

Simulated CBDs for SpRs Project



Mr. Ross Coomber

19/01/2021

Hosted on www.school-of-Andry.com



Cases



PELVIS/ADDITIONAL VIEW/2
APT084 Pelvis a.p.
WV1692.1.1395

CC

CR



- What do you see?
- What is your plan?
- Reduction techniques?
- Strategy?
- Plate breaks – what next?
- Important investigations



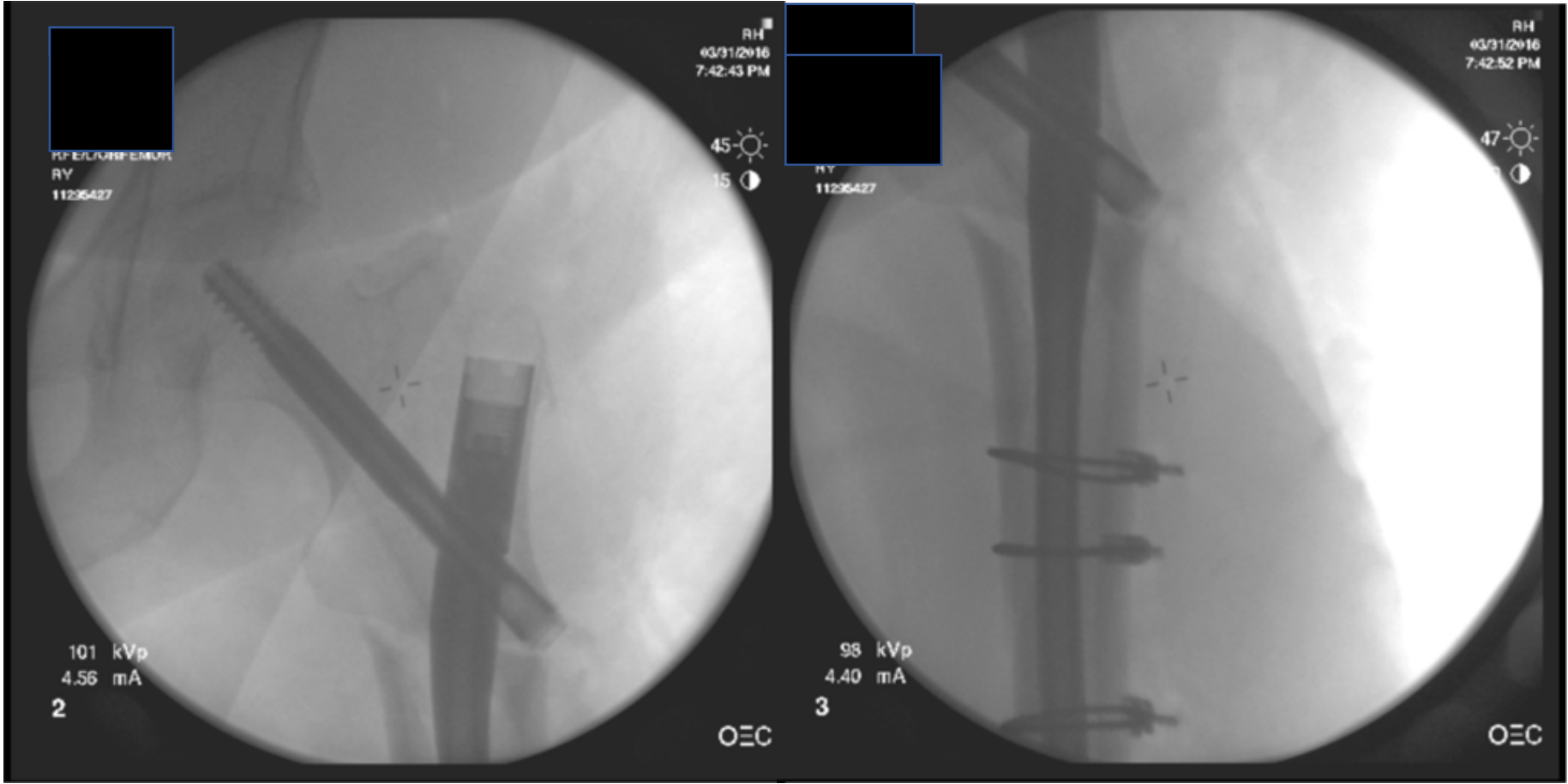
Surgeon A, community hospital:

