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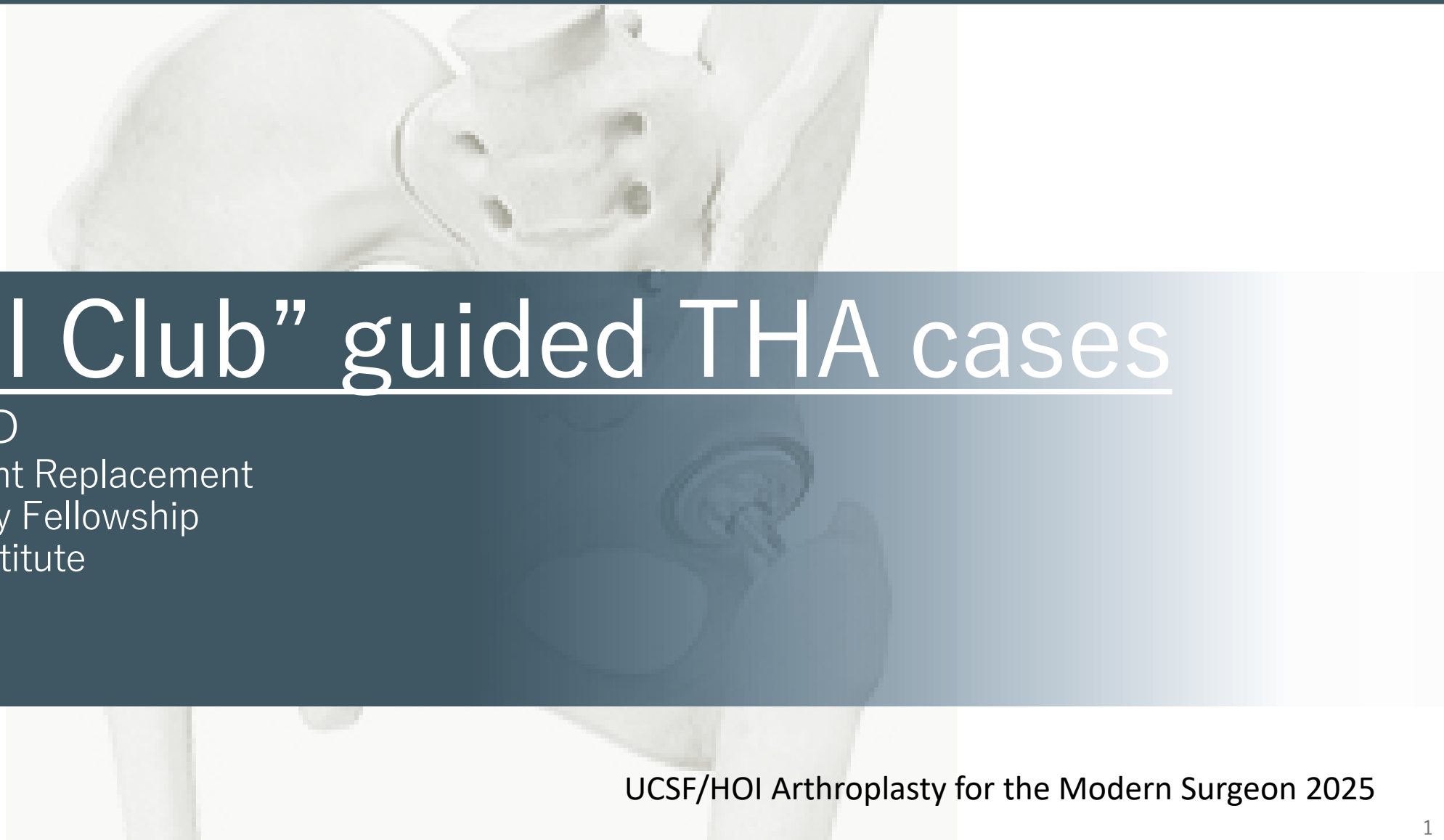

“Journal Club” guided THA cases

Nader Nassif, MD
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Hoag Orthopedic Institute

UCSF/HOI Arthroplasty for the Modern Surgeon 2025

Disclosures:

- Consultant: Depuy-Synthes
- Royalties: Depuy-Synthes
- Institutional Education and Research Support
  - OREF Omega Grant
  - Depuy-Synthes
  - The Hoag Foundation

Hip Replacement Salad:

- 4-5 lbs cases featuring today's topics
- Pepper in some recent articles
- 3 tablespoons of "WTF" did you do that for?
- A sprinkle of healthy optimism
- 1/2 cup of laughter
- A bucket full of opinions from talented surgeons… and Michael Hunter

Directions:

Toss all ingredients together and hopefully pick up a few things and satiate your knowledge

Be Controversial and speak your mind,

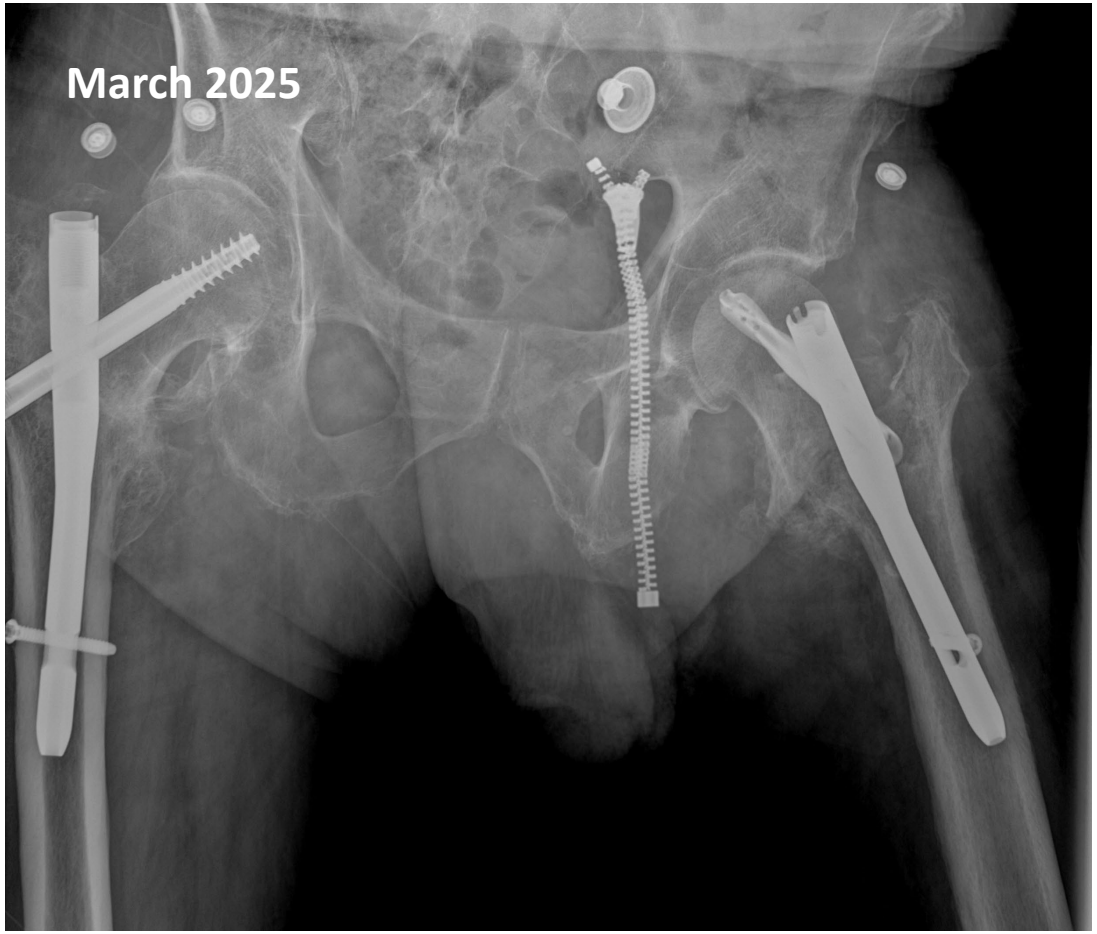
"You have a right to your own opinions but not your own facts"

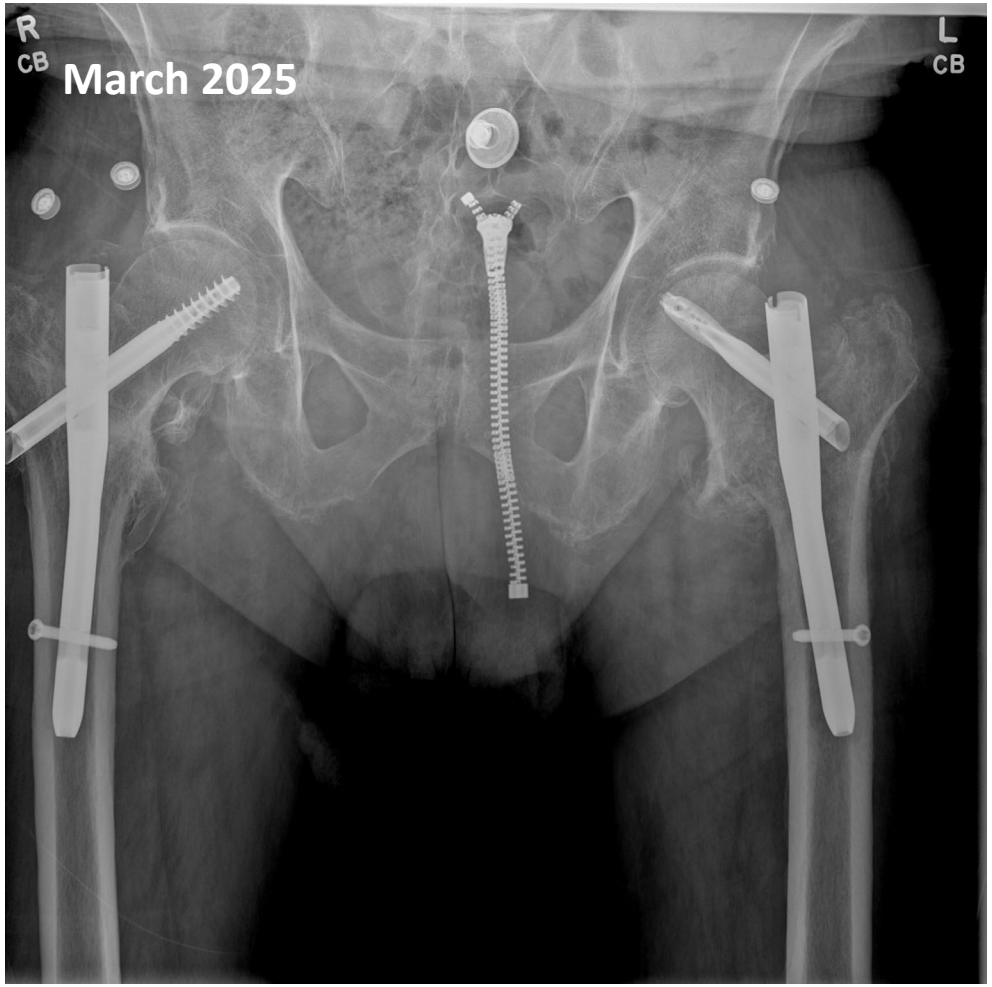
Case # 1

- 81 yo M s/p a left CMN December 2024
- Fell in February 2025
- Subsequent pain in the left hip
- Still using walker
- PMHx:
  - *Not bad for this age!*

