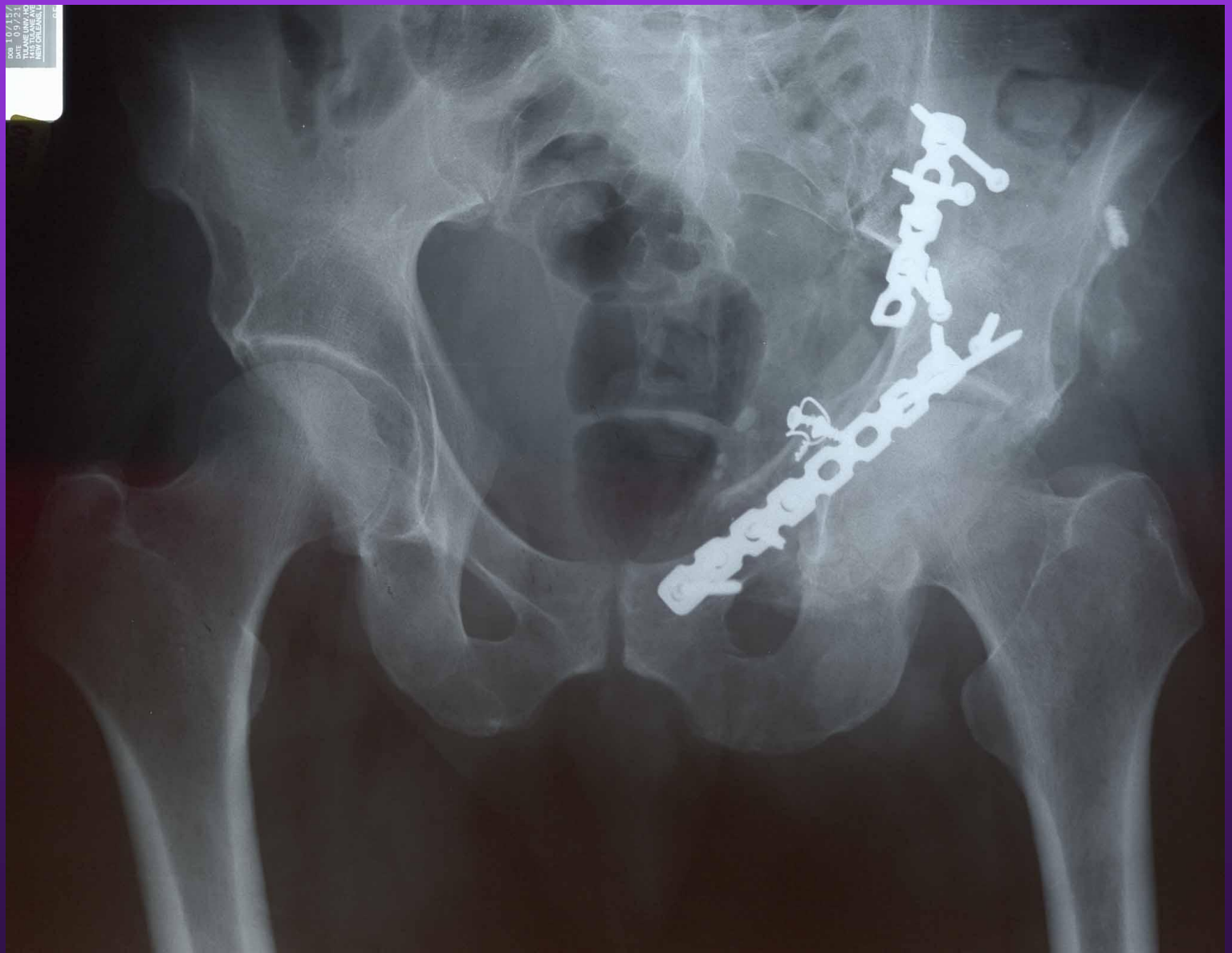

JM 8/17/2012 10 year FU


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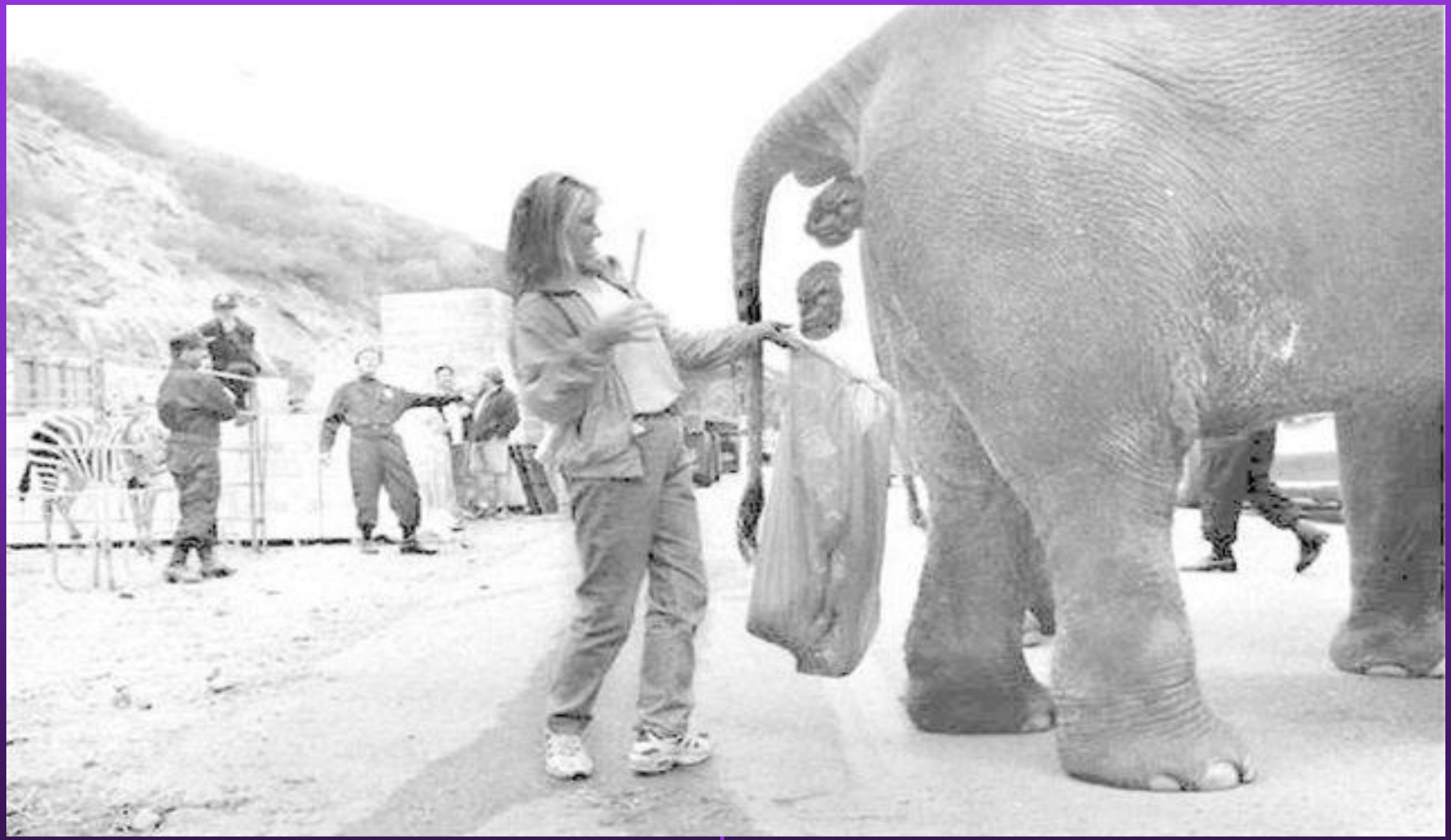
Series Desc: Hip LAT
< 2 - 2 (ALL) >
DICKSON K
IRAY Mars
[8/14/2020 ,9:13:07 AM]
Minolta^Konica
100% Pixel
Original Resolution
L
10 cm
JM 8/2020 20 year FU

Summary

- Consider 1º THA – Femoral head damage, dome impaction (medial or lateral), pre