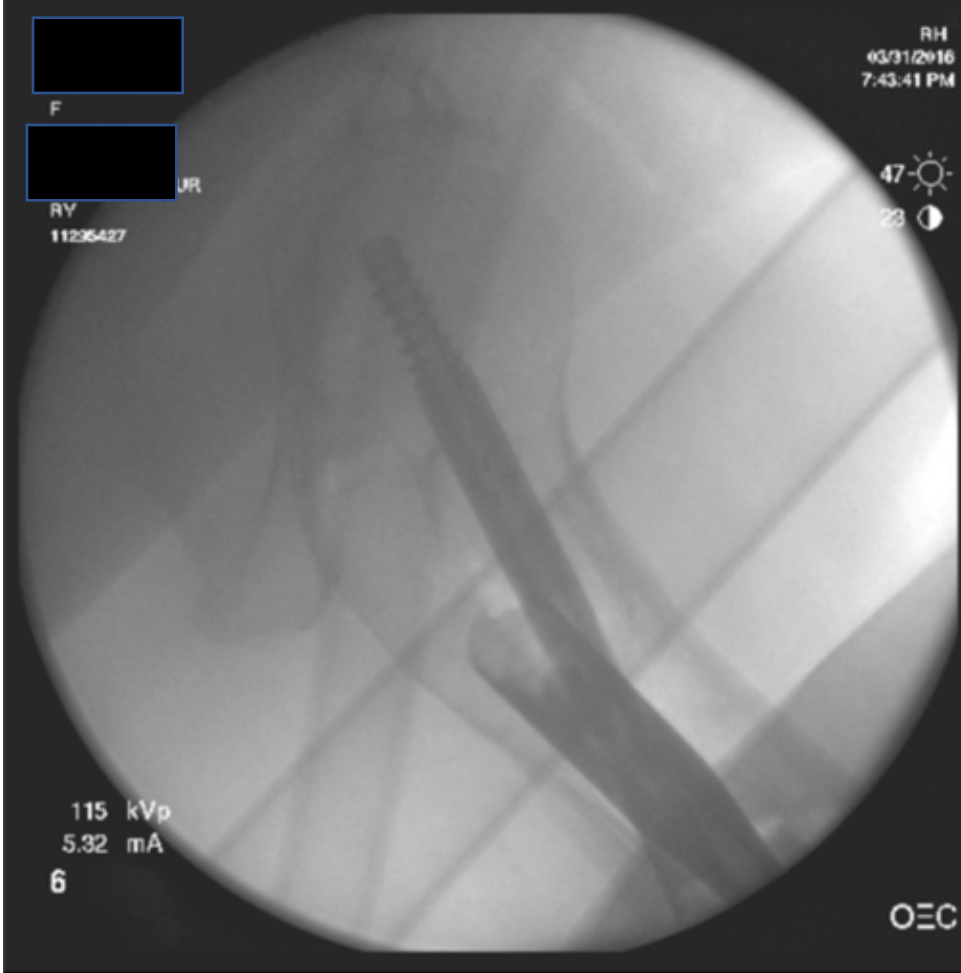
Difficult case anticipated

Body habitus

Need for open reduction

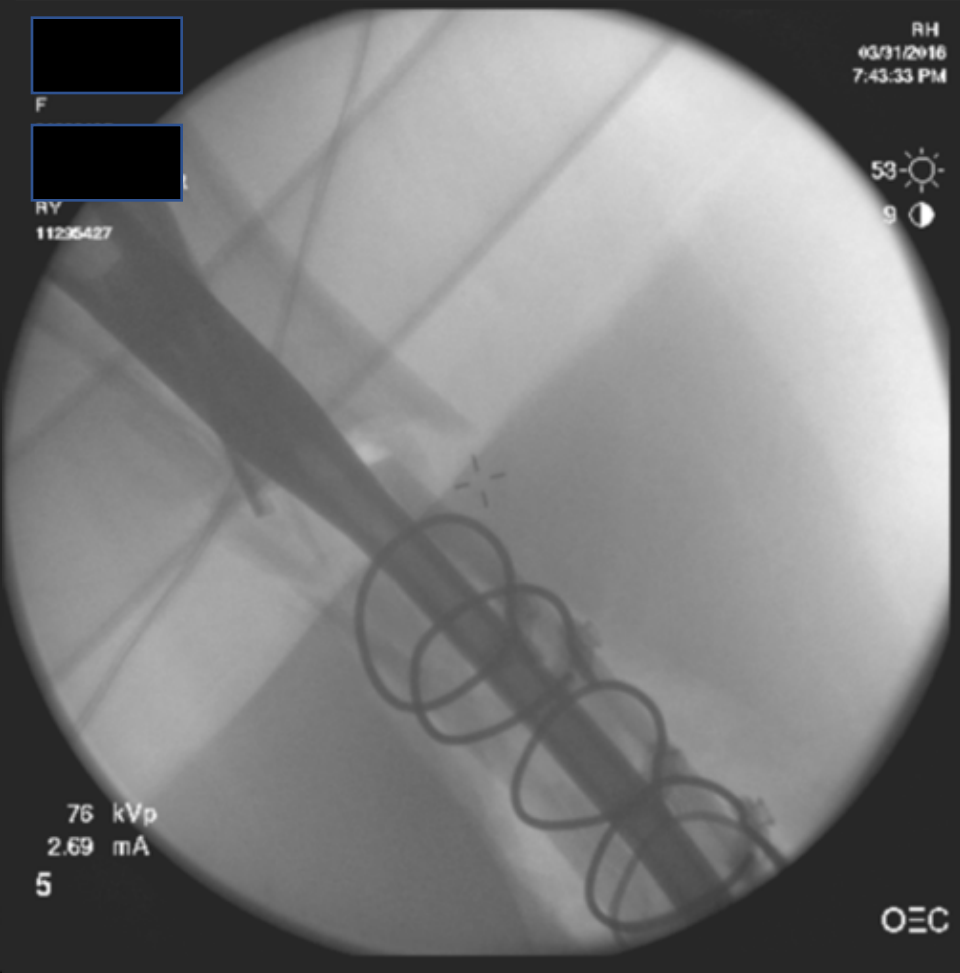
Bisphosphonate related atypical fx





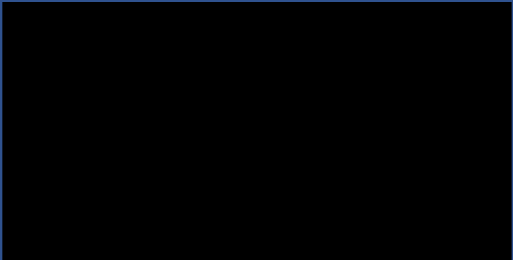
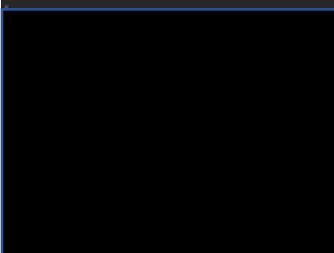
RH
03/31/2016
7:43:41 PM