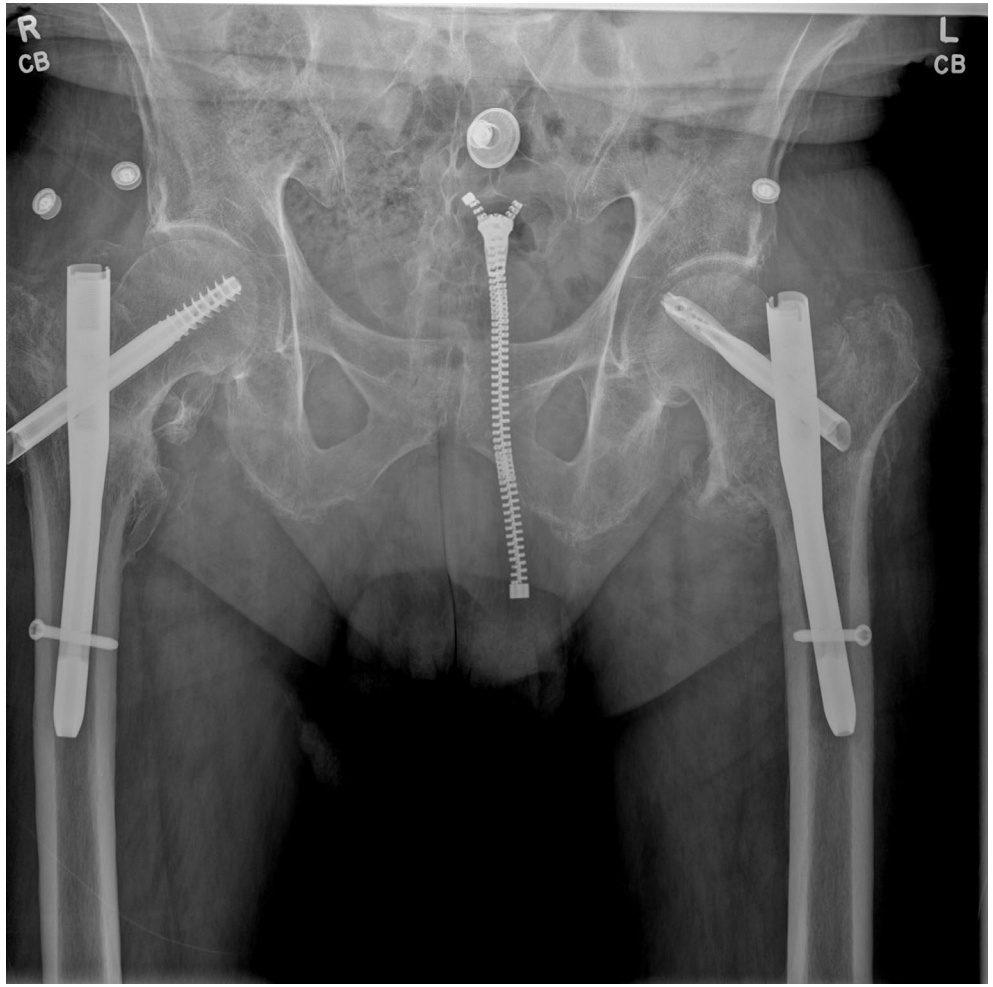
- PE:
  - Well healed surgical incisions
  - + limb
  - + FADIR
  - Leg Lengths even

Case #1





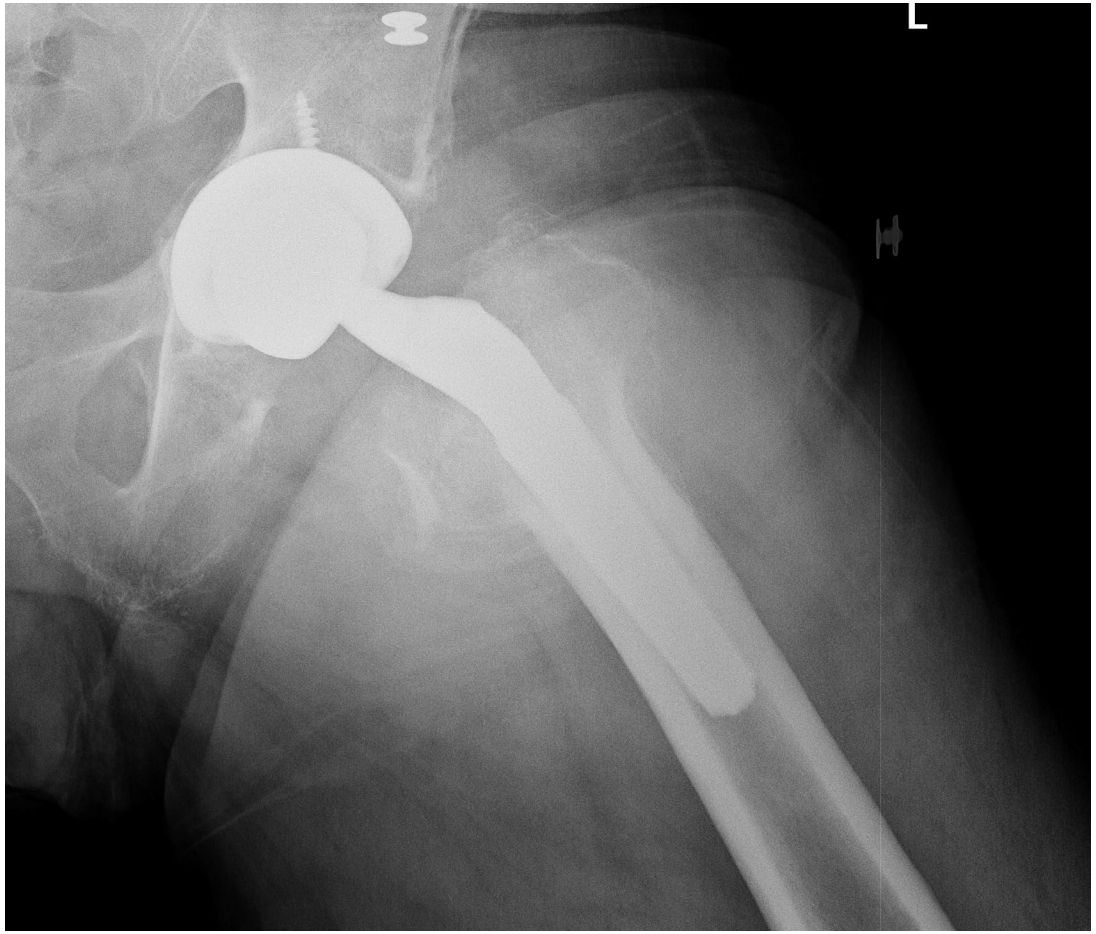
Case #1: 81 yo with failure of CMN

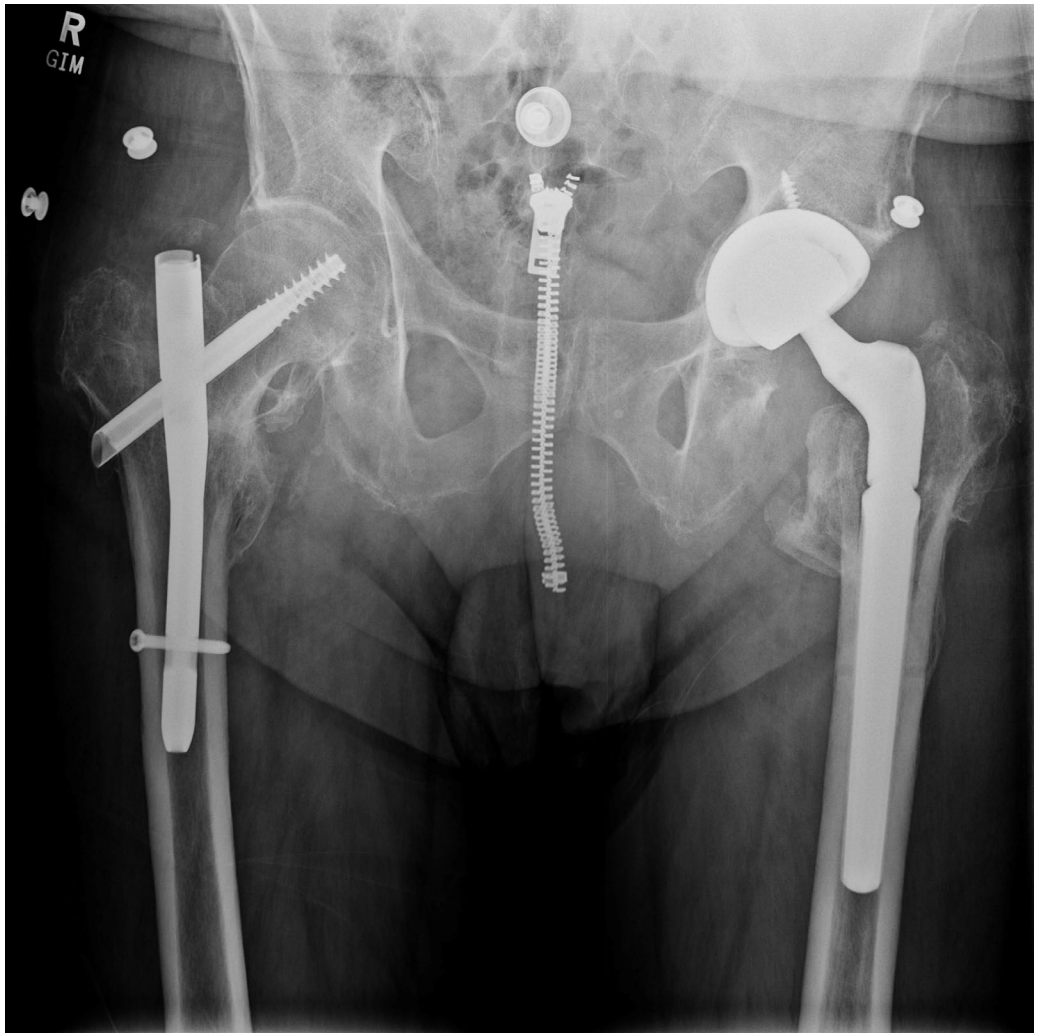


- Preop Work up?
- Approach?

- Stem Choice?
- Other surgical considerations?

- Post Op Weight bearing?
- DVT ppx?
- Extended Antibiotics?





Yes! I am aware the cup is too medial but his bone was soft so please forgive me

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Indications and Outcomes of Conversion Total Hip Arthroplasty via the Anterior and Posterior Approaches

William K. Crockatt, MD *, Mouhanad M. El-Othmani, MD, Nana O. Sarpong, MD, MBA, Alexander L. Neuwirth, MD, H. John Cooper, MD, Carl L. Herndon, MD

Department of Orthopedic Surgery, Columbia University Medical Center, New York, New York

- Retrospective Review of a single institution 80 hips
  - 47 Anterior
  - 33 Posterior
  - Results:
    - Anterior Approach had a “lower length of stay, complication rate, and revision rate”

Table 2
Comparison of Outcomes.

