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Periprosthetic Fracture Management - Acetabulum



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Peri-prosthetic Epidemic??



Increasing incidence

- Prevalence arthroplasty
- “Graying of America”
- Increased lifespan
- #1 rising diagnosis = peri-prosthetic femur fracture (OTA, 2003)

DAYTON, **December 1, 2006** - A major accident occurred on SH 321 at Old Cleveland Road in Dayton around 6:50 PM on Friday. Old Cleveland Road is just north of the overpass on SH 321 north of Dayton.



JP

PECK, JOHANNA
88Y 3M F SW 142433
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Series Desc: AP
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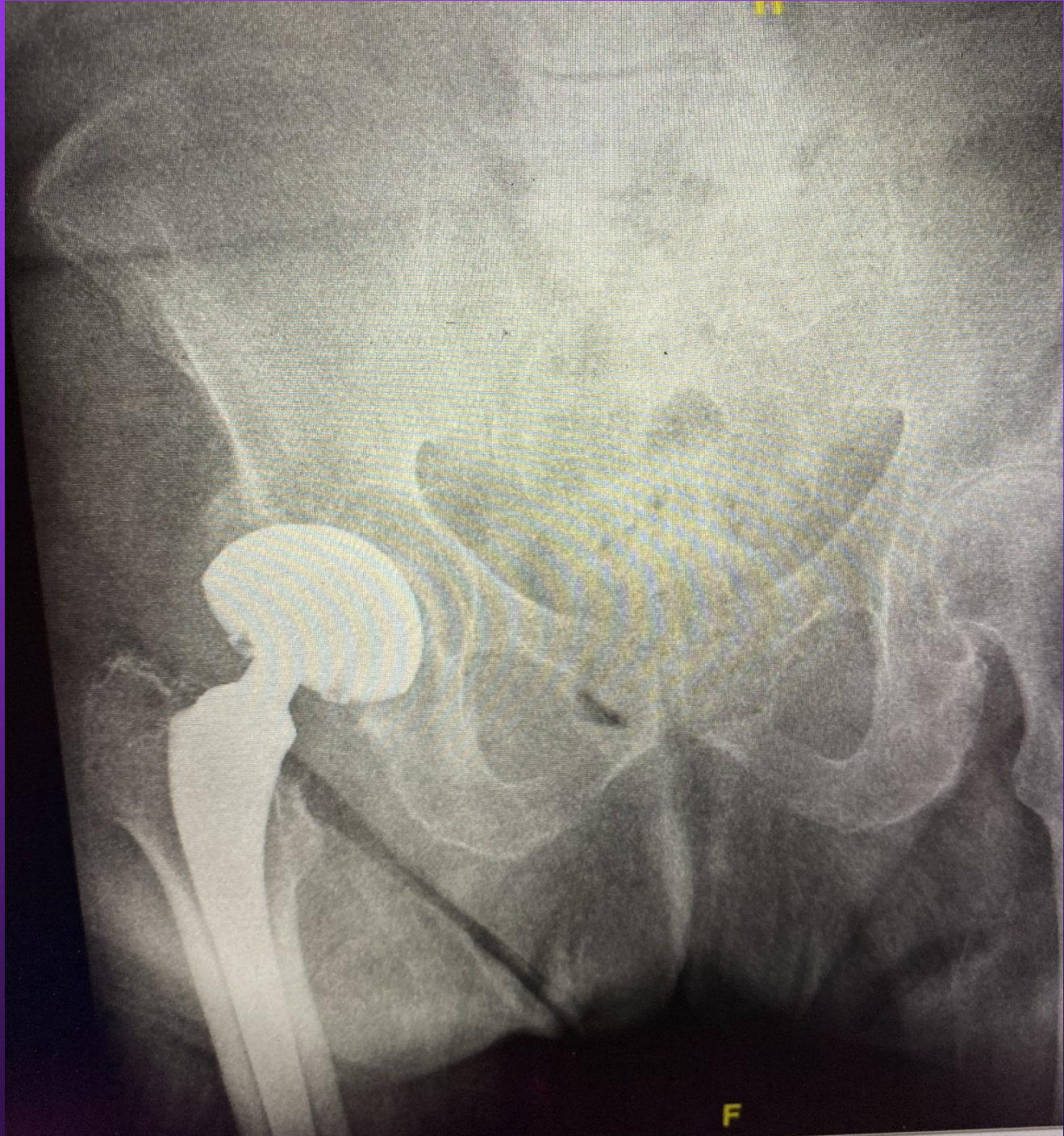
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Falls