47
23



RH
03/31/2016
7:43:33 PM

53
9

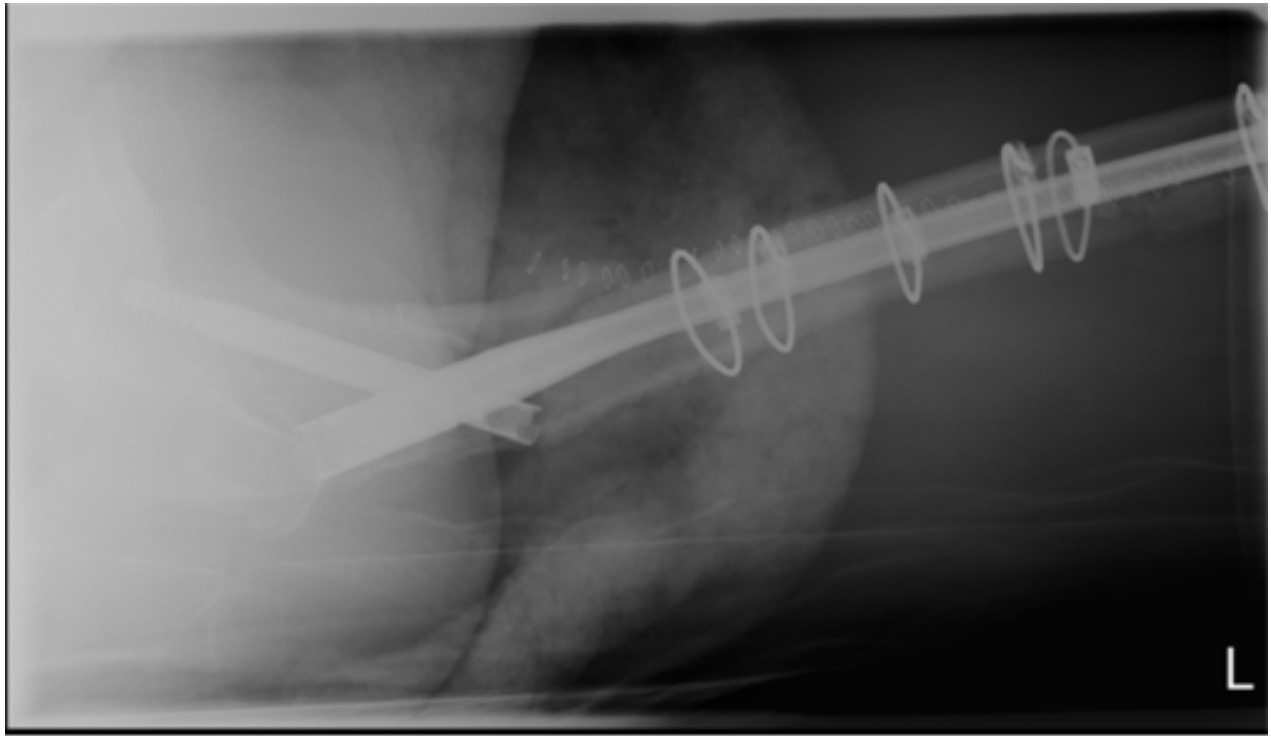


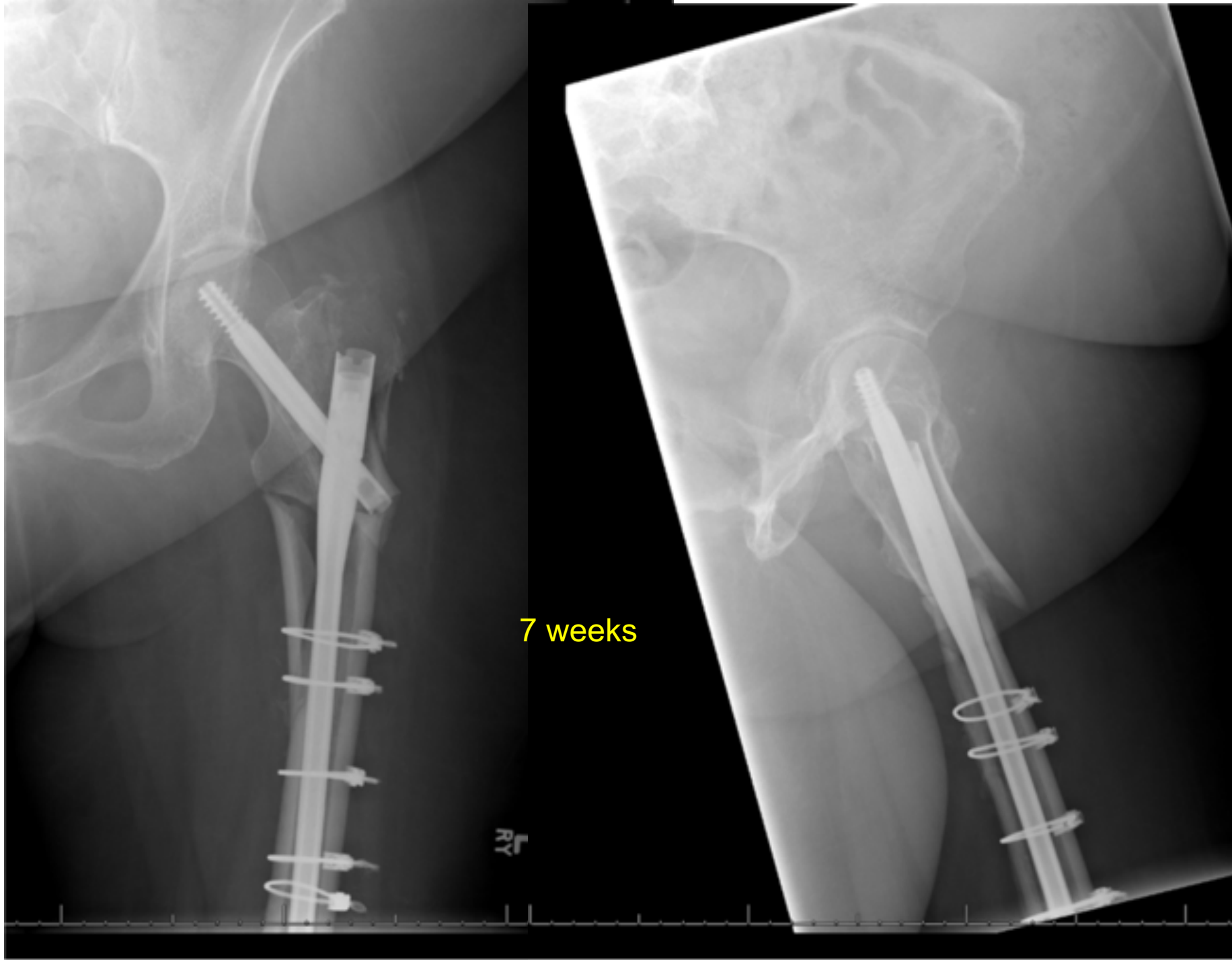
'Final Xrays were taken. The fracture was in slight varus at the fracture site, but the overall alignment was acceptable. The hardware was well positioned. I was pleased with the final construct.'



