

Kyle F. Dickson, M.D. M.B.A.

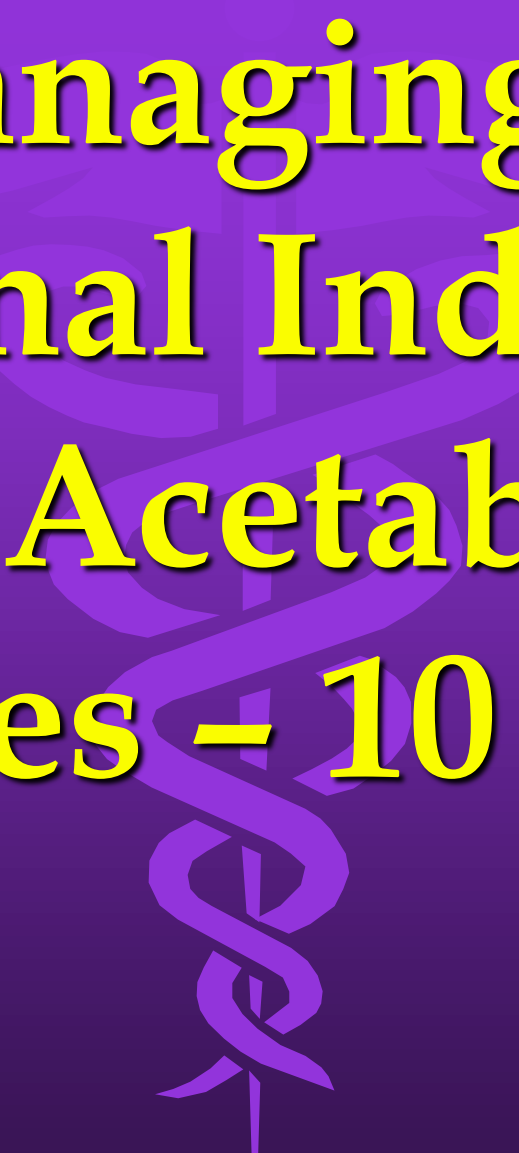


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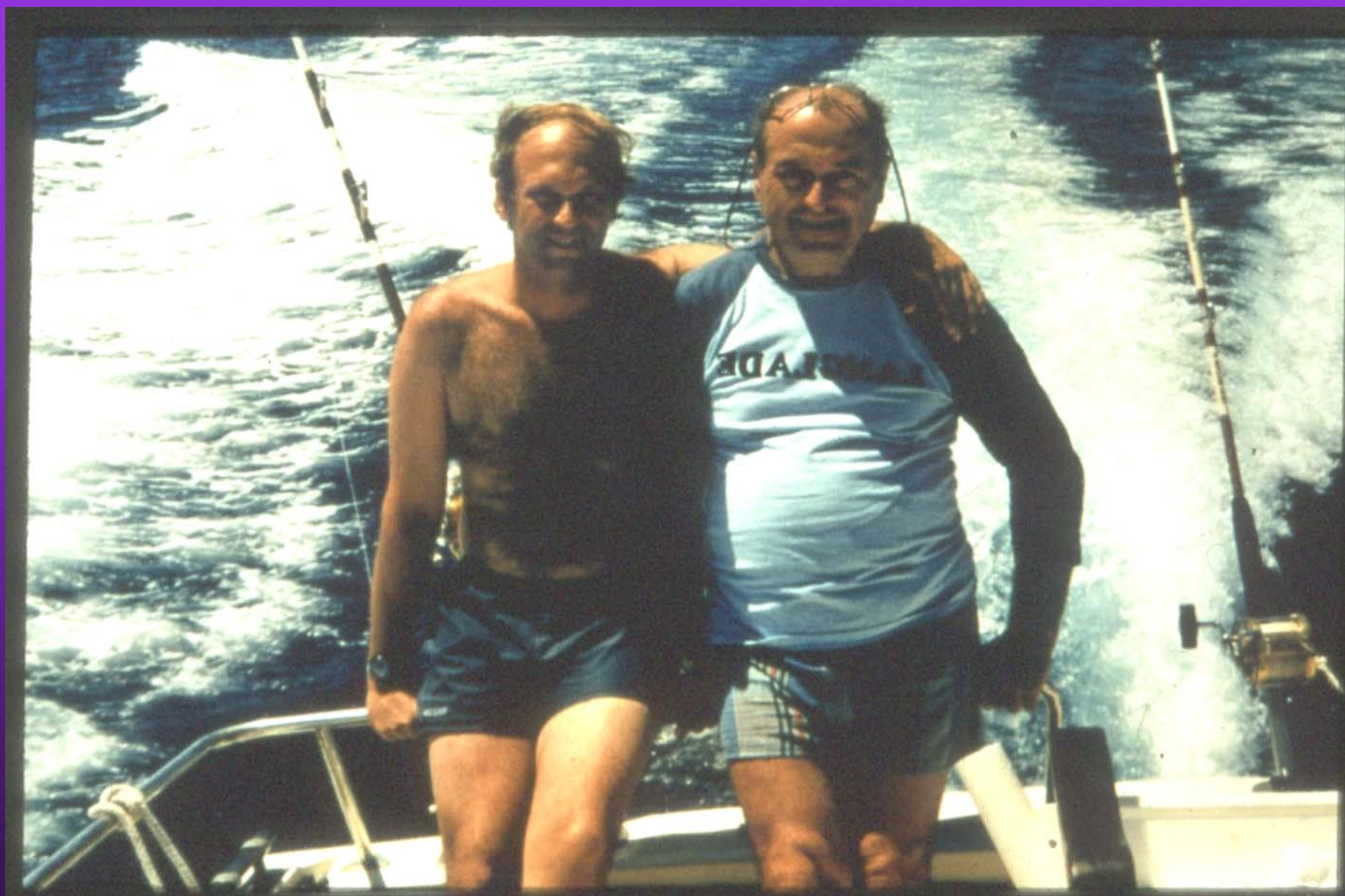
Managing the Marginal Indications of Acetabular Fractures



Kyle Dickson MD, MBA
Professor Baylor College of Medicine
Southwest Orthopaedic Group, Houston Texas



Managing the Marginal Indications of Acetabular Fractures – 10 Minutes



Indications For ORIF

- Displaced dome $> 1\text{mm}$ ($\text{ARA} < 25^\circ$, $\text{MRA} < 45^\circ$, $\text{PRA} < 70^\circ$), subluxation of femoral head
- Lack of 2° congruence (Both Column acetabular fractures only)
- 20-40% posterior wall

Timing of Surgery: Criteria

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

Contraindications

- Lack of know how (better is not good enough – needs to be perfect)
- Comorbidities (CV, non ambulators, etc)
- Non compliant (alzheimers, Schizo)
- Severe osteoporosis



“A MAN’S GOT TO KNOW HIS LIMITATIONS”



Experience



- is not doing a better job on cases but doing a perfect job more efficiently

Marginal Indications

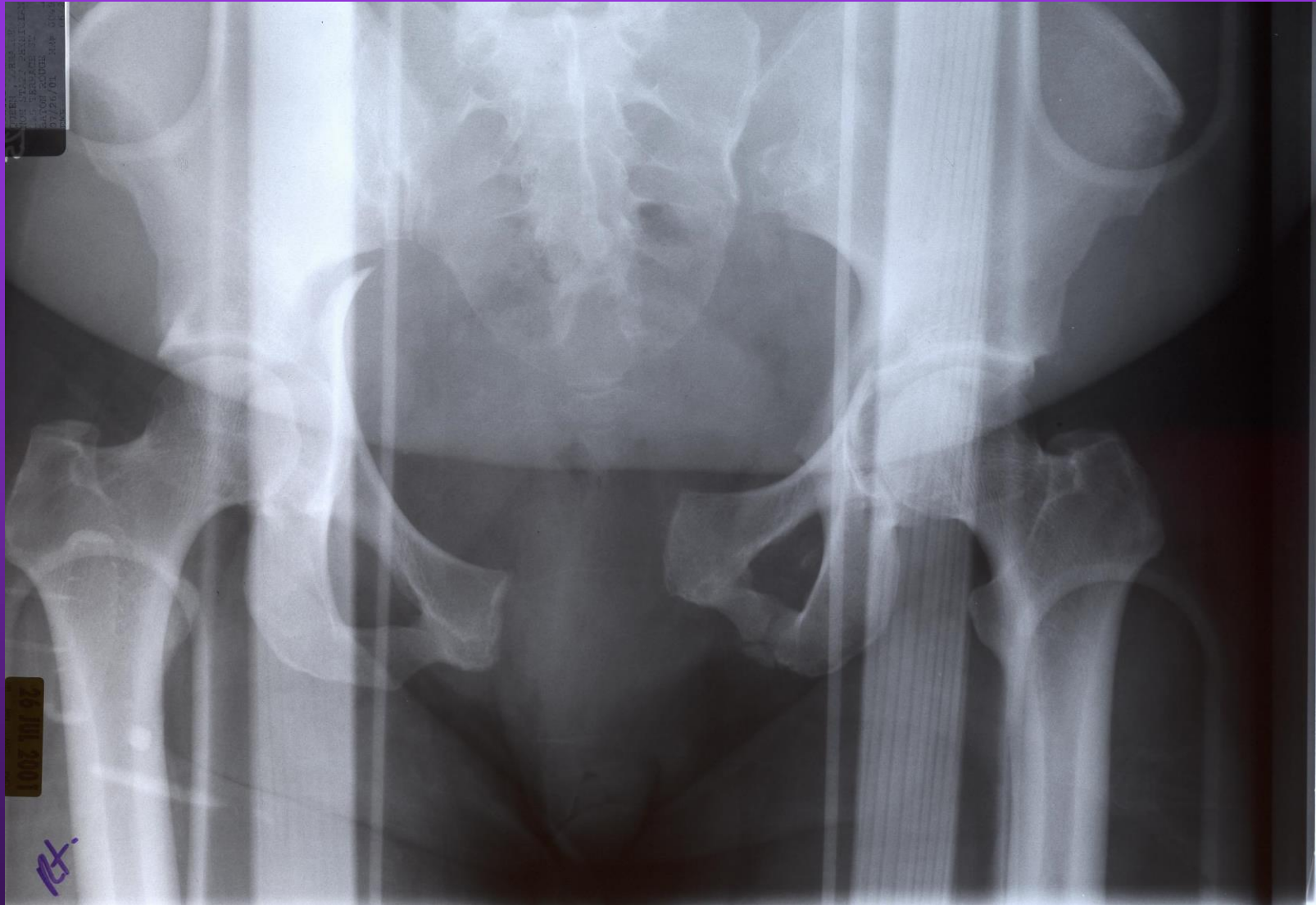
- Posterior wall that is $<20\%$
- Nondisplaced fractures in the significant roof arc dome
- Never includes rami fractures, fractures not in the dome or those that are outside the dome – **Just say no!**



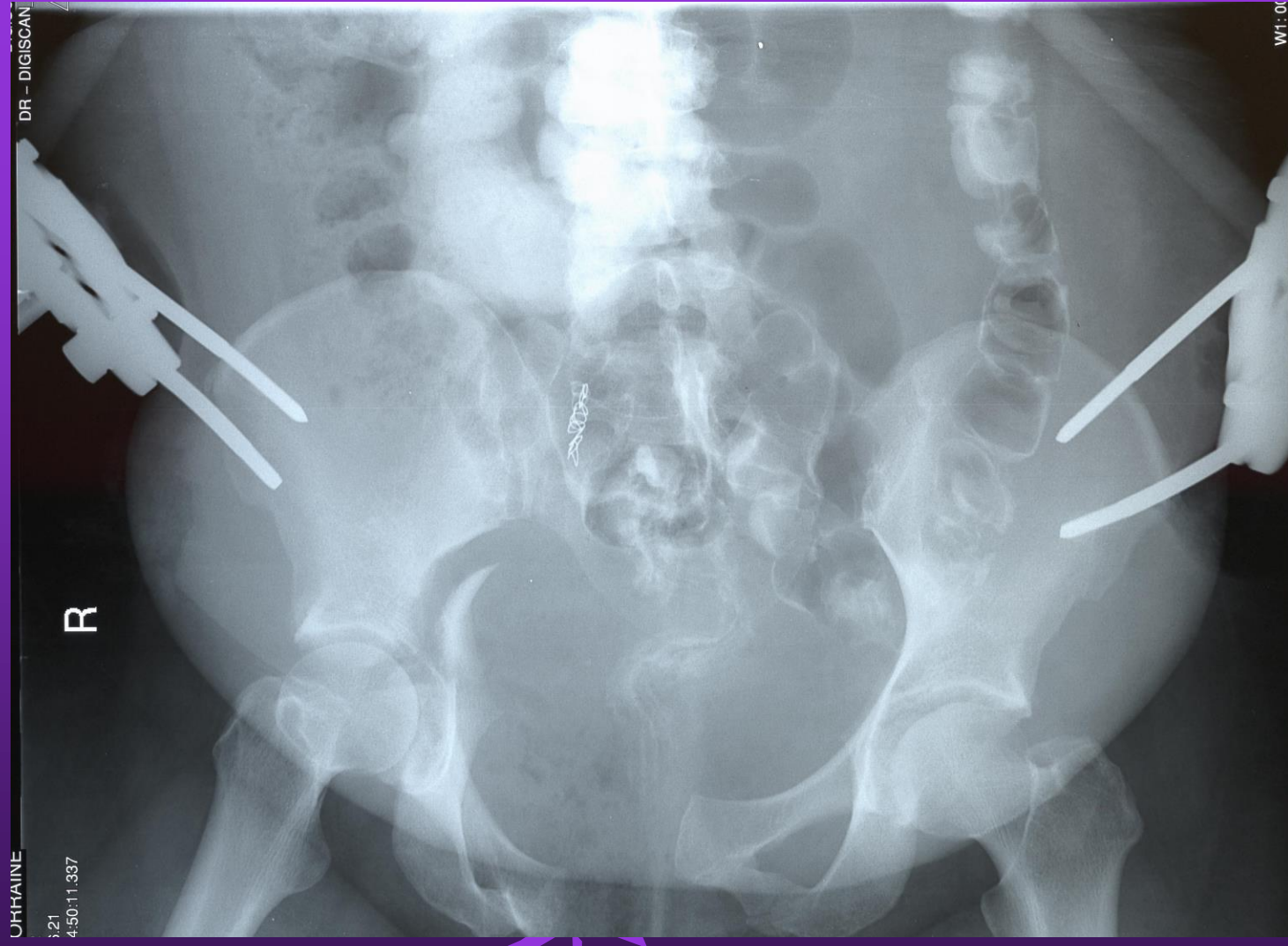




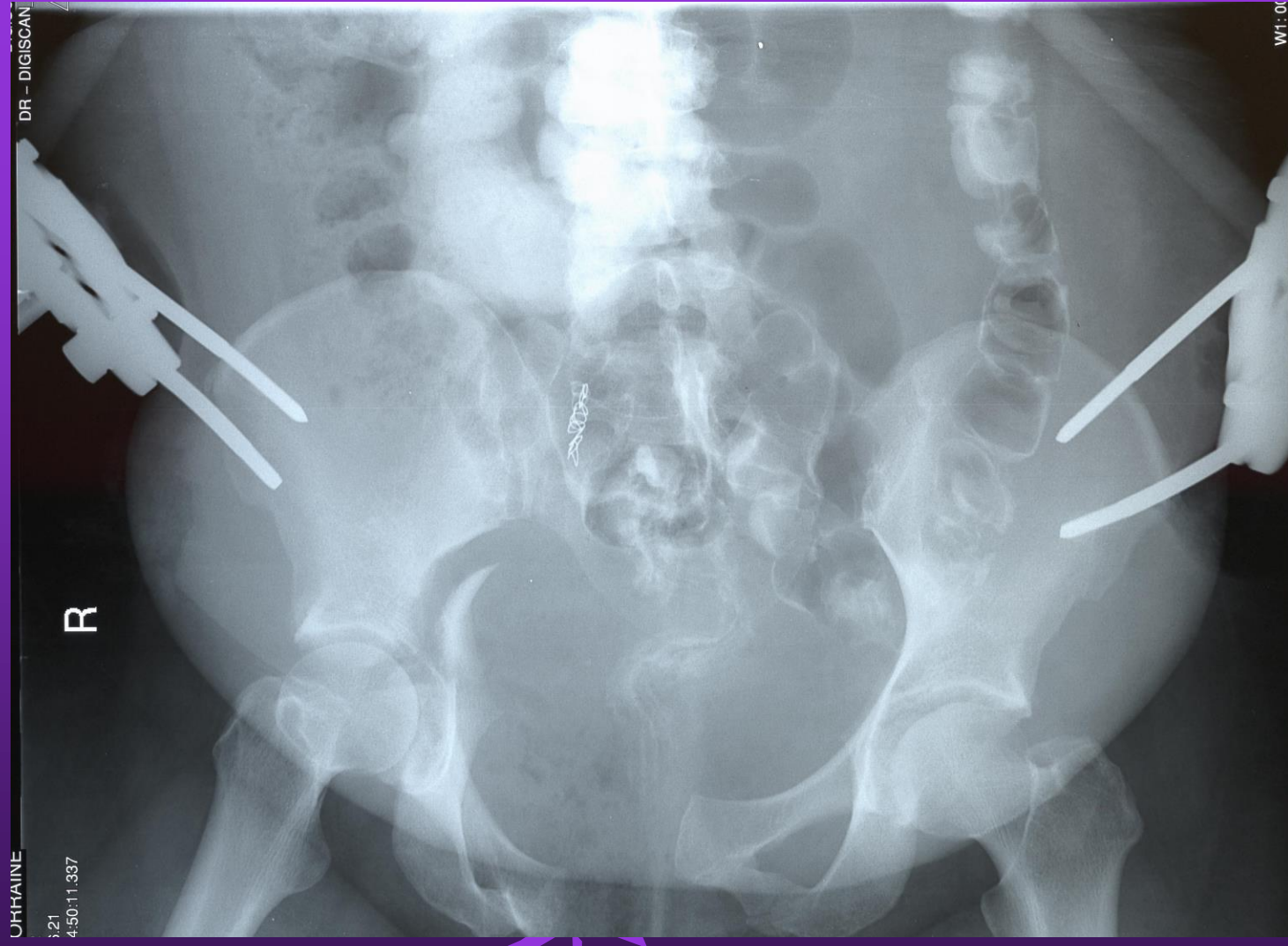
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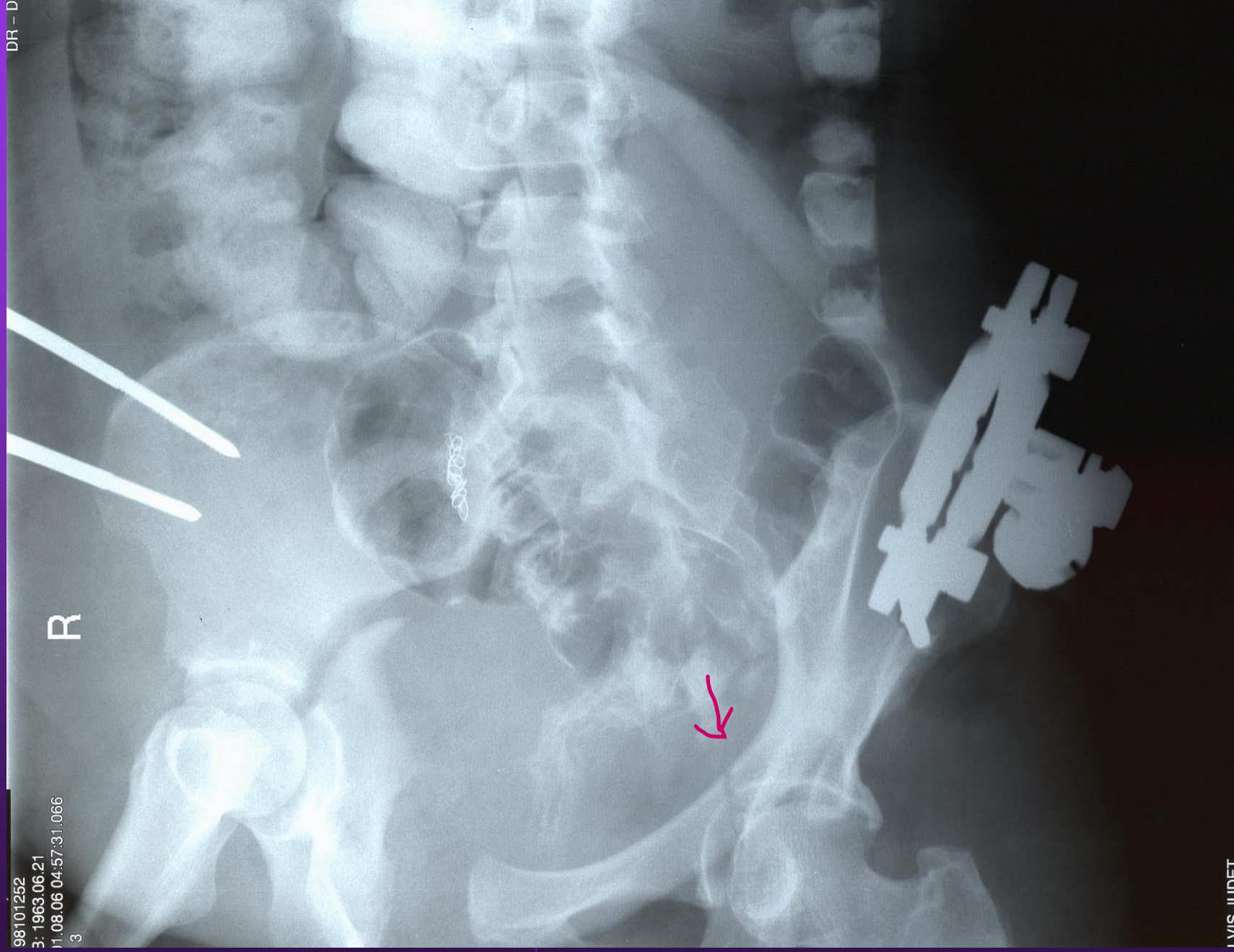
LQ