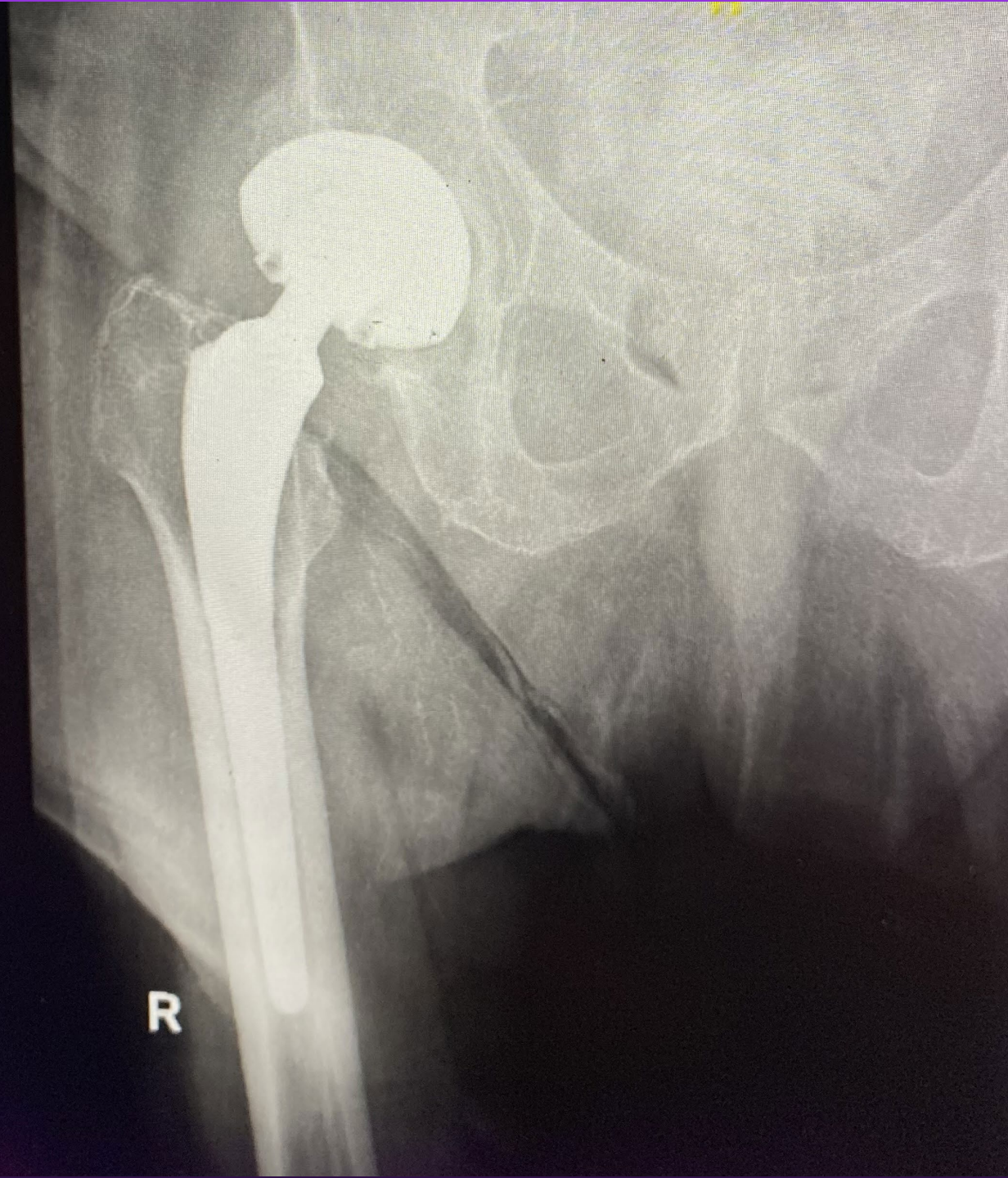




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199

2+V RT

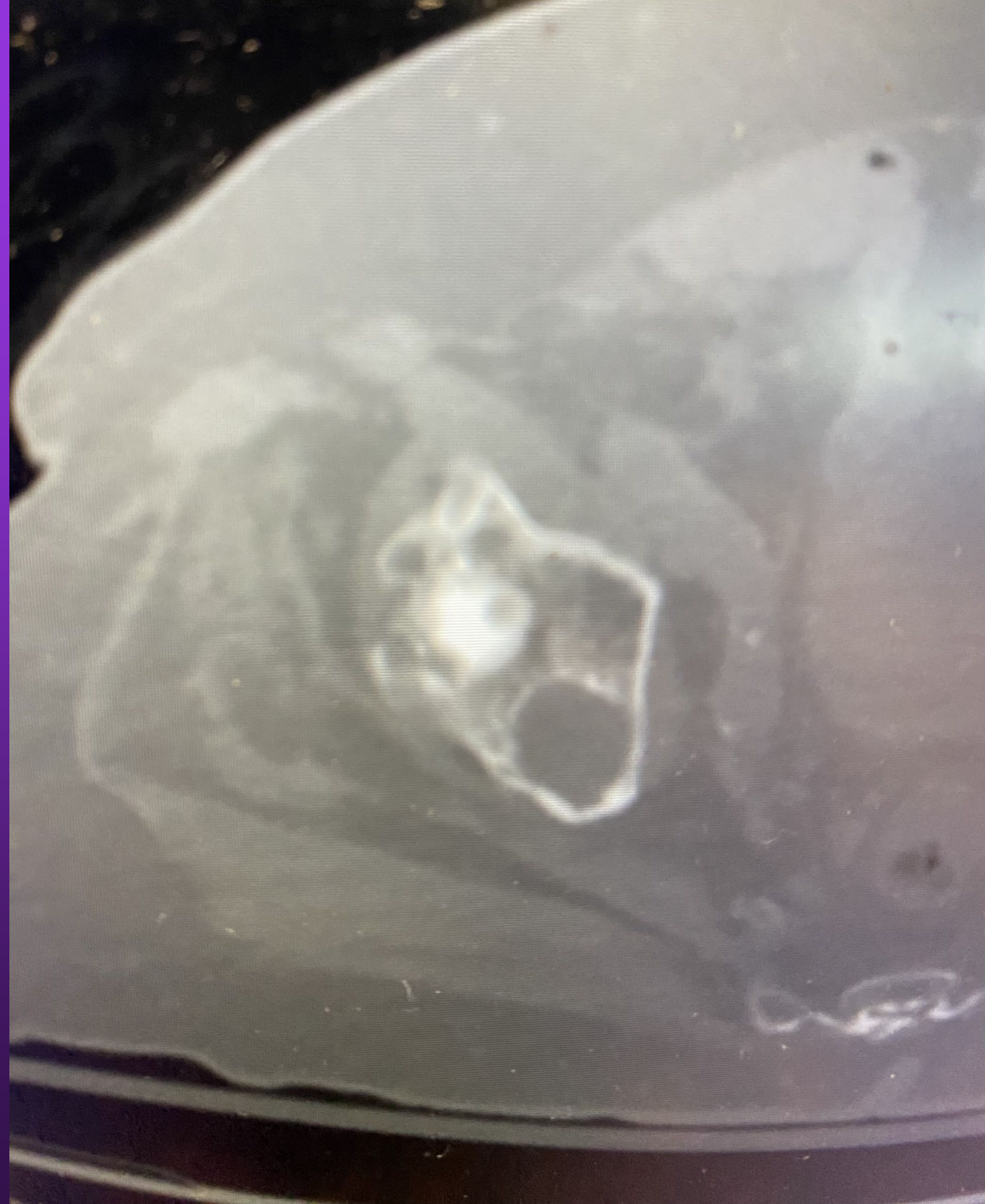


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Portable











“A MAN’S GOT TO KNOW HIS LIMITATIONS”

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88Y 3M F SW 142433
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Principles



- Rule out infection (esr, crp, wbc, alpha defensin, synovial elastase, pcr, etc)
- Stem stable - Hx, PE, CT

Aspiration

- Indications – previous infection, elevated inflammatory markers, suspected infection, distinguish between hip joint and extrinsic causes
- Problems – sampling error (culture <1% of bacteria and only 50% successful in face of infection), on antibiotics already (wait 1-2 weeks)

Aspiration

- Alpha defensin – protein produced by body in the face of infection independent of antibiotics or prosthesis
 - 96% accurate
 - False negative
 - Sent to outside lab

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- 69yo with significant pain with ambulation but constant pain
- Elevated ESR and Crp
- No thigh pain
- Pain in groin with flexion
- Aspiration +alpha defensin, -culture

Options



- One stage
- Two stage
- Partial resection

Principles of Debridement

- Tumor surgery
- All devitalized tissue removed
 - includes skin, muscle, and bone
- Reprep and drape

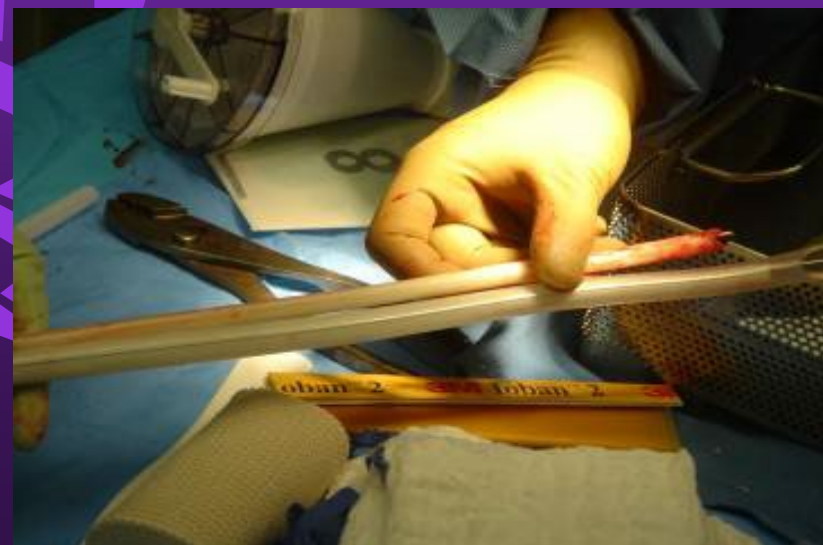
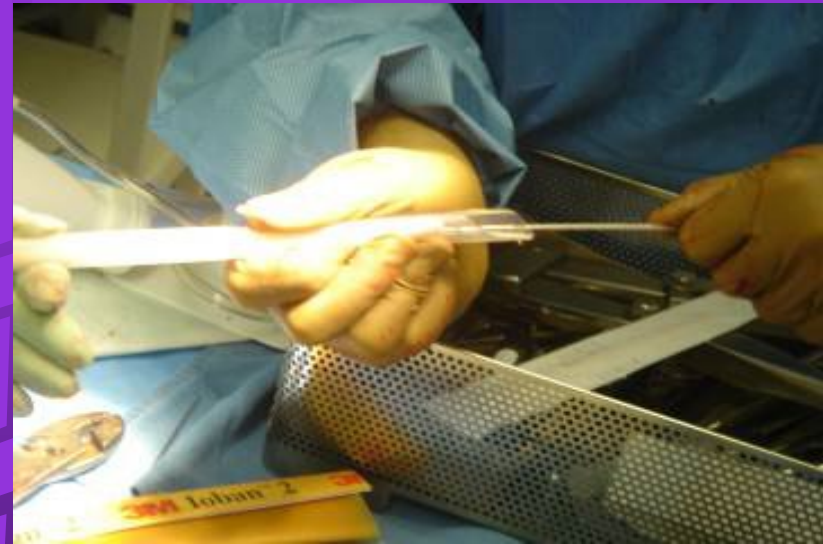
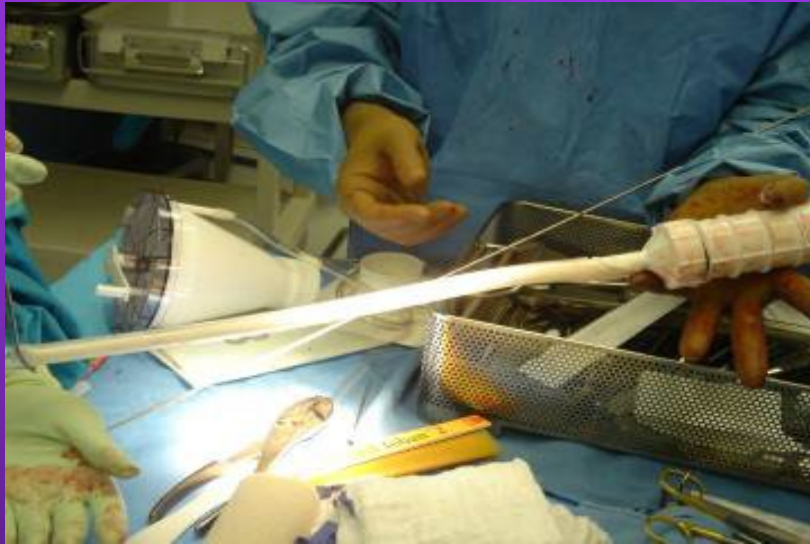
Preop

- Prevent infection – **obesity**, metabolic disease, remote infection, **prolonged hospitalization**, steroids, **diabetes (Hgb A1c – cardioprotective)**, immunosuppressed (HIV, rheumatoid arthritis ...etc), age, transplant
- Jehovah Witnesses – cell saver, txa, aquamantys

Preop

- Antibiotics and antifungal, 36 gauge chest tube, mineral oil, guide rod
 - Tobramycin cement with additional 3 vials (1 gr each) and 3 vials of vancomycin and if open for a while or positive cultures 3 vials (500mg) of amphotericin all per bag
- Heat stable antibiotic specific for cx
- Hemovac, incisional vac