existing osteoarthritis, ?severe osteoporosis, stable fixation of acetabular fracture
- ORIF is still the gold standard even in the elderly
- Results of 1° THA with acetabular fracture not as good as THA alone



Complex Fractures of Acetabulum: Should the Enlarged Iliofemoral Approach be Abandoned

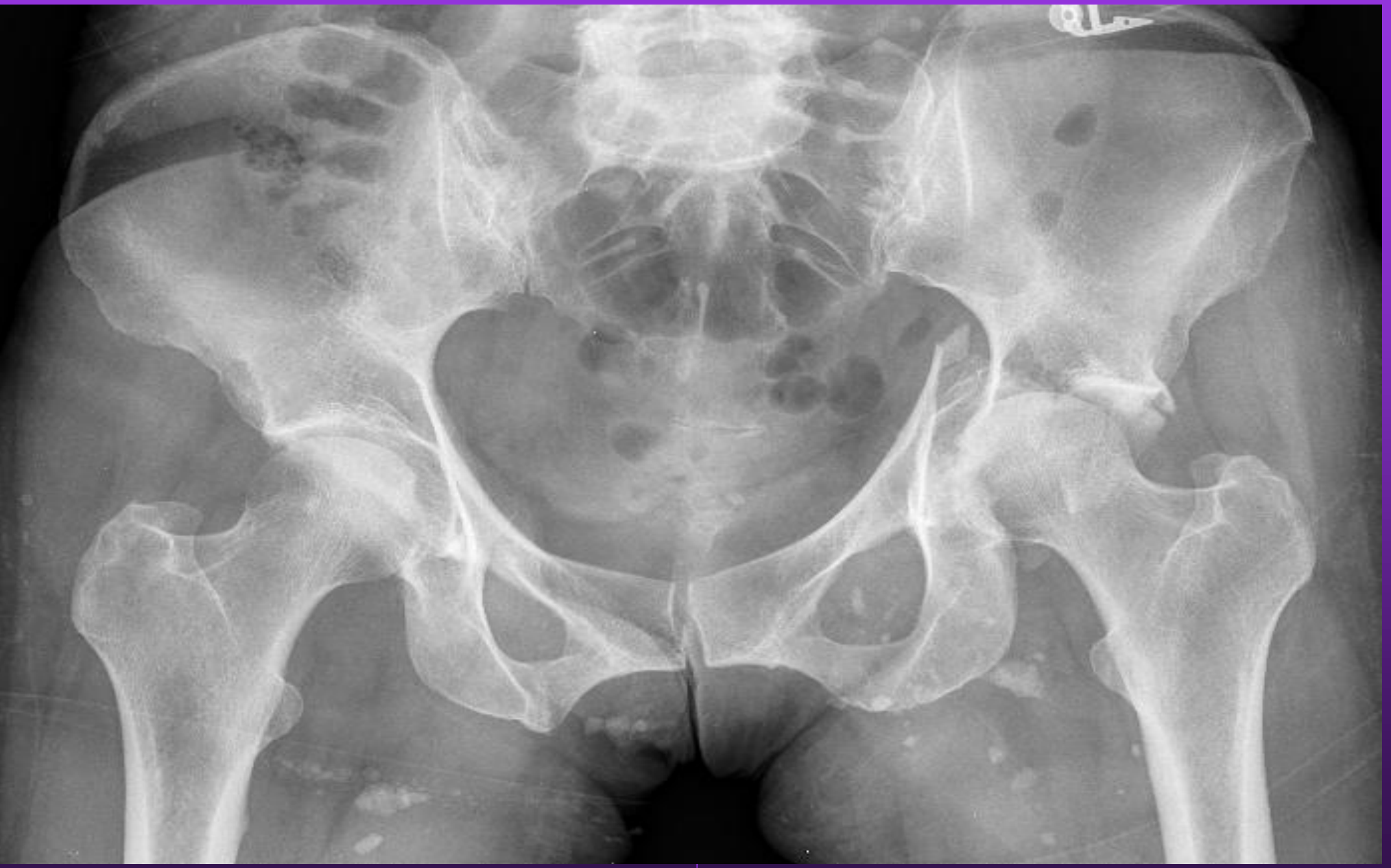
Dujardin et al, Orthop Traumatology Surg Res, 2018 Jun 104(4) 465-8