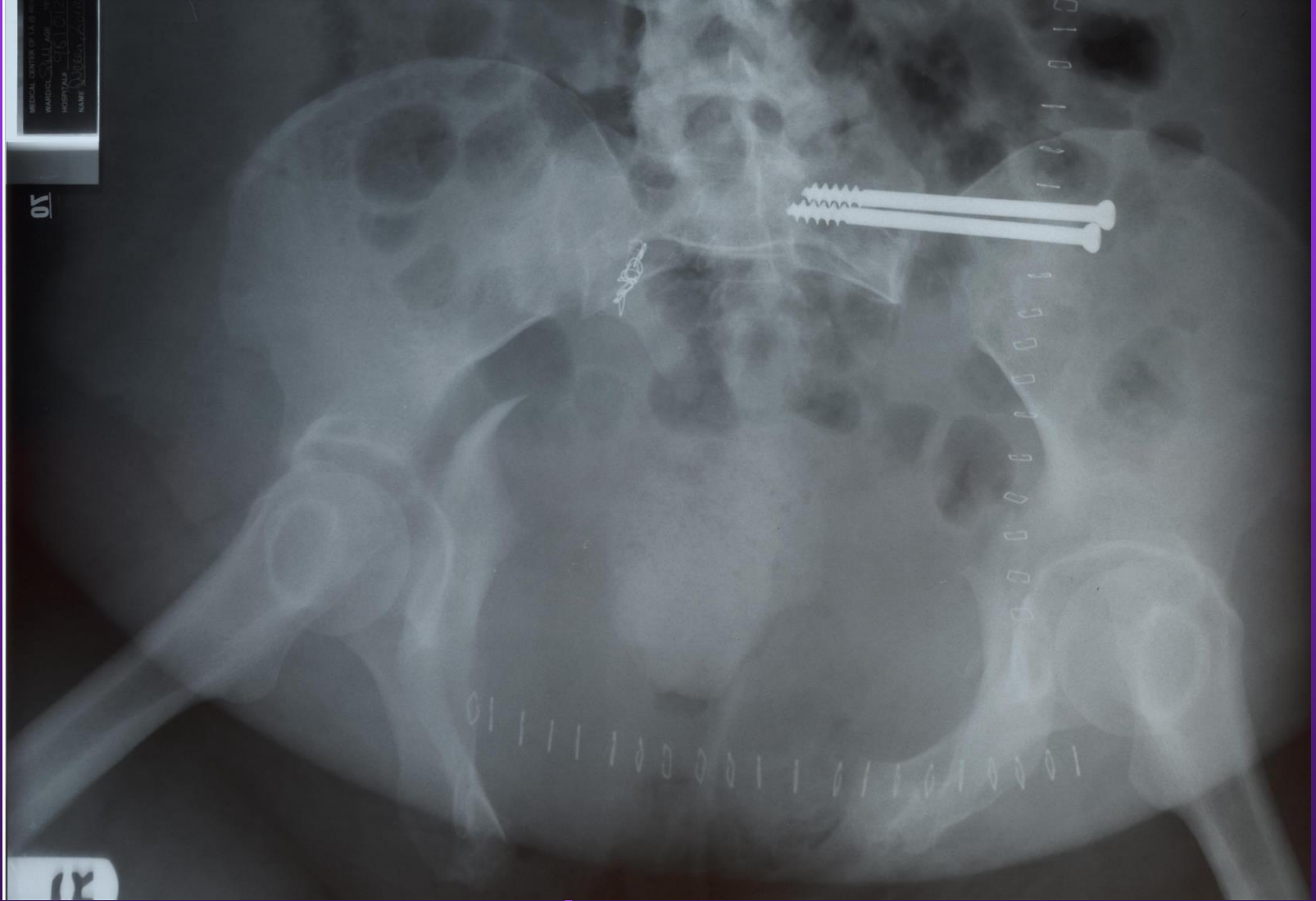
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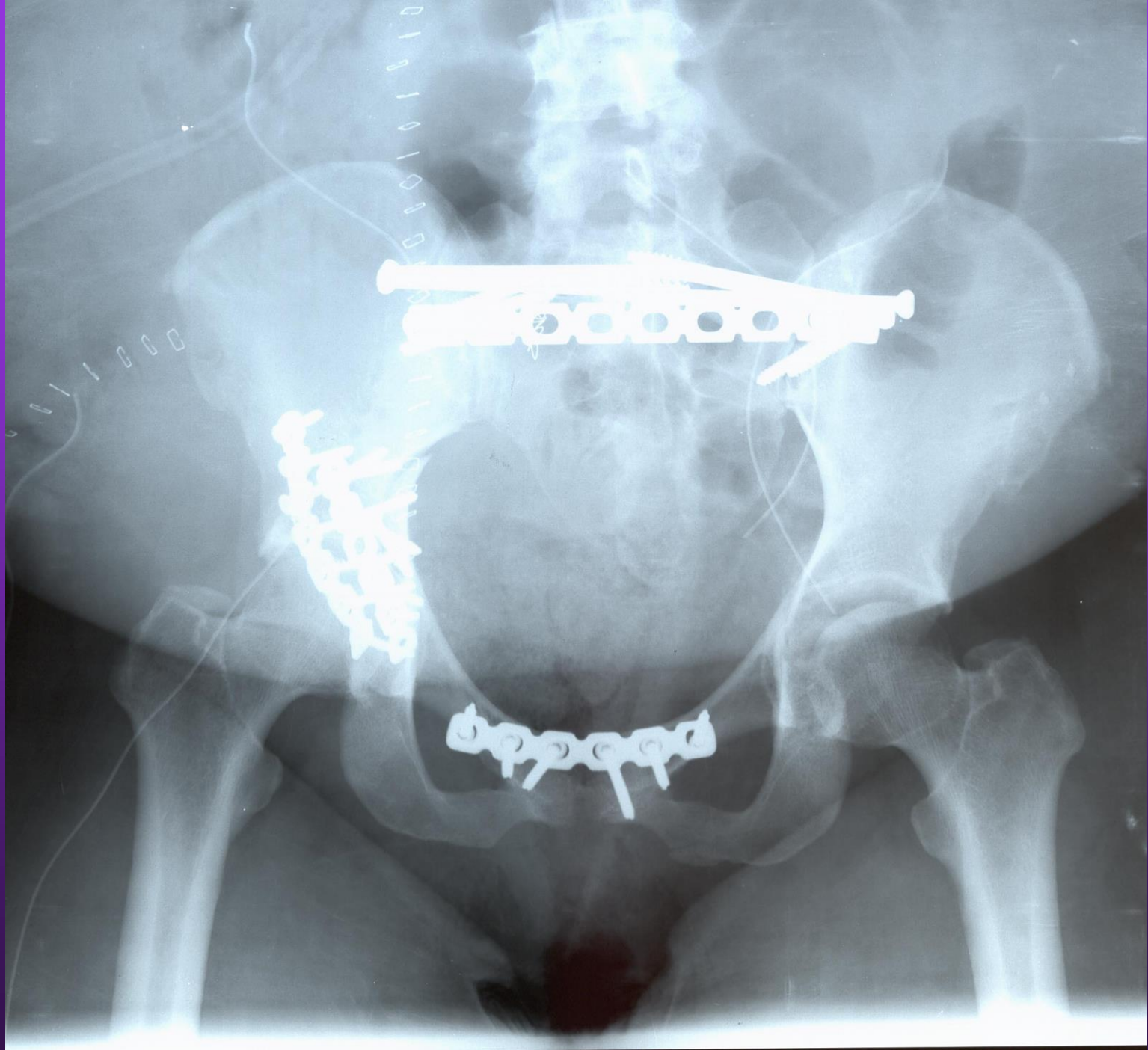
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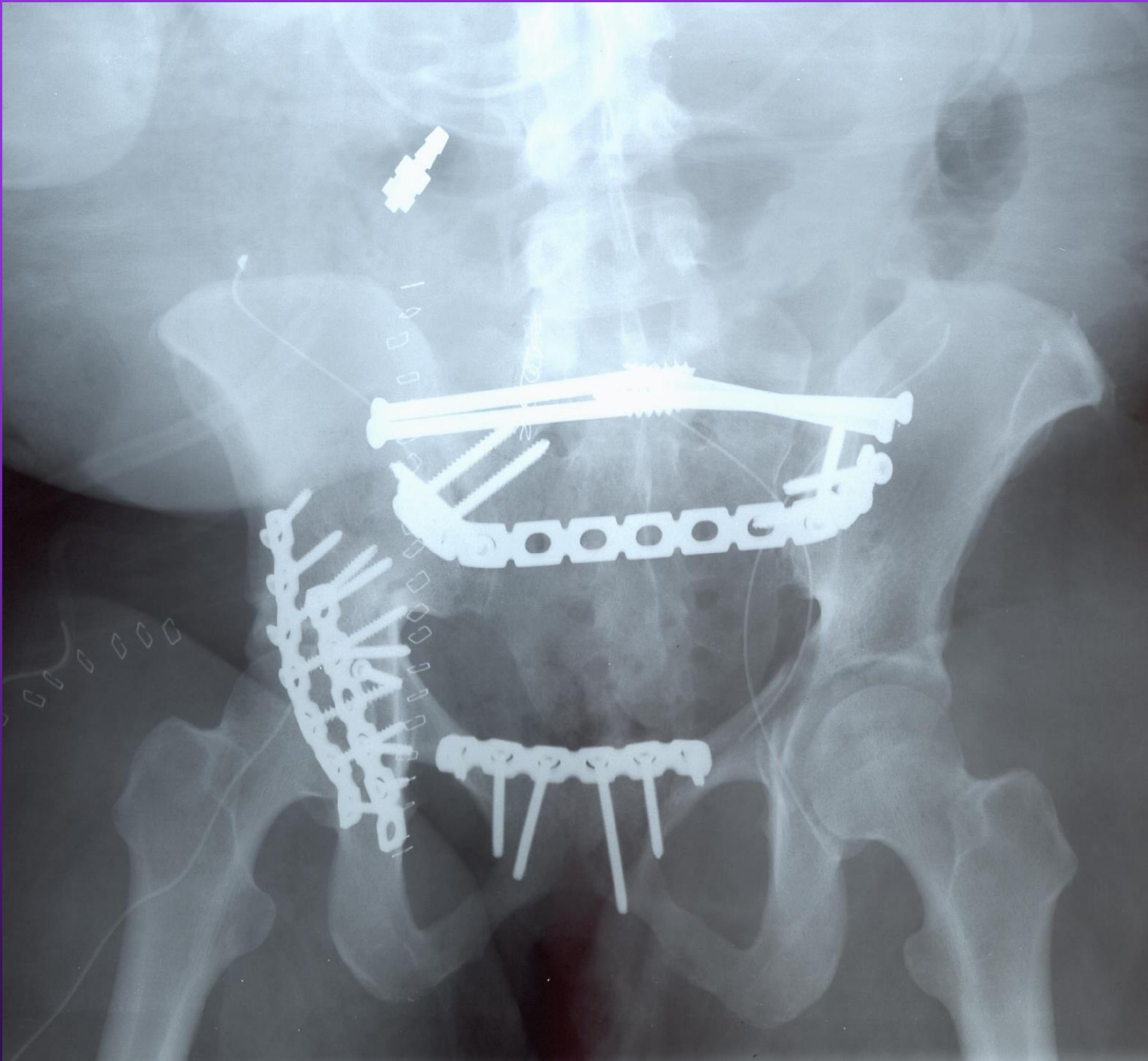
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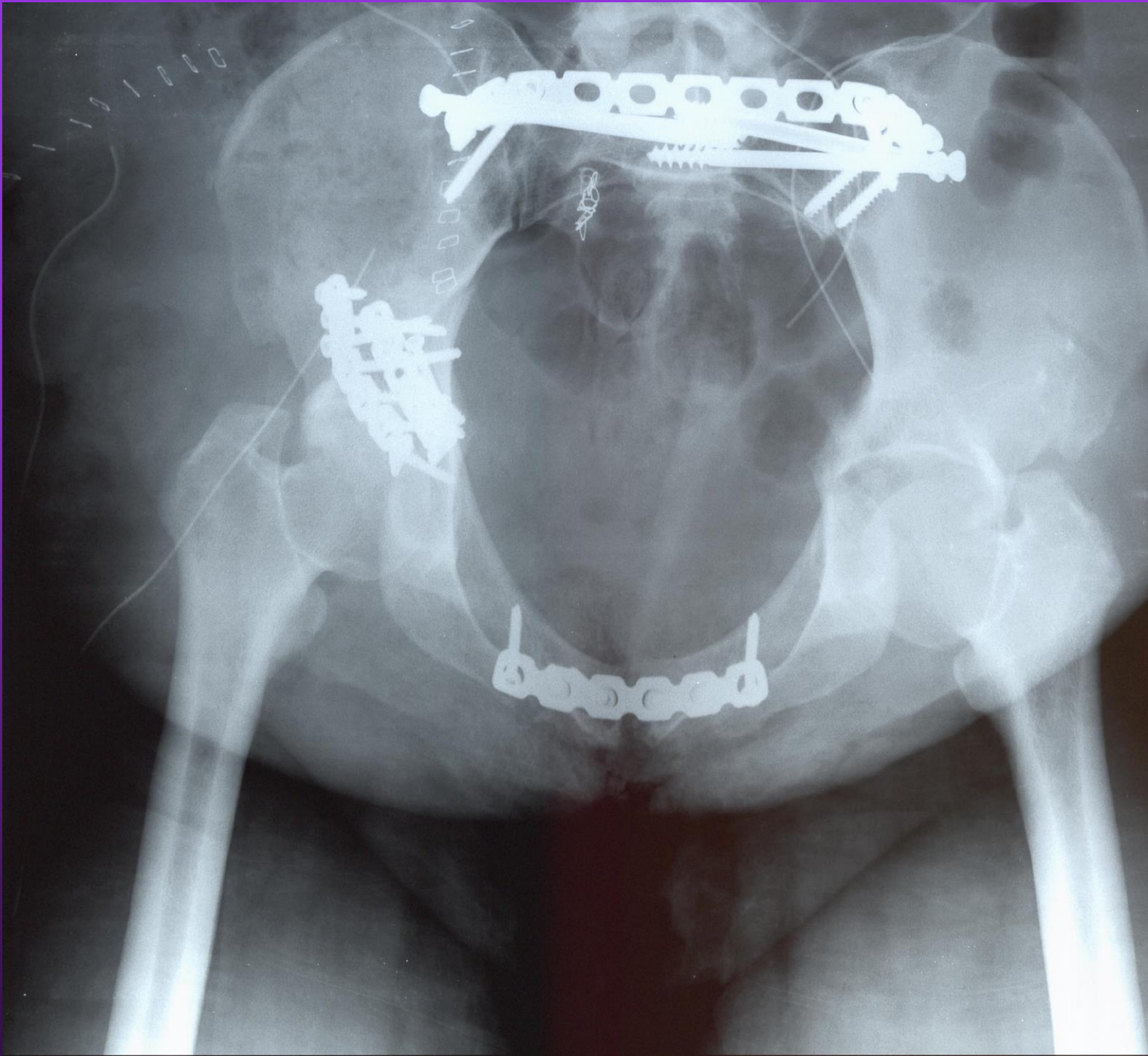
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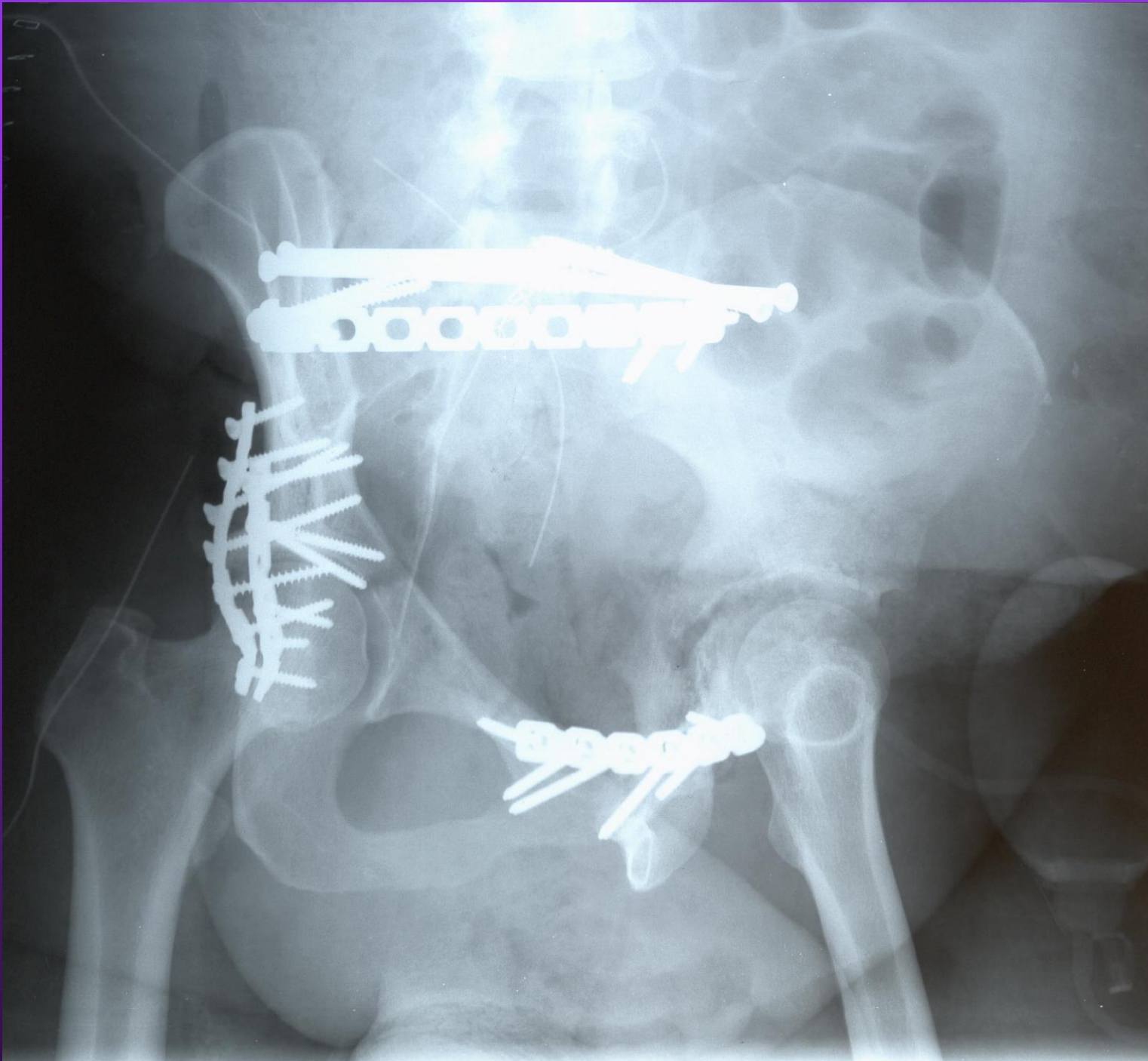
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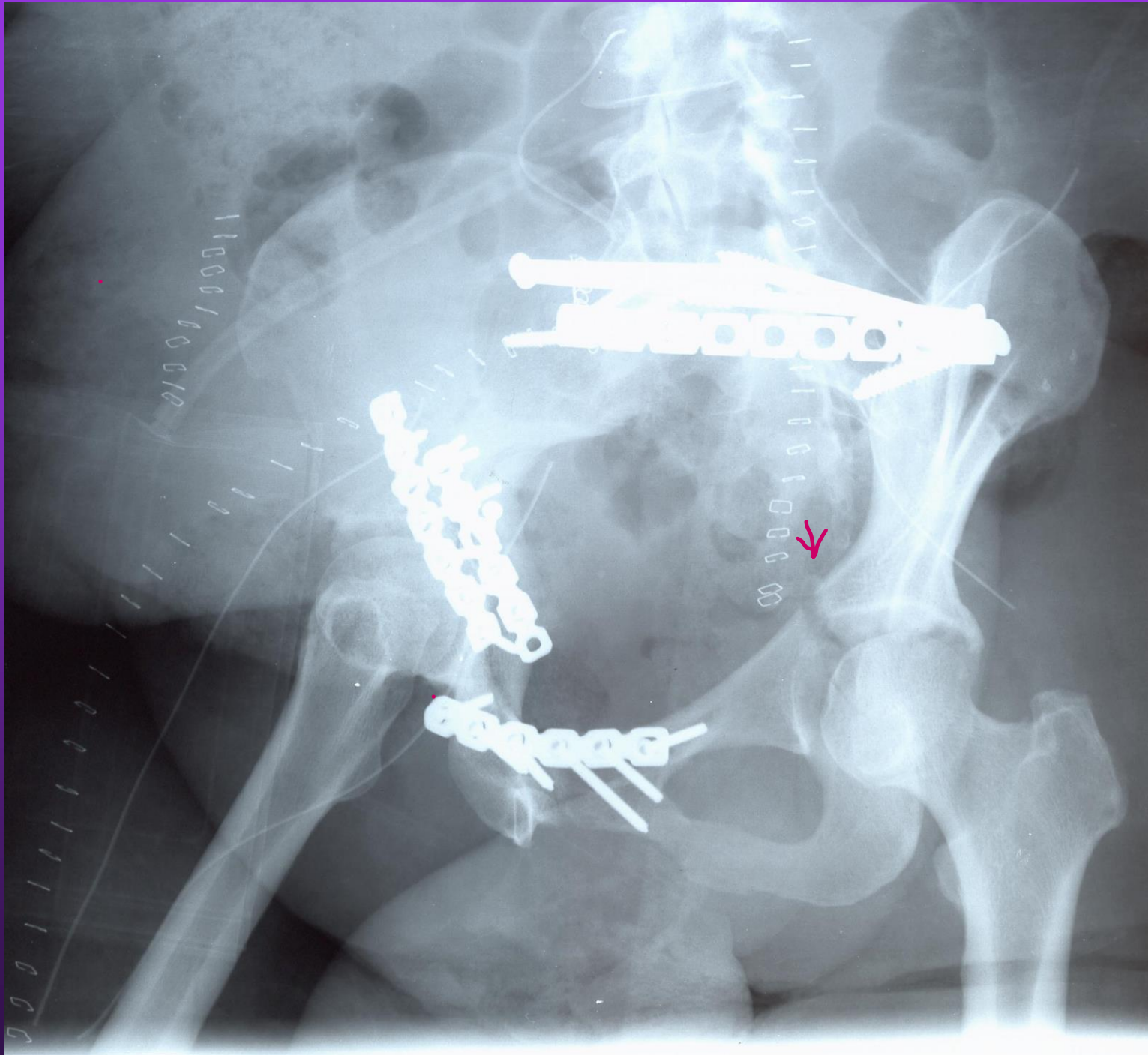
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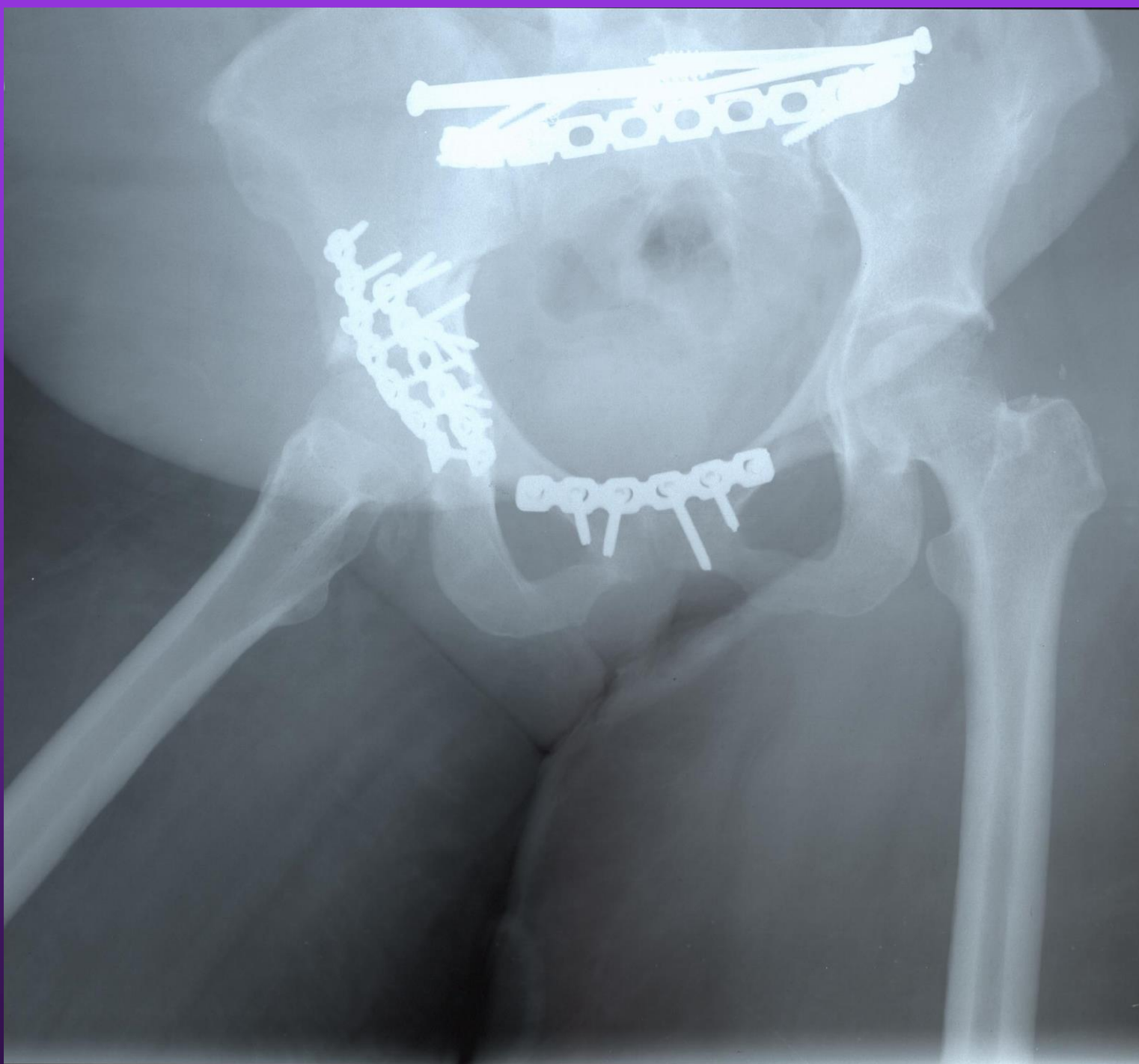
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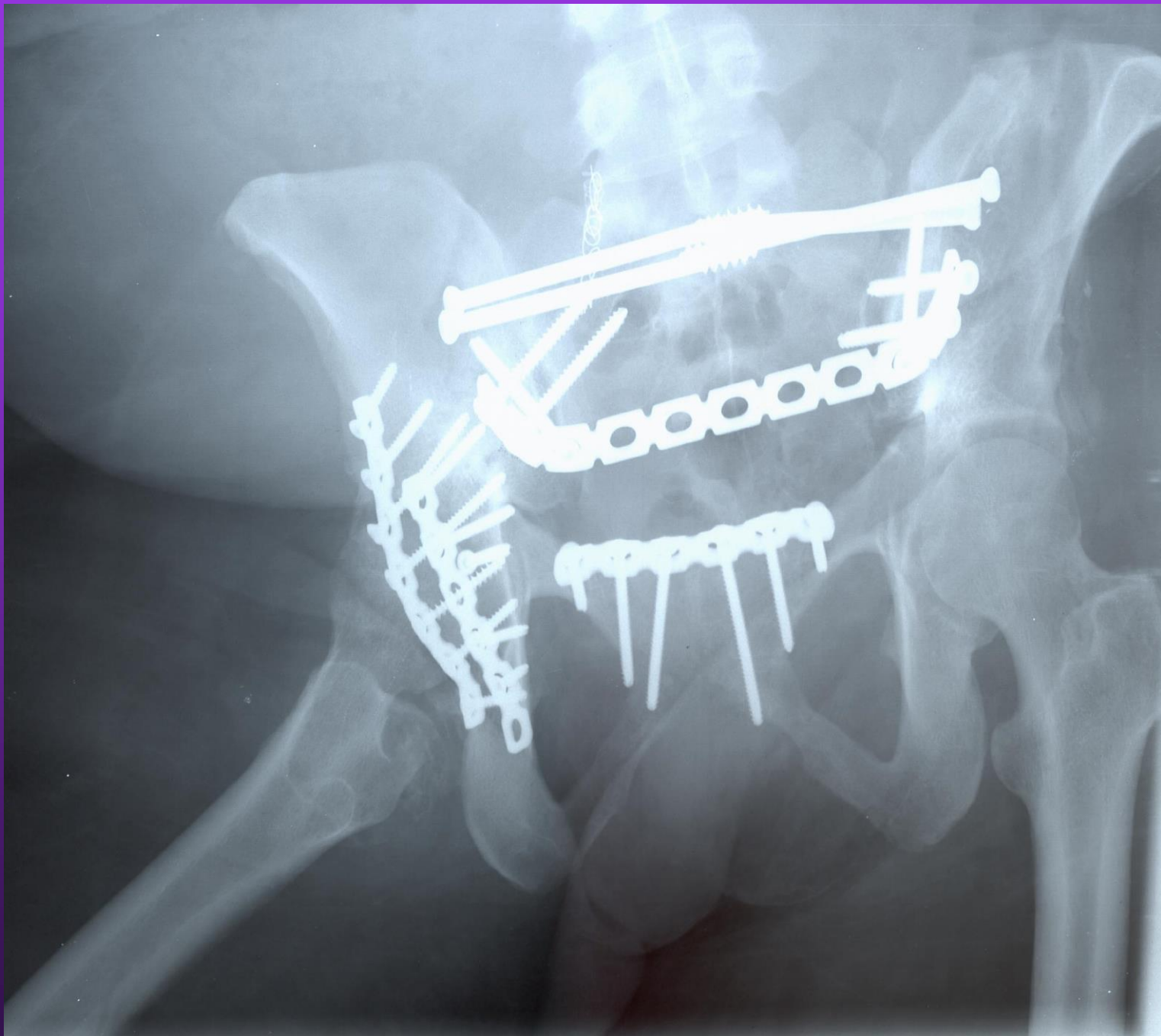
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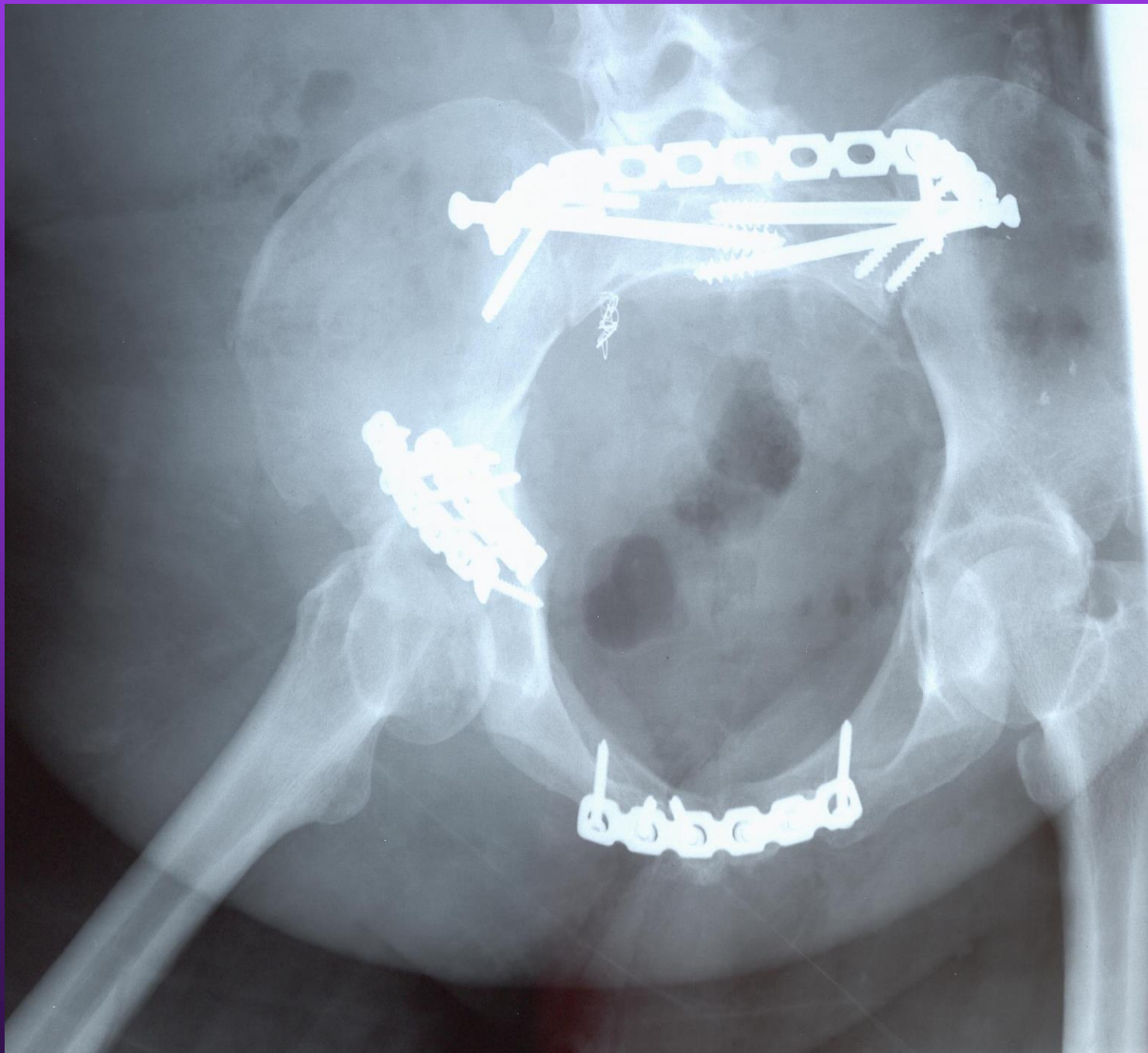
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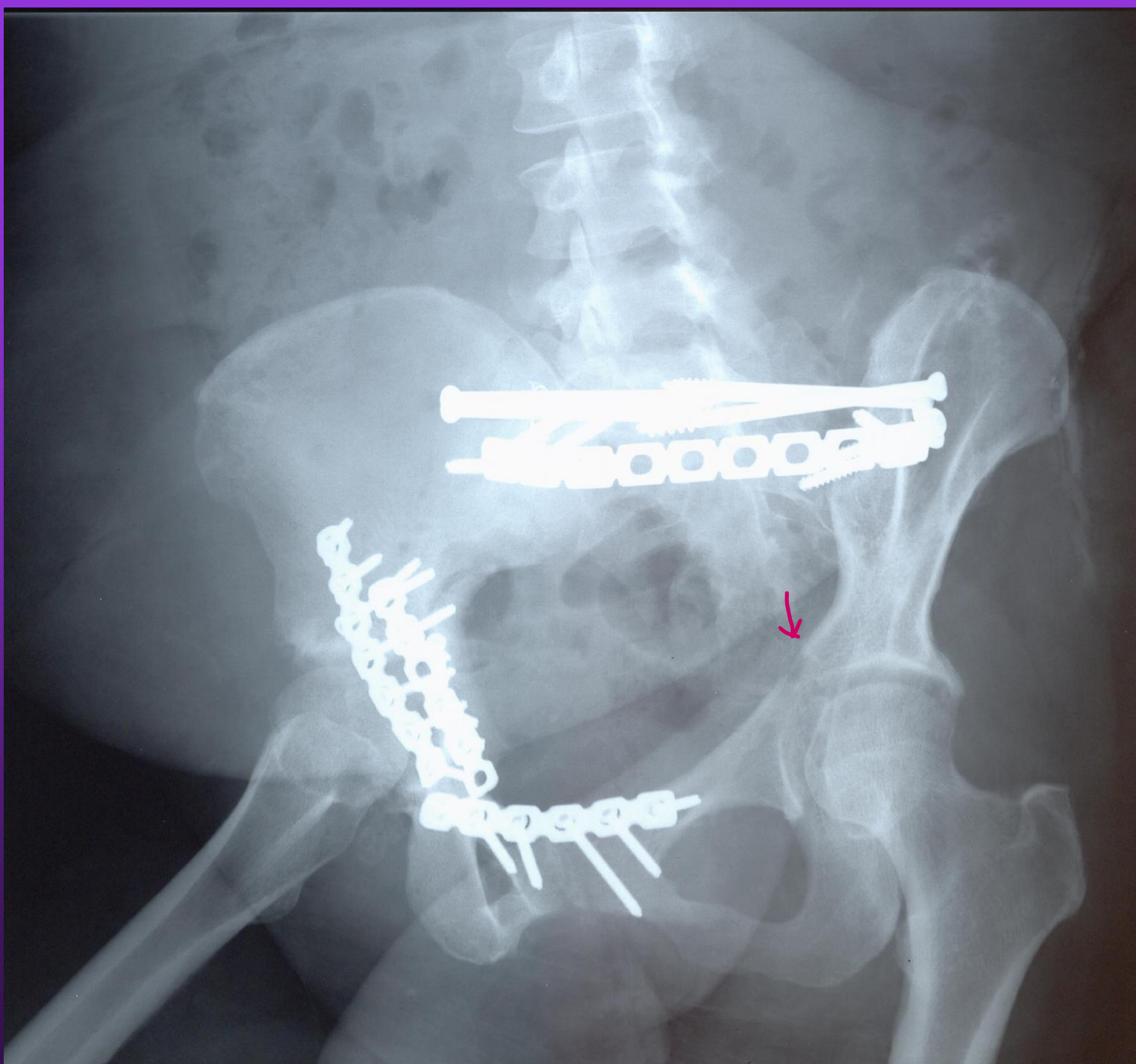
LQ