1 week







7 weeks

L
RY



11 weeks

Colleague 1



3 months

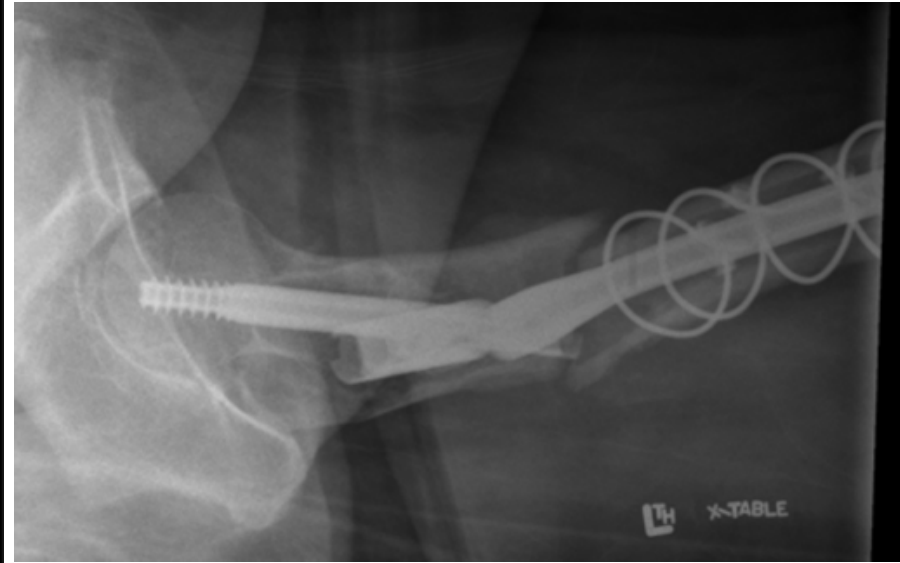
Colleague 2