TECHNIQUE OF ABX ROD



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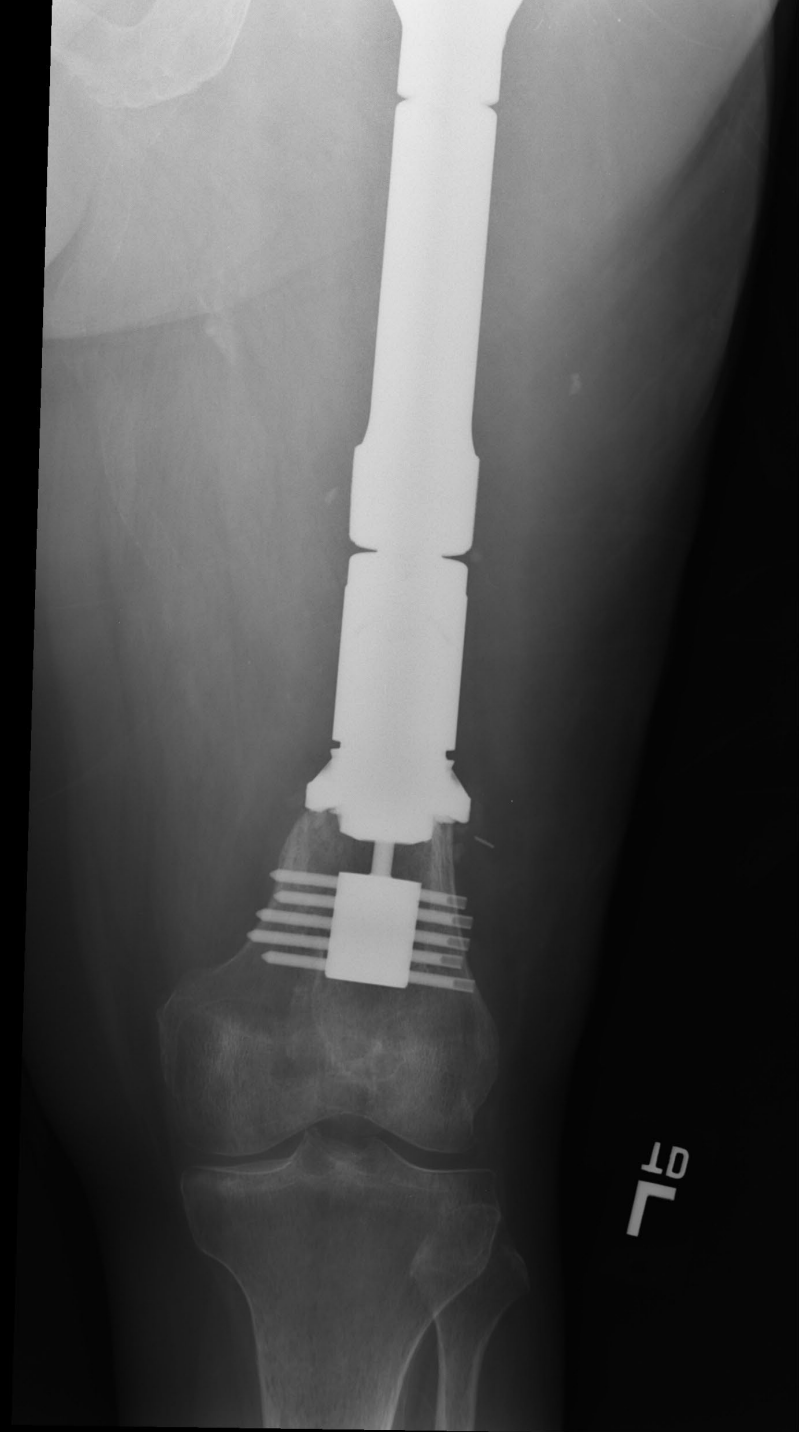
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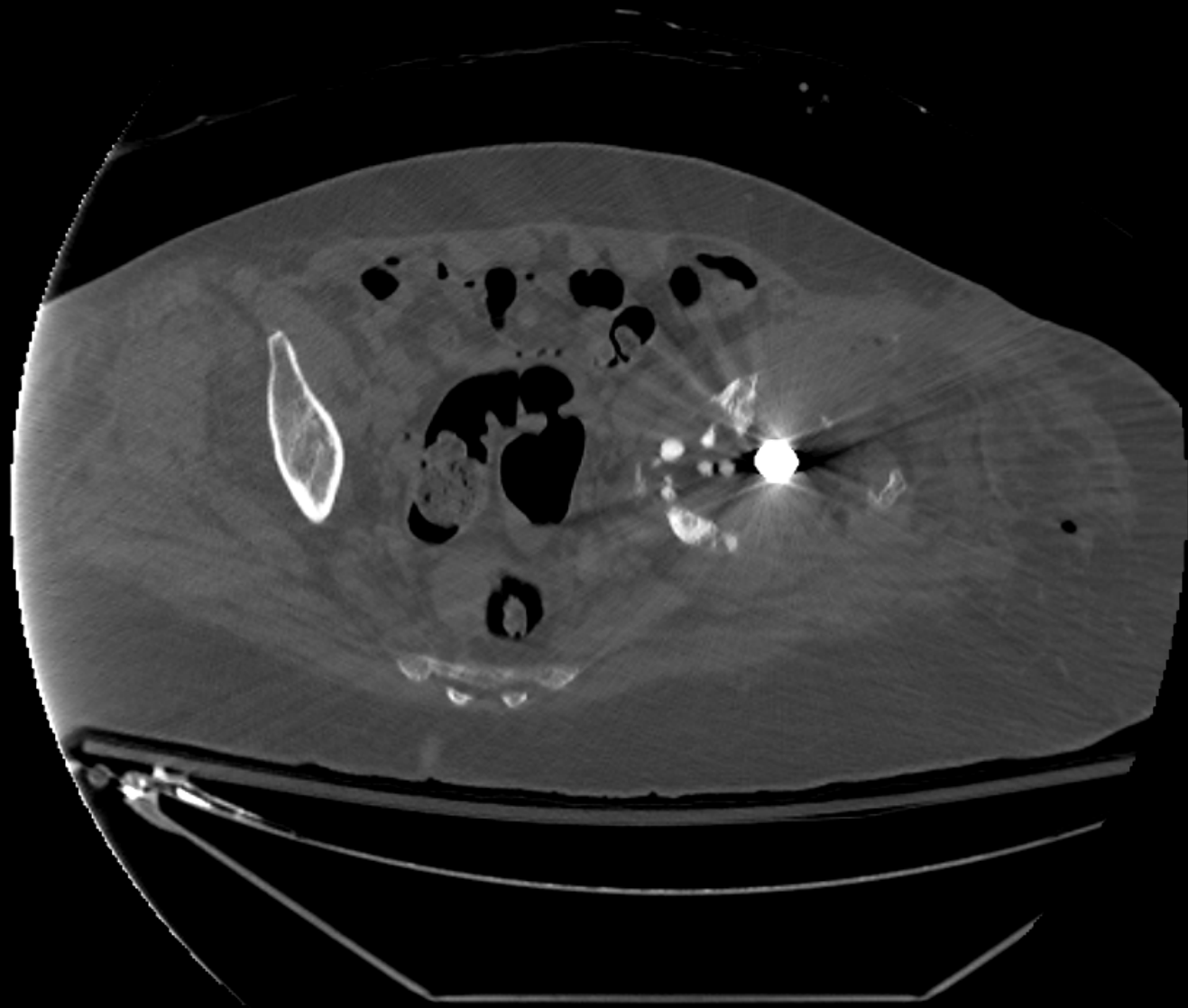
Infection Protocol

- 6 weeks iv abx
- WBC, ESR, Crp at 6 weeks and 7 weeks (see them decrease or stay the same)
- 7 weeks aspiration for cx and alpha defensin
- 8 weeks either revision or repeat debridement (record 5 debridements before implant)

CT scan

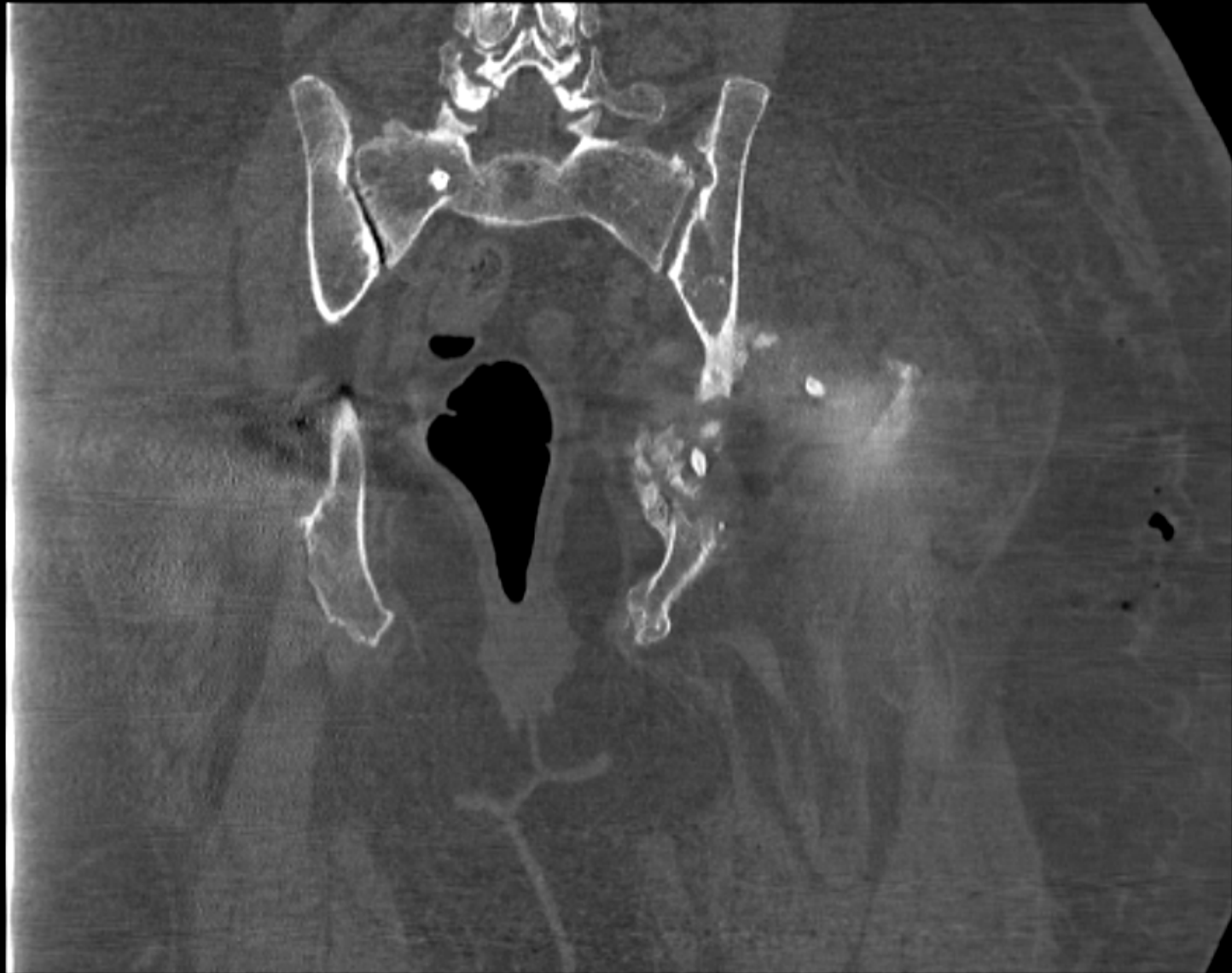
- Loosening – lack of spot welding
- Defects – contained vs how to contain
- Fractures – pelvic discontinuity