LQ



LQ

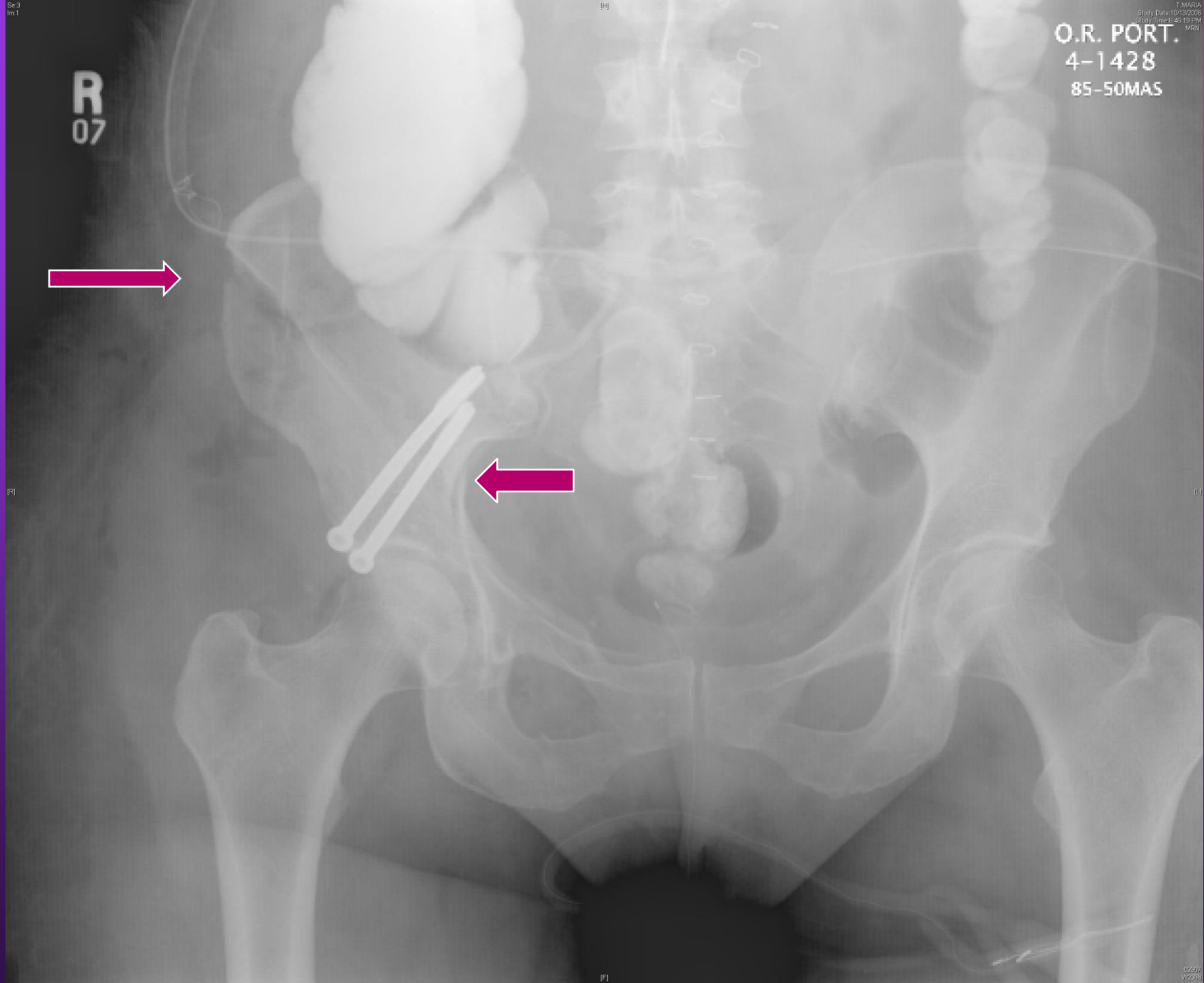








R
07



“if this anatomical result is not achieved it would have been better not to operate at all”