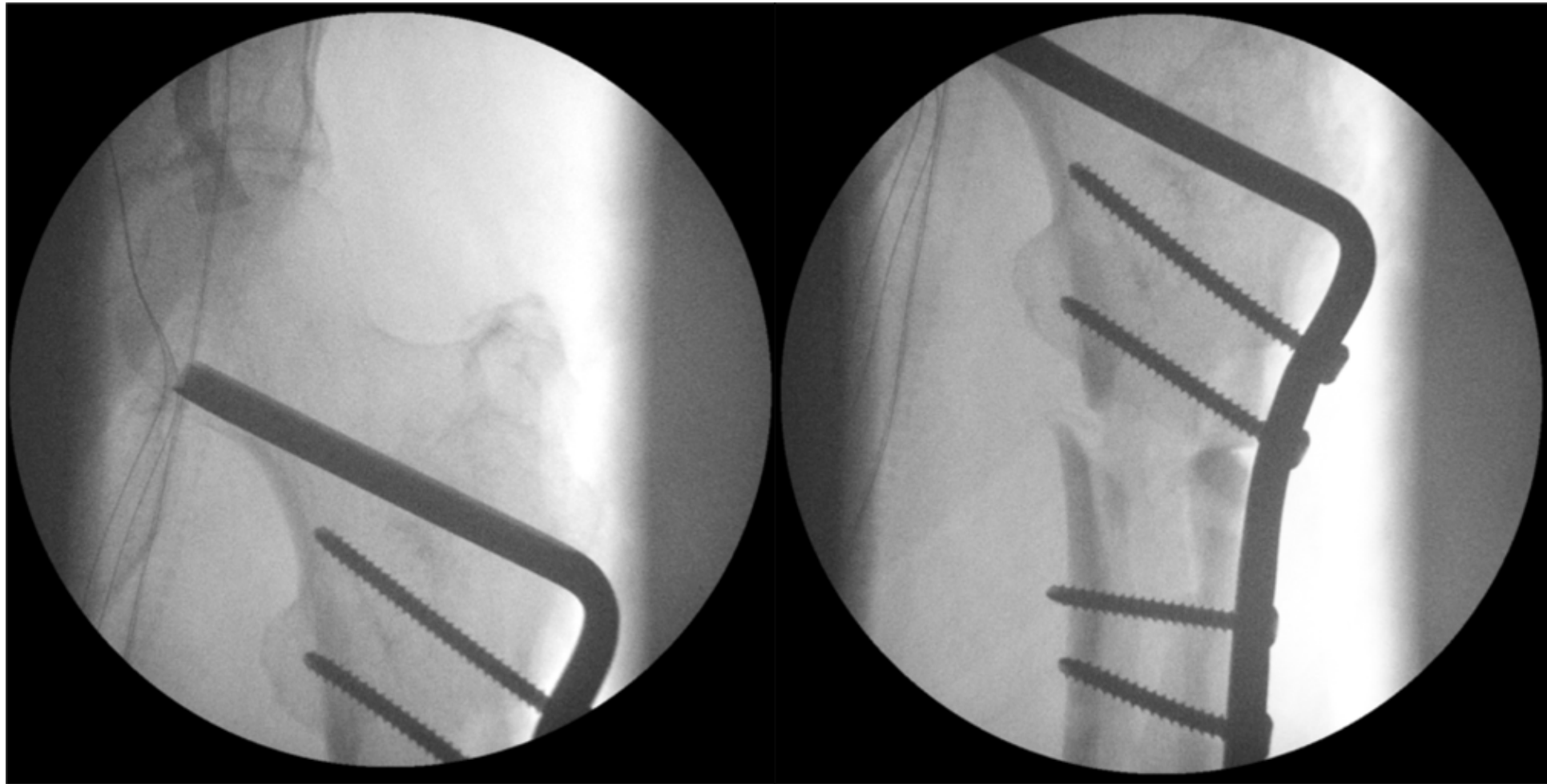
5 months

Colleague 3

Referred to Trauma
Centre

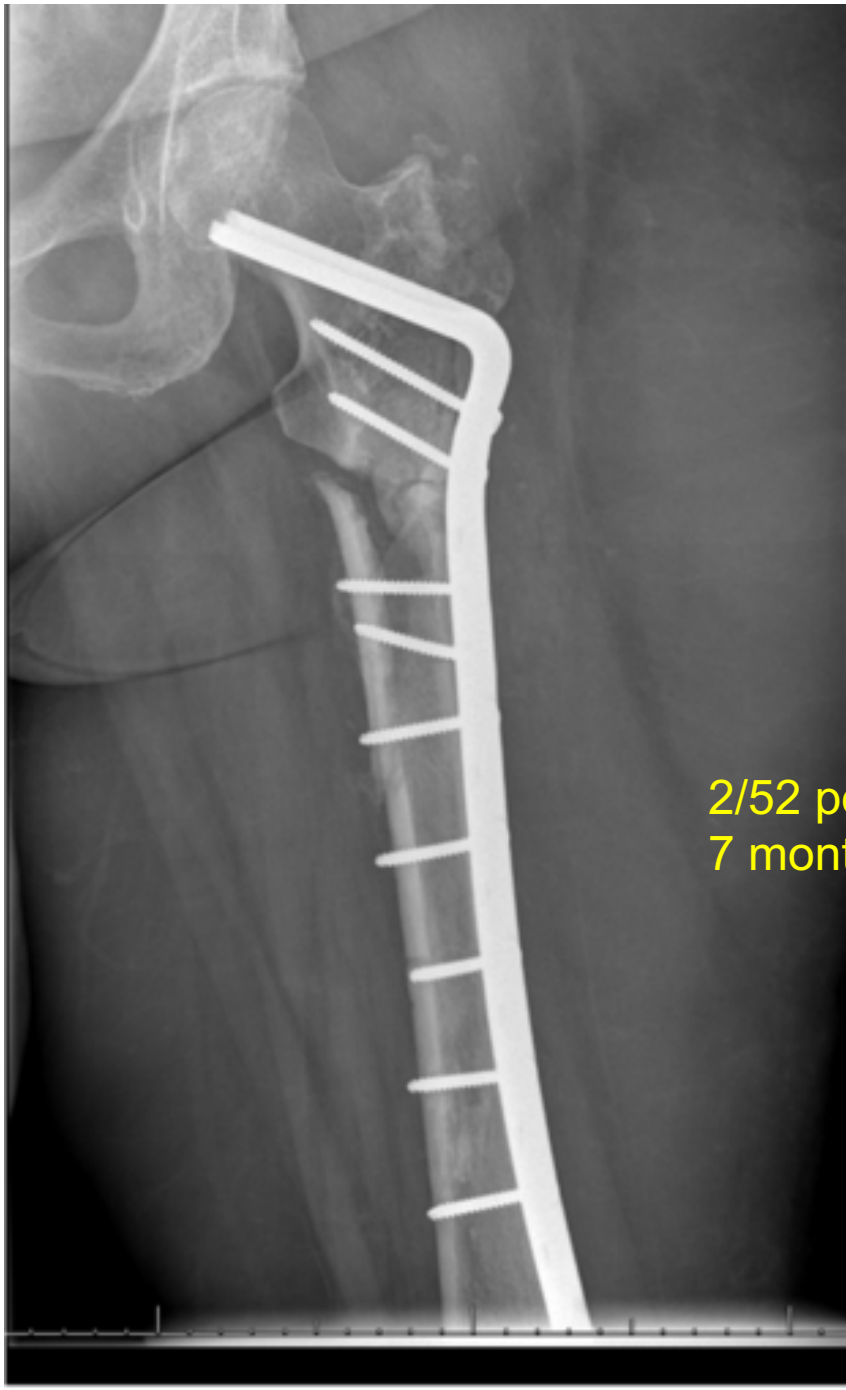