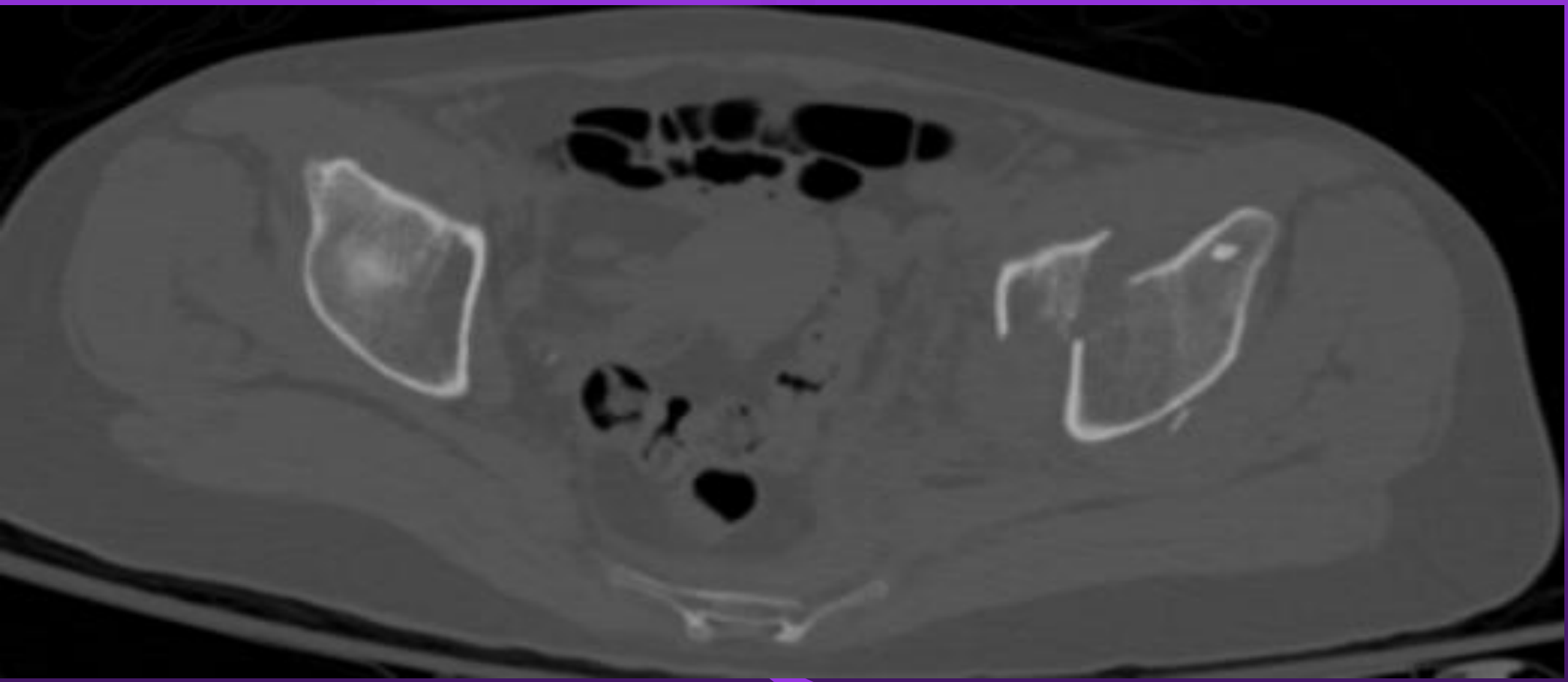
Findings

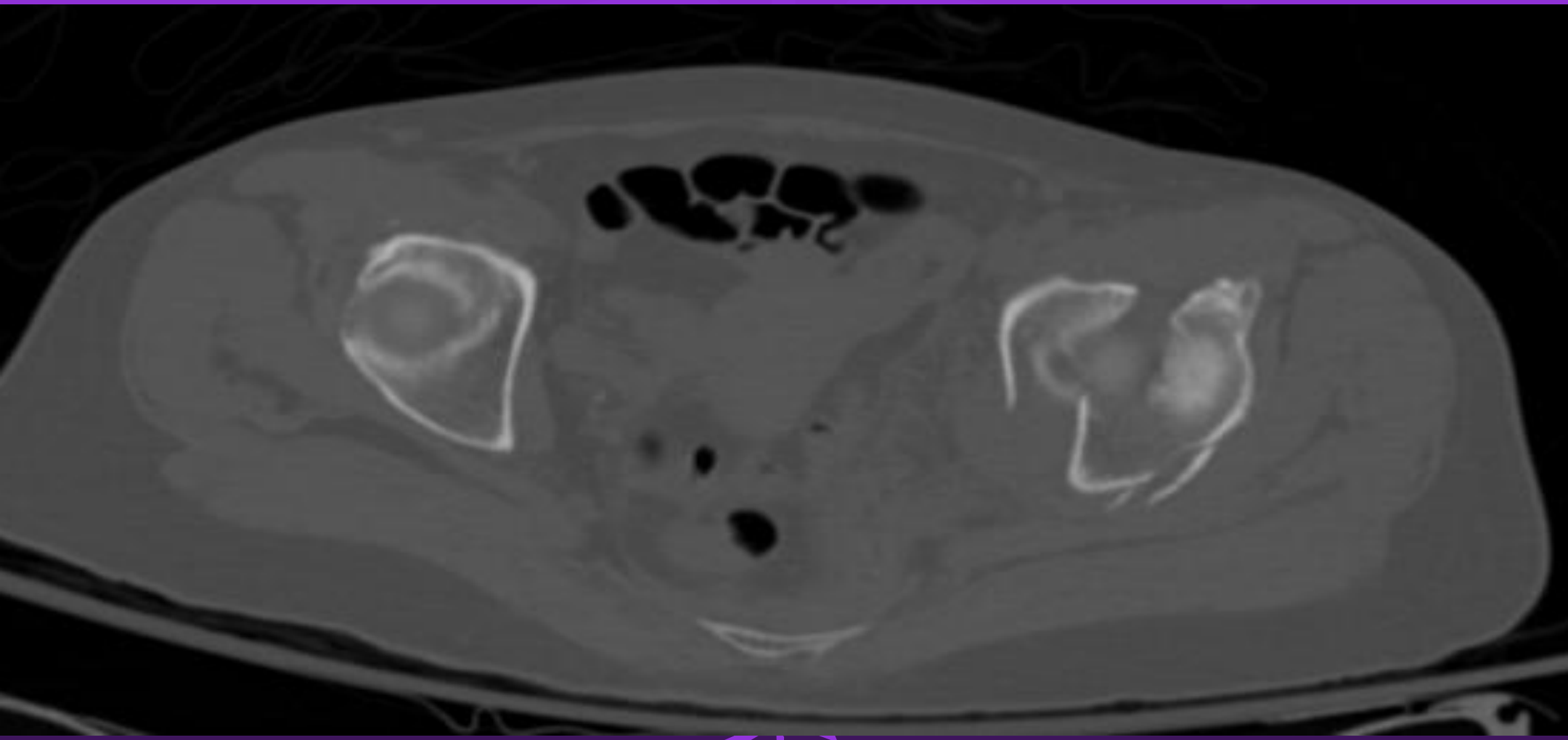
- 20 year follow up 15 pts - 2 THA

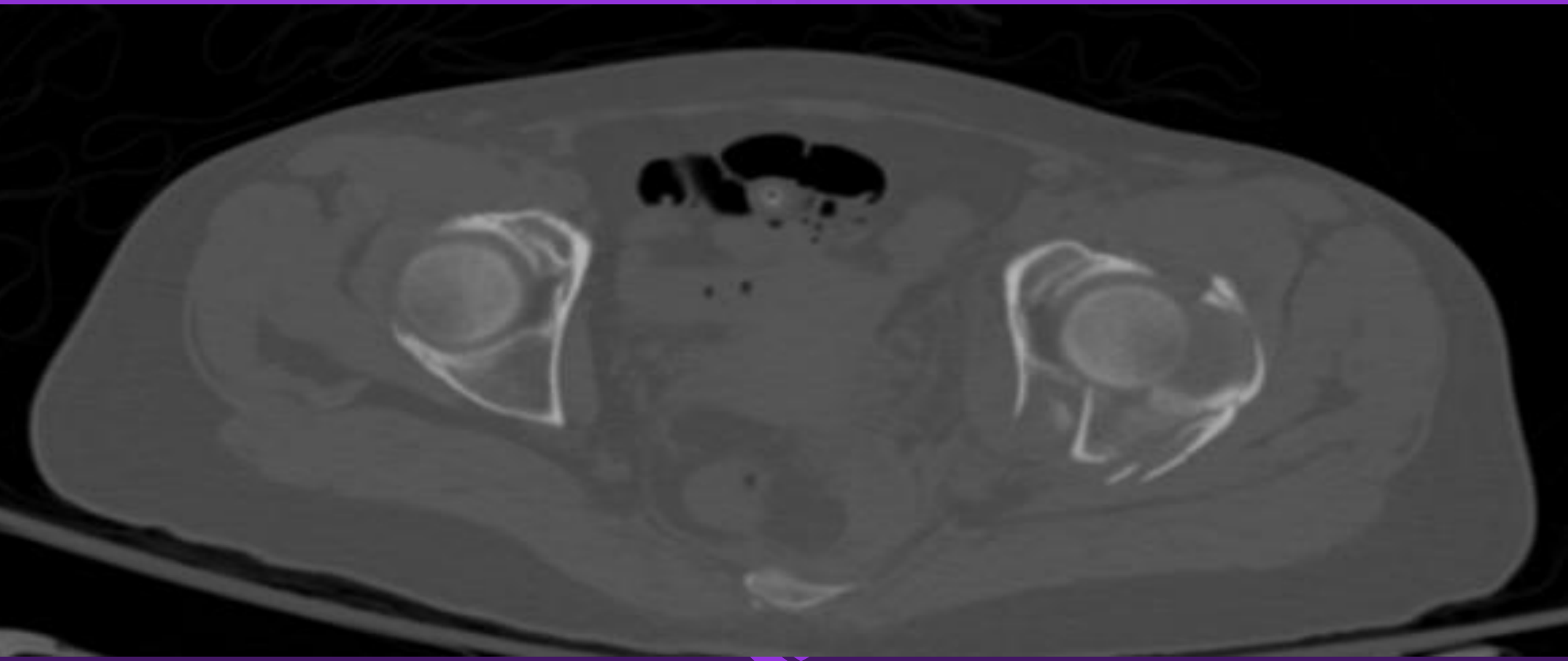
MW