Letournel

Make it perfect

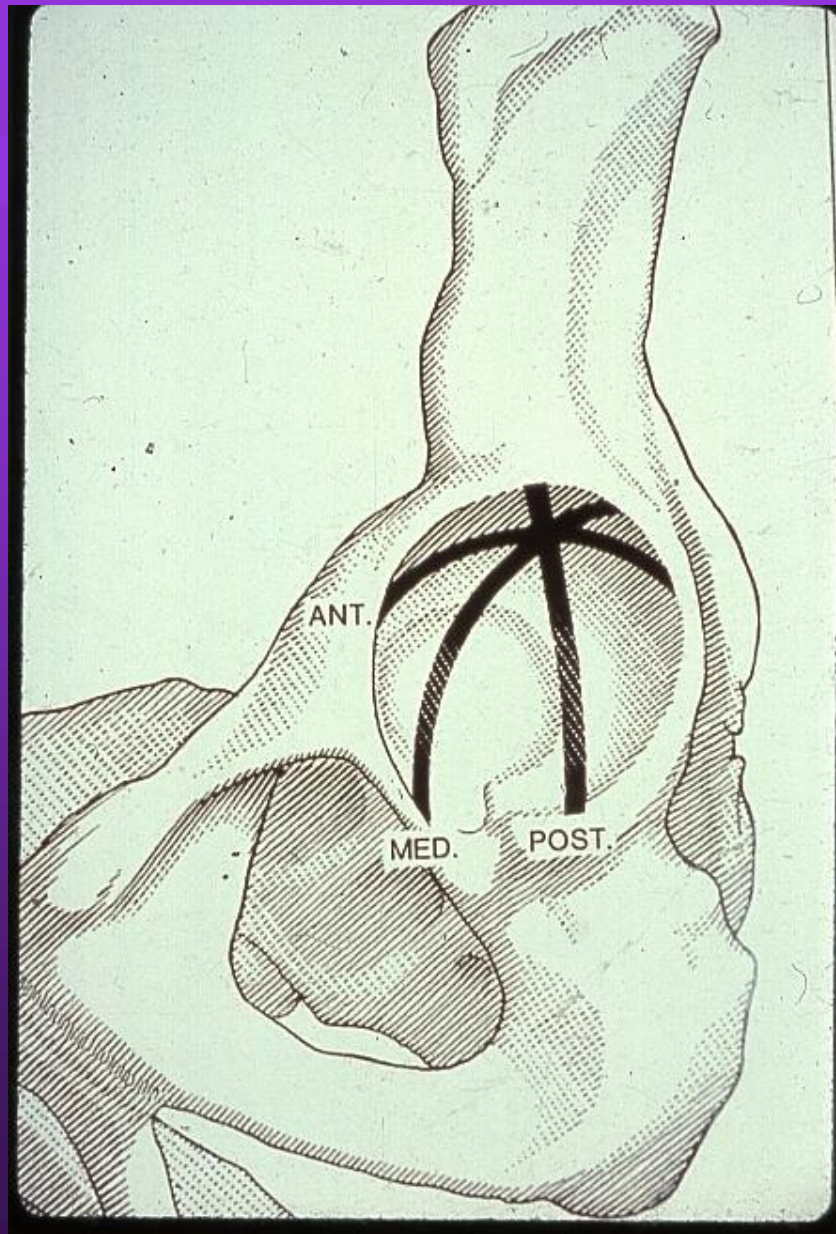


R
32 23

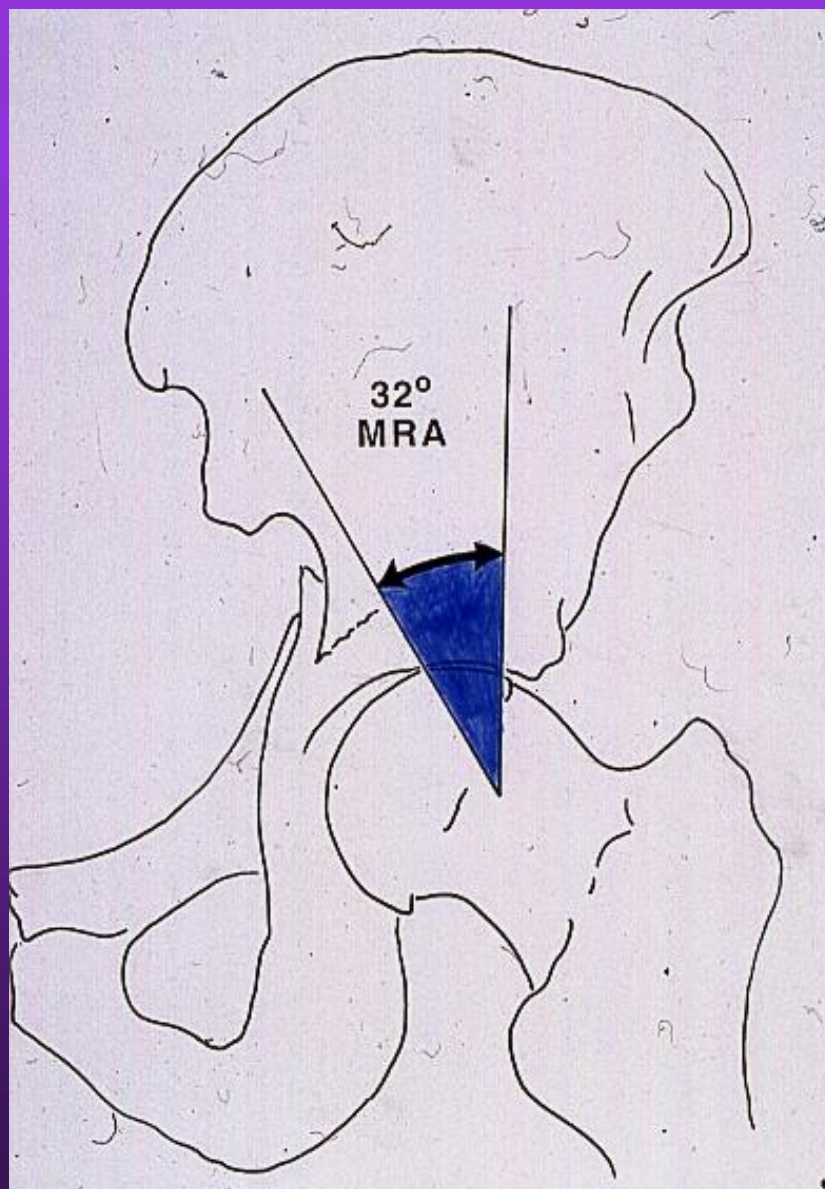
3 yr fu

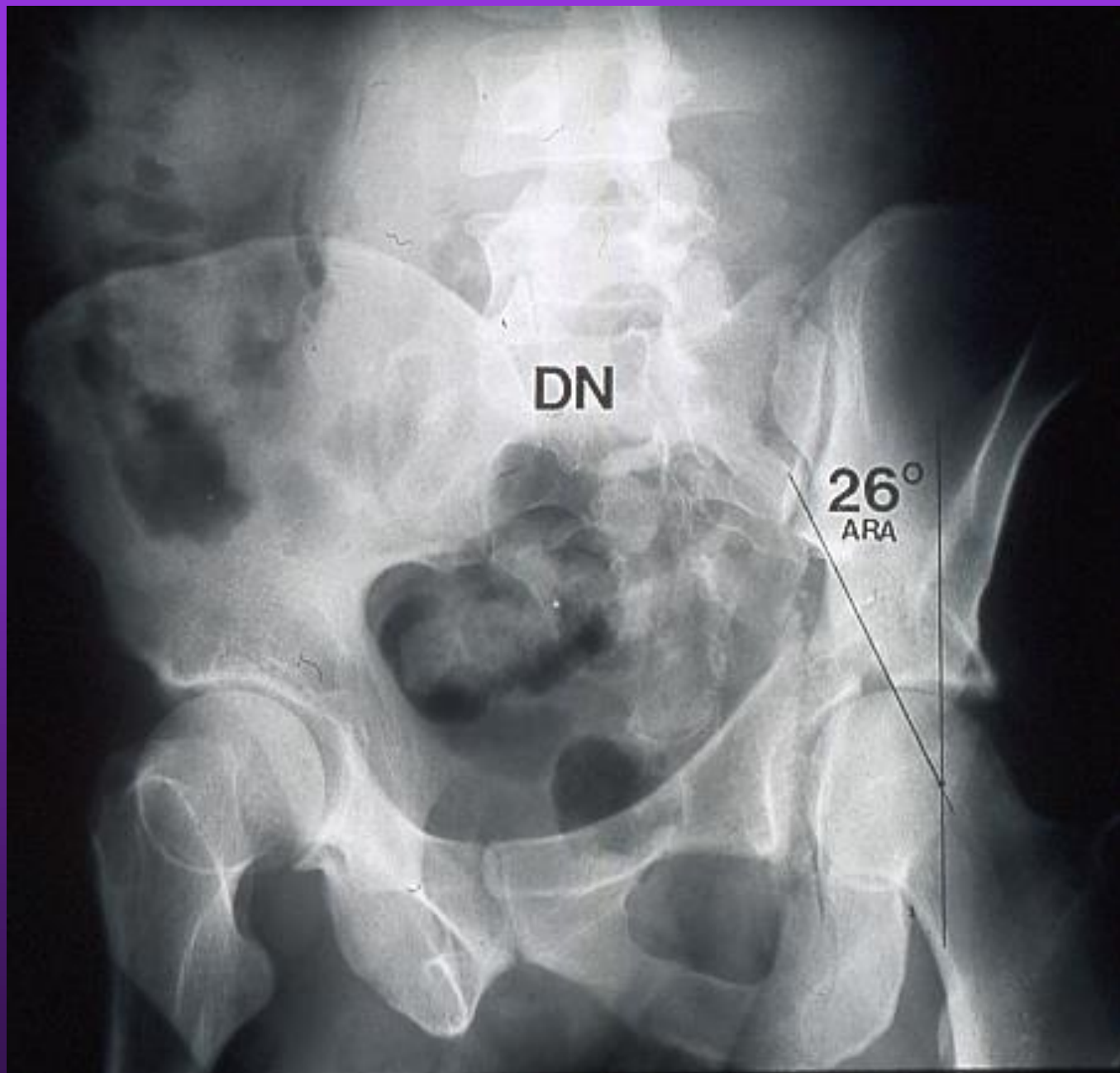


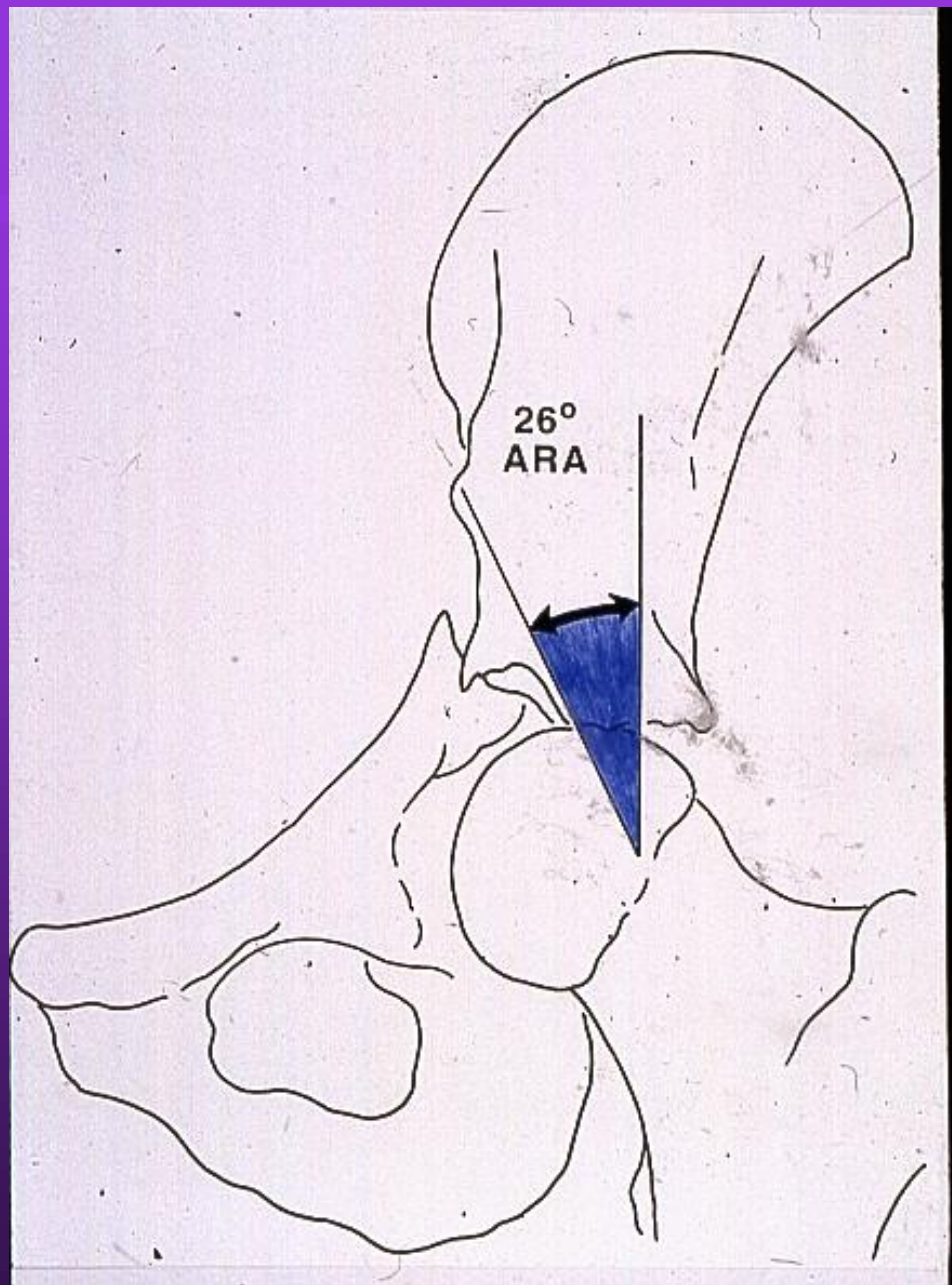
R
32/23

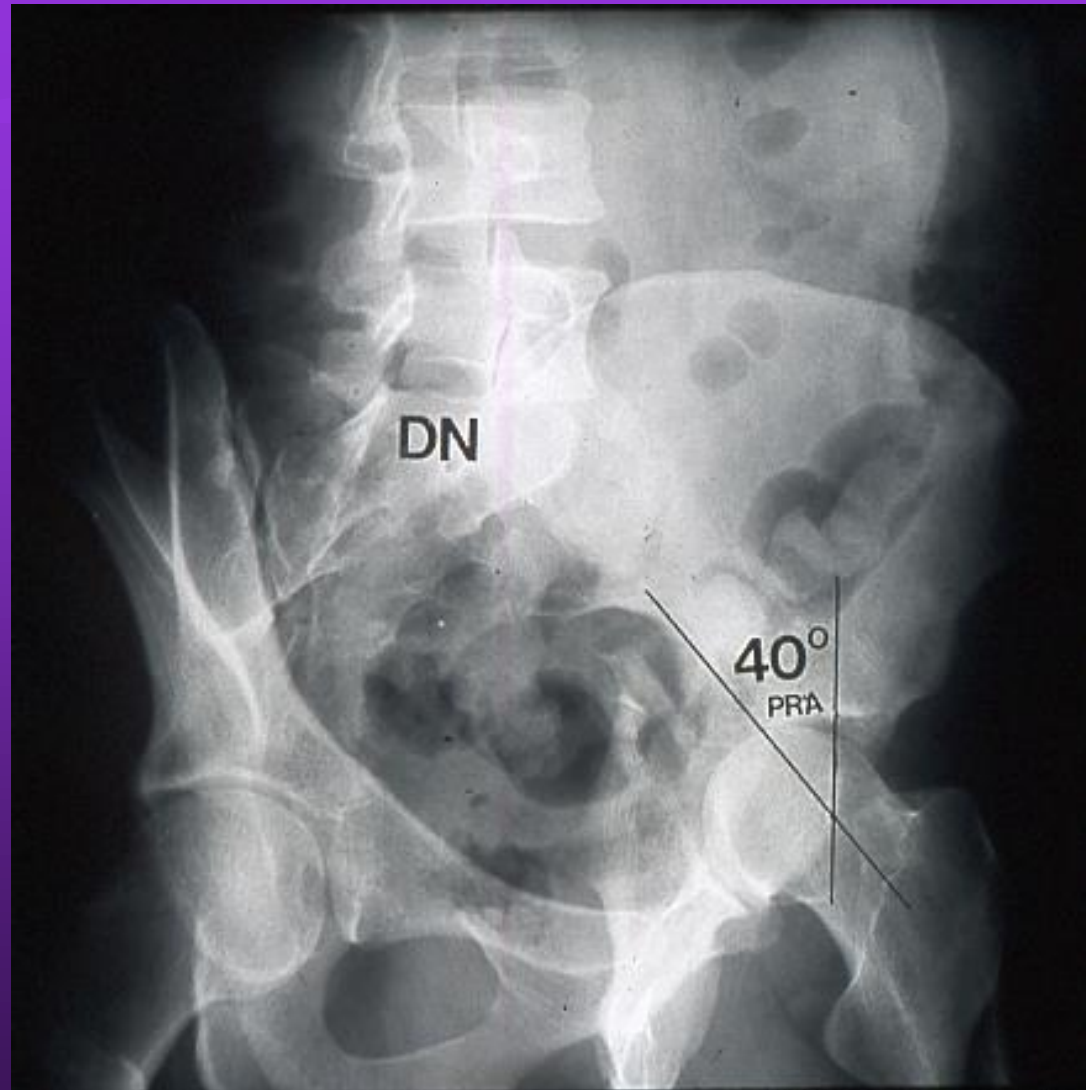


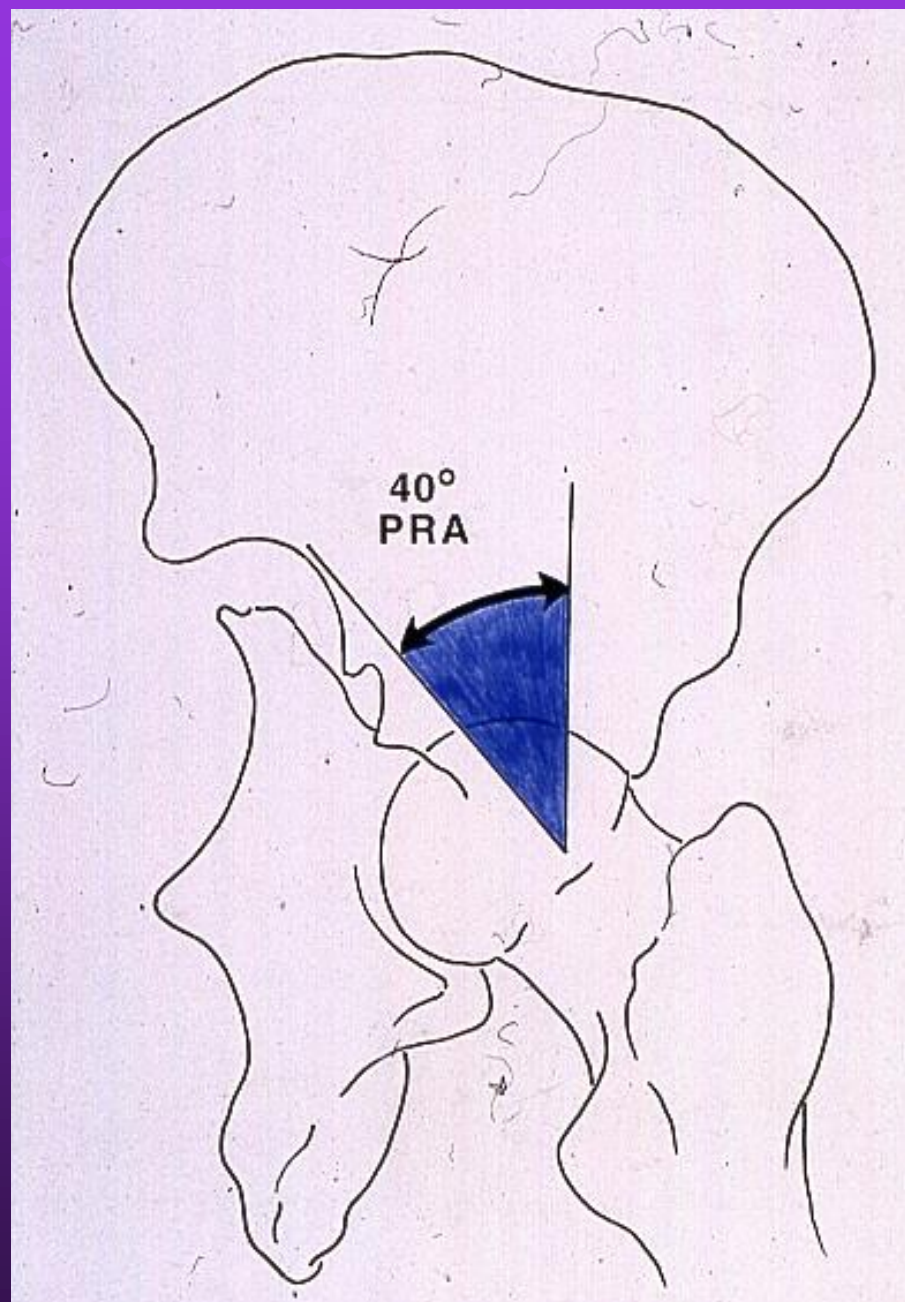








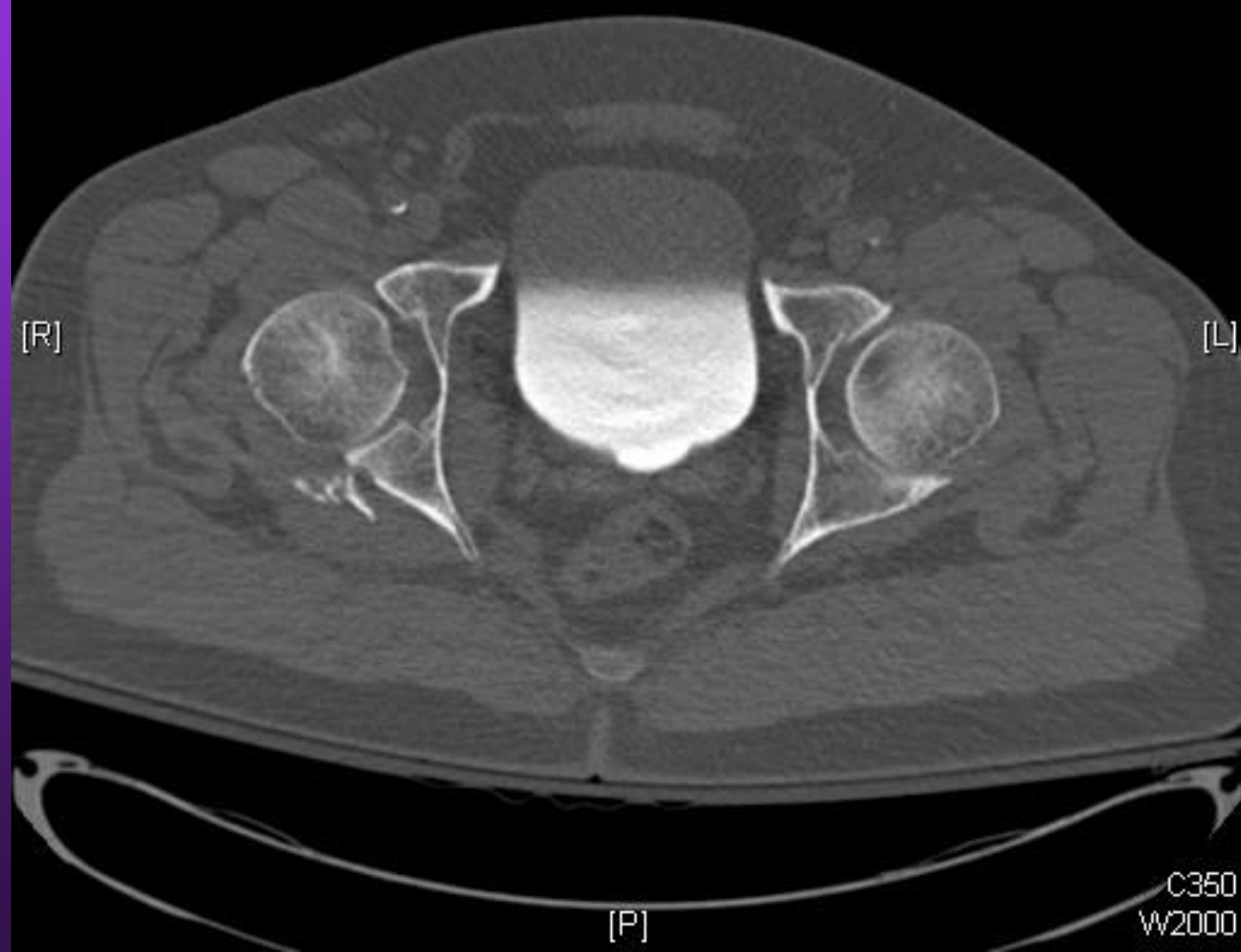




Se:6
Im:176

[A]

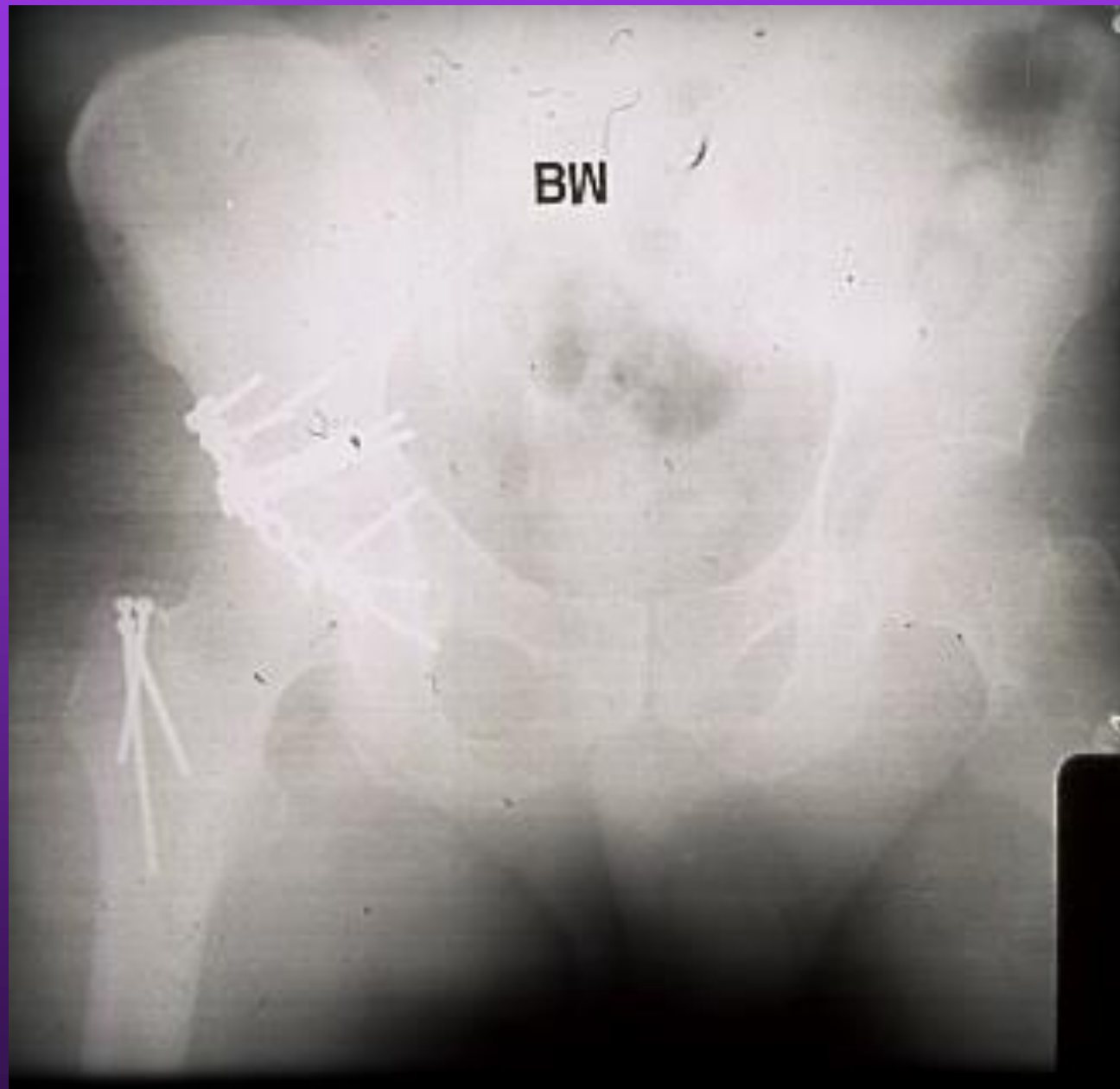
L.JEFFREY
Study Date:7/14/2010
Study Time:9:33:09 PM
MRN:

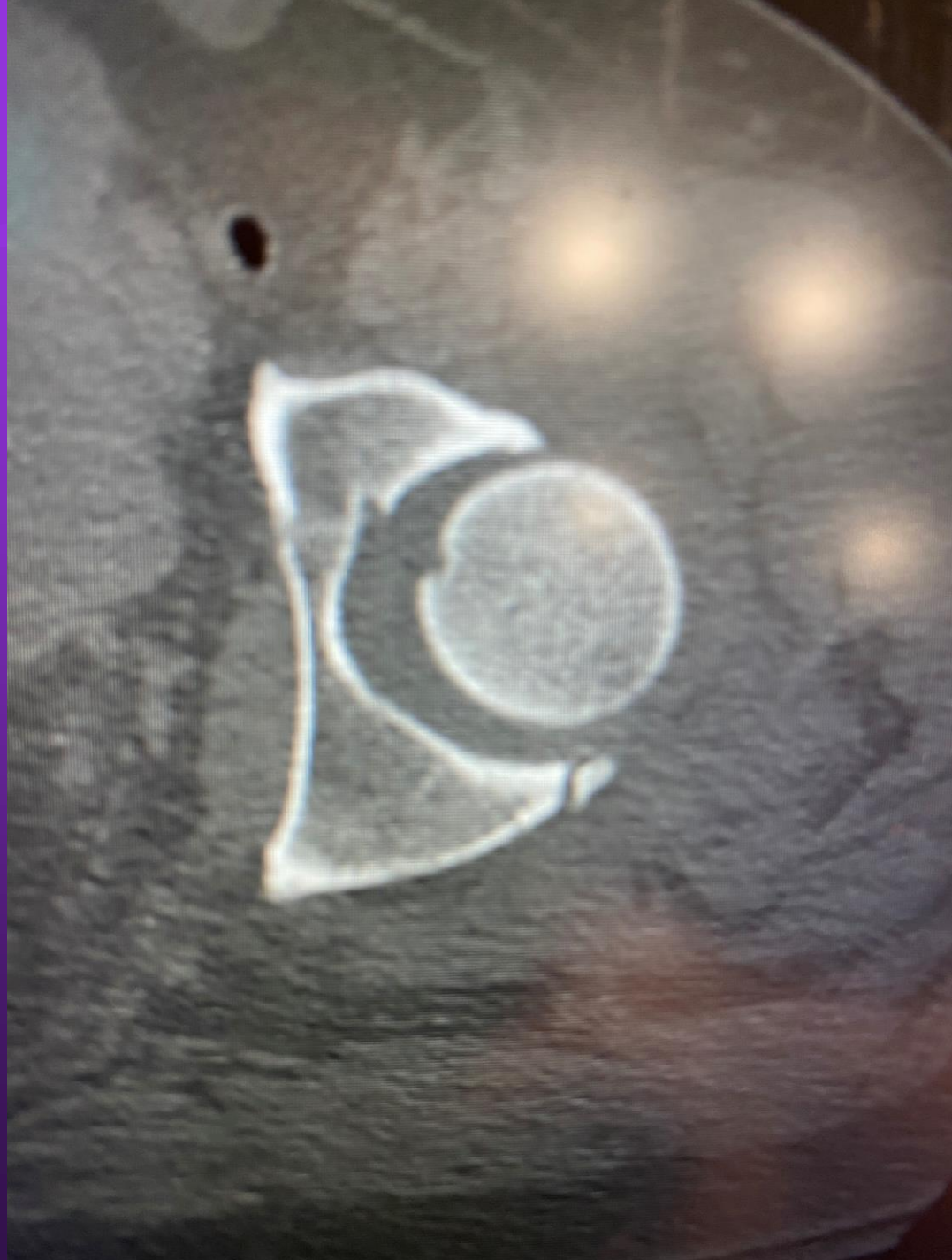


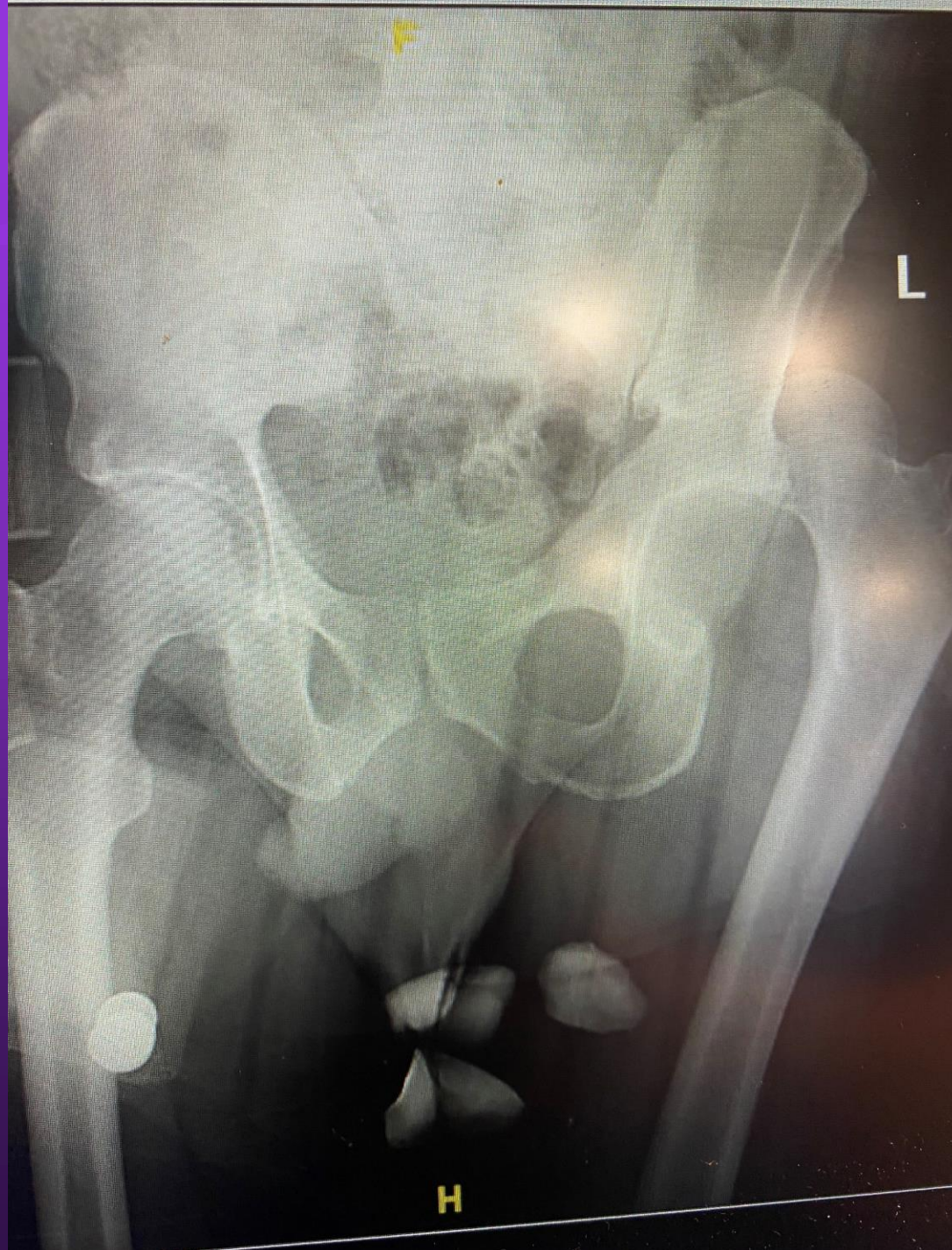


Spring Plate vs Mini Screws

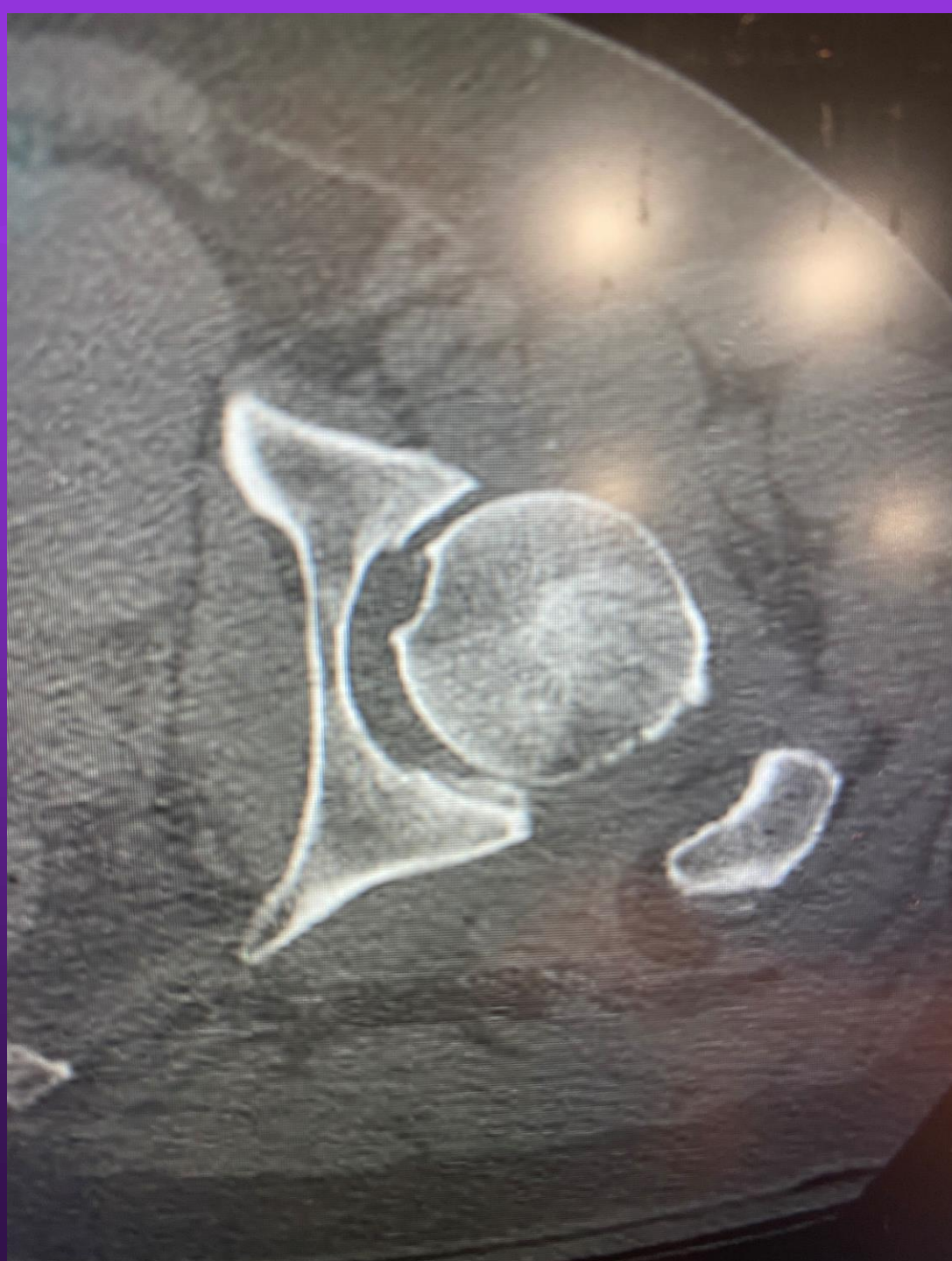
- Buttress spring plate, 1/3 tubular 2 holes and prong into bone not labrum
- Mini screws cool but Letournel never used them