Variable	Anterior Approach (n = 47)	Posterior Approach (n = 33)	*P* value
Complications (%)	10.6	39.4	**<0.01**
Periprosthetic Fracture (n)	2	5	
Hematoma/Seroma (n)	0	2	
Wound Dehiscence (n)	2	3	
Dislocation (n)	0	2	
Infection (n)	1	1	
Neuropraxia (n)	0	0	
Revisions (%)	4.3	18.2	**<0.01**
Periprosthetic Fracture (n)	1	3	
Dislocation (n)	0	2	
Infection (n)	1	1	
Length of Stay (mean days, SD)	2.3 (2.5)	3.4 (2.2)	**0.046**
Discharge disposition (%)			0.19
Home	72.3	57.1	
Facility	25.5	42.9	

Bolded *P* values are those that reached statistical significance.

The Journal of Arthroplasty 40 (2025) S240eS245

Not the same population!

Variable	Anterior Approach (N = 47)	Posterior Approach (N = 33)	*P* value
Prior Implant (%)			**<0.001**
Percutaneous screws (CRPP)	51.2	17.1	
Hemiarthroplasty	6.4	11.4	
Long IMN	12.8	14.3	
Short IMN	17.4	14.3	
SHS	10.6	42.9	
Multiple Incisions Required (%)	59.6	18.2	**0.0003**
Use of Revision Style Implants (%)	17.0	40.6	**0.02**

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Archives of Orthopaedic and Trauma Surgery (2022) 142:3737–3745
https://doi.org/10.1007/s00402-021-04215-1

TRAUMA SURGERY

Conversion total hip arthroplasty for early failure following unstable intertrochanteric hip fracture: what can patients expect?

Blake J. Schultz[1] · Chelsea Sicat[1] · Aleks Penev[1] · Ran Schwarzkopf[1] · Kenneth A. Egol[1]

Implants	
Acetabular components	
Acetabular grafting/augment	6 (27.3%)
Revision cup	4 (18.2%)
Cemented cup	2 (9.1%)
Dual mobility cup	7 (31.8%)
Cup screws	22 (100%)
Femoral components	
Revision stems	21 (95.4%)
Revision stem average size	195 mm (range 150–250)
Cemented stems	5 (22.7%)
Cerclage wires/plates	8 (36.3%)

- 22 patients retrospective cohort 1:5 matched to primary total hips
- Mean time to failure was 145 days
- Most common mode of failure was screw cut out (40%)
- 63% of patients had acetabular sided damage

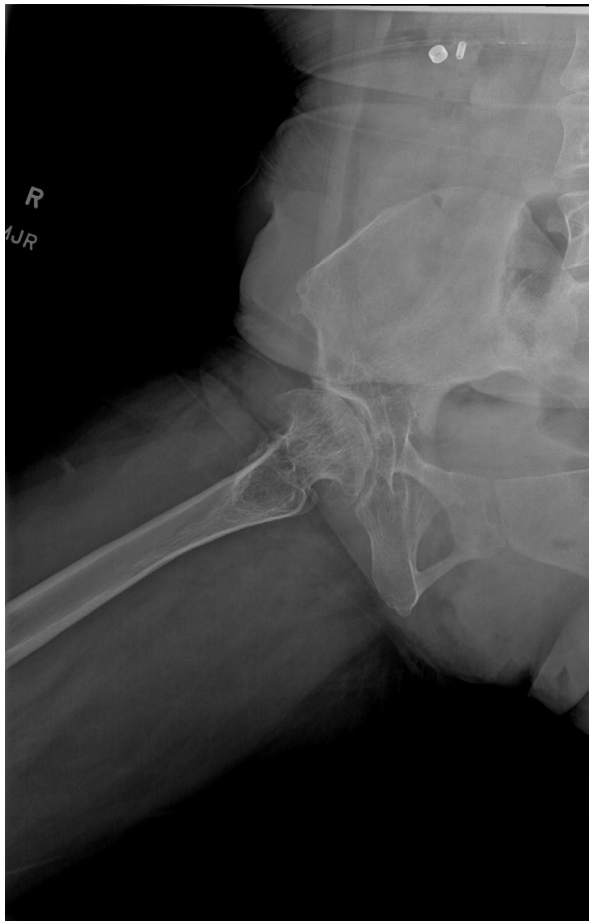
Table 1 Comparison of matched samples

	Converted THA	Primary THA	*p* value
n	22	109	
Outcomes			
Estimated blood loss (mL)	600 (SD 240)	314 (SD 167)	<0.001*
Pre-operative Hgb	11.8 (2.20)	12.6 (SD 1.76)	0.152
Post-operative Hgb	8.45 (SD 1.20)	9.64 (1.60)	<0.001*
Difference in pre- and post-op Hgb	3.39 (SD 1.99)	3.01 (SD 1.41)	0.333
Operation time (minutes)	176.3 (SD 54.7)	105.3 (SD 41.4)	<0.001*
Length of stay (days)	5.5 (SD 2.9)	2.8 (SD 1.9)	<0.001*
Readmissions	8 (36.4%)	13 (11.9%)	0.011*
Complications			
Overall complications	0.95 (SD 1.56)	0.26 (SD 0.60)	<0.001*
Surgical complications	0.41 (SD 1.3, Median = 0, Range = {0,6})	0.10 (SD 0.38, Median = 0, Range = {0,2})	0.018*
Periprosthetic joint infection	2 (9.1%)	2 (1.8%)	0.261
Dislocation	2 (9.1%)	1 (0.9%)	0.120
Revisions	3 (13.6%)	8 (7.3%)	0.582
Medical complications	0.55 (SD 0.67, Median = 0, Range = {0,2})	0.16 (SD 0.47) Median = 0, Range = {0,3})	0.001*
Sepsis	1 (4.5%)	0 (0.0%)	0.369
DVT/PE	0 (0.0%)	2 (1.8%)	1.000
AKI	1 (4.5%)	2 (1.8%)	1.000
UTI	1 (4.5%)	4 (3.6%)	1.000
Anemia	7 (31.8%)	9 (8.2%)	0.006*

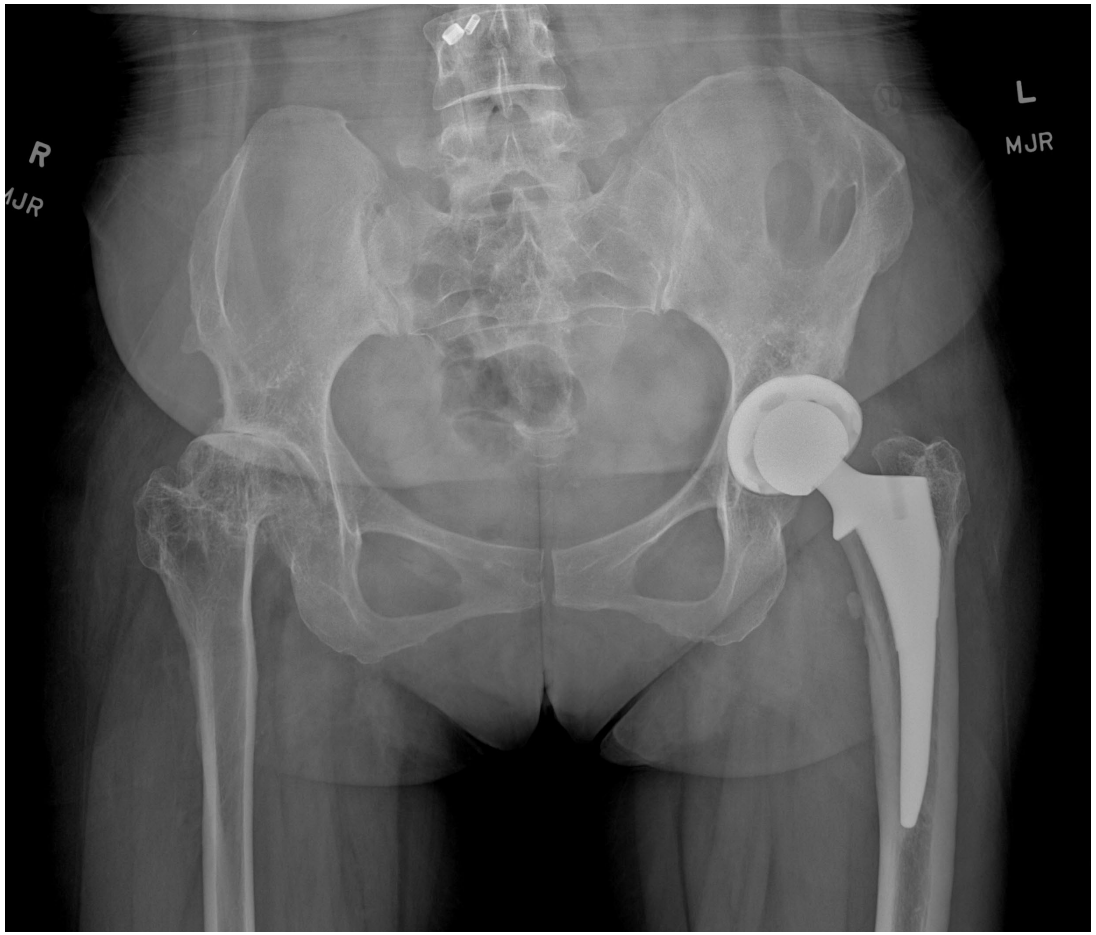
Case # 2

- 44yo F with a history of bilateral acetabular dysplasia (Left side did well after recent THA)
- Right side acetabular osteotomy + femoral derotation osteotomy in china as a child
- PMHx:
  - She's fine but had a prior DVT after surgery
- PE:
  - Ilioinguinal, Iliofemoral and a lateral incision
  - ¾ inch (2cm) short
  - Neuro-intact