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Principles

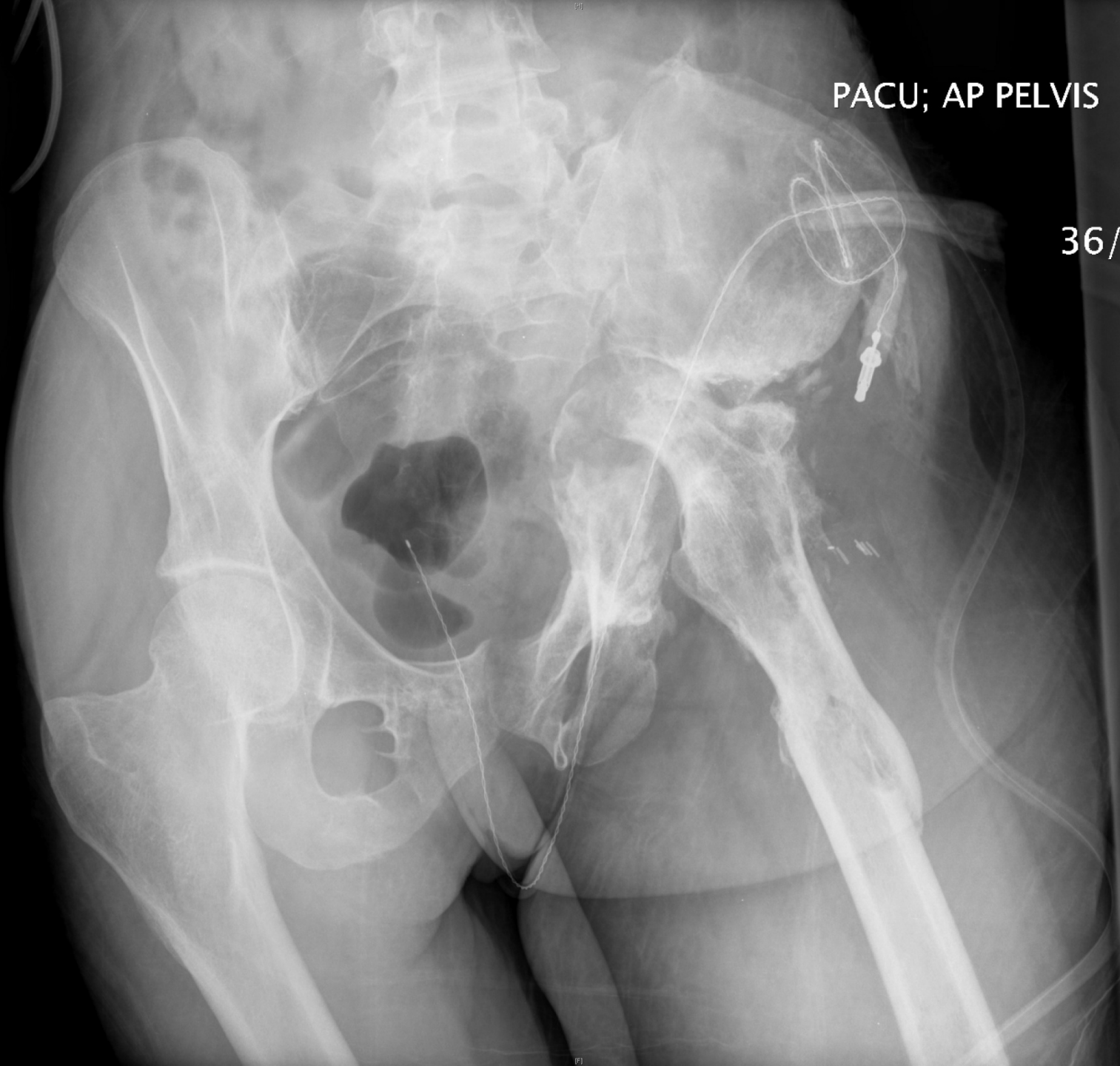
- Stability of cup
 - Solid host bone – jumbo cup, oblong cup, cup cage cup construct
 - Contained defect vs need to create contained defect with mesh
 - Fracture or pelvic discontinuity that requires separate fixation

PACU; AP PELVIS



36/72

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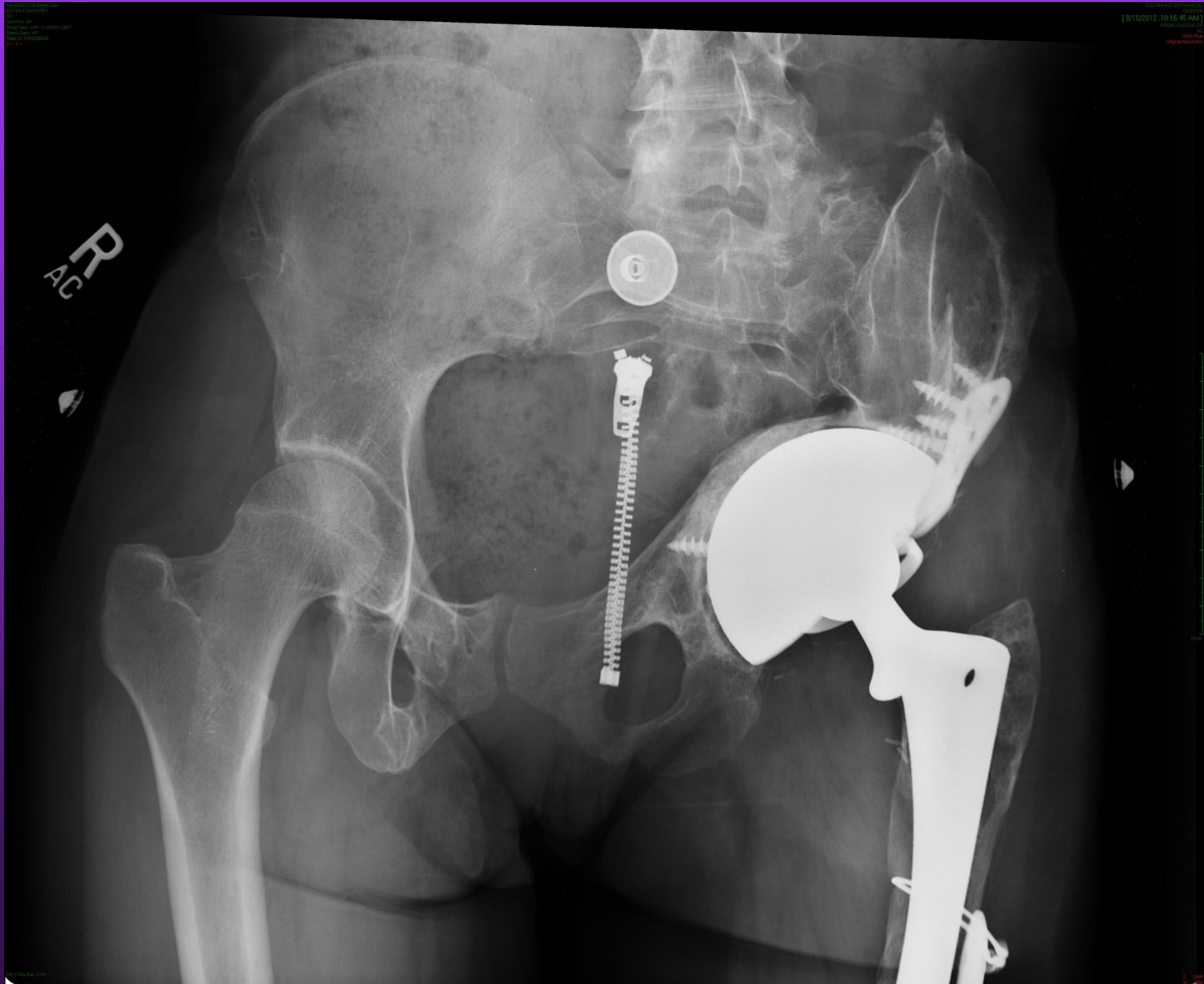