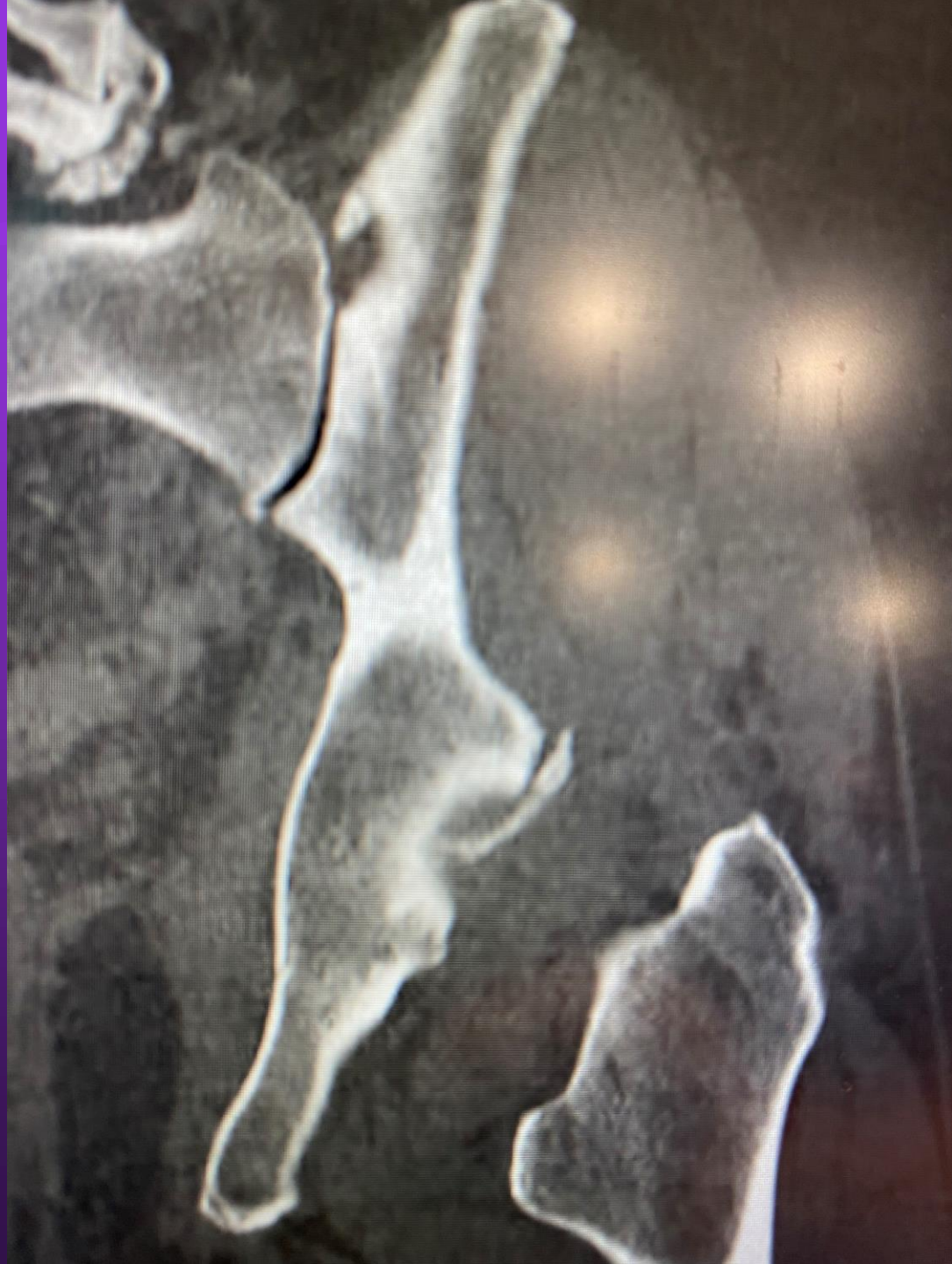










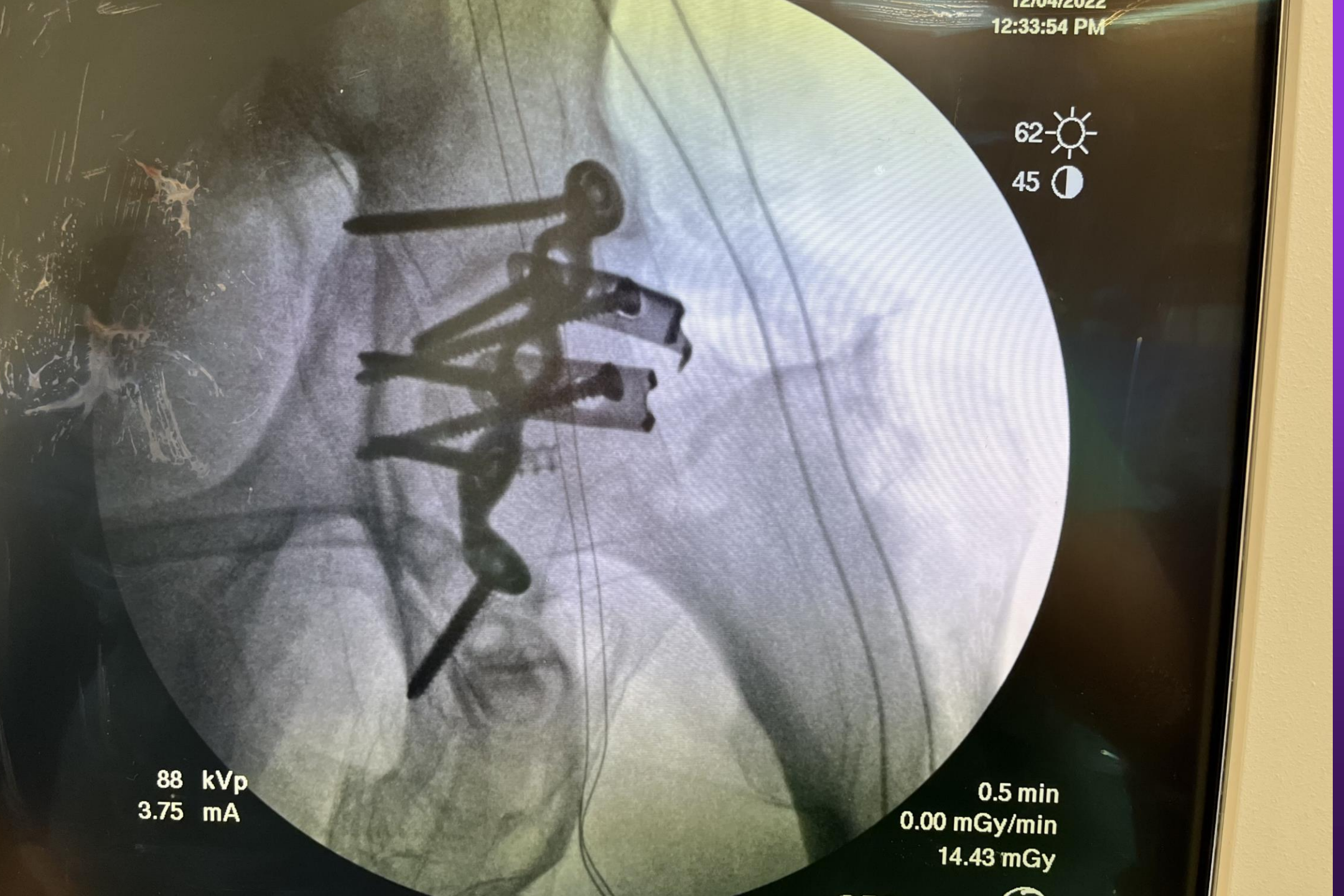


12/04/2022
12:33:54 PM

62 
45 

88 kVp
3.75 mA

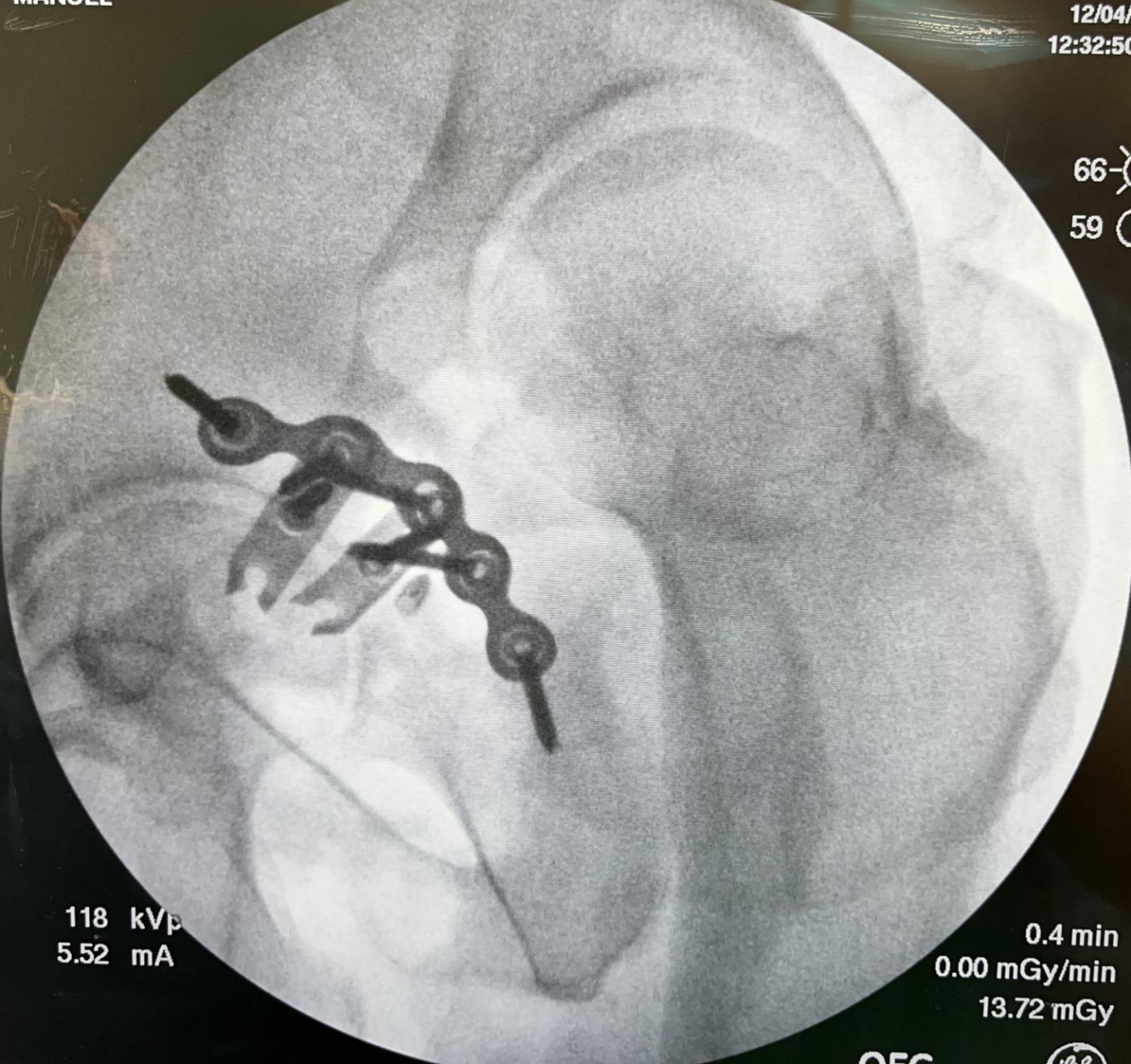
0.5 min
0.00 mGy/min
14.43 mGy



MANUEL

12/04/2022
12:32:50 PM

66 
59 



118 kVp
5.52 mA

0.4 min
0.00 mGy/min
13.72 mGy

QEC



MANUEL

12/04/2022
12:33:24 PM

62 
46 

91 kVp
4.03 mA

0.4 min
0.00 mGy/min
14.20 mGy

OEC









MEDCOM RESAMPLED
[H]

Se:603
Im:2

M.RANDALL, J
Study Date:6/1/2013
Study Time:6:25:05 PM
MRN:



[PL]

[AR]

[F]

C128
W256

Se:17
Im:84

[A]

M.RANDALL, J
Study Date:6/1/2013
Study Time:6:25:05 PM
MRN:



Omni 300

[P]

C477
W1488

Se:5
Im:105

Shift Overlay from 60xx to 7FE0
[H]

M.RANDALL, J
Study Date:6/11/2013
Study Time:1:44:21 AM
MRN:

[R]

[L]

[F]

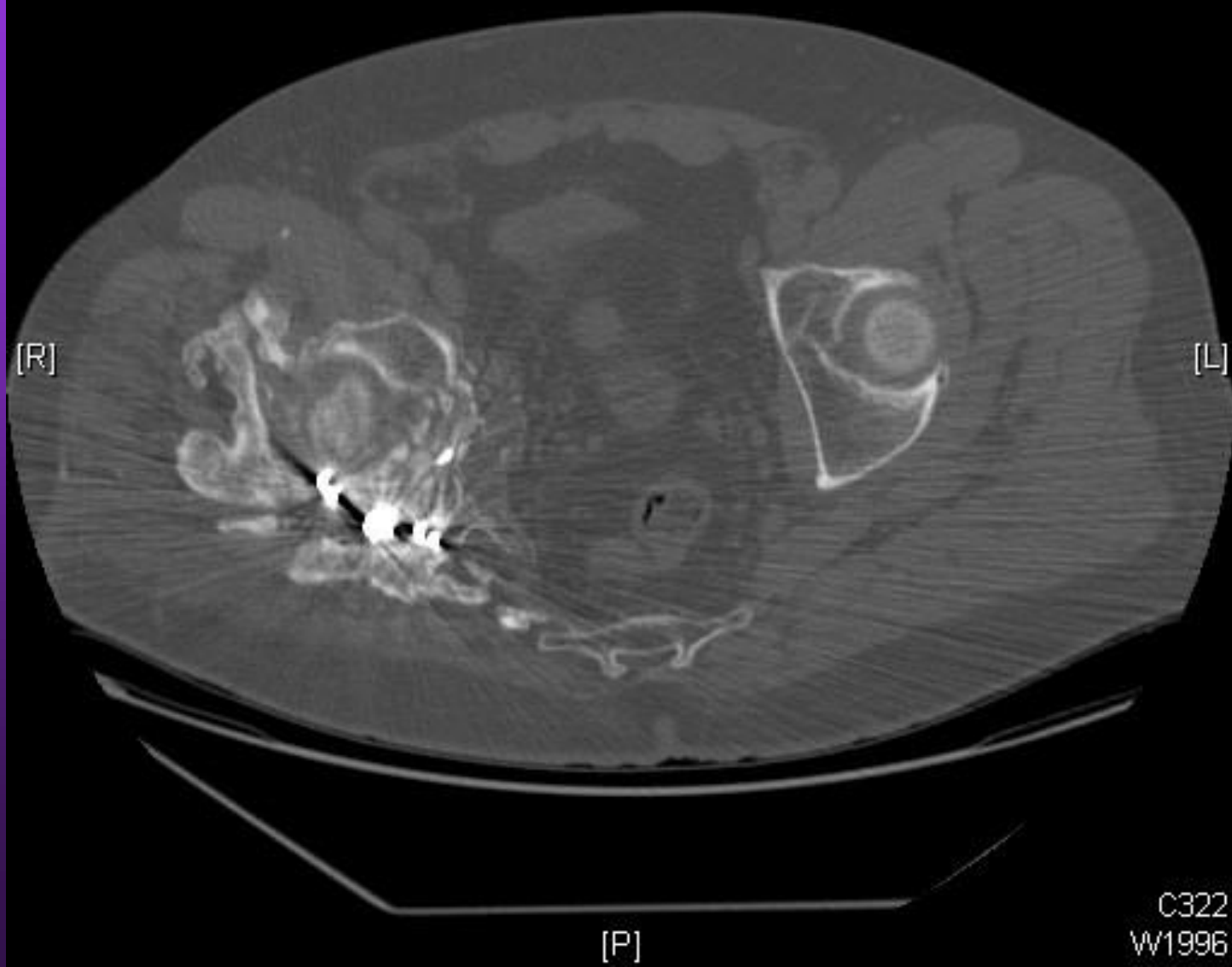
C421
W1502



Se:3
Im:119

[A]

M.RANDALL, J
Study Date:9/12/2014
Study Time:10:23:55 AM
MRN:



Se: 400

Im: 8: 6142

Se: 4

Volume Rendering No cut

(H)

S 96

Memorial Hermann OPID Clear Lake

MCIS Study Date: 9/12/2014

Study Time: 10:23:55 AM

DoB: Apr 06 1958

Ex: Sep 12 2014

DFOV 44.0 cm

STND

400/8

L

[L]

0

5

R

[R]

3

4

No VDI

kv 120

mA 440

Rot 0.80s/HE 27.5mm/rot

1.2mm 1.375:1/0.6sp

Tilt: 0.0

10:26:04 AM

W = 594 L = 41

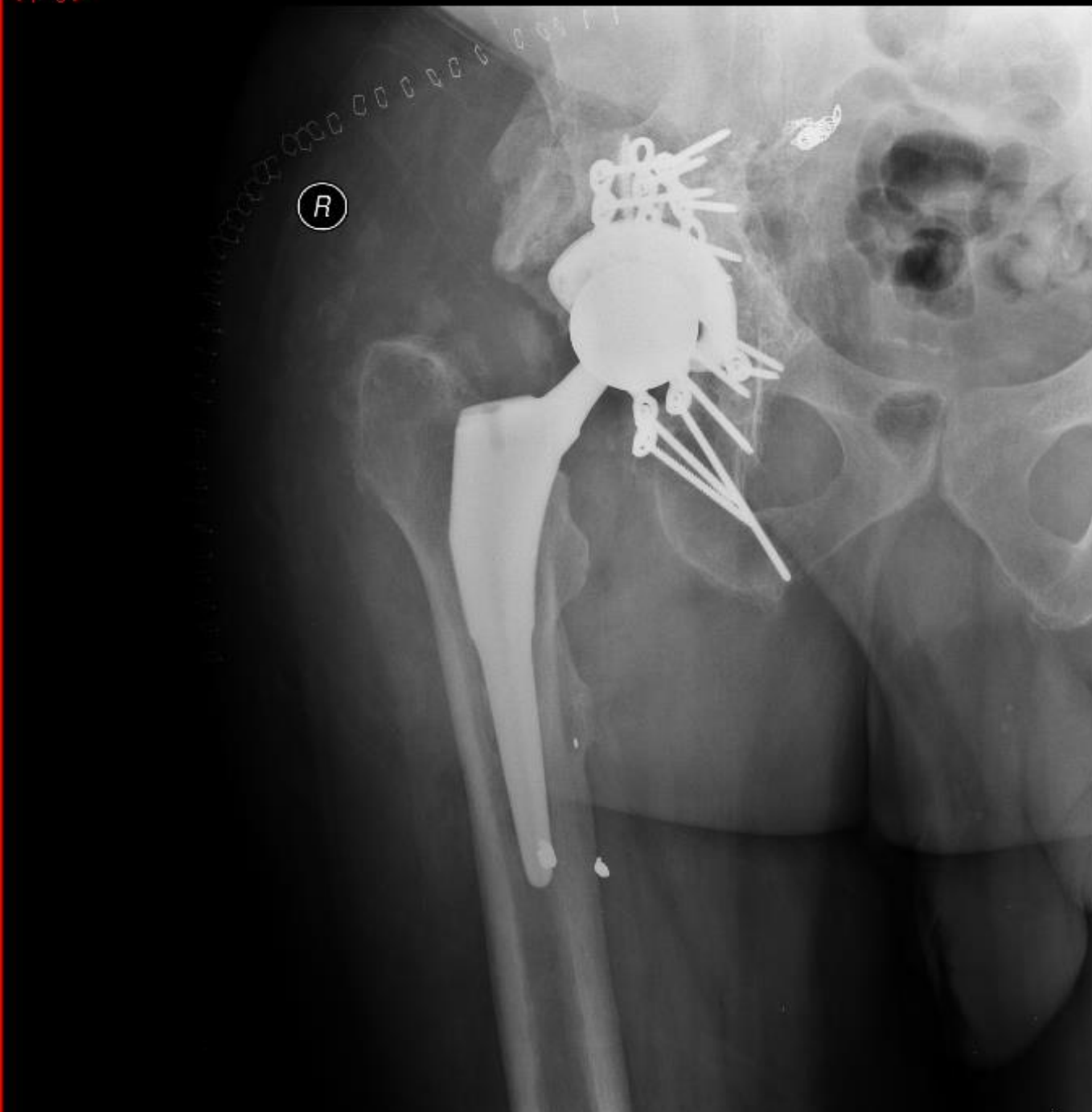
I 344

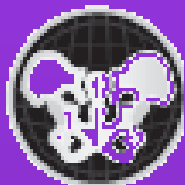
[F]



0128

W256



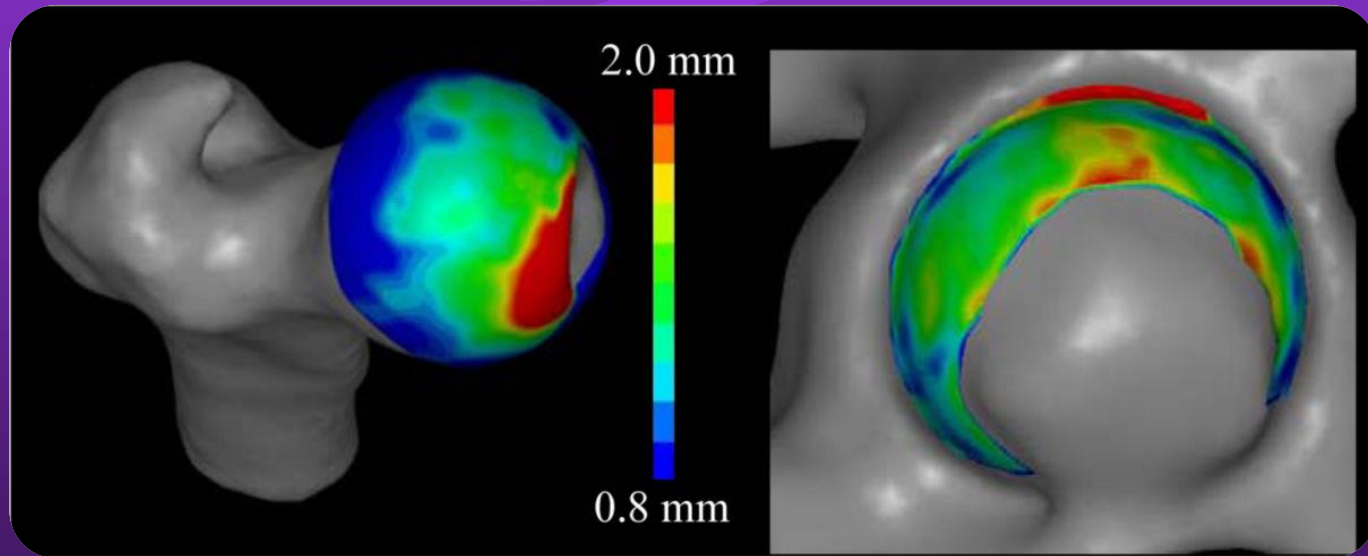


PEAK CONTACT STRESSES IN ABNORMAL HIPS

Author/Year	Normal hips Peak contact stress (MPa)	Dysplastic hips Peak contact stress (MPa)	Dysplastic hips after osteotomy (MPa)	Slipped capital femoral epiphysis after osteotomy (MPa)	Malreduced acetabular fractures Peak contact stress (MPa)
Iglič 1993 (14)	1.2-2.7	3-6	1.2-2.0		
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			



AREAS DE CONTACTO



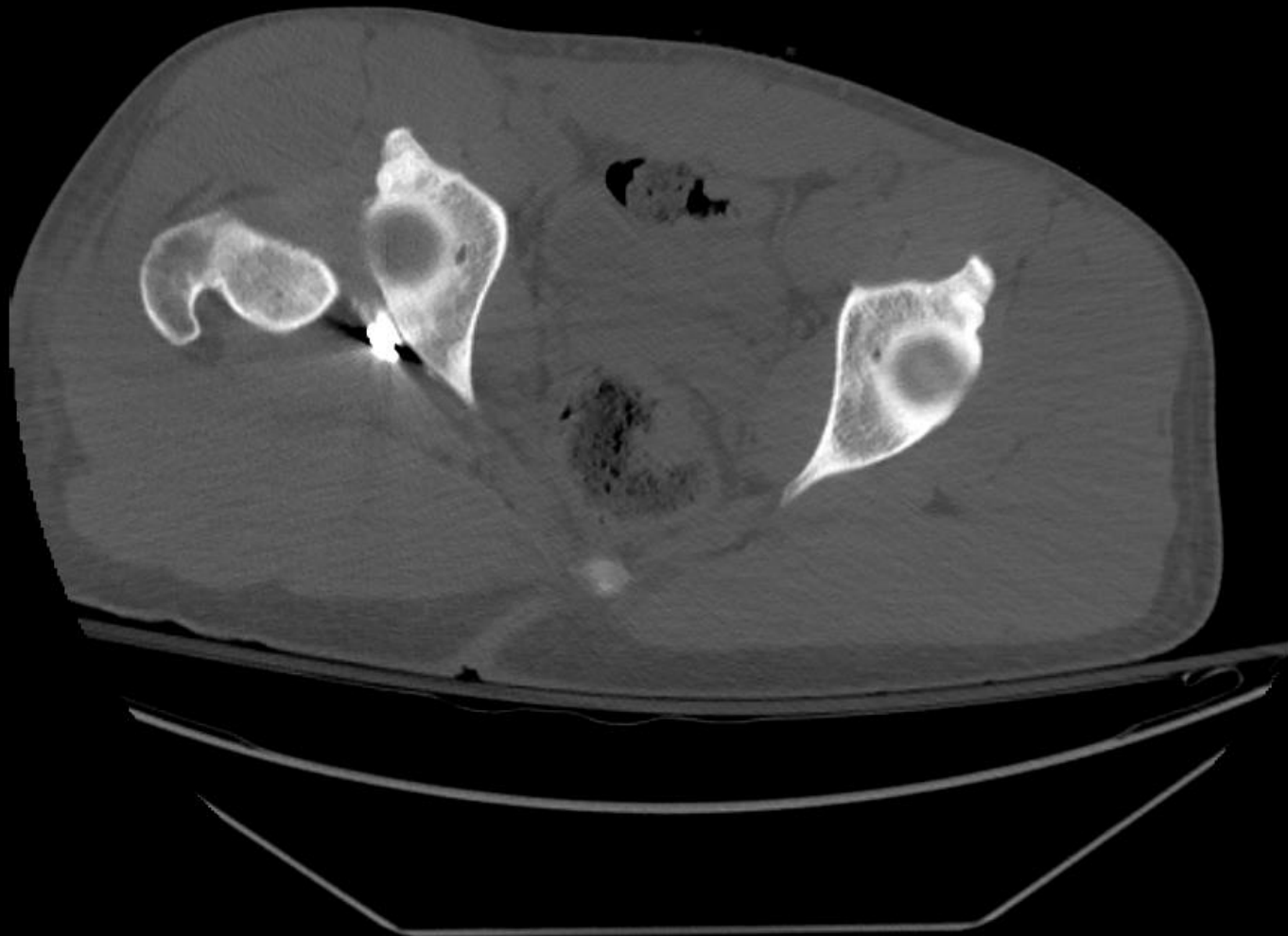


L

4/1/16

[A]

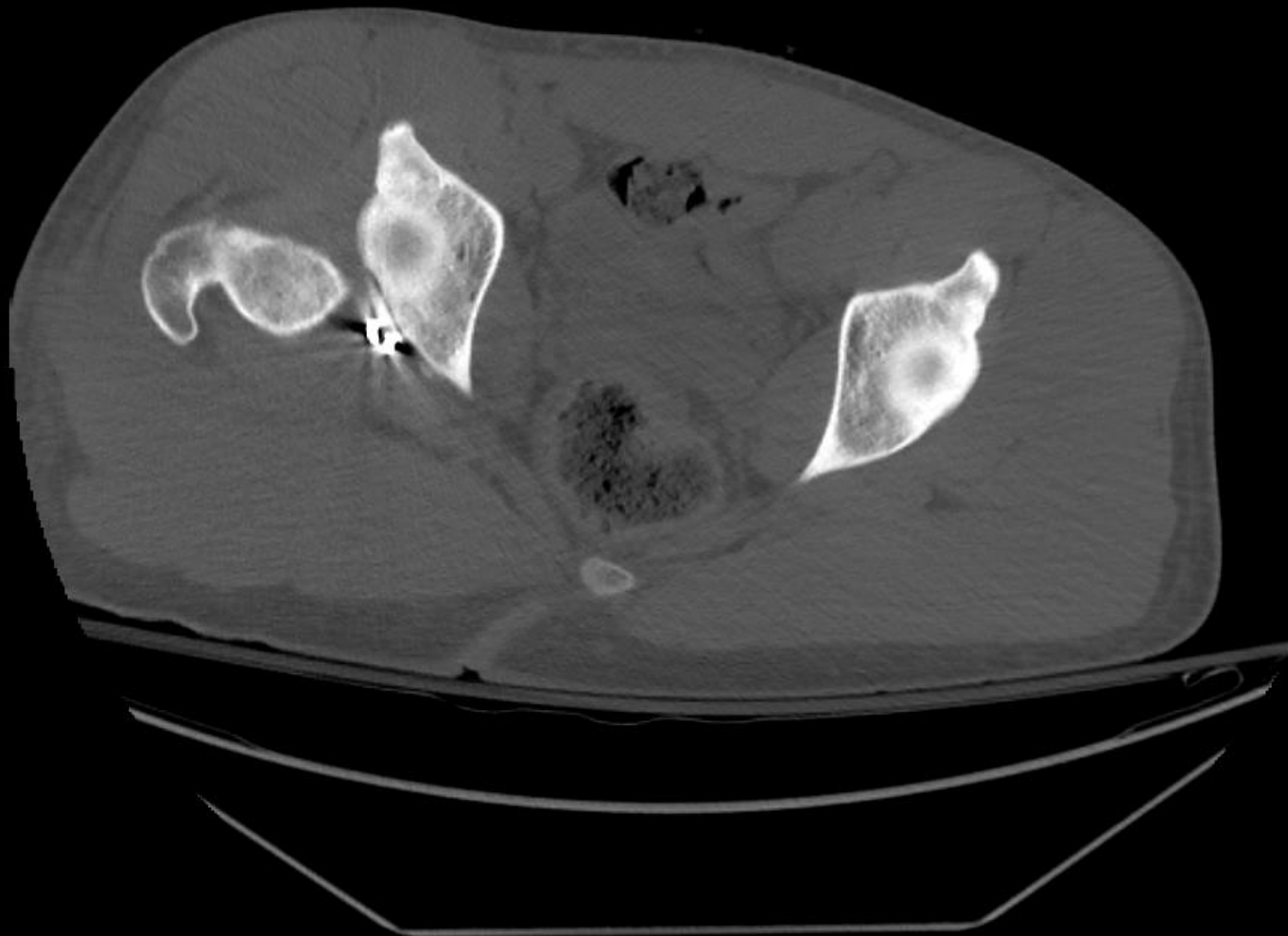
4/1/16



[P]