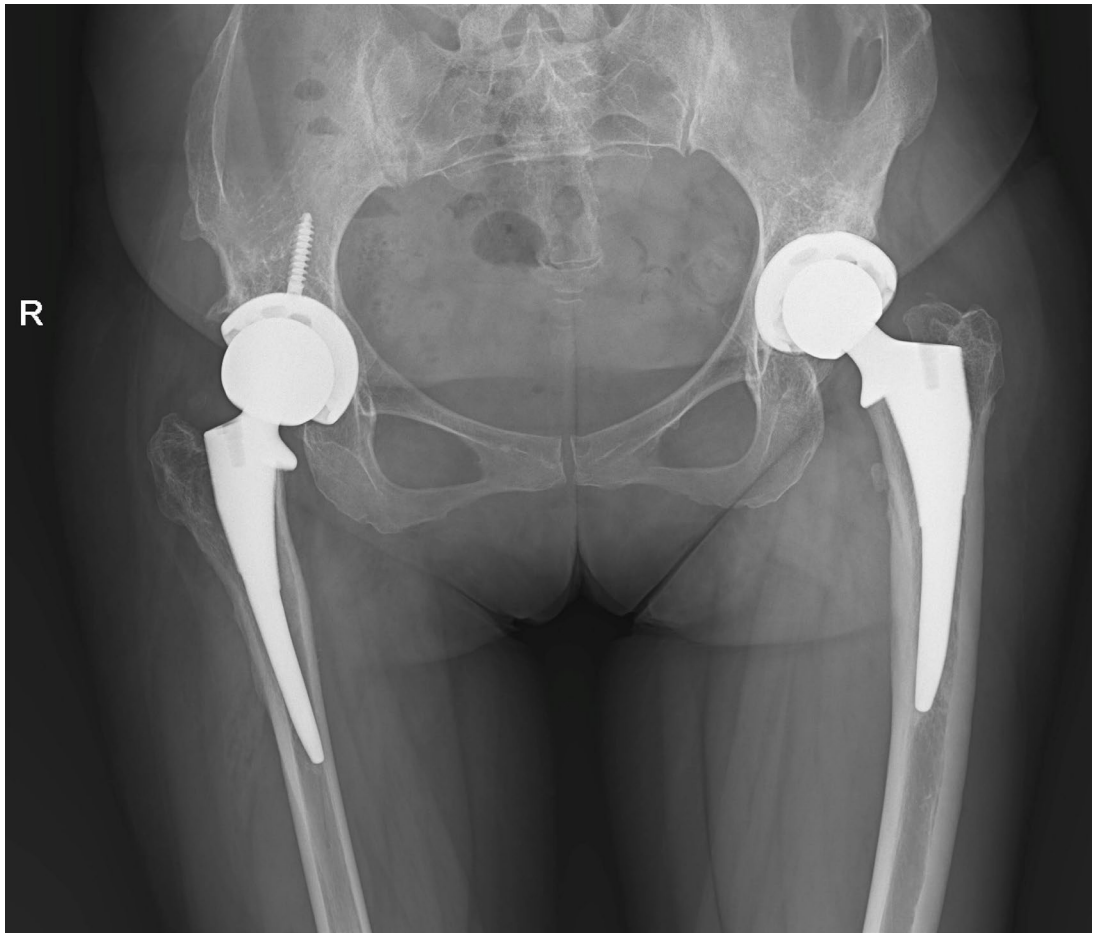
Case # 2



Case # 2: 44 yo dysplastic with prior Acetabular and Femoral Osteotomies



- What approach?
- Implant choice?
- Leg length discrepancy?
- Prior history of DVT…does it matter?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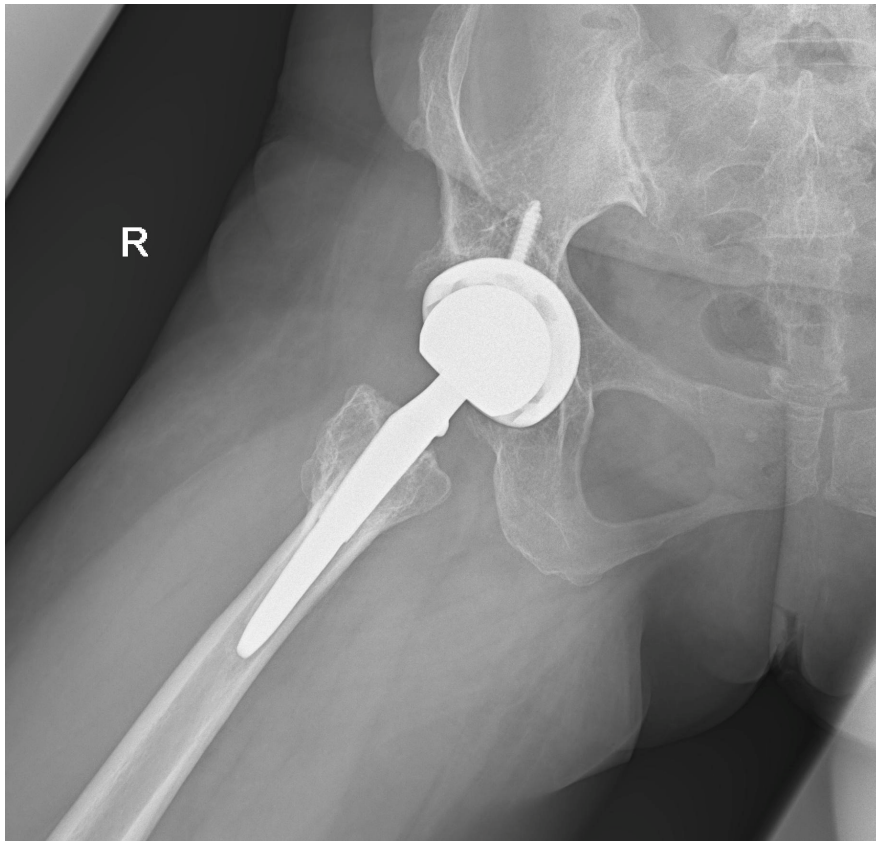
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Safety and Efficacy of Aspirin Compared to Enoxaparin Following Total Hip and Total Knee Arthroplasty Among Patients Who Have a History of Venous Thromboembolic Disease

Kevin C. Liu, MD, Kyle M. Griffith, MD, Mary K. Richardson, MD, Cory K. Mayfield, MD, Natalie M. Kistler, BS, Jay R. Lieberman, MD, Nathanael D. Heckmann, MD *

Department of Orthopaedic Surgery, Keck School of Medicine of the University of Southern California, Los Angeles, California

- All payer claims database (Premier Healthcare Database) queried 2015-2021
- Patients with prior VTE
  - ASA vs Lovenox 1:1 match
  - 1400 Hips
  - 2800 Knees
- Evaluated incidence of PE, DVT, bleeding events
- Knees:
  - Similar risk of PE,
  - Reduced risk of DVT, blood loss Anemia or transfusions

Table 5
Matched Complications of THA Patients Who Have a History of VTE Receiving Aspirin and Lovenox.

Complication	ASA, N = 1,429		Enoxaparin, N = 1,429		Bivariable Regression			Multivariable Regression		
	N	%	N	%	OR	95% CI	*P* Value	aOR	95% CI	*P* Value
Periprosthetic Joint Infection	14	0.98	15	1.05	0.93	0.45 to 1.94	0.852	0.9	0.42 to 1.94	0.795
Sepsis	7	0.49	9	0.63	0.78	0.29 to 2.09	0.617	0.47	0.15 to 1.43	0.182
Surgical Site Infection	2	0.14	5	0.35	0.4	0.08 to 2.06	0.273	0.25	0.03 to 2.10	0.201
Pulmonary Embolism	5	0.35	7	0.49	0.71	0.23 to 2.25	0.565	0.85	0.26 to 2.76	0.781
Deep Vein Thrombosis	16	1.12	15	1.05	1.07	0.53 to 2.17	0.857	1.12	0.53 to 2.36	0.76
Wound Dehiscence	7	0.49	7	0.49	1	0.35 to 2.86	1	0.8	0.24 to 2.69	0.721
Stroke	1	0.07	5	0.35	0.2	0.02 to 1.71	0.141	0.03	0.00 to 0.73	**0.031**
Pneumonia	6	0.42	9	0.63	0.67	0.24 to 1.87	0.44	0.32	0.09 to 1.11	0.073
Respiratory Failure	46	3.22	28	1.96	1.66	**1.03 to 2.68**	**0.036**	1.04	0.60 to 1.78	0.9
Myocardial Infarction	2	0.14	0	0.00	1	. to	.	1	. to	.
Acute Renal Failure	53	3.71	36	2.52	1.49	0.97 to 2.29	0.069	1.38	0.86 to 2.23	0.183
Urinary Tract Infection	33	2.31	23	1.61	1.45	0.84 to 2.47	0.179	1.47	0.84 to 2.58	0.179
Hematoma	11	0.77	7	0.49	1.58	0.61 to 4.08	0.348	1.59	0.57 to 4.43	0.379
Acute Blood Loss Anemia	314	21.97	330	23.09	0.94	0.79 to 1.12	0.474	0.85	0.71 to 1.03	0.091
Hemorrhage	3	0.21	3	0.21	1	0.20 to 4.96	1	0.80	0.12 to 5.18	0.817
Transfusion	52	3.64	41	2.87	1.28	0.84 to 1.94	0.247	1.17	0.75 to 1.82	0.481
90-day Readmission	84	5.88	82	5.74	1.03	**0.75 to 1.40**	0.873	0.96	0.69 to 1.33	0.798
90-day In-Hospital Death	2	0.14	4	0.28	0.5	0.09 to 2.73	0.423	0.07	0.00 to 1.61	0.097

Bold indicates $P < 0.05$.
THA, total hip arthroplasty; VTE, venous thromboembolism; ASA, aspirin; OR, odds ratio; CI, confidence interval; aOR, adjusted odds ratio.