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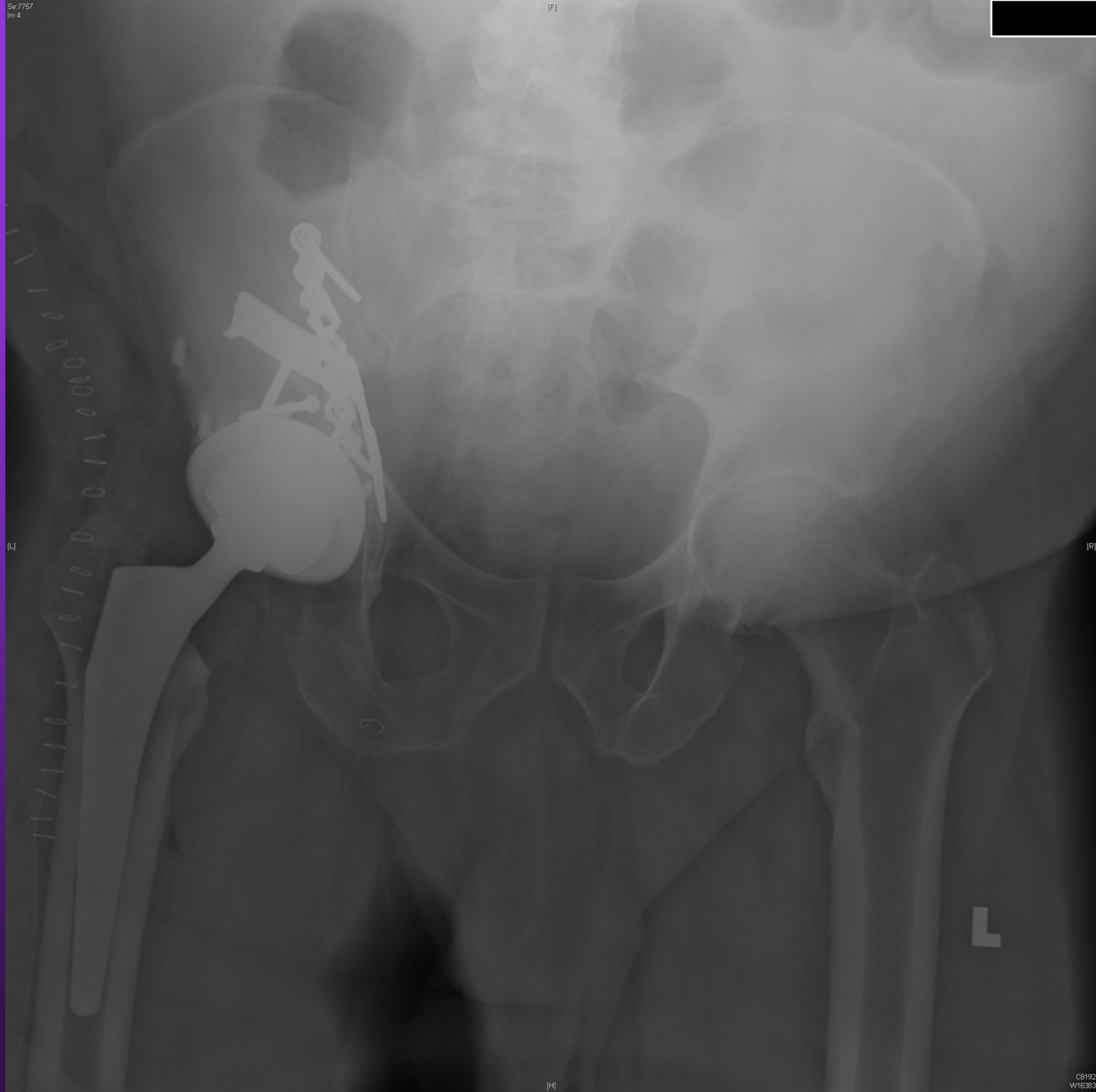


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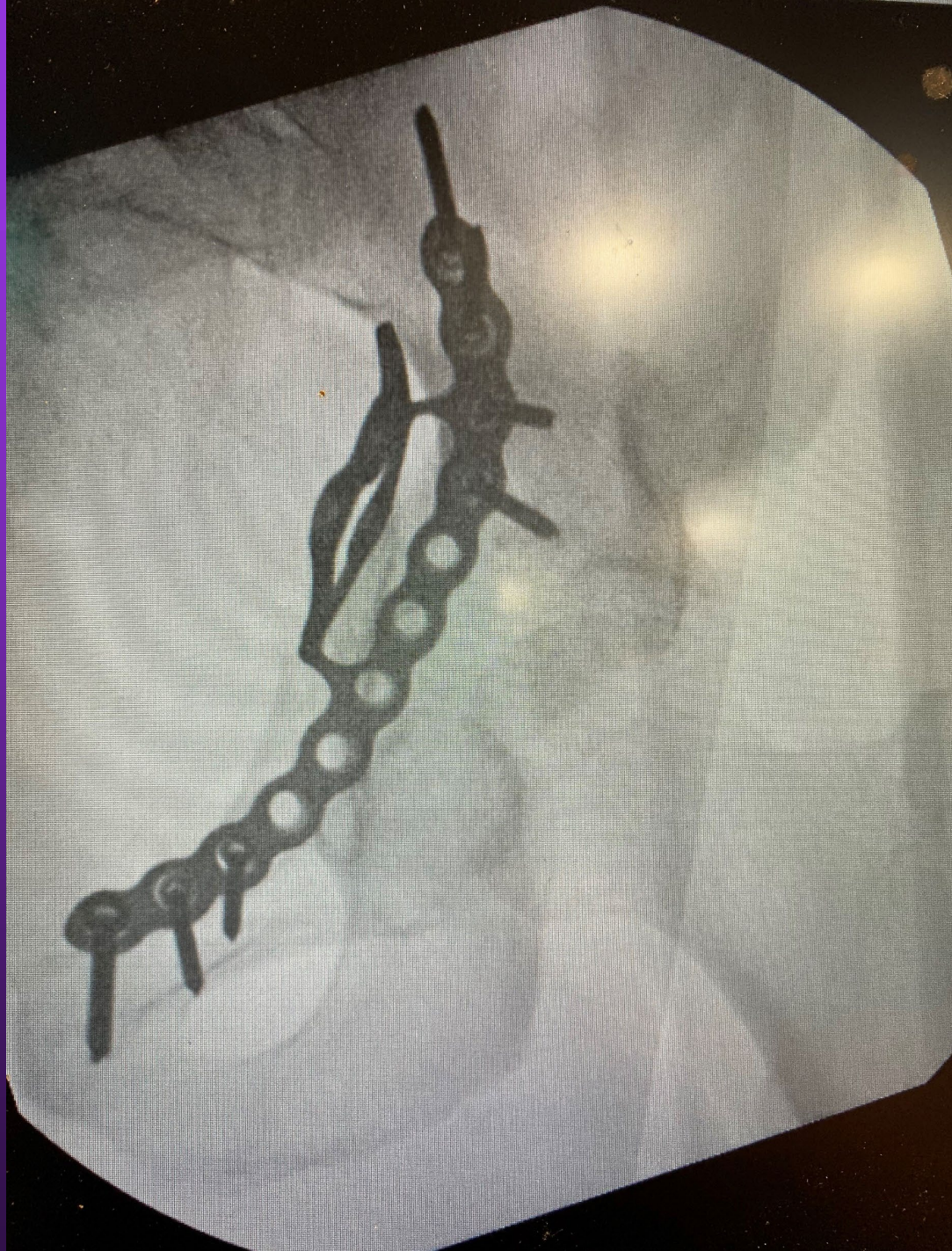
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Principles

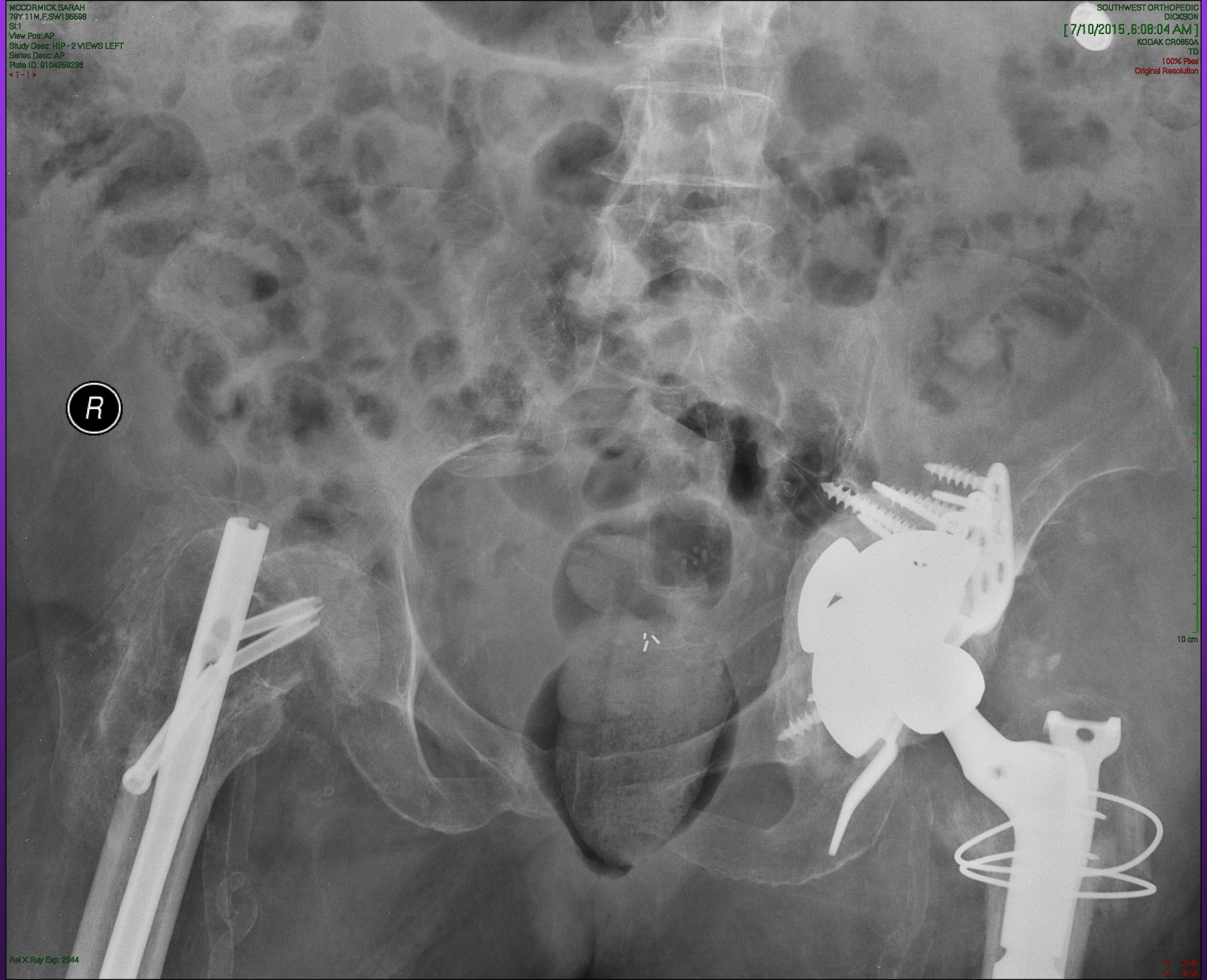
- Stable rim vs create a stable rim with tantalum augment
- Allograft reaming vs bulk – stable fixation and trabecular lines maintained
- Restore hip center but elevation does not increase joint reaction forces