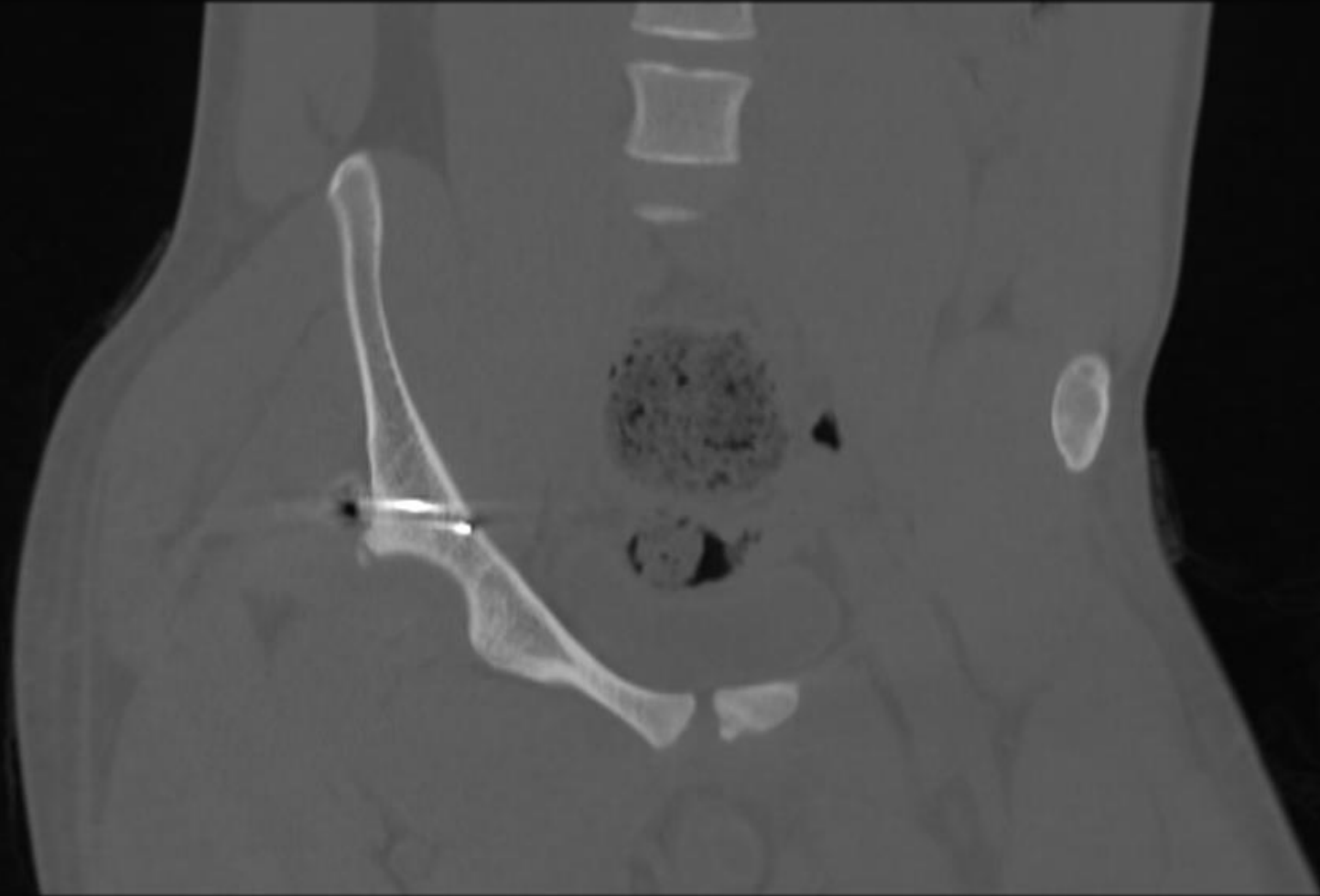
[A]

4/1/16

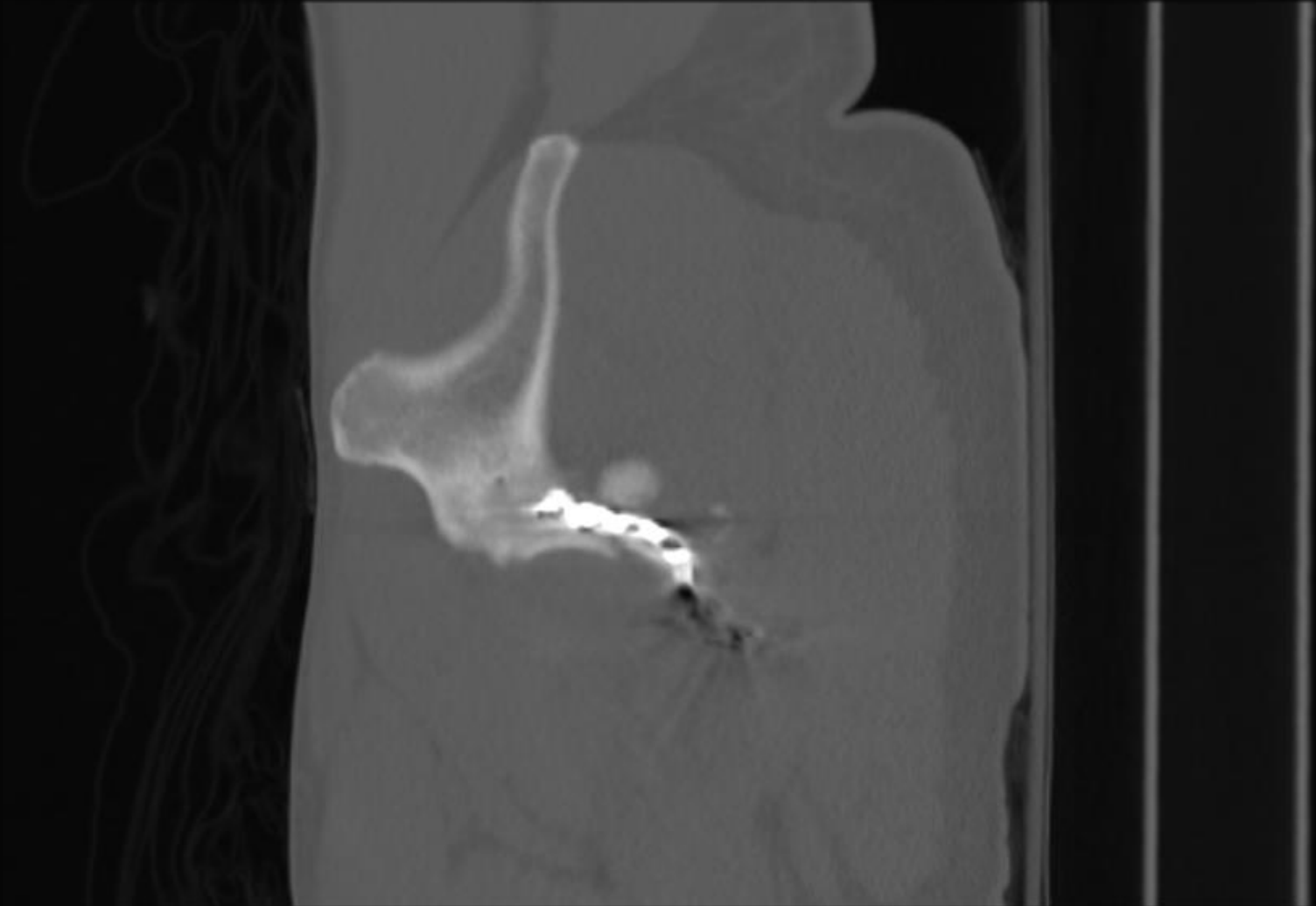


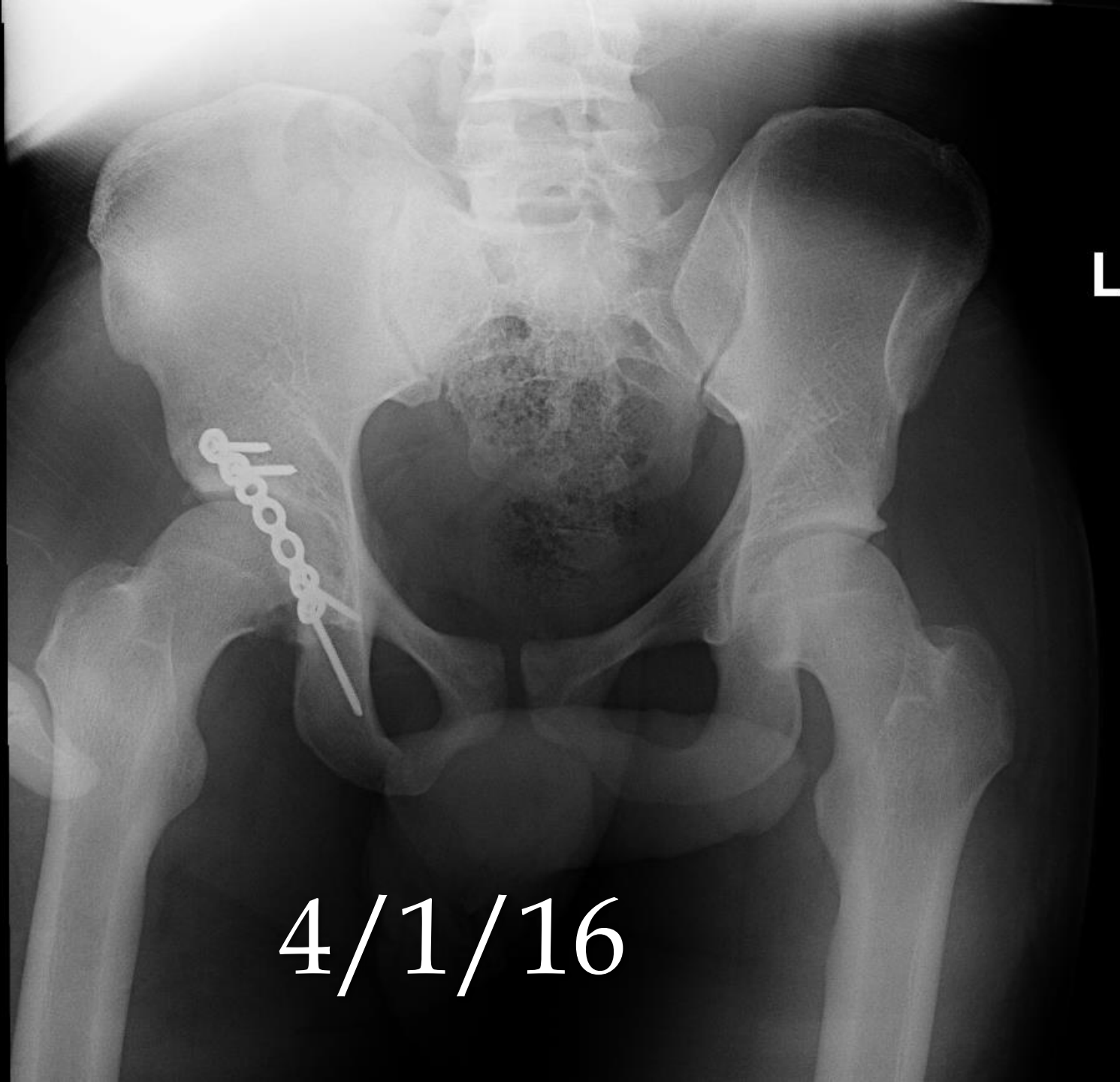
[P]

4/1/16



4/1/16

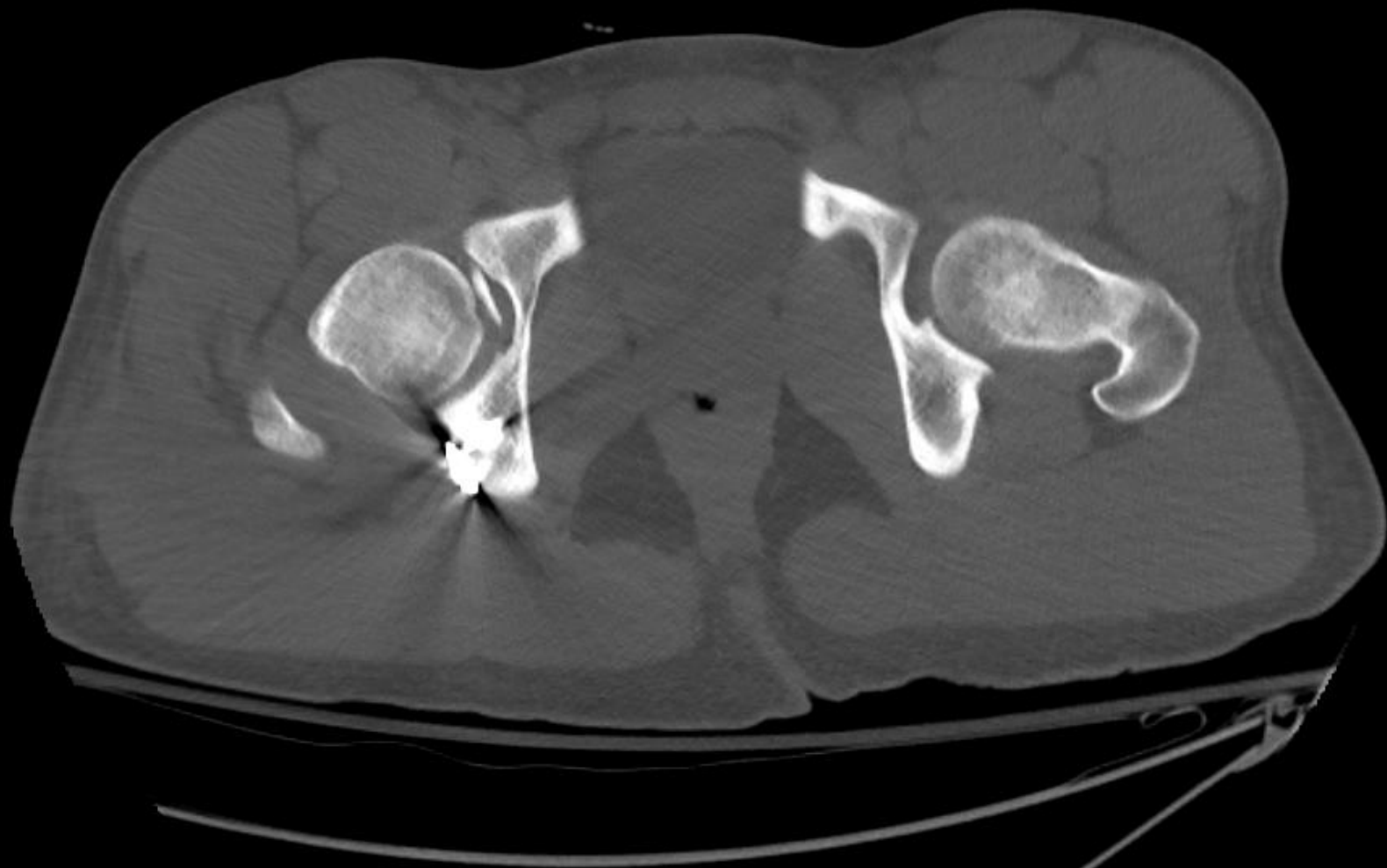




4/1/16

L

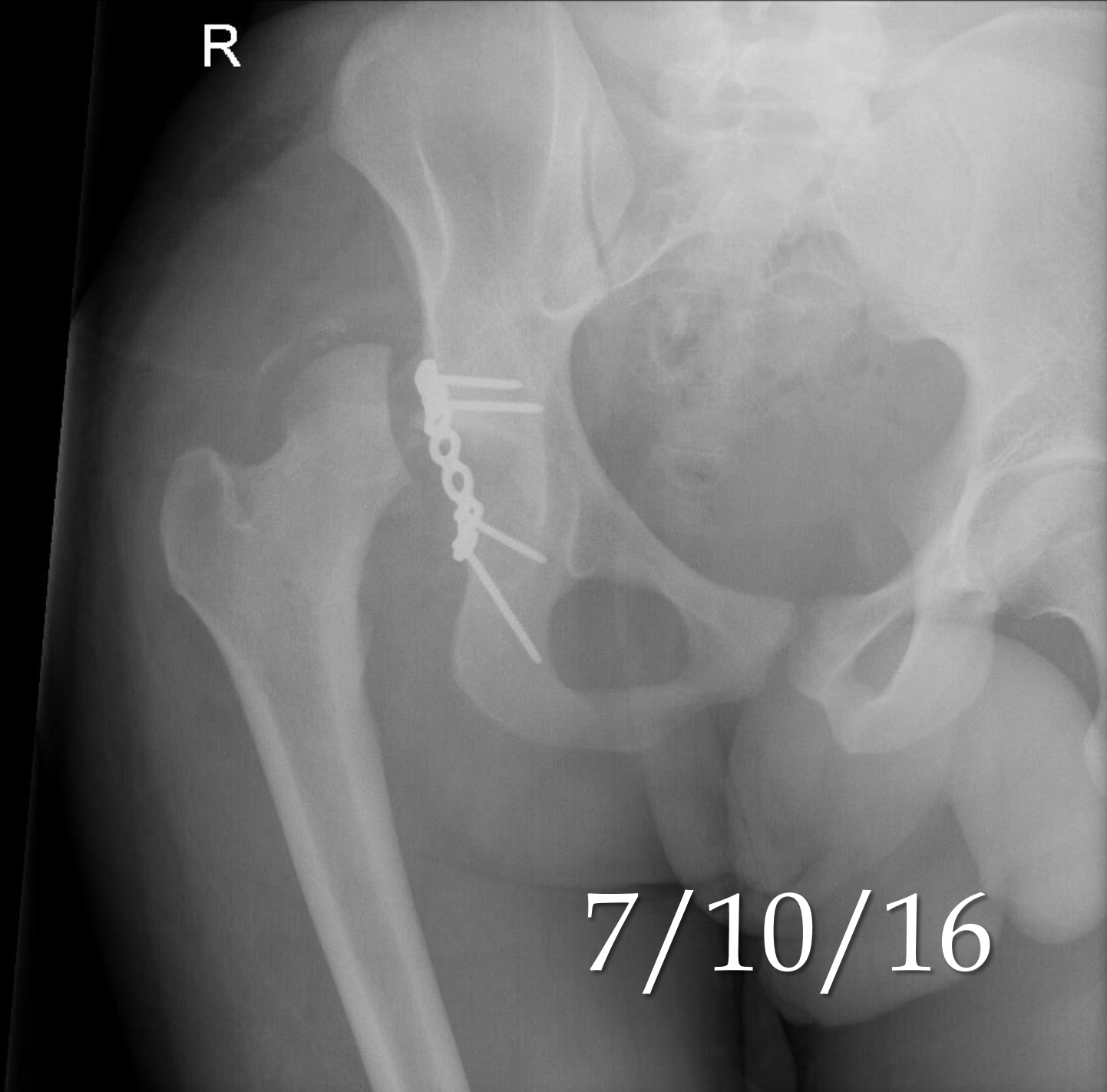
4/1/16



4/1/16



R

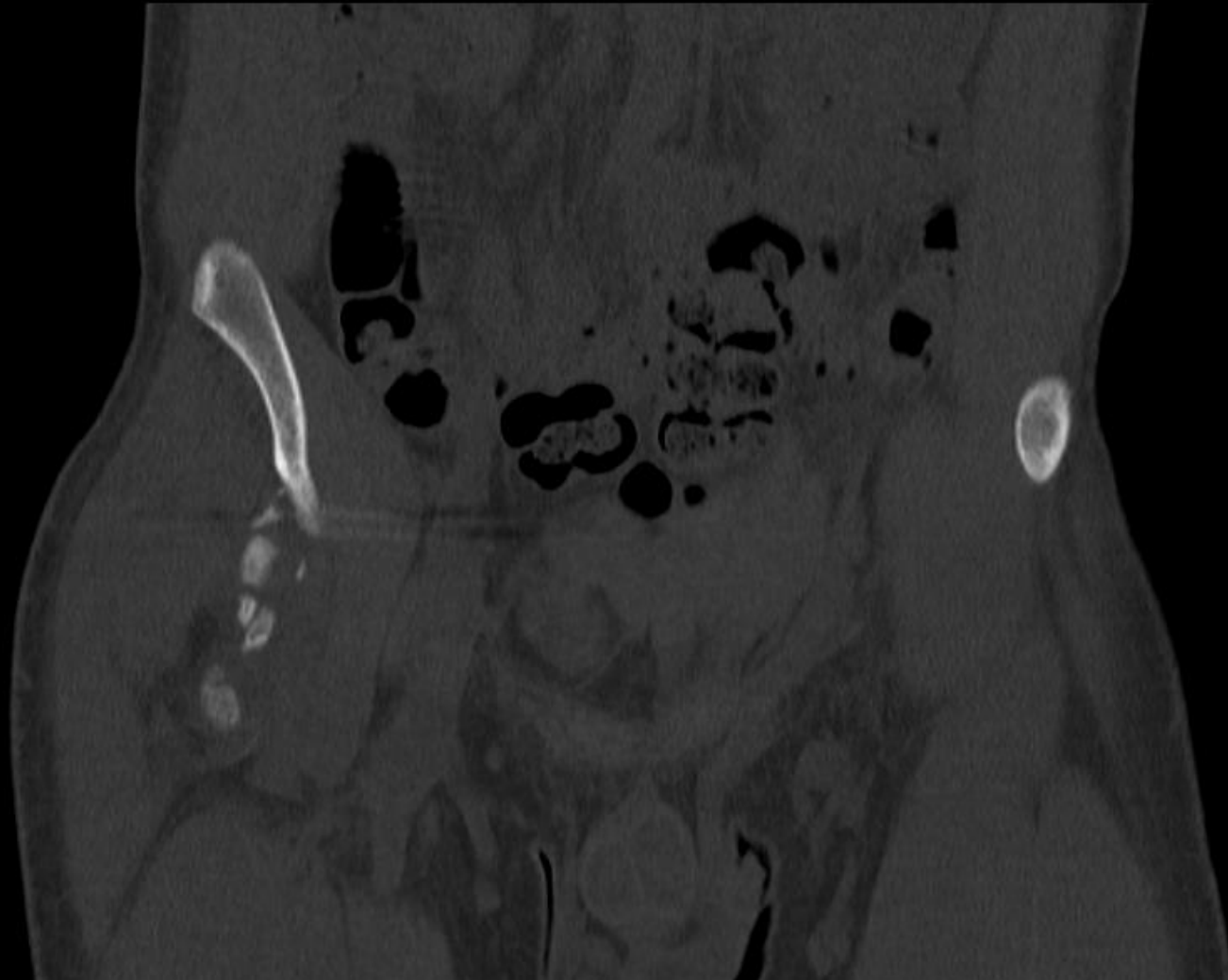


7/10/16

7/11/16



7/11/16



7/11/16



Surface

[HAL]

SCALLION MICHAEL W

SAL

Volume Rendering No cut

Ex: Jul 11 2016

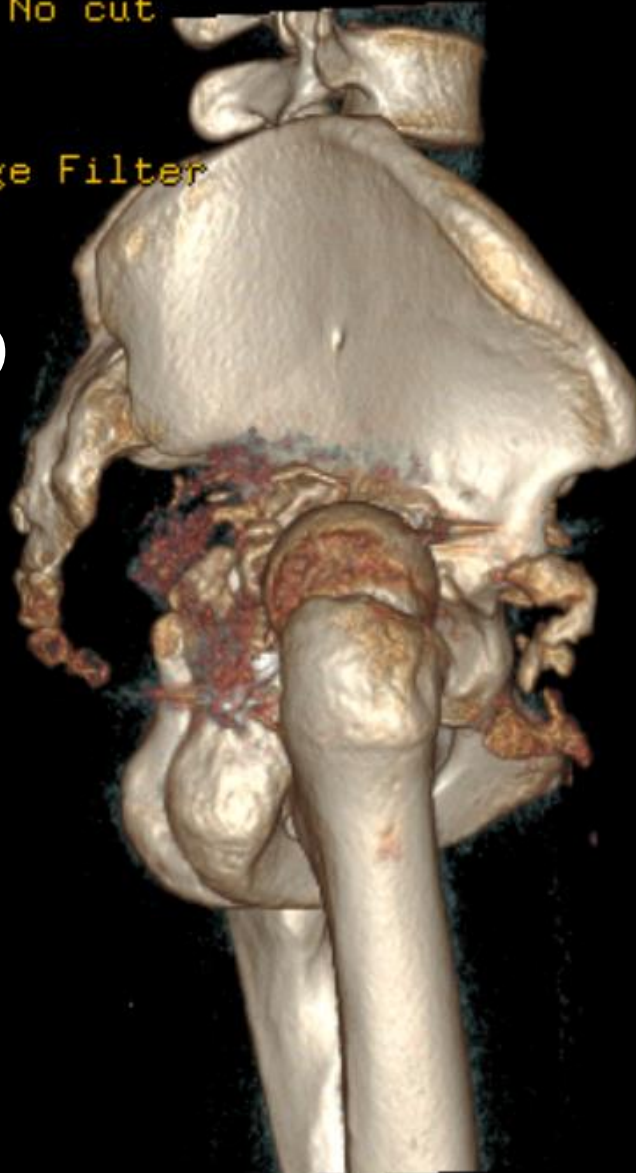
DFOV 43.4 cm
STND/SS40 No Image Filter

7/11/16

P
S
R

A
I
L

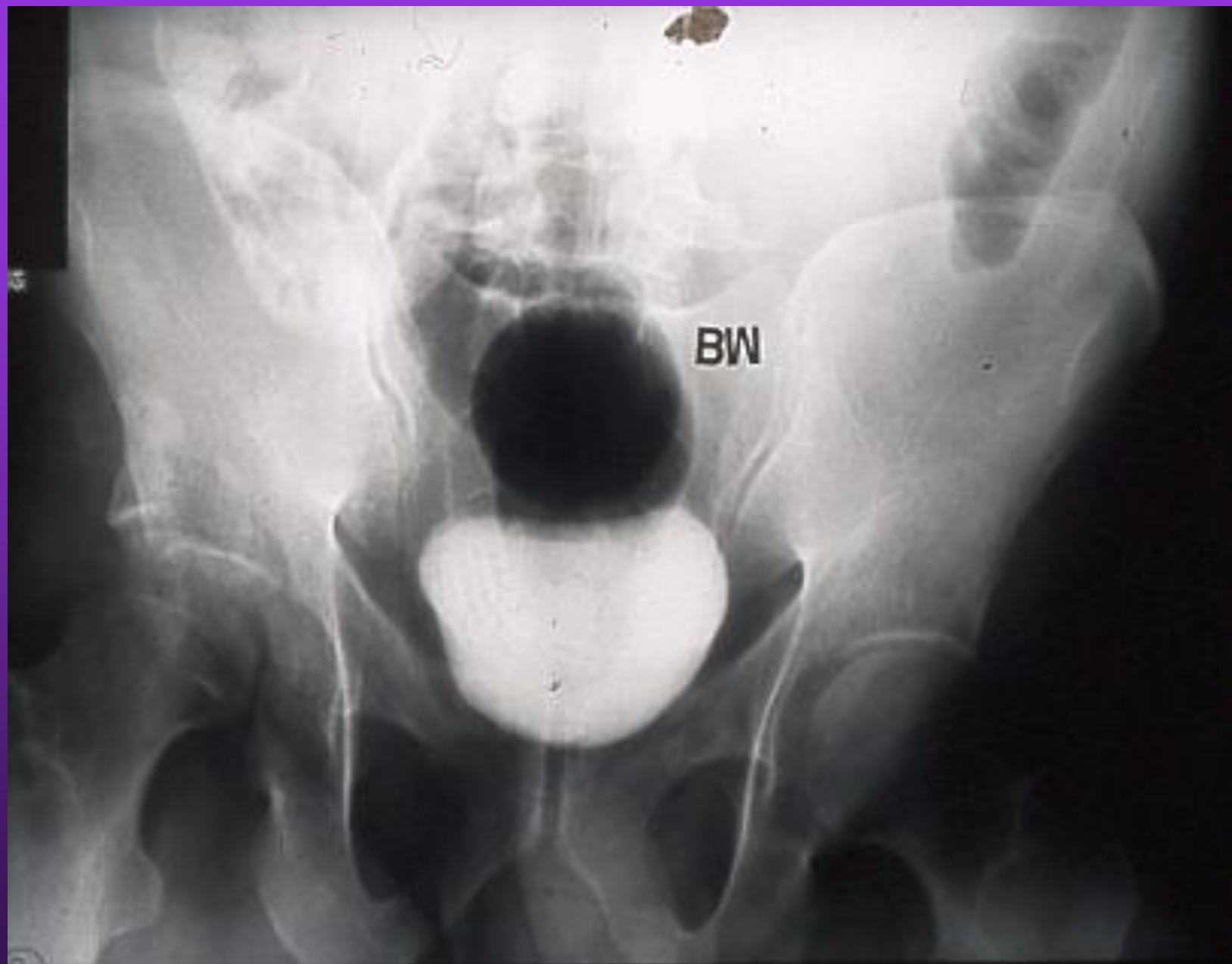
No VOI
kV 140

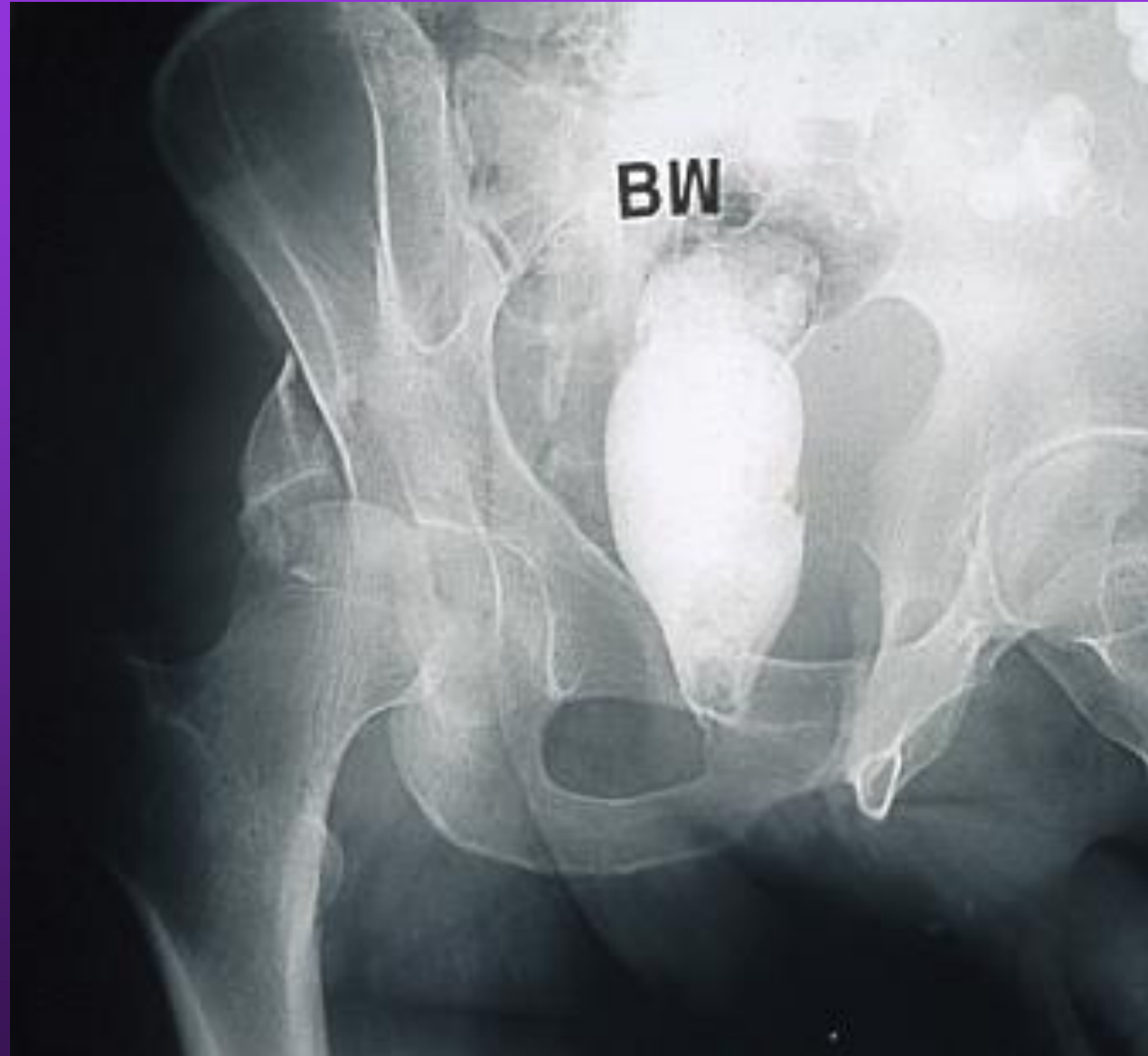


R

7/20/16
no radiation

[F]