6 months – atraumatic, worsening hip pain



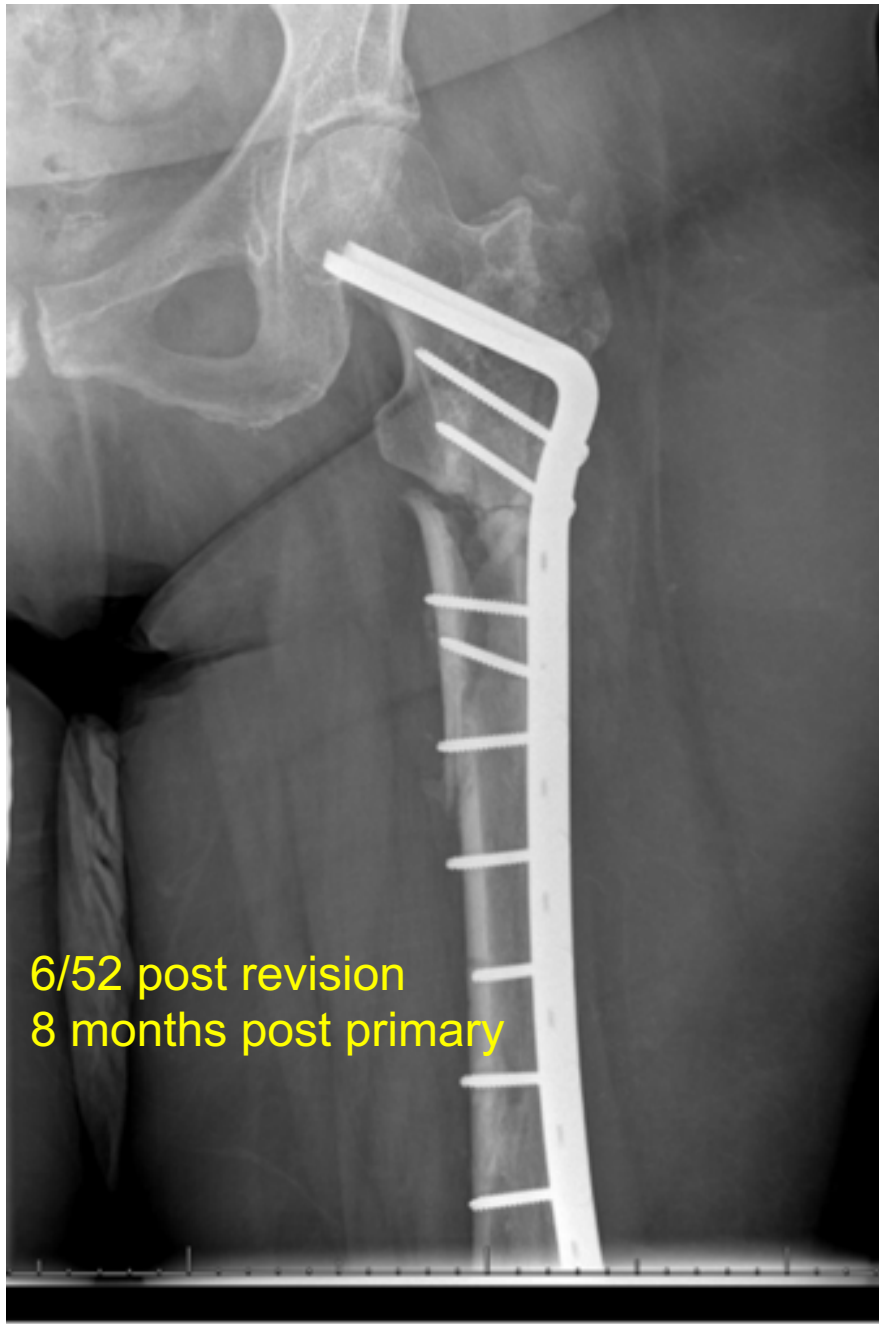
Surgeon B – Trauma centre revision at 6 months:
Blade plate fixation