SM

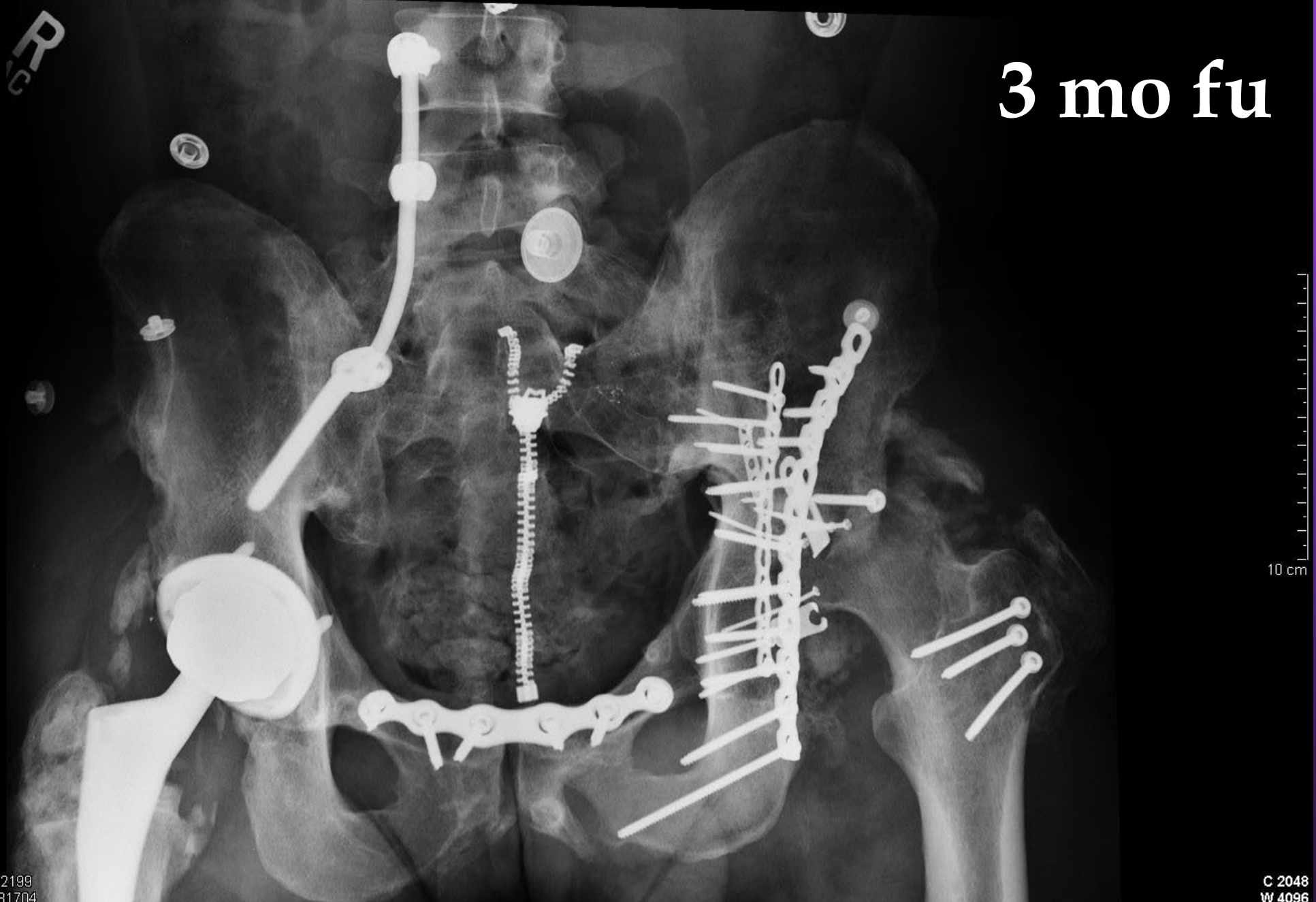
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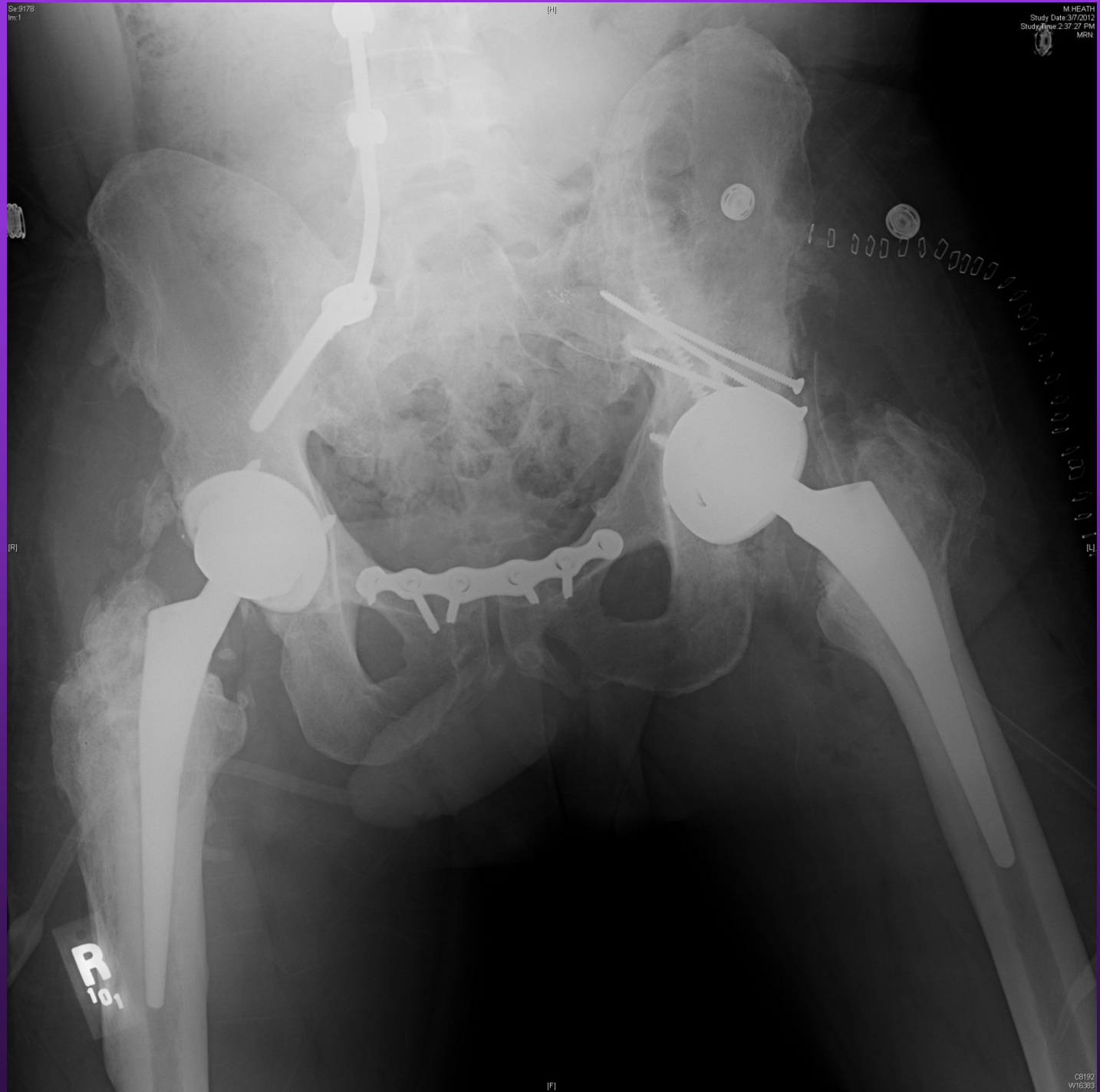
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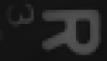
Post op



- Bulk graft can take 8 months to incorporate
- Reamings for contained (both with and without augmentation) 3 months