61.59.210
43

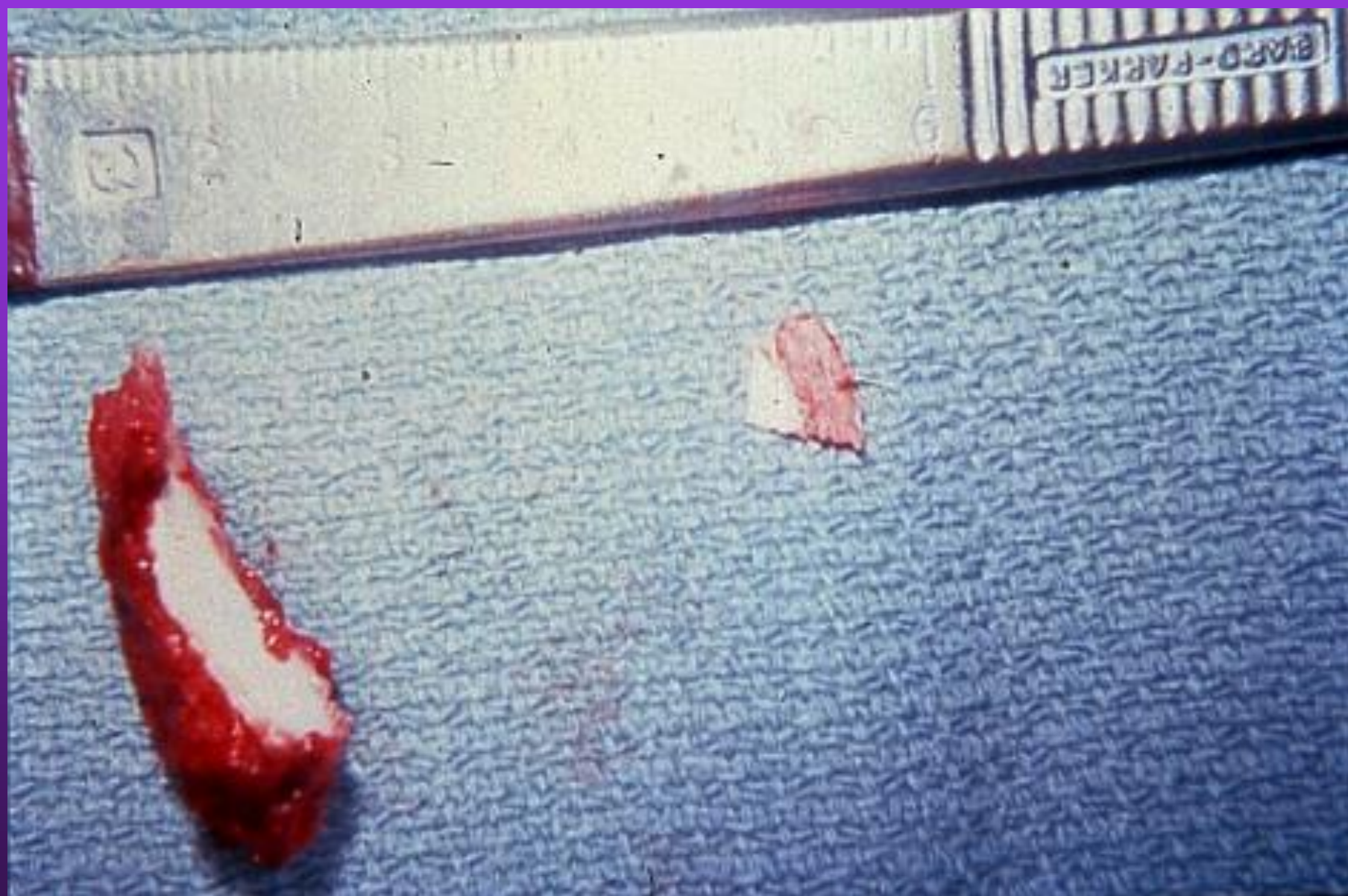


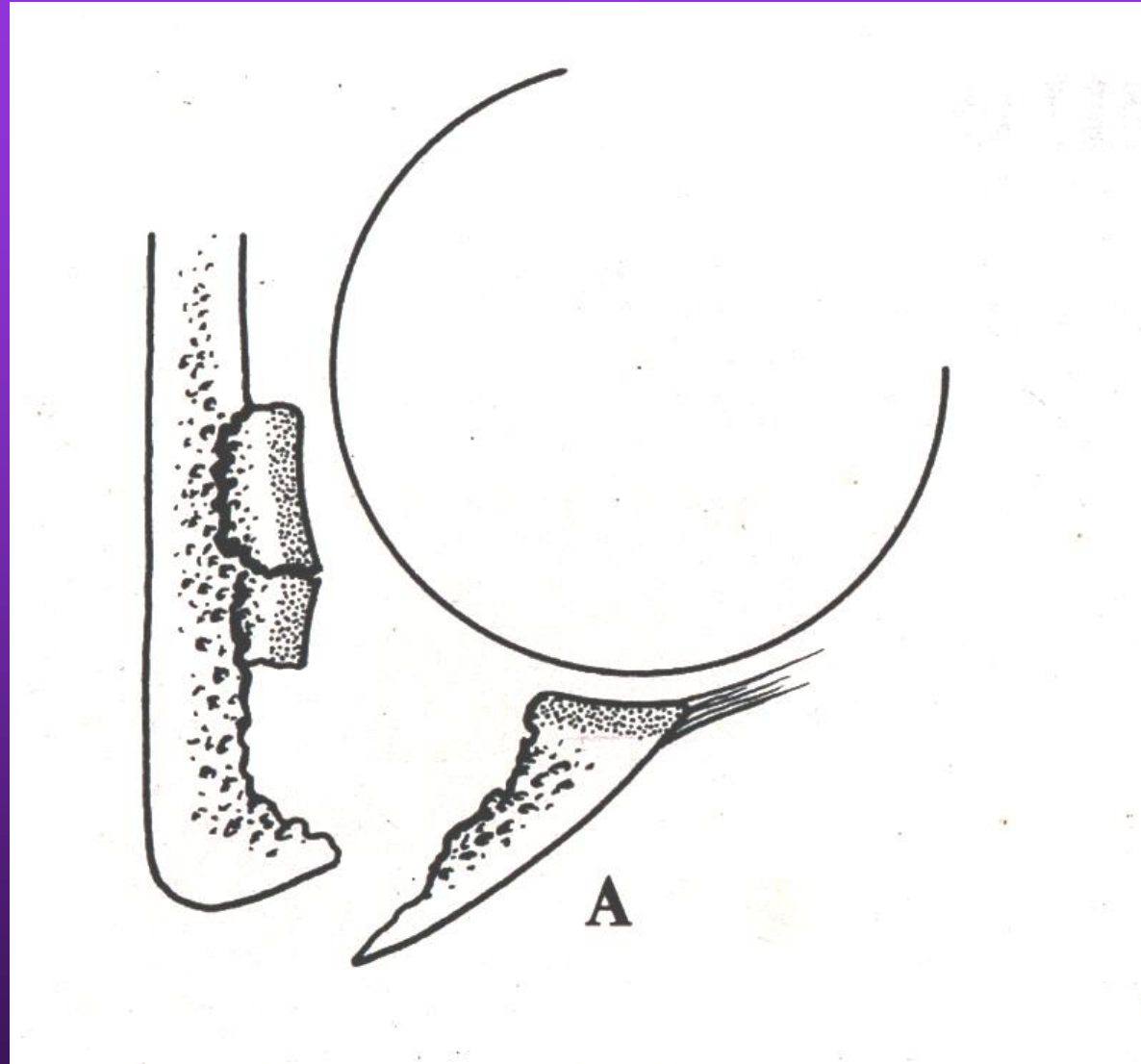
BW

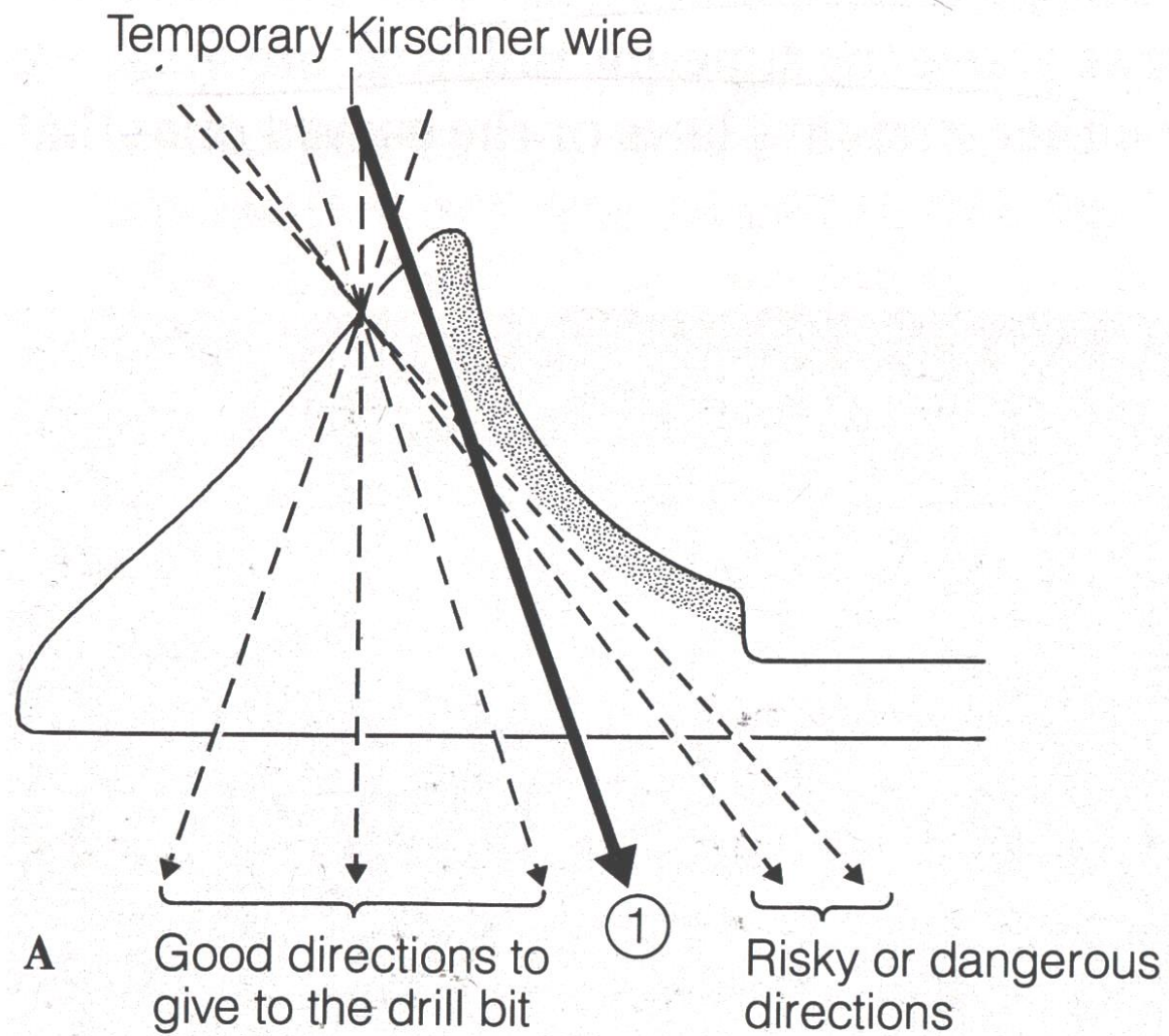
n: 55158
-354
3
d:
1613
130
i: 250
4000
: 368 64

Marginal Impactions

- Articular surface elevated with as much as possible cancellous bone
- Autogenous graft from greater trochanter
- Proximal based trap door 1 x 1 cm at vastus lateralis ridge







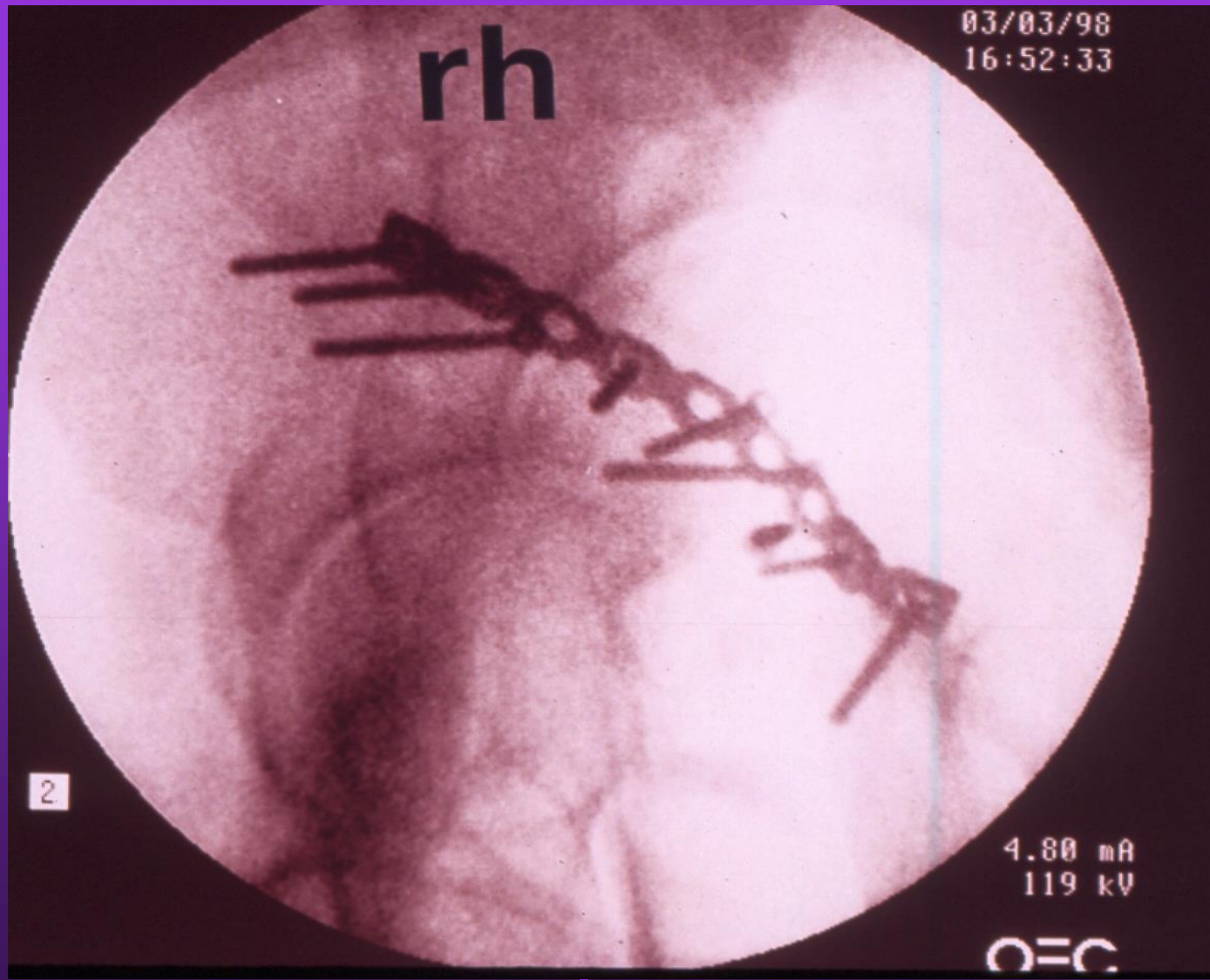
rh

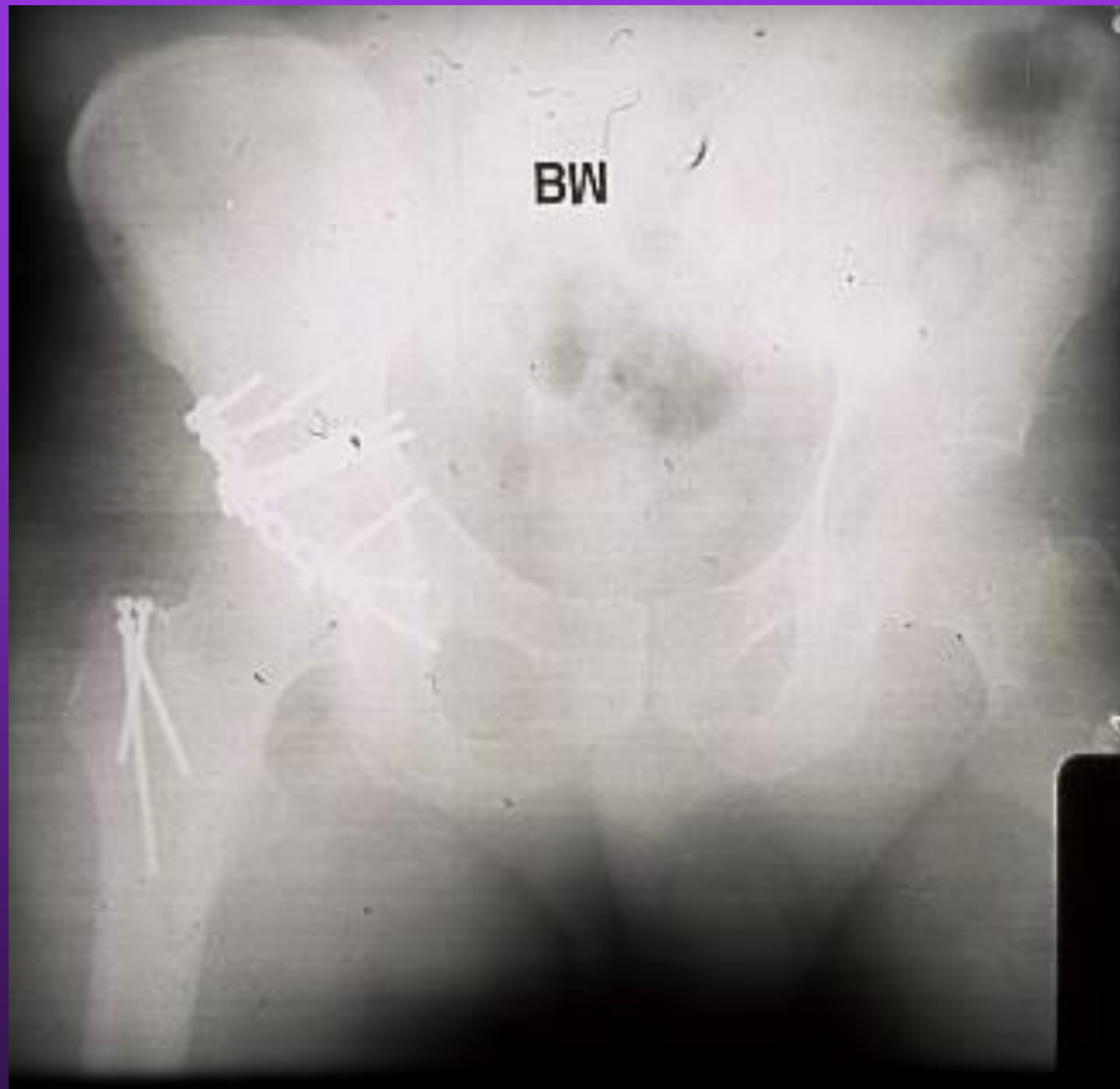
03/03/98
16:52:33

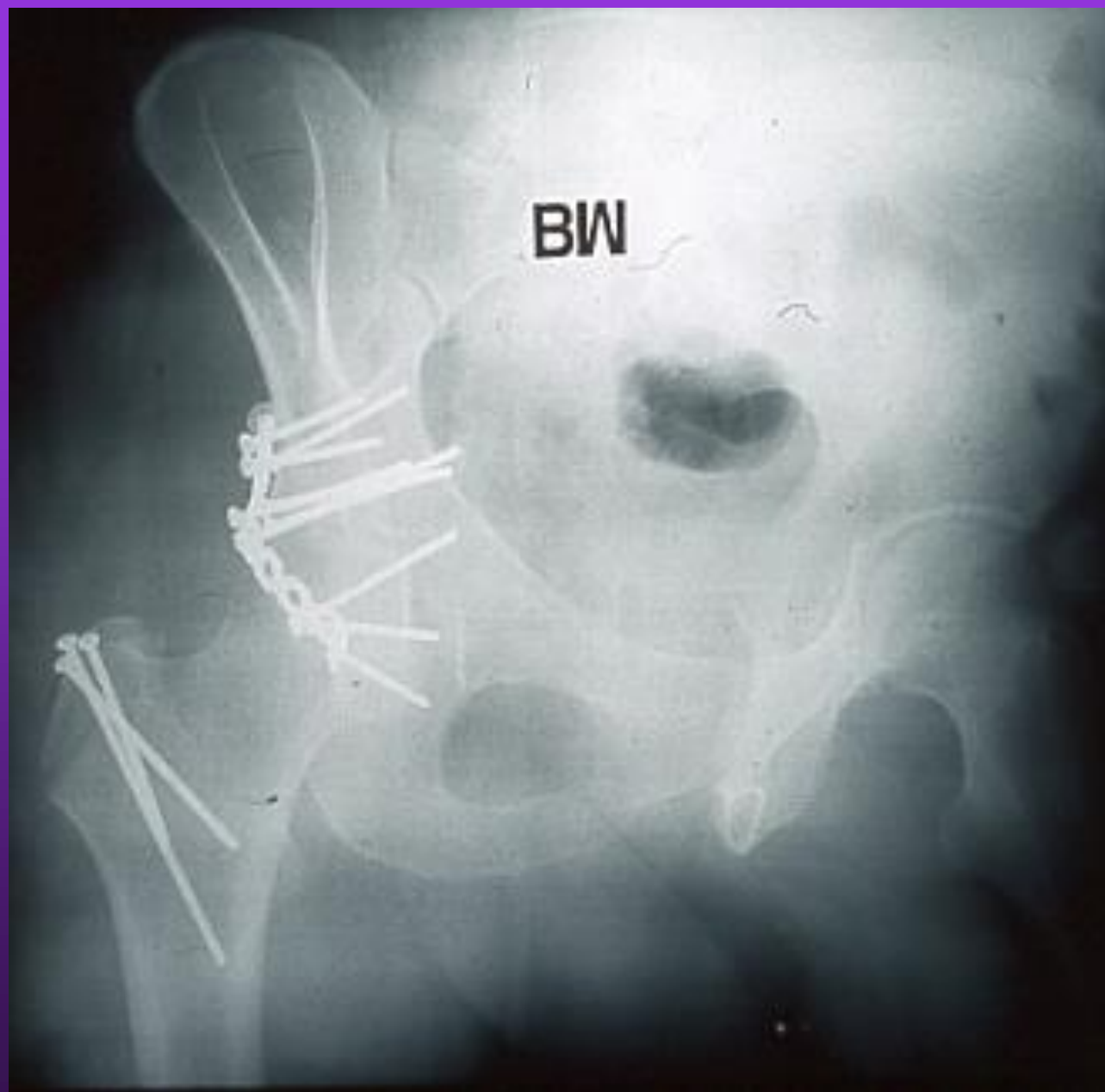
2

4.80 mA
119 kV

OEC



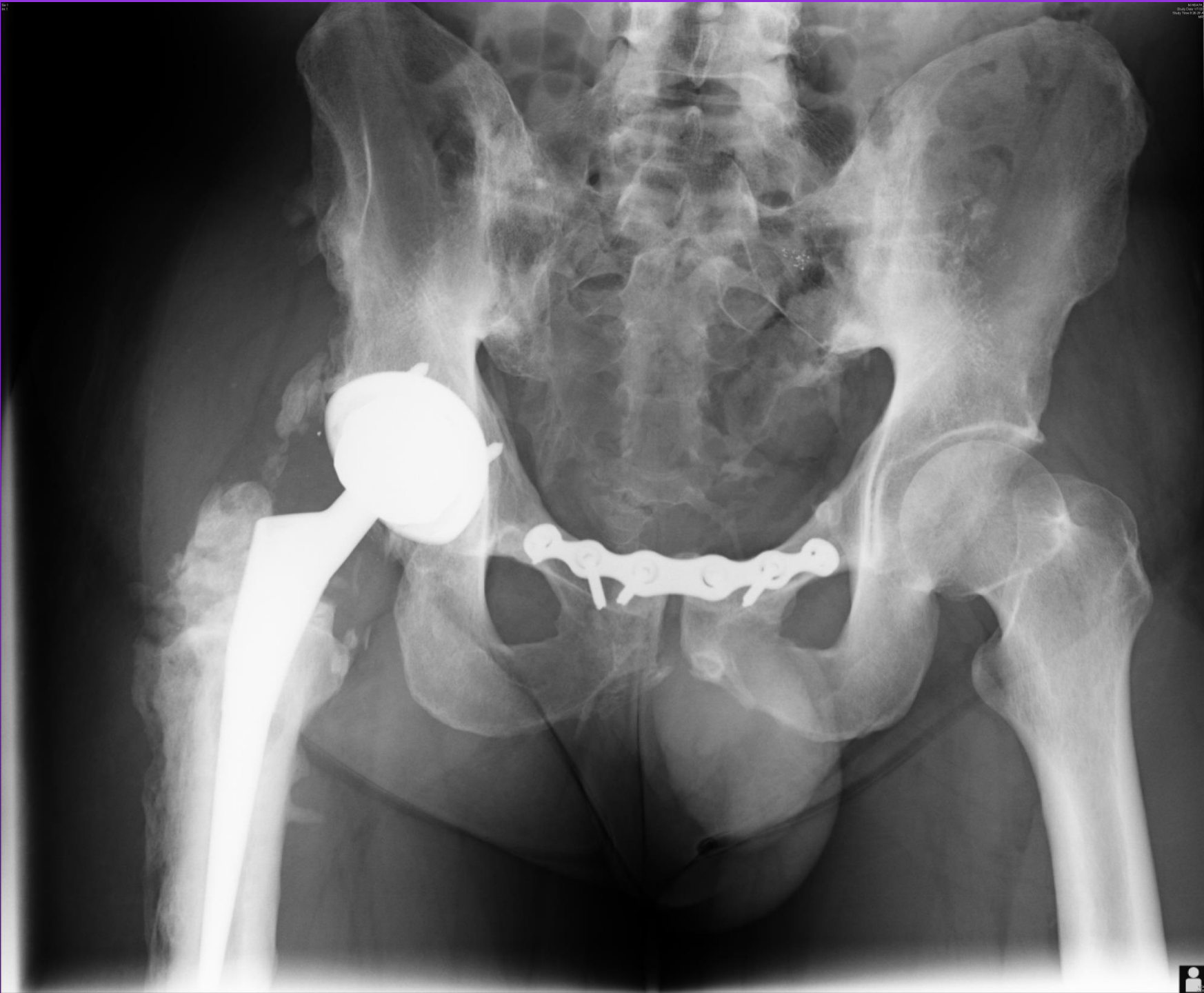






HM

- 35 yo previous MVA and a R THA after a failed femoral neck and bilateral pelvic injuries (previous IS screws)
- New MVA with a L distal femur and acetabulum fracture and R pelvis injury