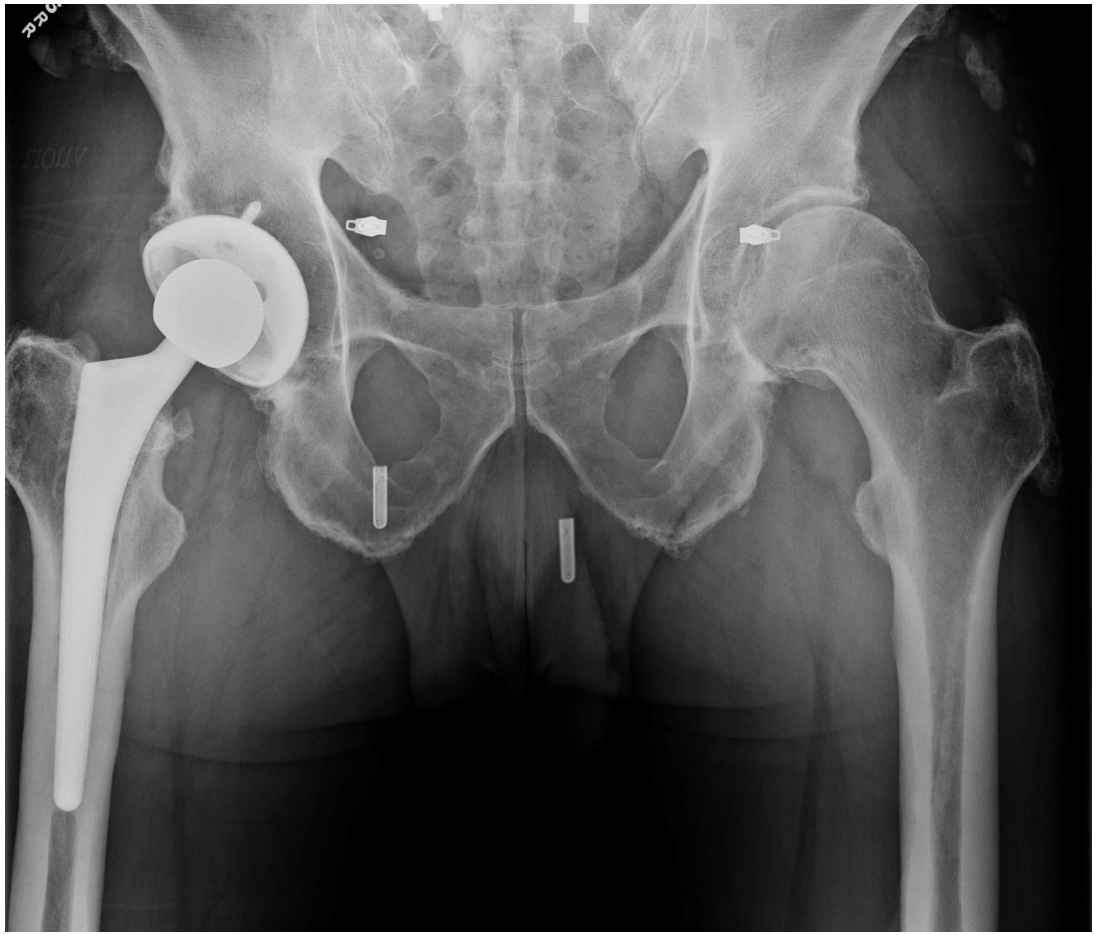
Case # 3

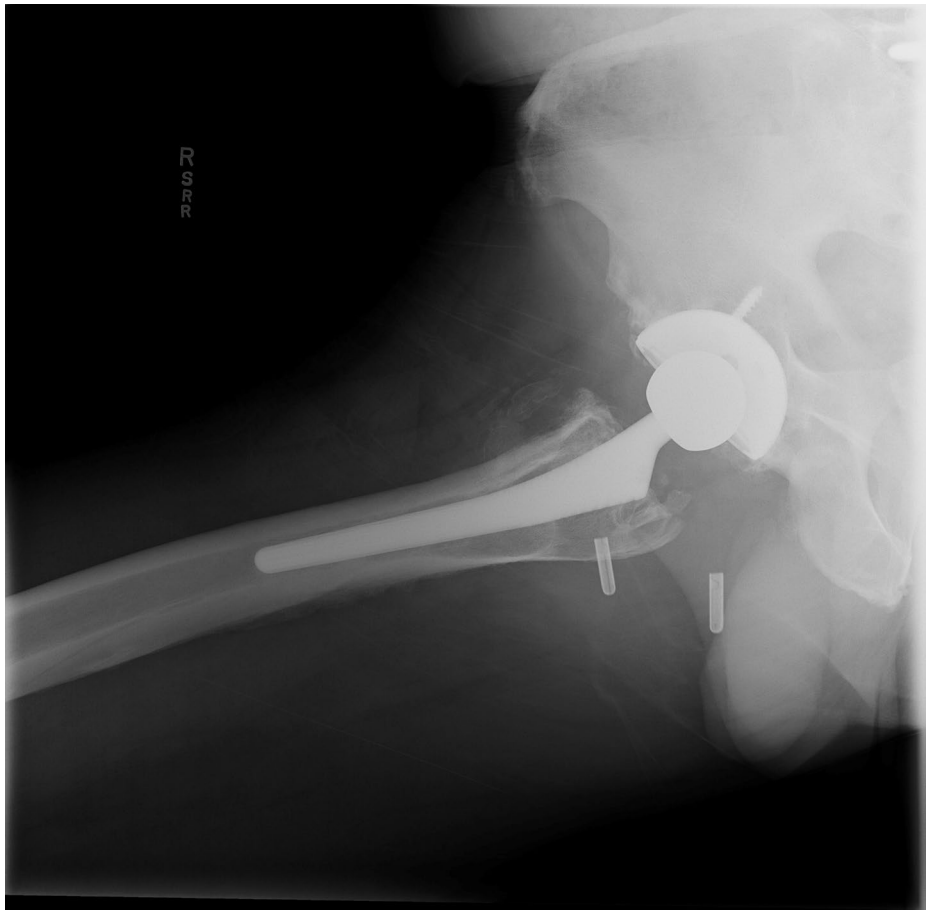
- 63 yo businessman s/p THA 2012, healthy active
- PMHx:
  - Ankylosing Spondylitis
- PSHx:
  - posterior spinal fusion in 2013

- Seen in April 2025 for mild right hip pain which resolved. No issues after.

- July 2025 – sustained 1st posterior dislocation while bending down to charge his phone followed shortly by another dislocation while turning in bed several weeks later.

Case #3





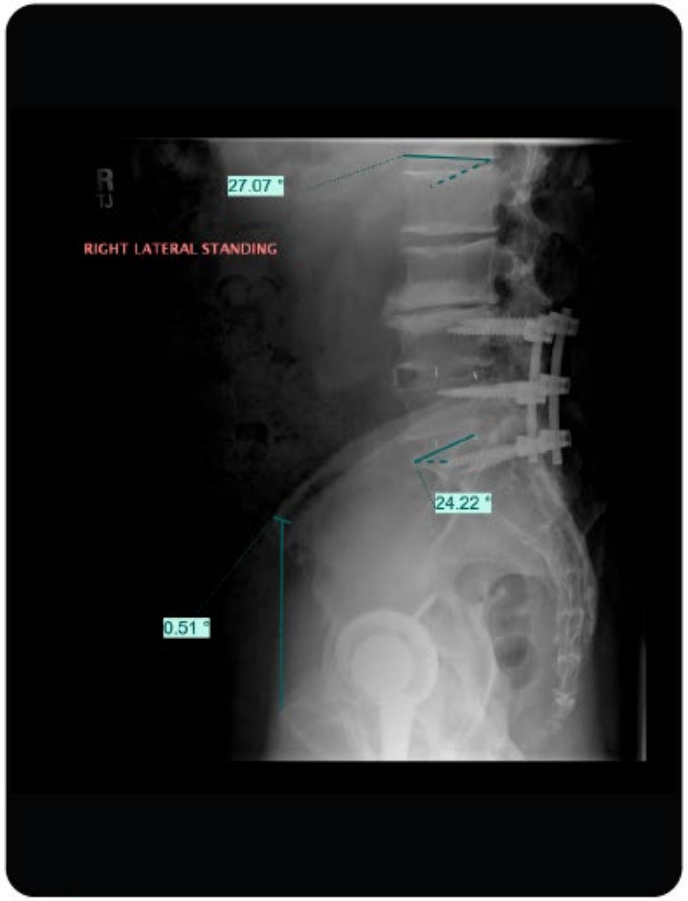
- Other diagnostic test?


L


2012
L MURO 1 2 3

Standing

Pelvic tilt	-1°
Pelvic rotation from supine to stand	-4°
Lumbar lordosis	27°

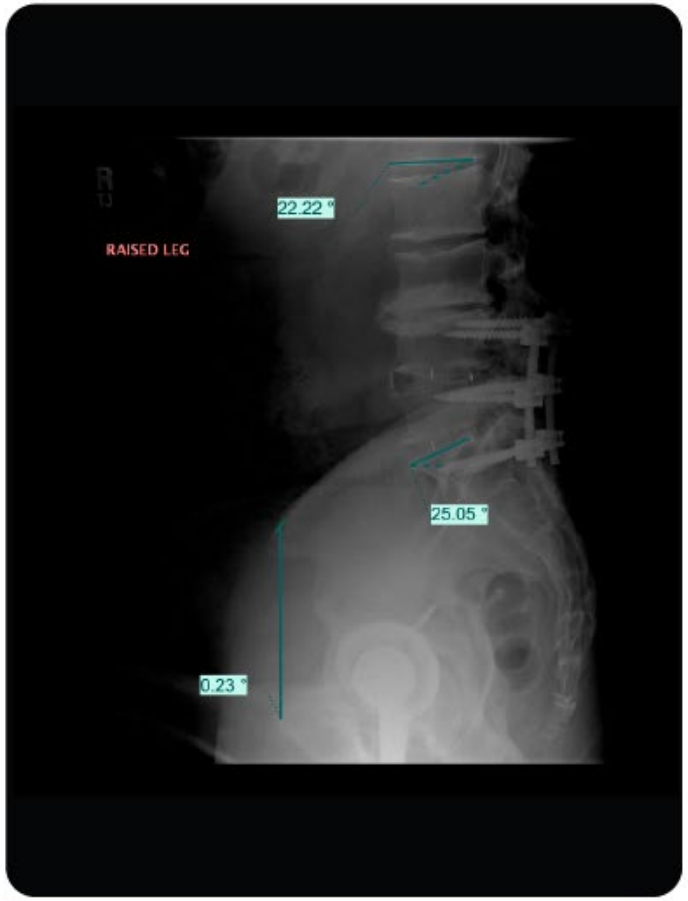


Flexed Seated

Pelvic tilt	+17°
Pelvic rotation from stand to seated	+18°
Lumbar lordosis	N/A

Step-up

Pelvic tilt	+0°
Pelvic rotation from supine to step-up	-3°
Lumbar lordosis	22°



Leg Length Measurements	Left	Right
Total limb length	874mm	875mm
Femur length	444mm	446mm
Tibia length	430mm	429mm
Hip length		
Femoral head height to G		

Femoral Measurement

Anatomical femoral versi

Femoral rotation

Functional femoral versi

Offset Measurements

Femoral offset	43mm	45mm
Acetabular offset	43mm	43mm
Global offset	86mm	88mm

	Supine	Stand	Seated
Combined version:	48°	50°	38°
Contralateral cup orientation:	N/A	N/A	N/A

Summary

- Spinopelvic profile: 0/5 risk factors identified.
- Limb length discrepancy: +1mm. Hip length discrepancy: +2mm.
- Functional Cup Orientations: 46°/21° Standing. 42°/9° Seated.
- Global offset discrepancy to contralateral: 2mm.

Leg Length Measurements

Figs 1-5 are based on generic anatomical models

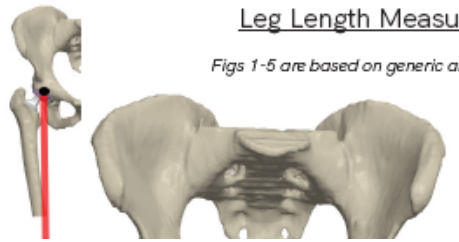


Fig 3

rement

Femoral Measurements

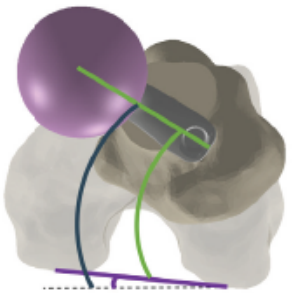


Fig 4

Functional femoral version = Anatomical femoral version + Femoral rotation

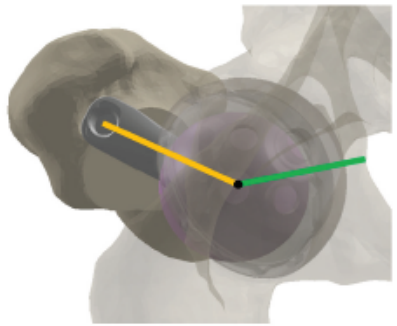


Fig 5

Global offset = Acetabular offset + Femoral offset

Spinopelvic risk factors

Supine-to-stand	-4°	Standing PT	-1°
Stand-to-seated	+18°	Lumbar flexion	N/A
		PI-LL mismatch	+11°

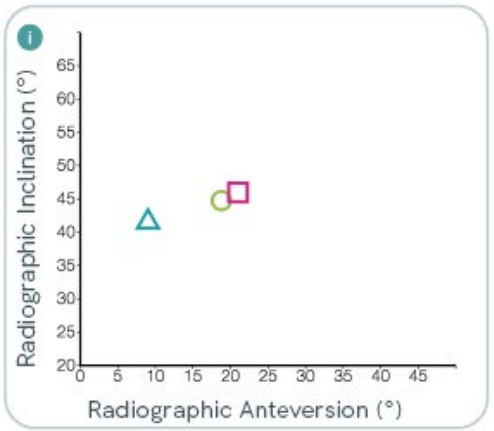
- Right limb length is 1mm longer
- Right hip length is 2mm longer
- Right hip has 2mm more offset