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PACU PORTABLE





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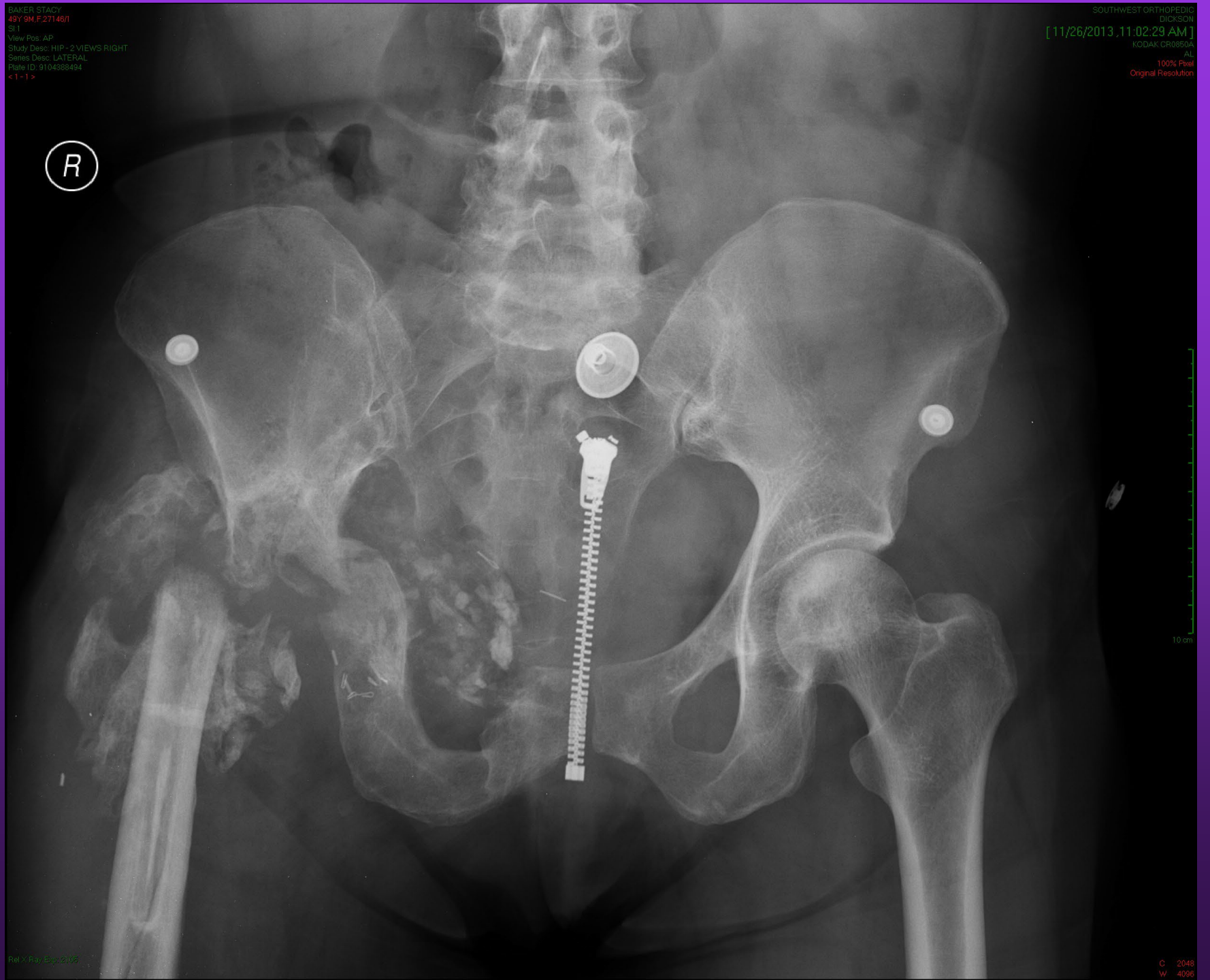
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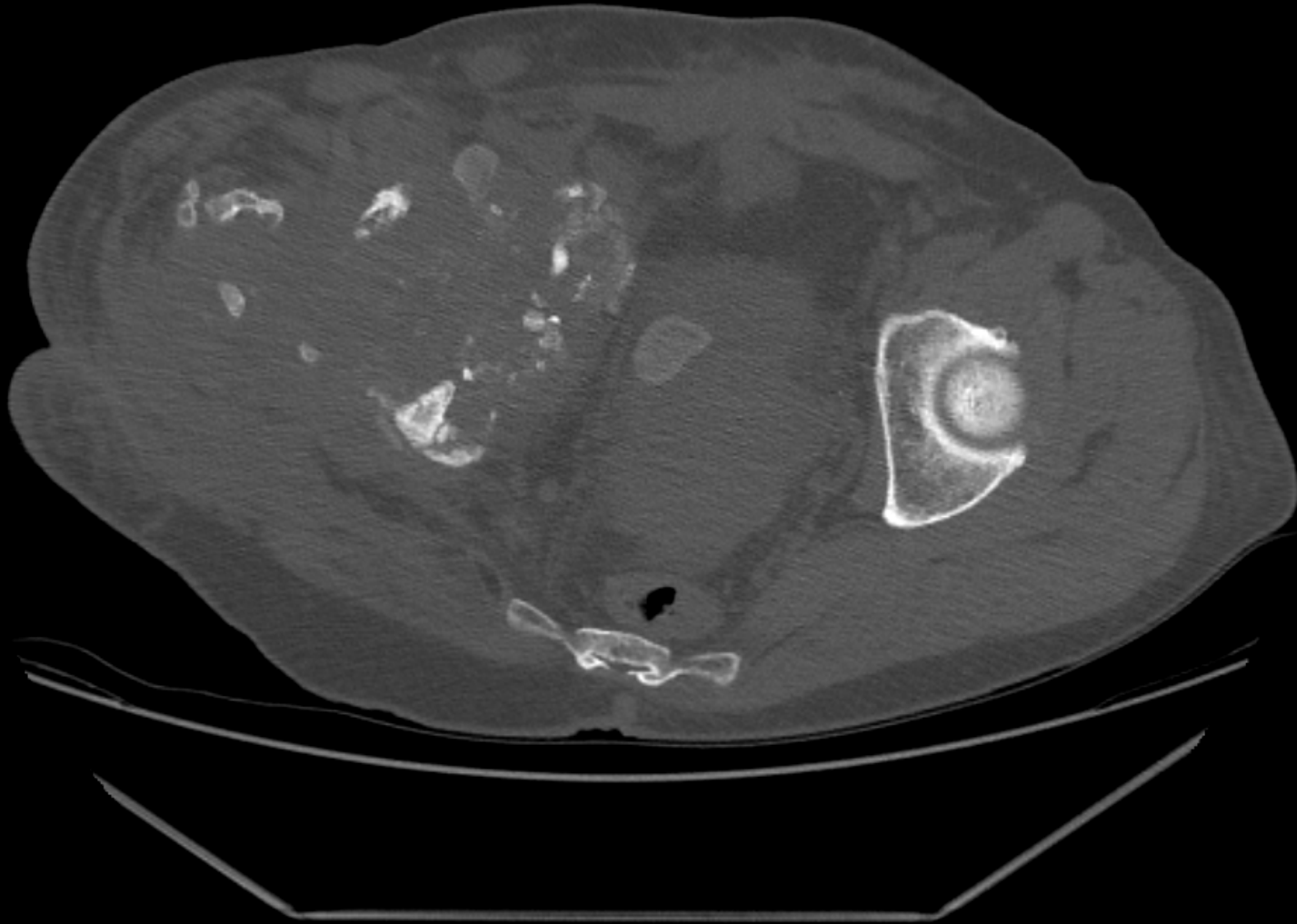