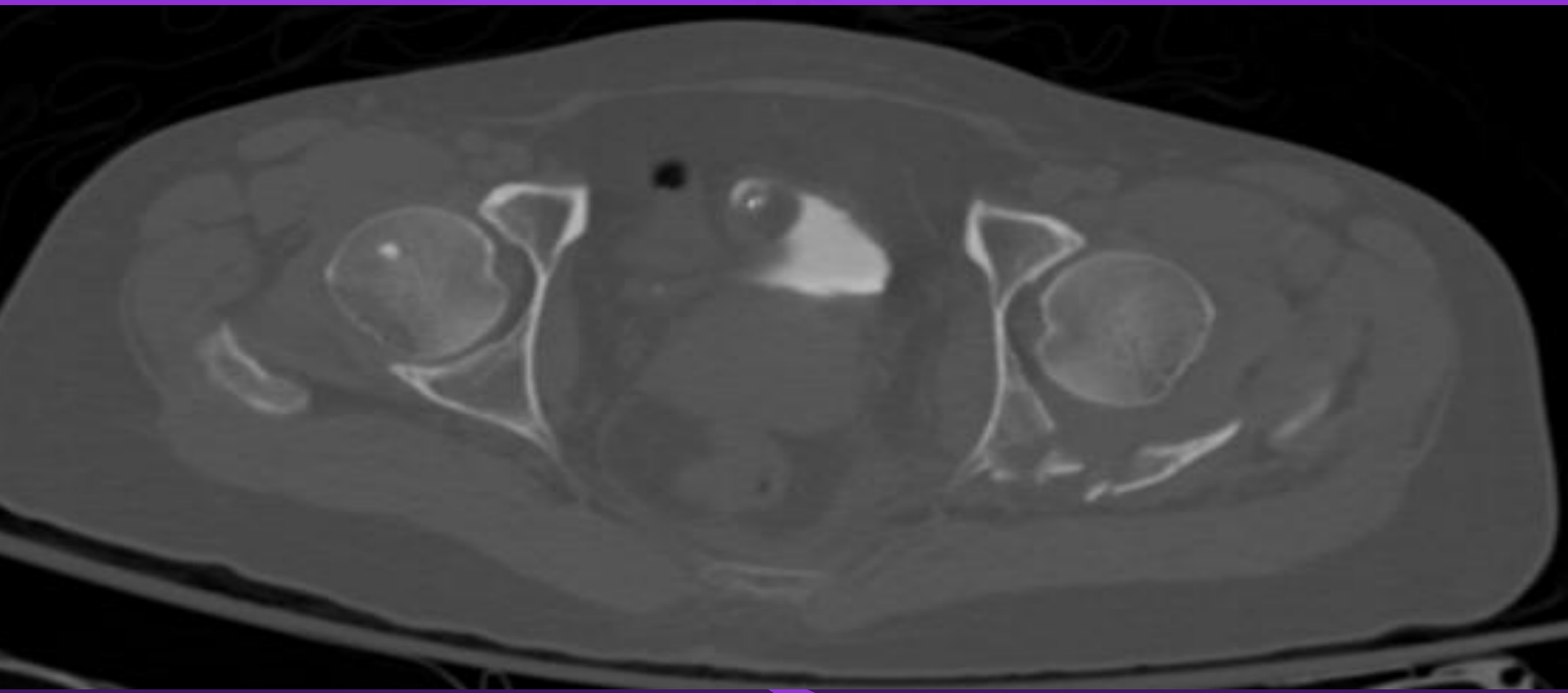
- 52 yo female, professional barrel racer
- s/p crush injury after her horse (Latte) slipped and fell on her during barrel race
- Transtectal
- TrPW