Functional cup analysis

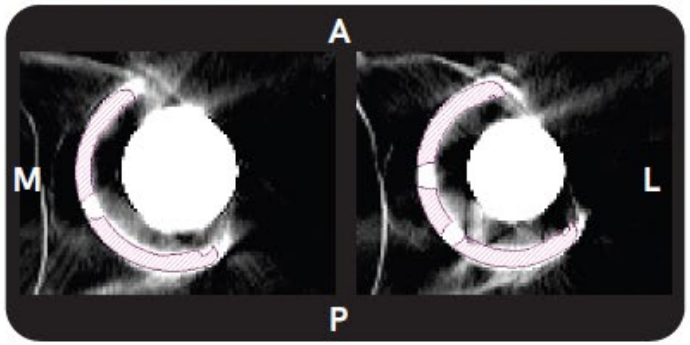
○ Supine
45°/19°

□ Standing
46°/21°

△ Seated
42°/9°

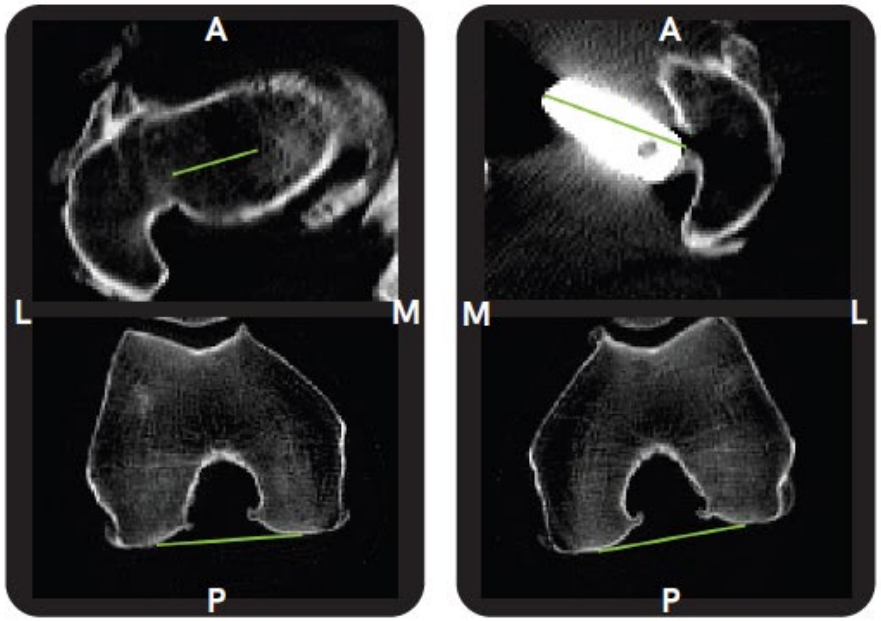


Centre of rotation (COR) 10mm above COR



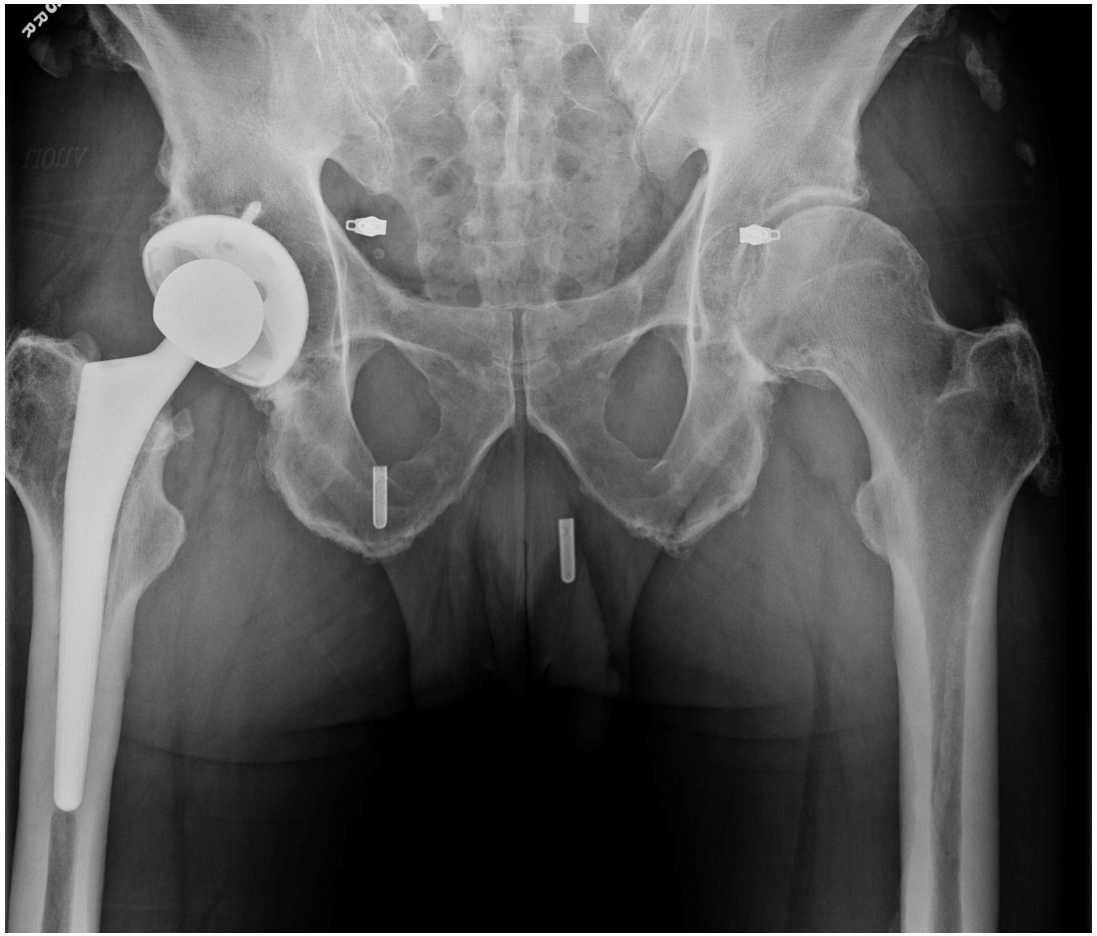
Left		Right
13°	Anatomical Femoral Version	29°

Top-down femur axial view:

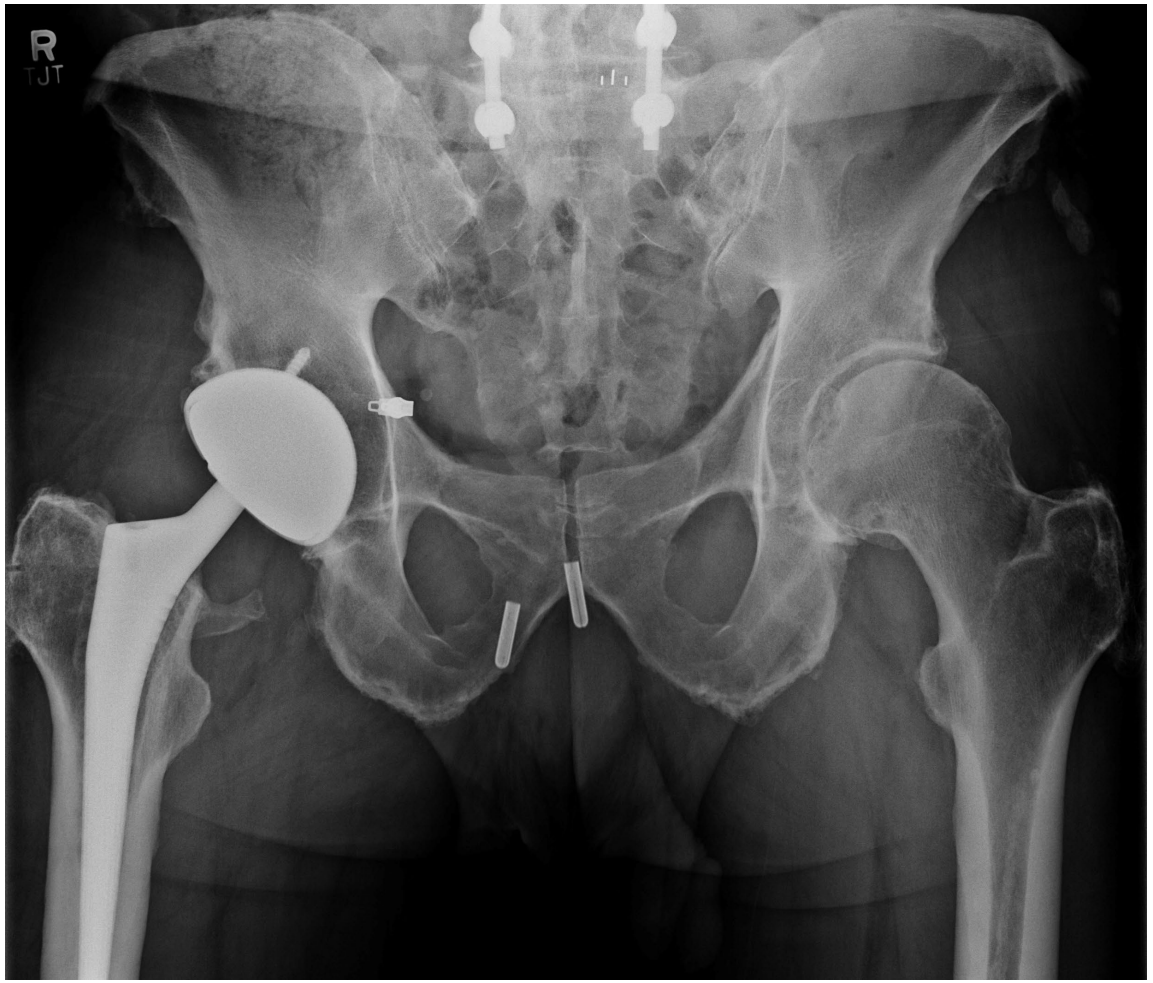


4°	Femoral Rotation	-10°
17°	Functional Femoral Version	19°

Case # 3: The Mysterious Dislocator

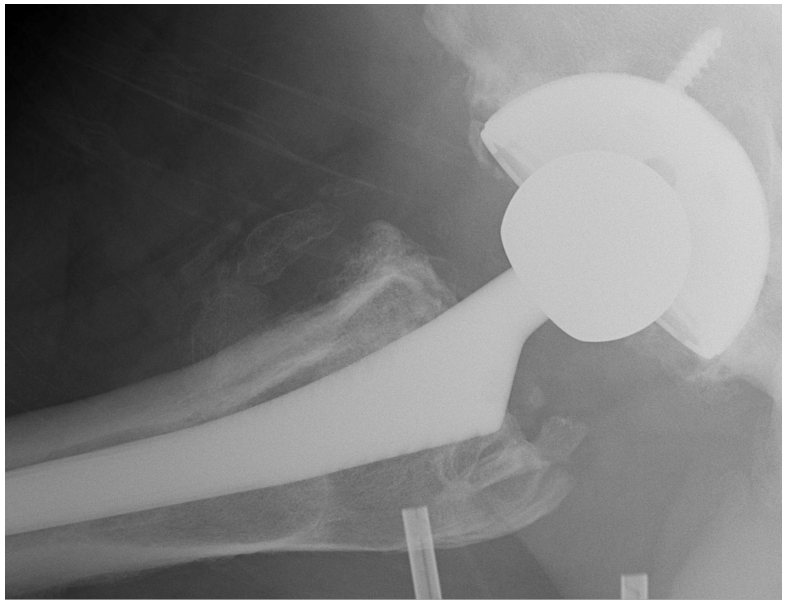


- Treatment Options?
- Precautions
- Other Considerations



Intraop Findings:

- Components well fixed
- Hip difficult to get into a position to dislocate
- Abductor Medius Tear with Mild retraction



Case # 4: My Albatross

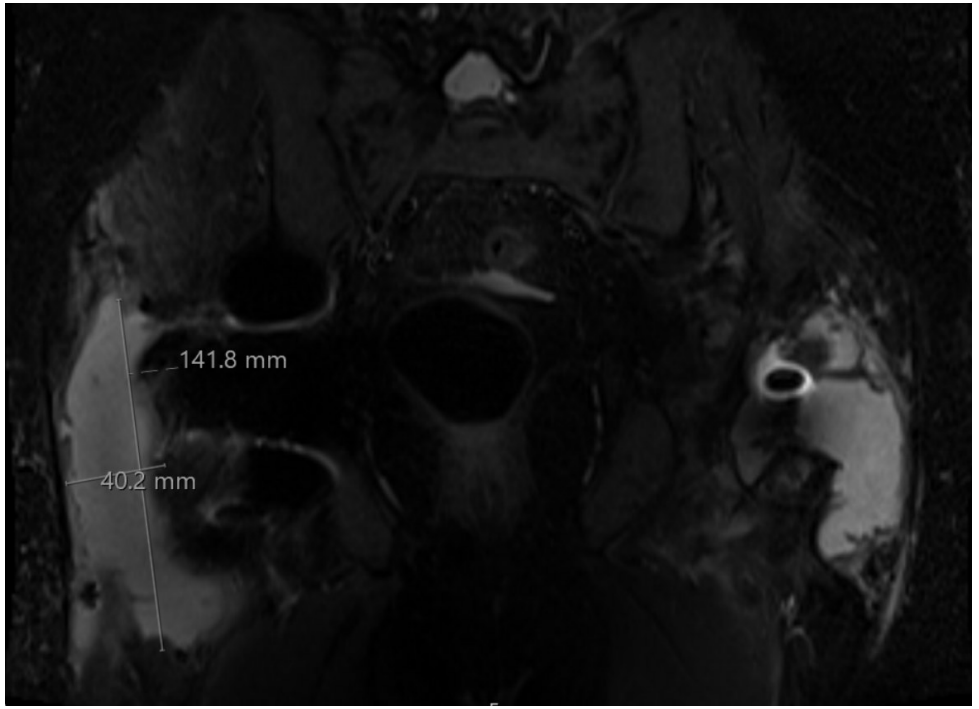
- 78 yo M
- PMHx:
  - Ankylosing Spondylitis
  - Prostate Cancer
  - Reccurrent DVTs on Eliquis
  - s/p Left femoral bypass
  - OSA
- Arthroplasty History
  - B THA ~45 years ago
  - Multiple Revisions on both sides (poor historian) for aseptic loosening
  - Rev RTHA 2020 for instability


Rime of the Ancient Mariner

- Patient contracted Covid
- Extended hospital stay in 3/2021
- Noted to have fracture of LEFT GT and osteolysis plan was for a revision Left total hip but patient was not medically optimized and delayed surgery

Case # 4: My Albatross

- 18 months later present to the ER with a cervical epidural abscess
- Tag WBC scan slightly elevated on the left hip
- Patient started complaining of pain in his LEFT hip.
- MRI obtained showed:
  - 7x9 cm LEFT hip effusion
  - 14x4 cm RIGHT hip effusion (Asymptomatic)
- Both hips aspirated showing purulent fluid. + MSSA



What to do?

- Bilateral DAIR?
- Bilateral Explants?
- One of each?

- DAIR of the RIGHT HIP
- Explant of the LEFT Hip
- After the LEFT hip procedure, pulses in left foot couldn't be palpated, concerned for vascular injury
- Vascular surgery consult: no vascular injury, vasospasm of his artery (has had a prior bypass on that leg).
- Immunology Consult: "Everything appears to be in working order"

Now What?

- Chronic Suppression?
- Live with the spacer?

Destination Spacer?

1.5-Stage Revision for the Treatment of Periprosthetic Joint Infection: A Systematic Review

Michael Khnanisho, BS [a, b], Carly Horne, BS [a, c], David G. Deckey, MD [a, d, *], Saad Tarabichi, MD [a], Thorsten M. Seyler, MD, PhD [d], Joshua S. Bingham, MD [a]

[a] *Department of Orthopaedic Surgery, Mayo Clinic Arizona, Phoenix, Arizona*
[b] *Albany Medical College, Albany, New York*
[c] *Lincoln Memorial University-DeBusk College of Osteopathic Medicine, Knoxville, Tennessee*
[d] *Department of Orthopaedic Surgery, Duke University, Durham, North Carolina*

- 13 Articles
- 924 Patients (704 knees, 228 hips)
- 556 patients (428 knees, 136 hips) had 1.5 stage
- Mean Follow up of 3.8 years

- Overall Success (Infection free survival) = 86.8%
- 6 of 13 studies evaluated 1.5 vs 2 stage
- 5 of 6 studies no difference in Infection free survival
- 1 showed 1.5 stage to be better than 2 stage

1.5-Stage Revision for the Treatment of Periprosthetic Joint Infection: A Systematic Review

Michael Khnanisho, BS [a, b], Carly Horne, BS [a, c], David G. Deckey, MD [a, d, *], Saad Tarabichi, MD [a], Thorsten M. Seyler, MD, PhD [d], Joshua S. Bingham, MD [a]

[a] *Department of Orthopaedic Surgery, Mayo Clinic Arizona, Phoenix, Arizona*
[b] *Albany Medical College, Albany, New York*
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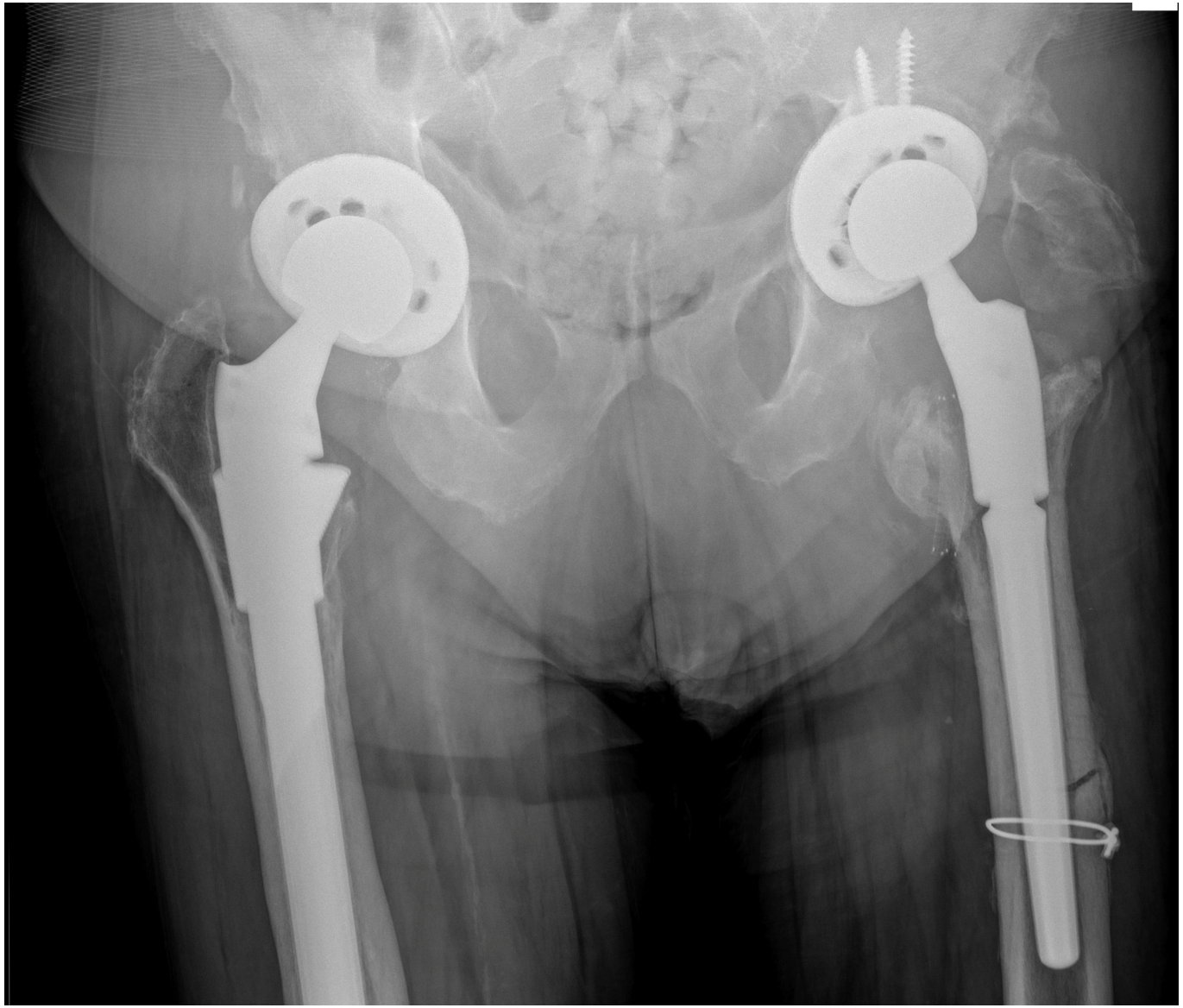
[d] *Department of Orthopaedic Surgery, Duke University, Durham, North Carolina*

Table 2
Study Outcomes of the 1.5-Stage Revision.

Study Number (n)	Number of Patients (n)	Number of Hips (n)	Number of Knees (n)	Successful Outcomes (%)	Failed Outcomes (%)	Mean Follow-up (years)
1	14	0	15	87	13	3.7
2	58	0	58	79.3	20.7	2.7
3	114	0	114	85.1	14.9	2.6
4	6	0	6	100	0	N/A
5	54	54	0	94	6	2.5
6	29	0	31	90	10	2.7
7	27	27	0	96.3	3.7	N/A
8	55	0	59	63	37	5
9	56	0	57	78.9	14	4.4
10	88	0	88	80.6	19.4	N/A
11	8	8	0	100	0	6.1
12	28	28	0	85.7	14.3	4
13	19	19	0	89	11	4



- Pt is ambulatory with walker
- 6 weeks of IV Abx
- 6 weeks of Oral Abx
- Off Abx for 2 months

- Starts to develop pain
  - ESR CRP normal
  - Aspiration negative
  - Revision 7 months post op

but there is more

- Patient taken off Chronic suppression and put back on his DMARS
- 13 months later RIGHT hip starts hurting with new erythema (~2 years following the DAIR)

- CRP 2.4, ESR 89
- Aspiration:
  - 31K WBC, 93% Neutrophils
  - Staph Aureus, again

- What do I do now?
  - Chronic suppression?
  - Another DAIR
  - Explant?