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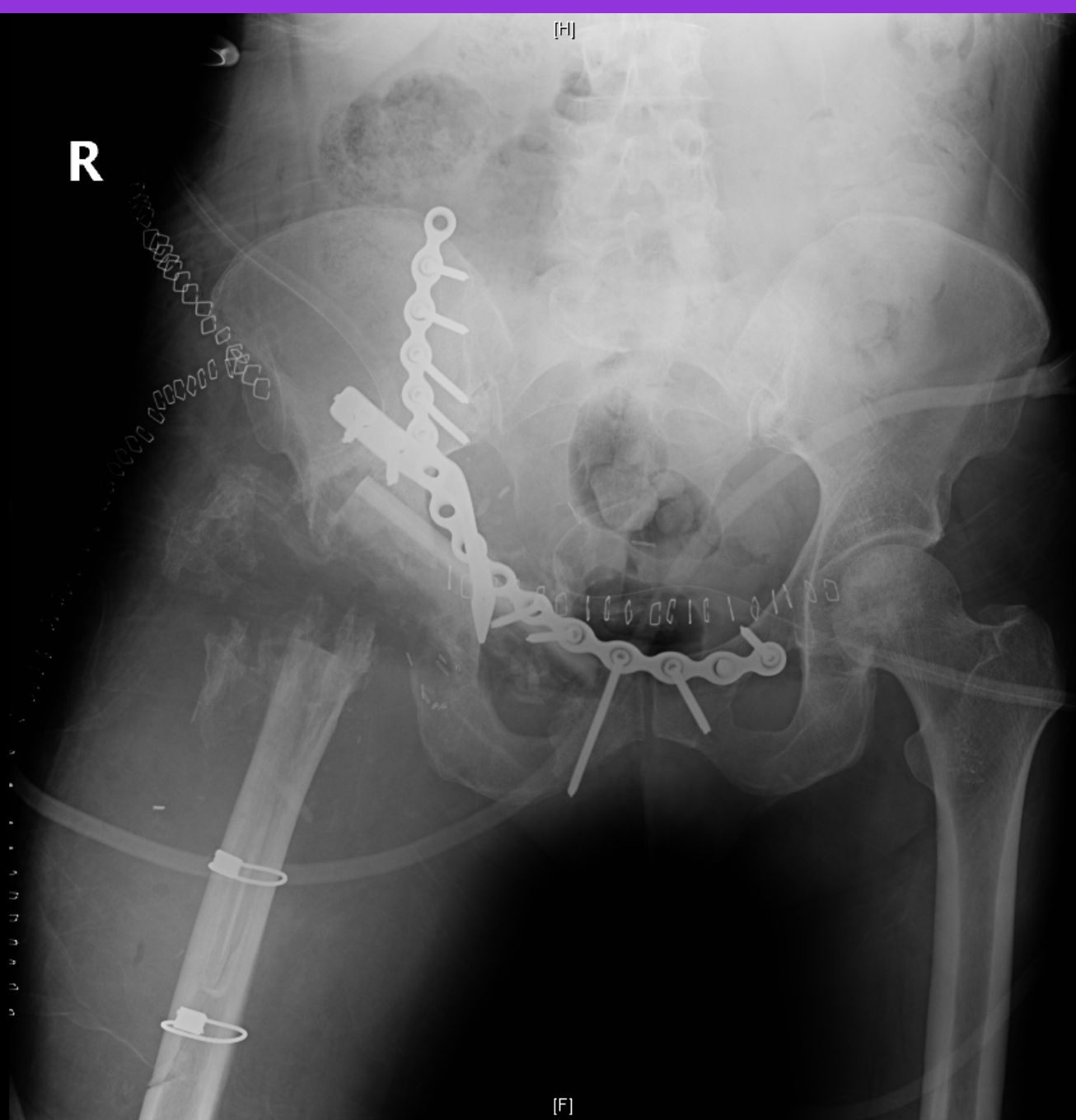
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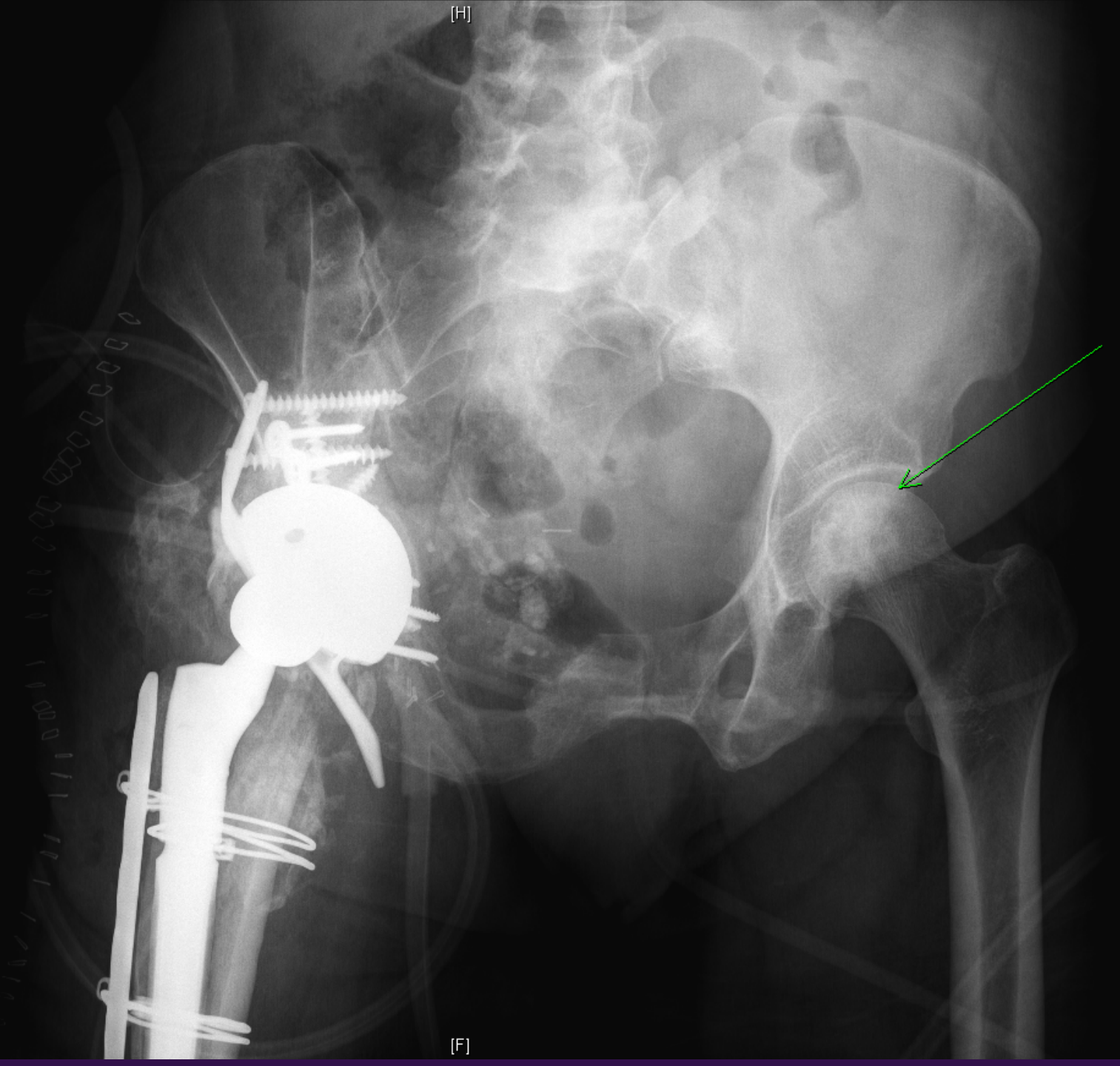




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PECK, JOHANNA
88Y 3M F SW 142433
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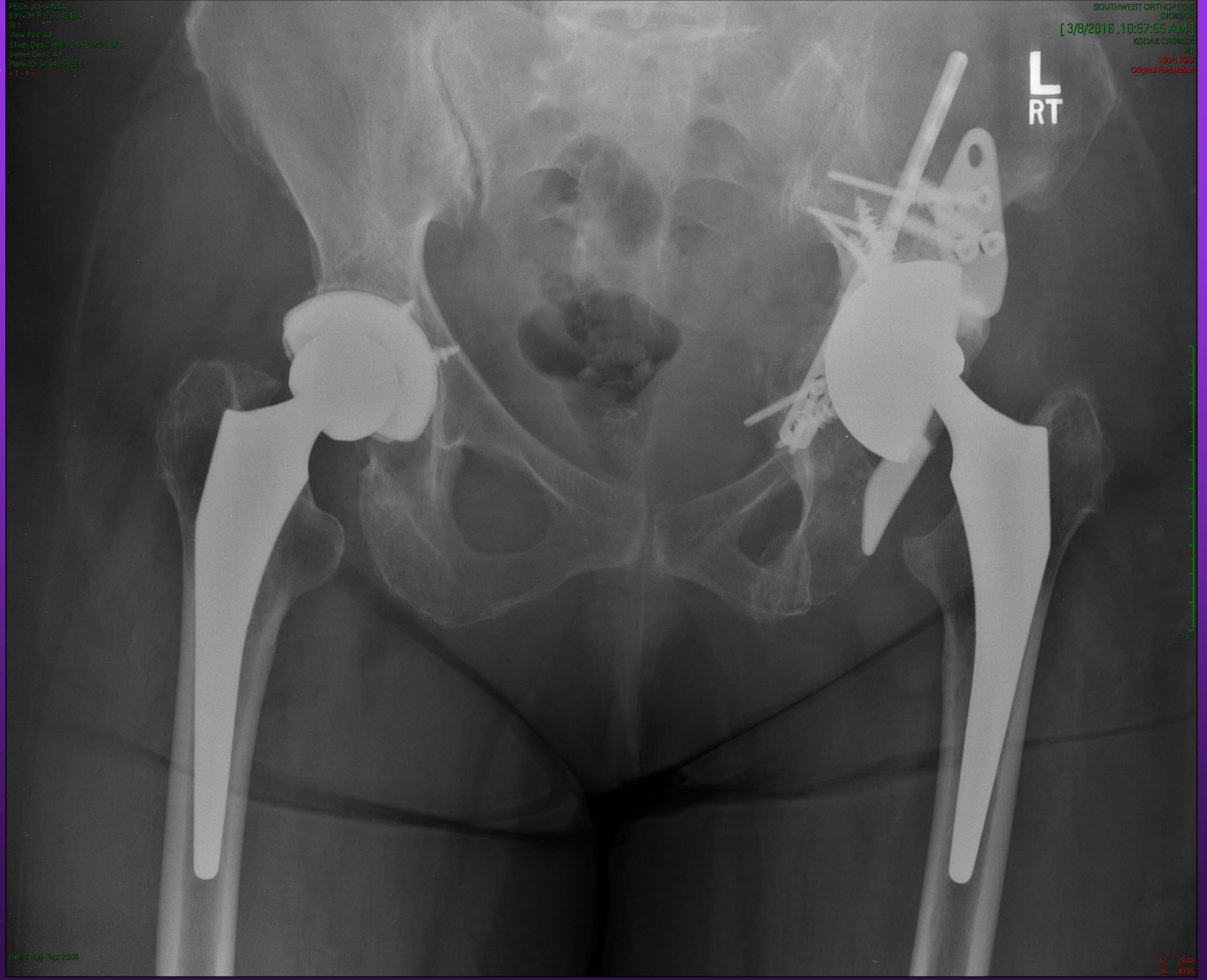


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Original Resolution

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Principles

- Stability of cup
 - Solid host bone – jumbo cup, cup cage cup construct
 - Contained defect vs need to create contained defect with mesh
 - Fracture or pelvic discontinuity that requires separate fixation

Principles

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Thank You

Charity Hospital, New Orleans