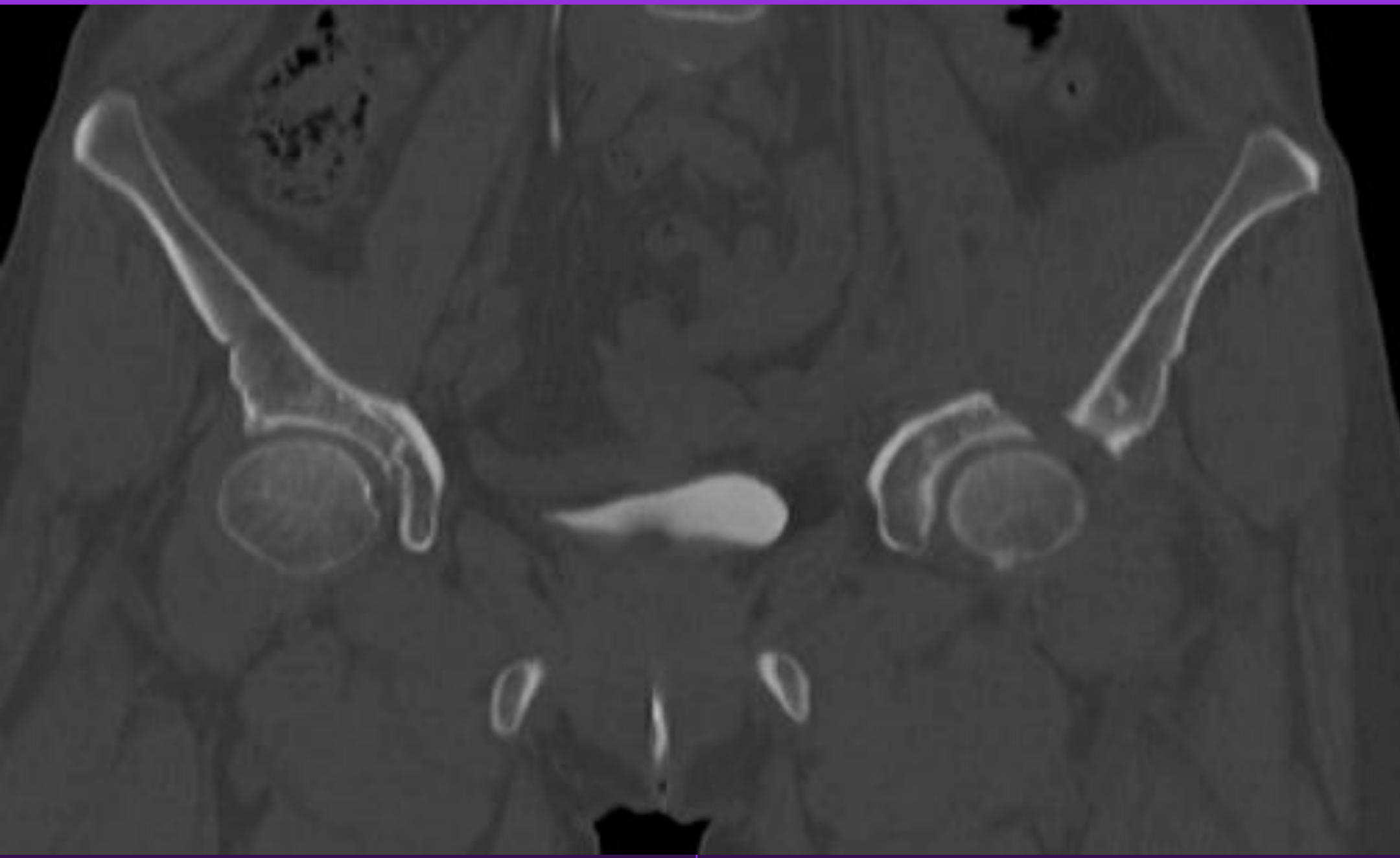


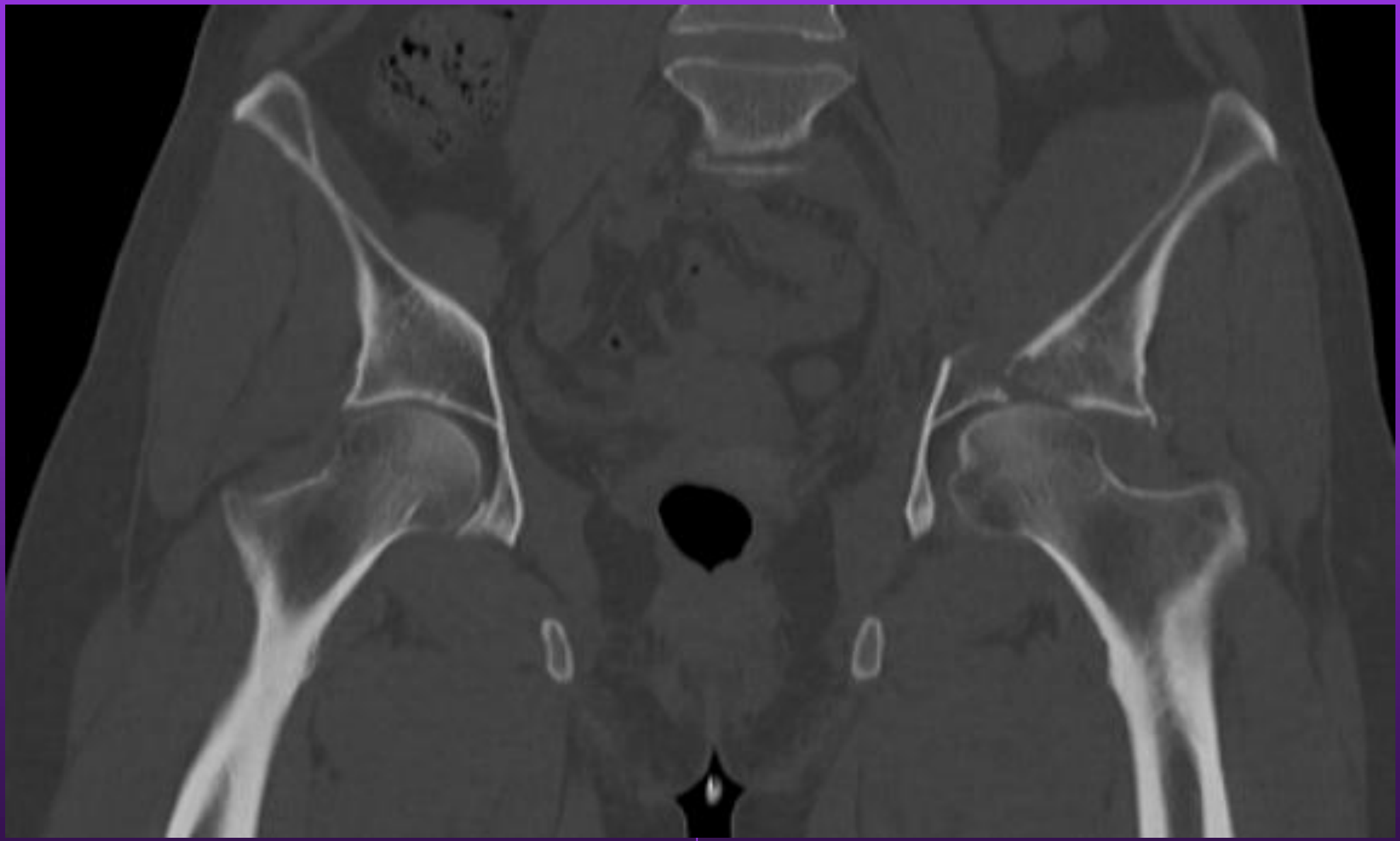


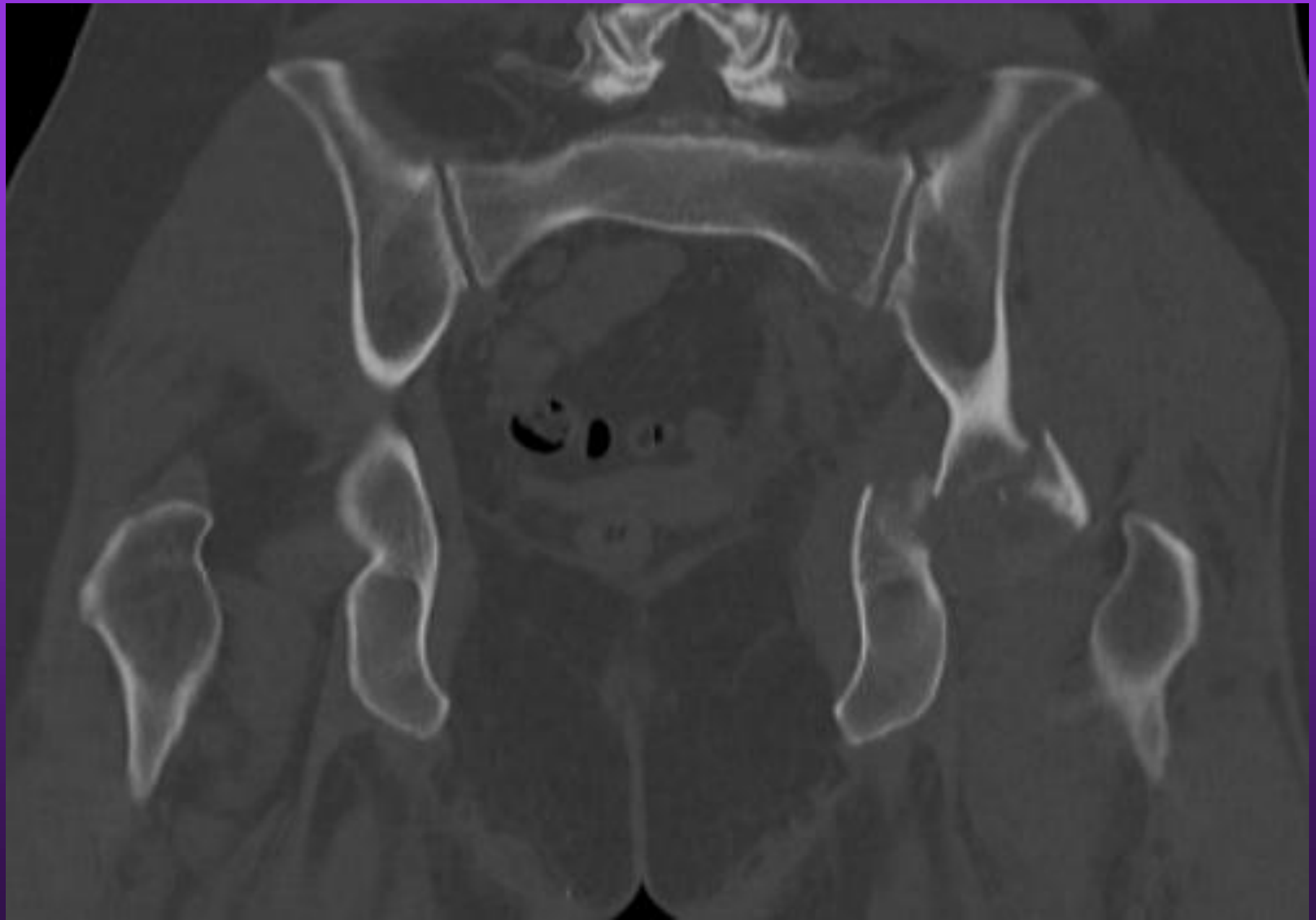












Indications for EIF

- "T" type fractures (KL) (52%)
  - Transtectal – significant displacement of the Anterior Column
  - Associated rami fractures or symphysis disruption
  - > 1 week delay

Preop Plan for T-Shape

- Draw out the fracture
- Understand the rotation and translation of the fragments