- Patient refused explant, another DAIR performed

Perioperative Demographic and Laboratory Characteristics of Failed Debridement, Antibiotics, and Implant Retention: Can We Determine Which Patients Will Fail?

Itay Ashkenazi, MD [a, b], Jeremiah Thomas, MD [a], Akram Habibi, MD [a], Theodor Di Pauli von Treuheim, MD [a], Claudette M. Lajam, MD [a], Vinay K. Aggarwal, MD [a], Ran Schwarzkopf, MD, MSc [a, *]

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Table 5
Logistic Regression for Significant Variables.

Value	OR	95% CI Interval	*P* Value
CCI	1.57	[1.17, 2.11]	.003
Procedure type	6.08	[2.02, 18.27]	.001
CRP	1.06	[1.01, 1.11]	.014
Synovial WBC[a]	1.14	[1.04, 1.25]	.008
Synovial PMN%	1.05	[1.01, 1.09]	.015
LOS (d)	1.21	[1.06, 1.40]	.006

CCI, Charlson Comorbidity Index; TKA, Total Knee Arthroplasty; CRP, C-Reactive Protein; WBC, White Blood Cell; PMN%, Polymorphonuclear Cell Percentage; LOS, Lengths of hospital Stay.
[a] Odds ratio refers to the increase in risk for failed treatment for every increase in 10,000/mL cell.

- Single Institution Retrospective Review of Failed DAIRs
- 83 patients DAIR with 3 months of index surgery
- Minimum 1 yr follow up

- Knees were more likely to fail a dair

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Table 3
Diagnostic Laboratory Values.

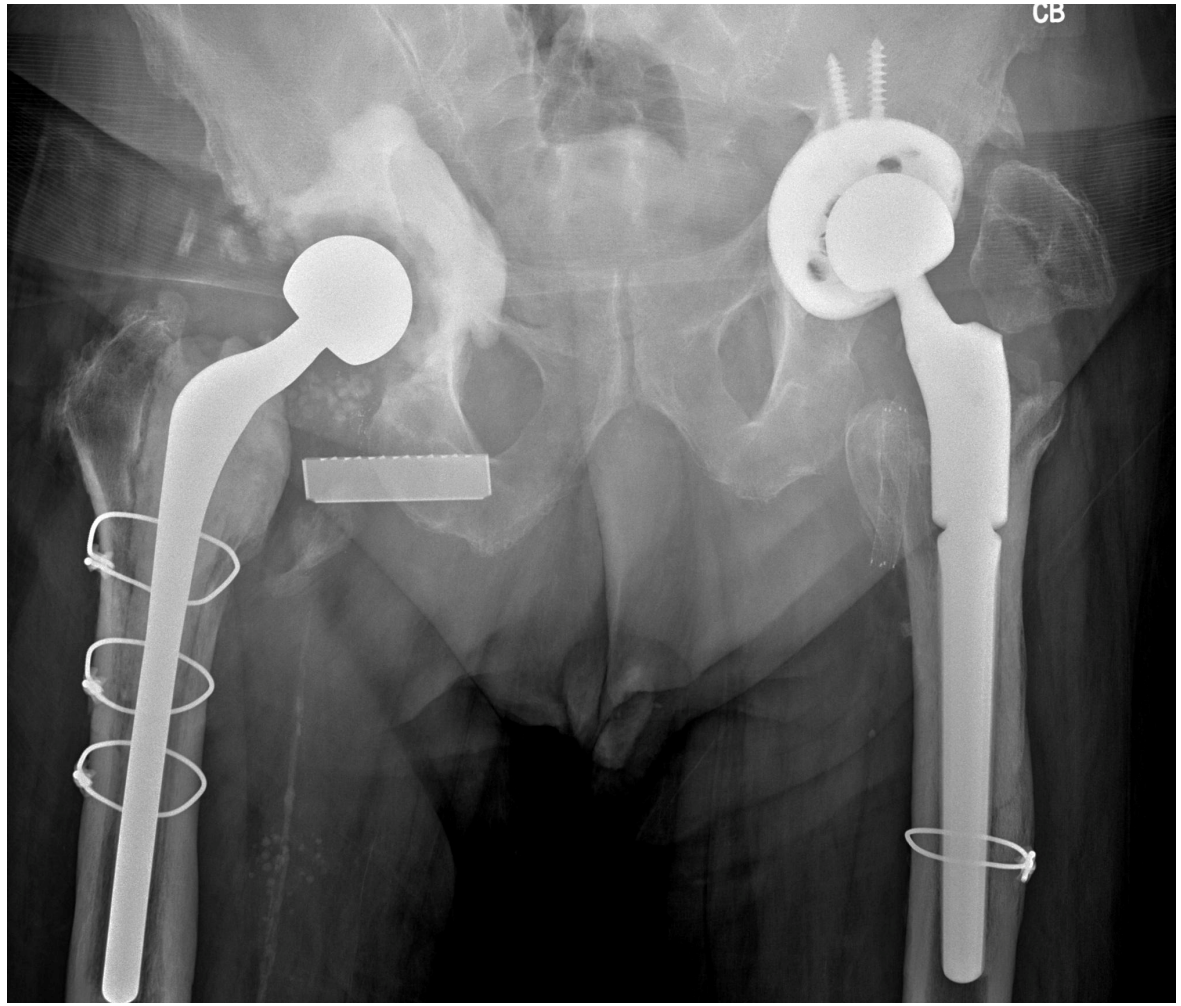
Value	MSIS 1/2 (n = 51)	MSIS 3/4 (n = 32)	*P* Value
CRP (mg/L) [range]	96.0 [1-270]	159.3 [9-478]	.010
ESR (mm/h) [range]	60.2 [13-140]	74.7 [5-140]	.078
Mean time to joint aspiration (d) [range]	40.9 [9-89]	36.8 [7-84]	.403
Synovial WBC [range]	23,717 [75-190,296]	65,672 [1,639-338,175]	.002
Synovial PMN% [range]	75.9 [14-96]	88.0 [43-100]	.001
Culture result[a]- no. (%)			.809
Culture-negative	6 (12.0)	4 (12.5)	
Gram-positive[a]	36 (72.0)	25 (78.2)	
Gram-negative[a]	11 (22.0)	6 (18.8)	
Culture status- no. (%)			.923
Culture-negative	7 (13.7)	4 (12,5)	
Monobacterial	38 (74.5)	25 (78.1)	
Polybacterial	6 (11.8)	3 (9.4)	

MSIS, Musculoskeletal Infection Society; CRP, C-Reactive Protein; ESR, Erythrocyte Sedimentation Rate; WBC, White Blood Cell; PMN%, Polymorphonuclear Cell Percentage.

[a] Patients with both gram-positive and gram-negative bacteria were included in both categories.

Guess what???


4 Months later
+ Right Hip sinus tract in spite of chronic suppressions

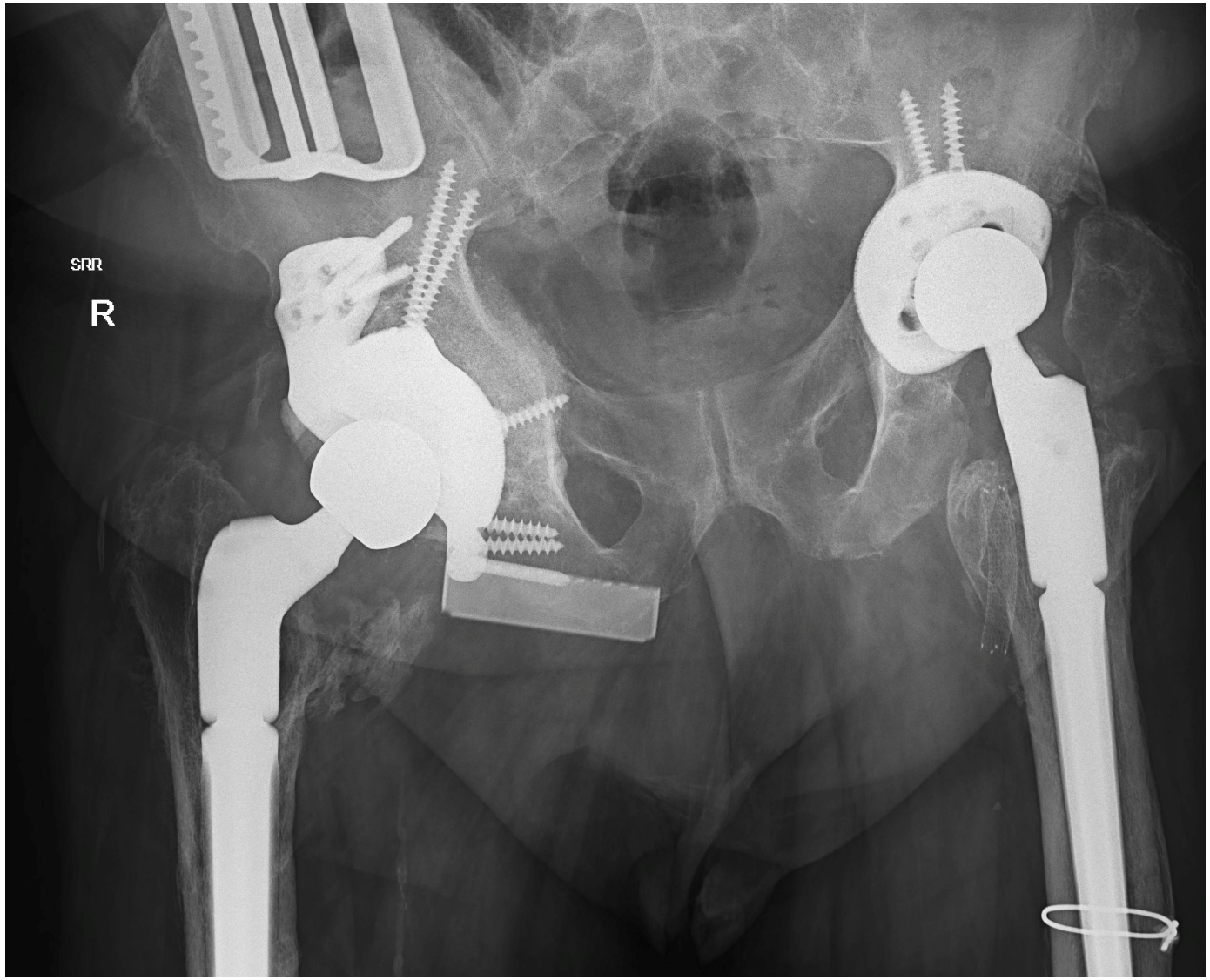


- Live with it?
- Weight bearing?

- Did well for 18 months then…new pain? Maybe?
- ESR CRP normal
- Aspiration negative

What now?

The end??



Hoag Orthopedic Institute