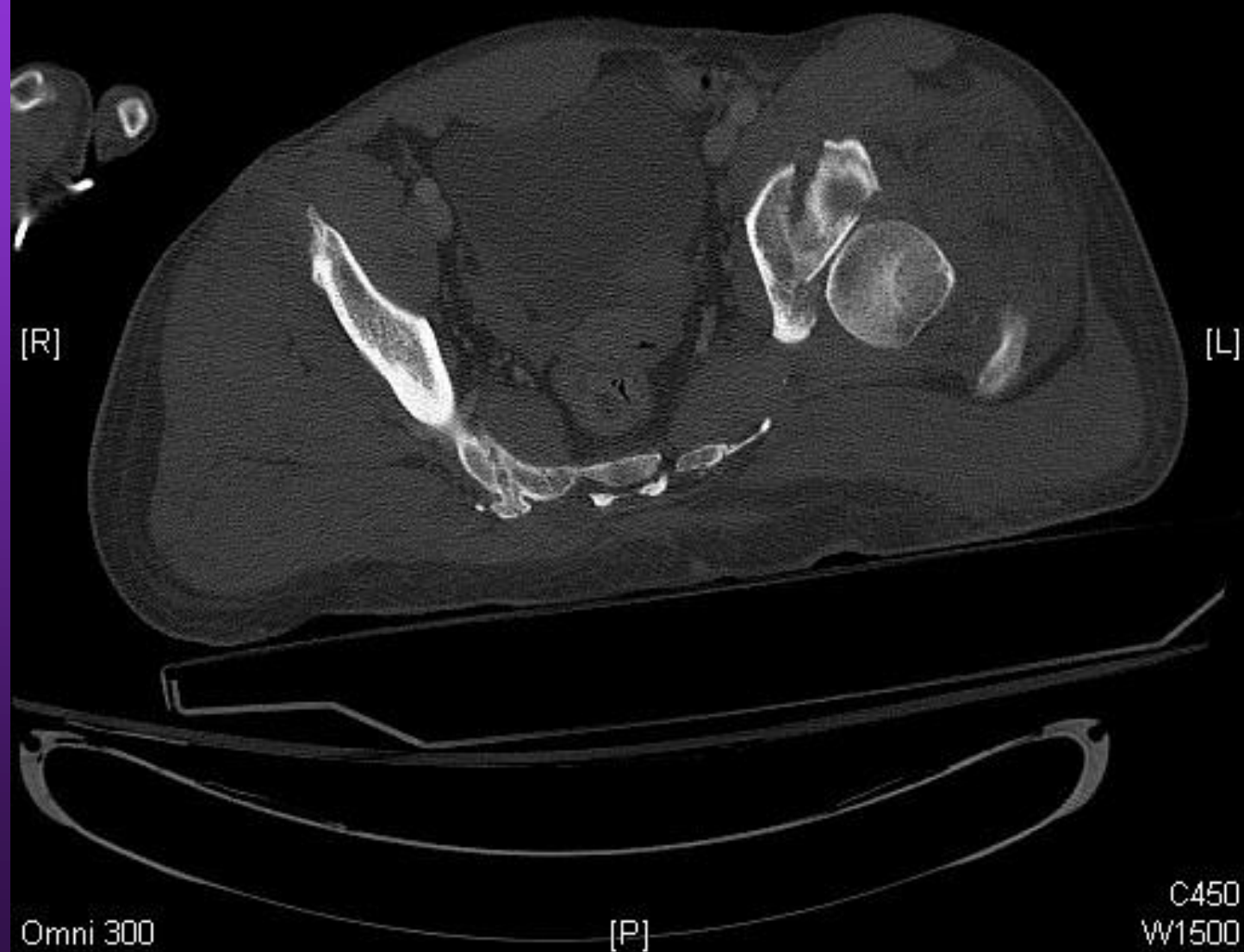
R



Se:17
Im:90

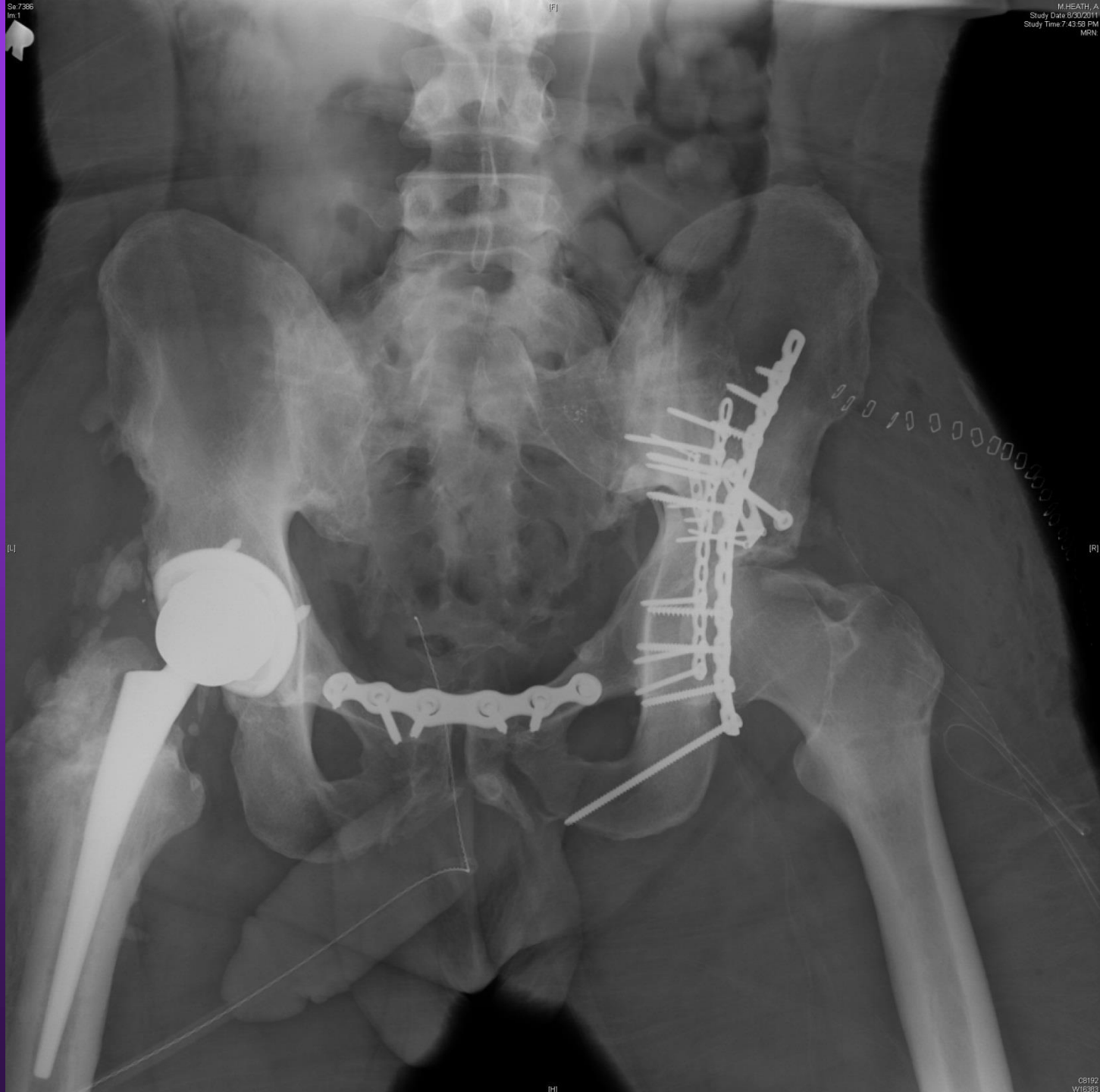
[A]

M. HEATH, A
Study Date: 8/28/2011
Study Time: 4:55:35 AM
MRN:



Both Column with PW (ACPHT with a PW)

- Approach?
 - EIF
 - Dual or Simultaneous II and KL
 - II
 - KL



?

Se:7
Im:139

[H]

M. HEATH, A

Study Date:8/31/2011

Study Time:4:02:42 AM

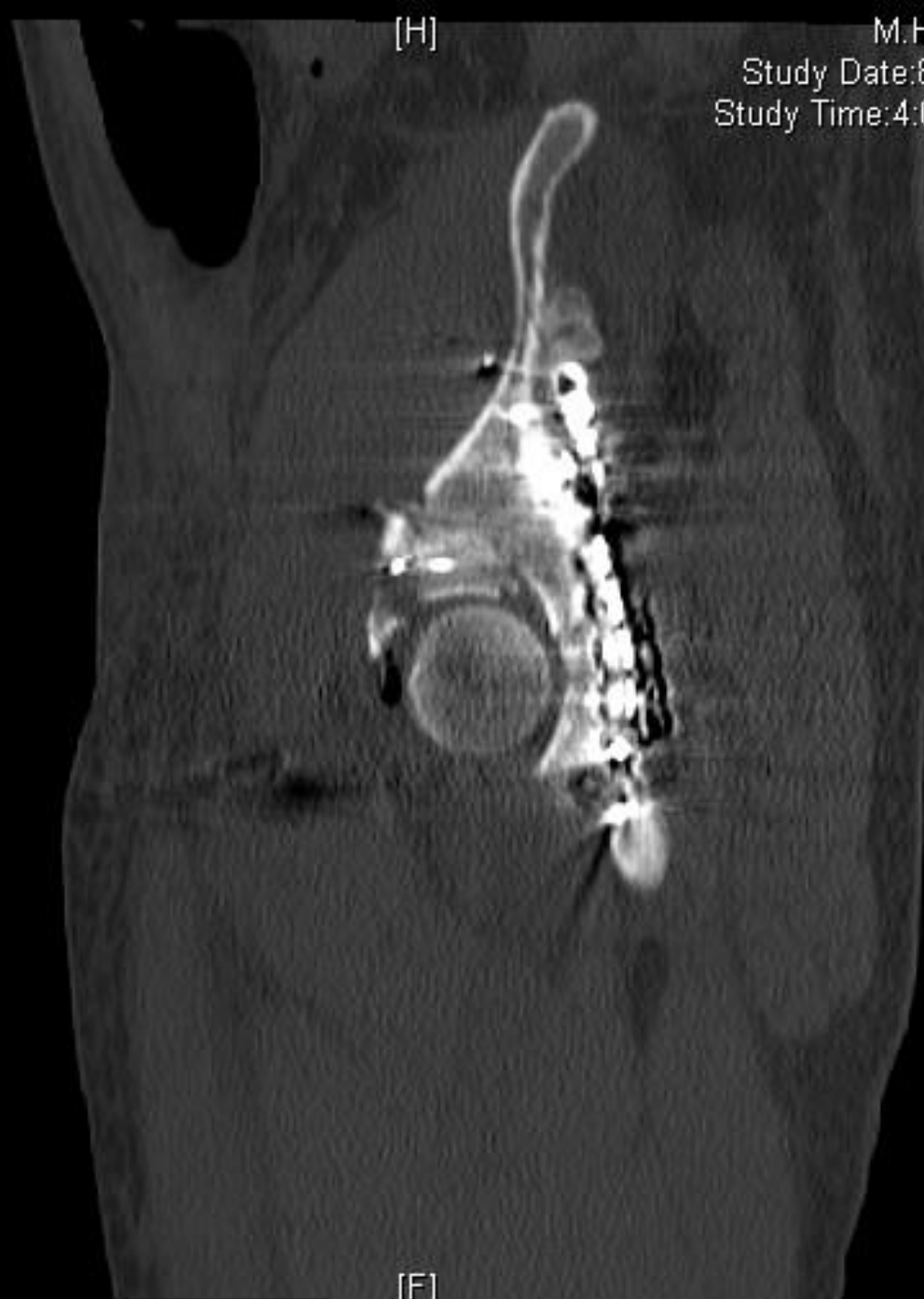
MRN:

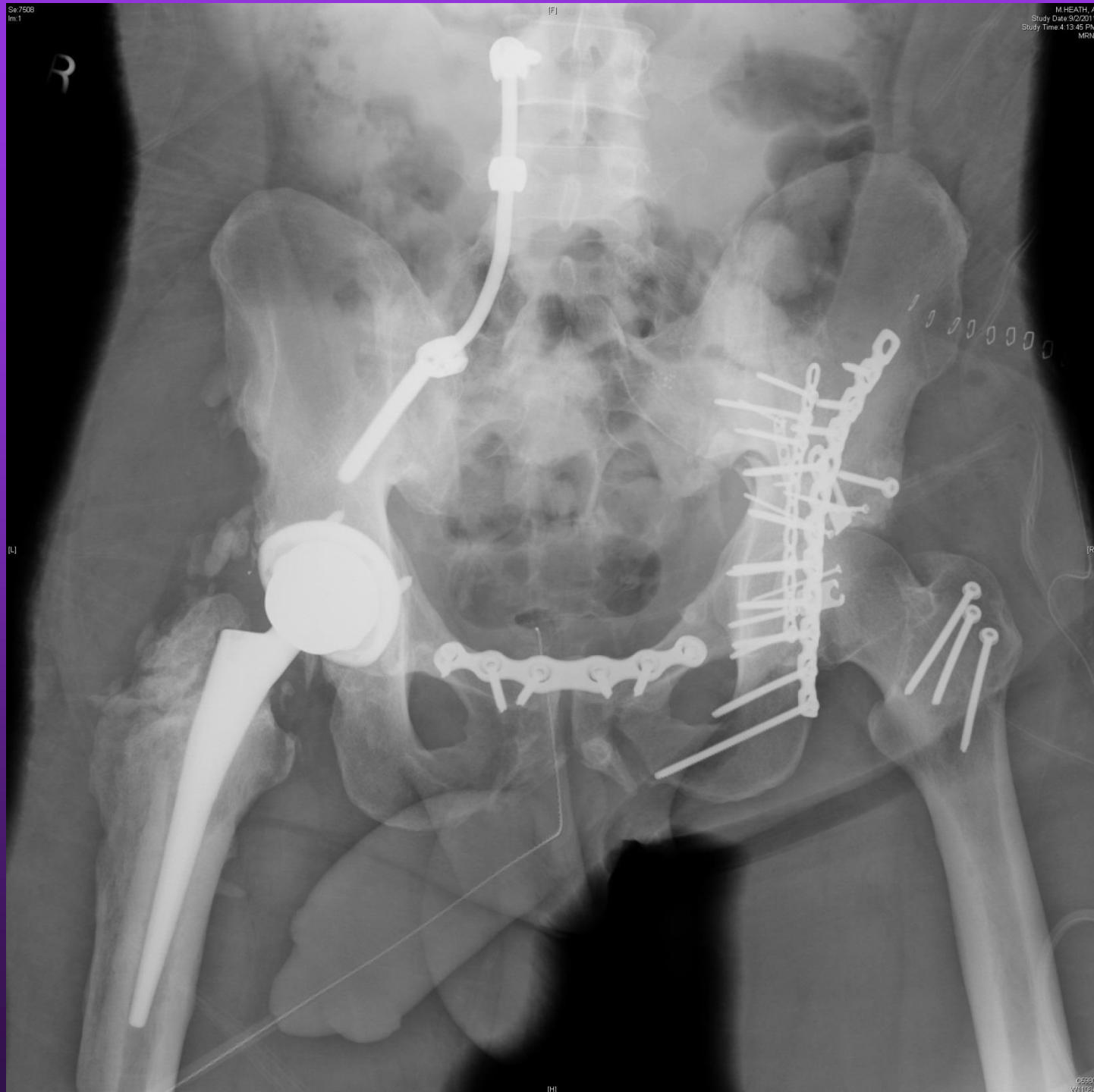
[A]

[P]

[F]

C450
W1500



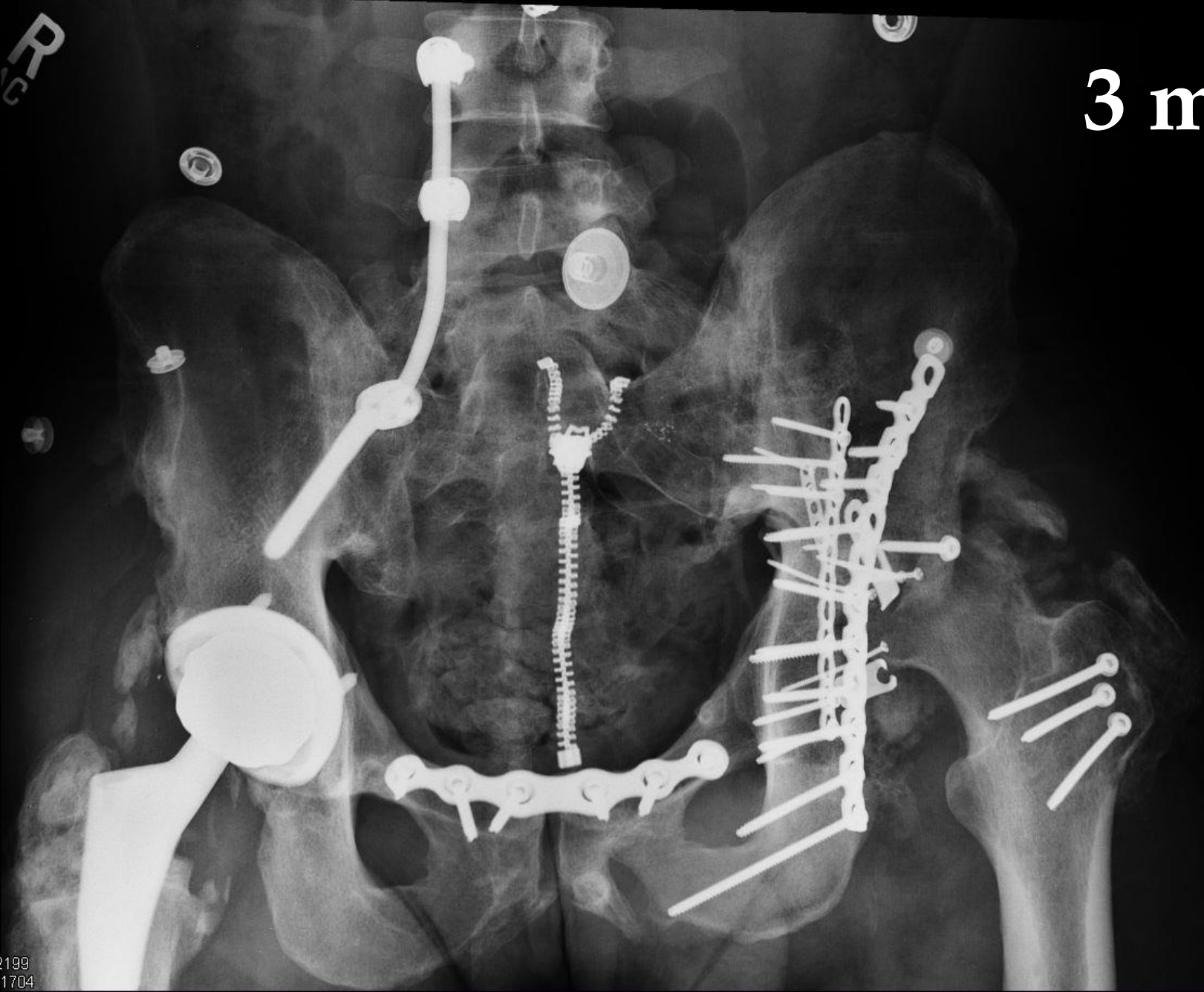


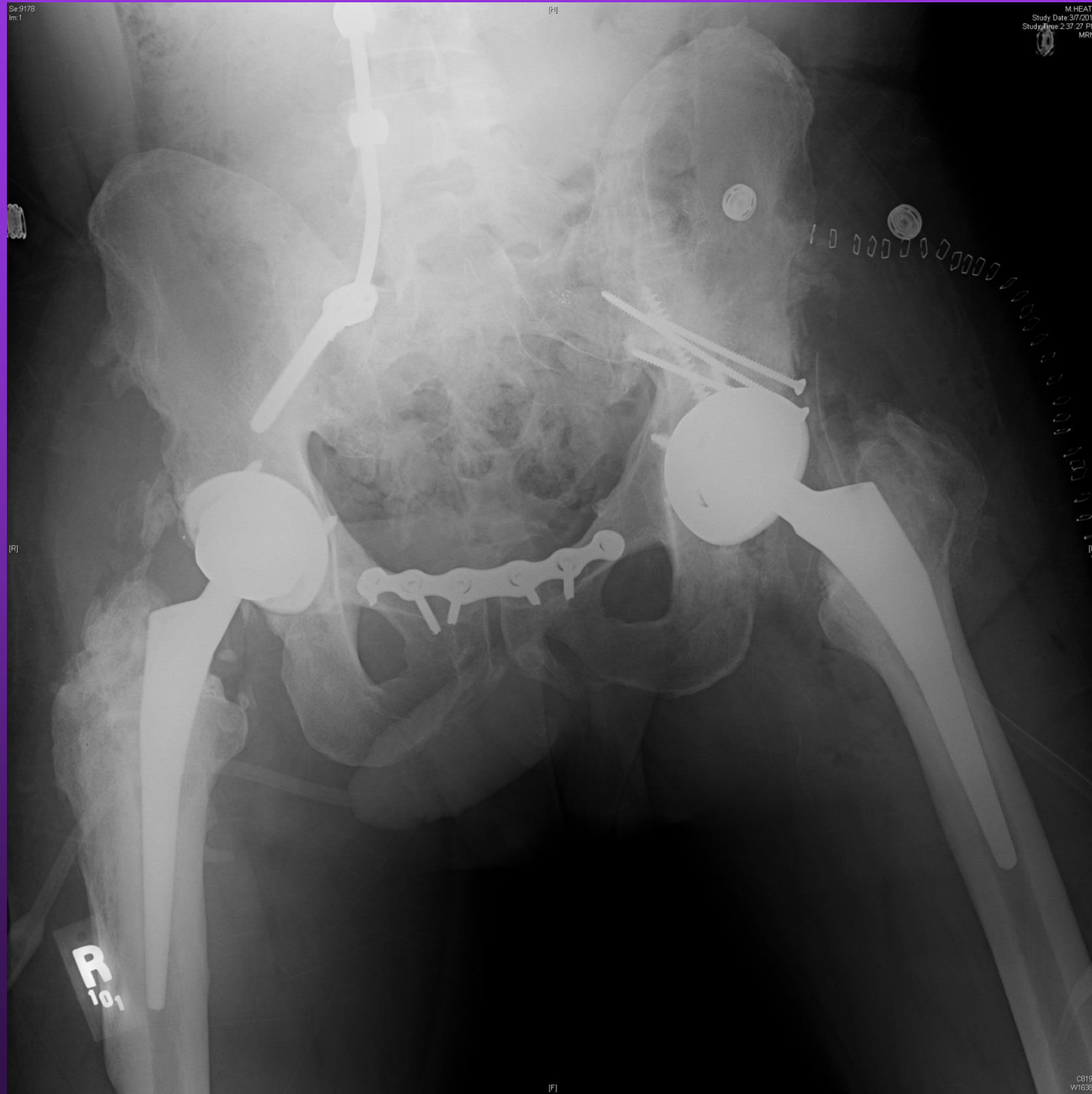
MOORE HEATH
35Y3M,M,SW186735
1-1
PELVIS
View Pos: AP

Lassy

SOUTHWEST ORTHOPEDIC
KODAK CR0850A
Dec 30, 2011 8:12:43 AM
Study Desc: HIP - 2 VIEWS LEFT

3 mo fu







Closed Treatment

- Traction
 - Rarely indicated because rarely successful
 - If done, displaced without traction → ORIF
 - If non-displaced, traction is not needed
- Non-displaced fracture TDWB x 8 weeks
 - Watch posterior column/posterior wall carefully

Conservative cont.

- Stable EUA (Posterior Wall fractures)
- Inexperience of the Surgeon and the team
- ?Medical contraindications
- Severe osteoporosis (Letournel)





Thank You

Charity Hospital, New Orleans