  - Transverse rotation 2 axis (symphysis, symphysis PC fracture line)
  - Open door "saloon door"

Does the Anterior Column Need to be Reduced?

- Transtectal vs juxtatectal or infratectal
- Anterior roof arc (ARA)< 45°- 20° (MRA - 40°, PRA - 60°)
- Posterior T – AC accessible posteriorly
- Do not Fix a Malunion

Critical Factors

- Does the anterior column need to be reduced (displaced vs trans, juxtatectal vs infratectal)?
- Contra lateral rami fractures (indirect reduction of the anterior column difficult)
- > 1 week from injury (w/ trans or juxta-yes-EIF vs dual approach no-KL)

Critical Factors cont.

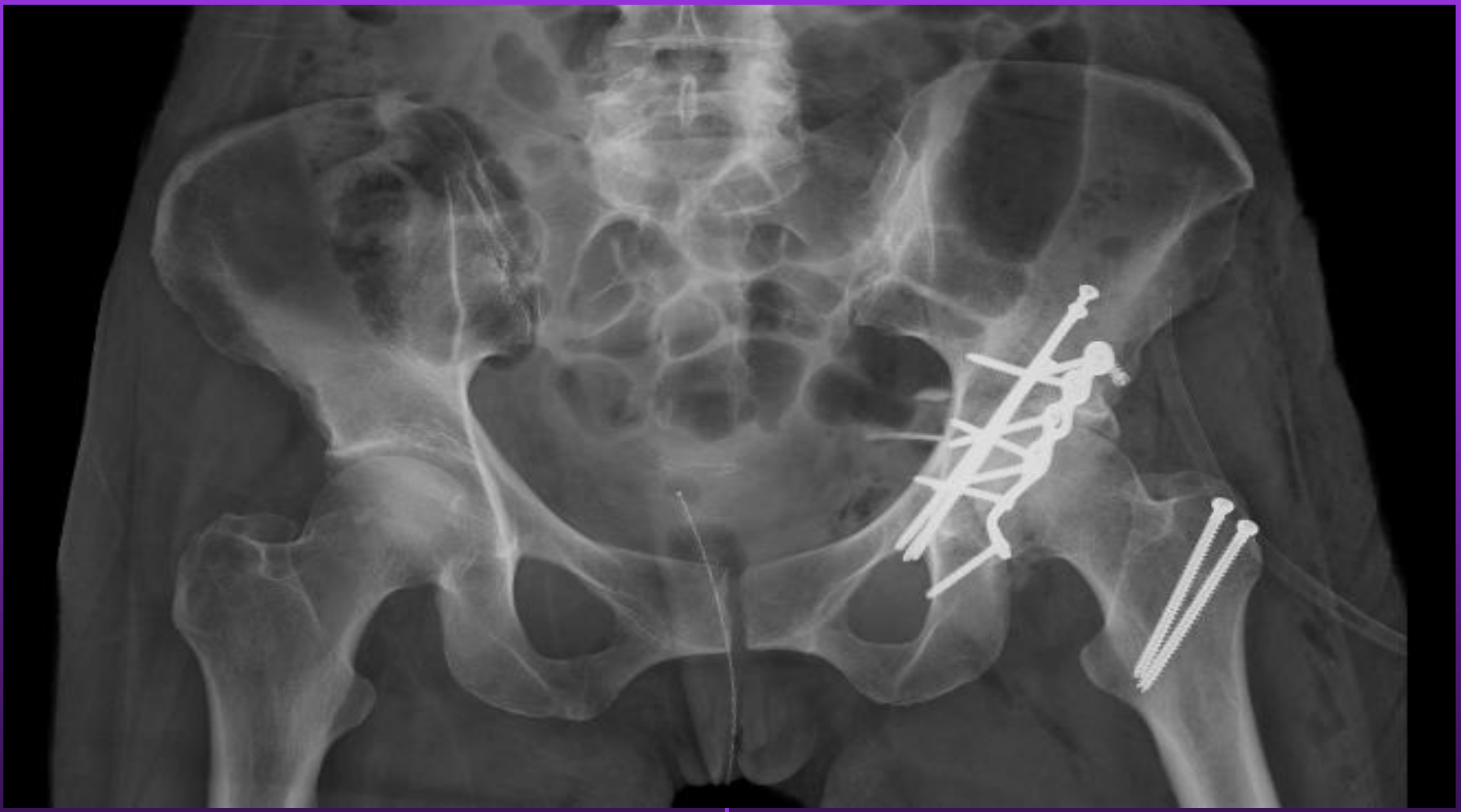
- KL for most may need sequential II for anterior column (?EIF)
- T-type fractures usually disrupt the labrum and capsule so indirect reduction of the posterior column very difficult from the front (ilioinquinal)

Timing of Surgery: Criteria

- Well - resuscitated patient
- Appropriate radiological work-up
- Appropriate understanding of fracture
- Appropriate operative team

Surgery

- ORIF through extended iliofemoral approach
  - Direct head of rectus detached and repaired with suture anchor
  - Trochanteric osteotomy performed
  - After transverse fracture reduced, two 3.5 screws placed into anterior column and one into posterior column
  - Significant impaction and Norian used with 2 screws through posterior wall and 6 hole buttress plate
  - EBL 350 cc's, Time 5 hours 4 minutes skin to skin
- Patient received radiation therapy for HO post-op day #1



Post-op Course

- 1.5 years post-op became world champion barrel racer for first time at age 53

Done

[redacted] celebrates with Dr. Kyle Dickson after being crowned 2012 World Champion Barrel Racer. Dr Dickson was Mary's surgeon who repaired her broken pelvis, broken hip

1.2K Likes 26 Comments

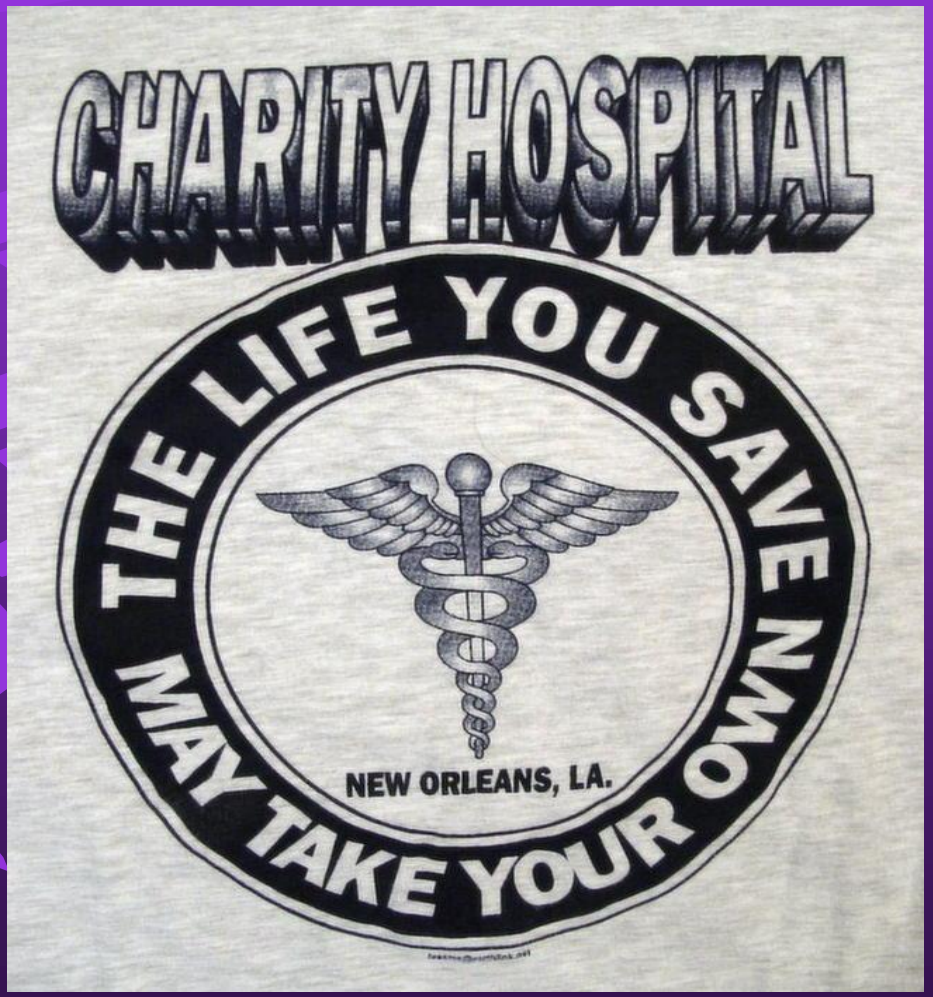
Should We Be Doing EIF?

- Results-**Complications** (HO-0%)
- Arthrosis resulting in THA (3) 10%
- Loss of fixation (1) 3%
- Infections requiring I&D (5) 17%
- Soft tissue defects requiring flaps (3) 10%

2014

Thank You


Charity Hospital, New Orleans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