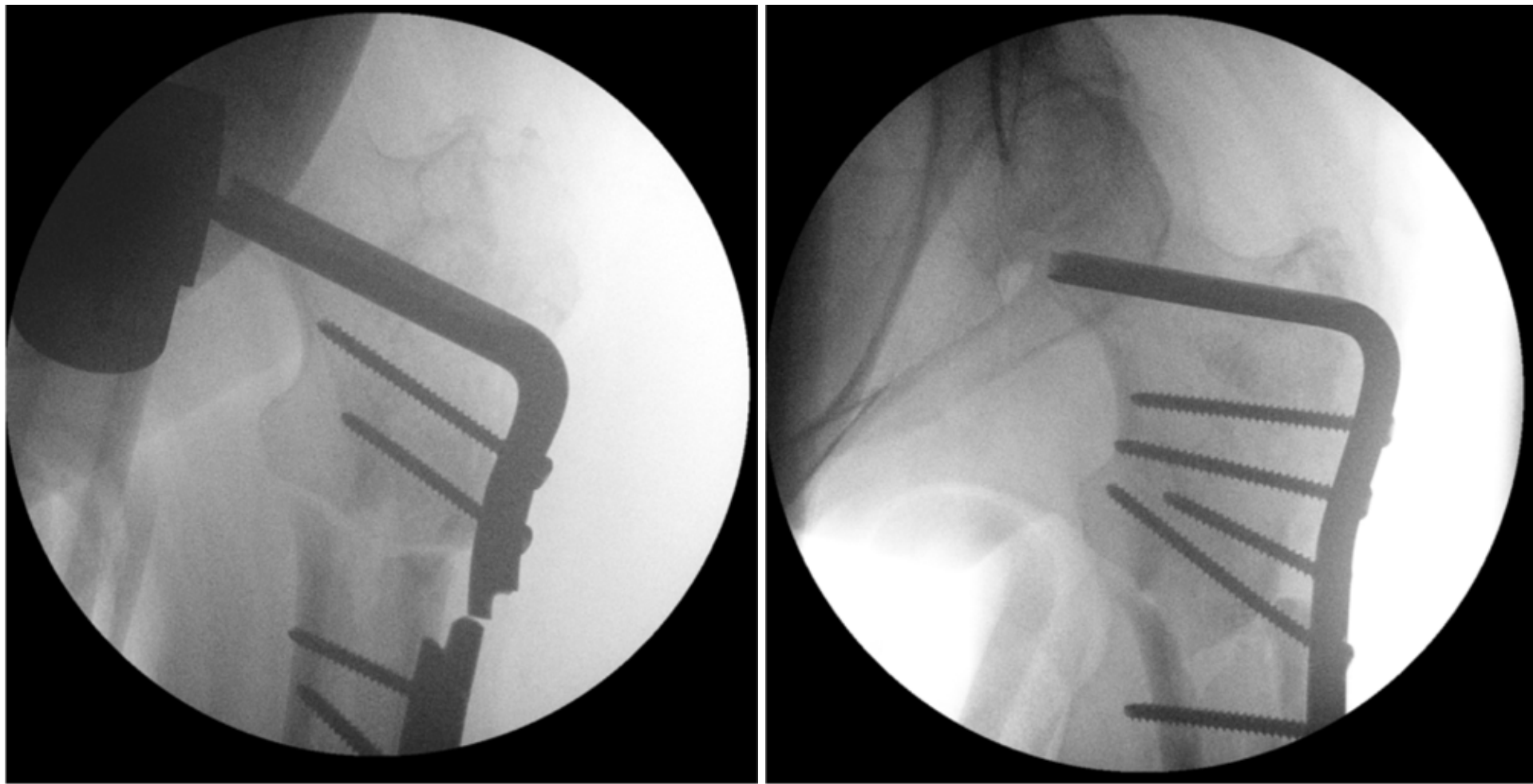




2/52 post revision
7 months post primary







Surgeon C – Trauma centre revision at 8 months:

Blade plate re-fixation

Shortened lateral cortex + compressed



9/52 post revision 2
9 months post primary



3 months post revision 2
1 year post primary

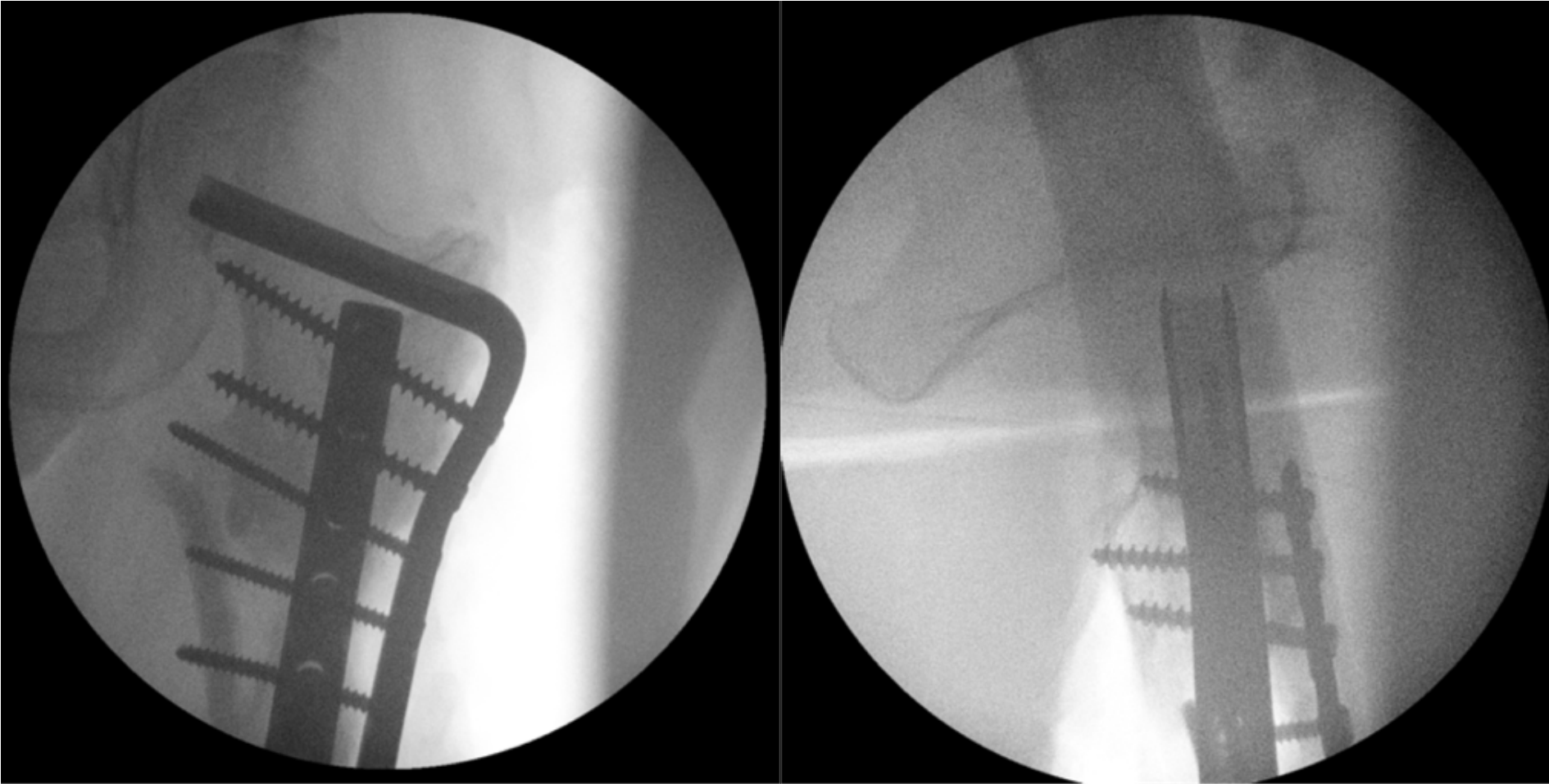


4 months post revision 2
13/12 post primary



5 months post revision 2
14/12 post primary



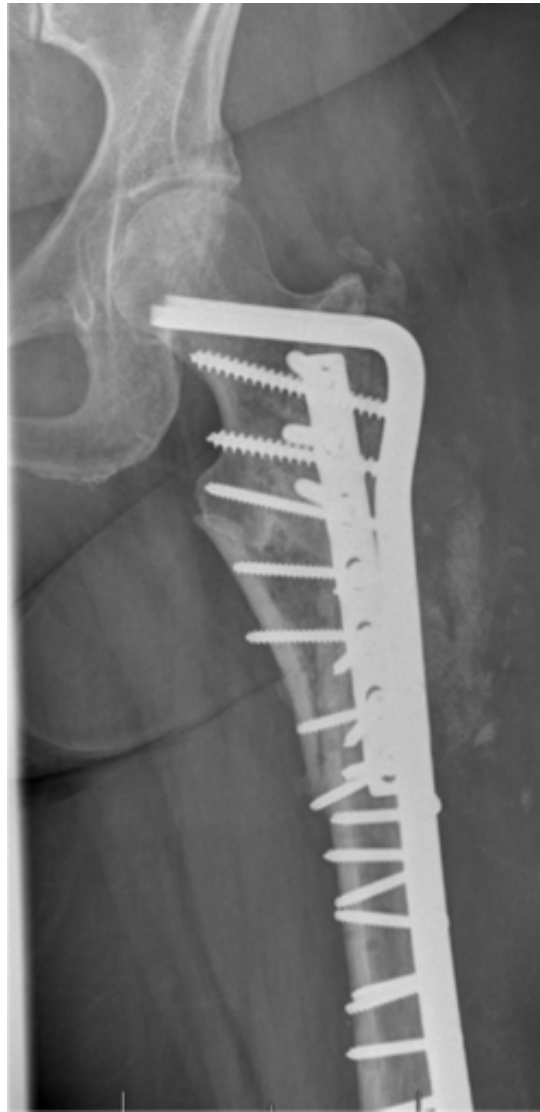


Surgeon B – Trauma centre revision at 5 months:

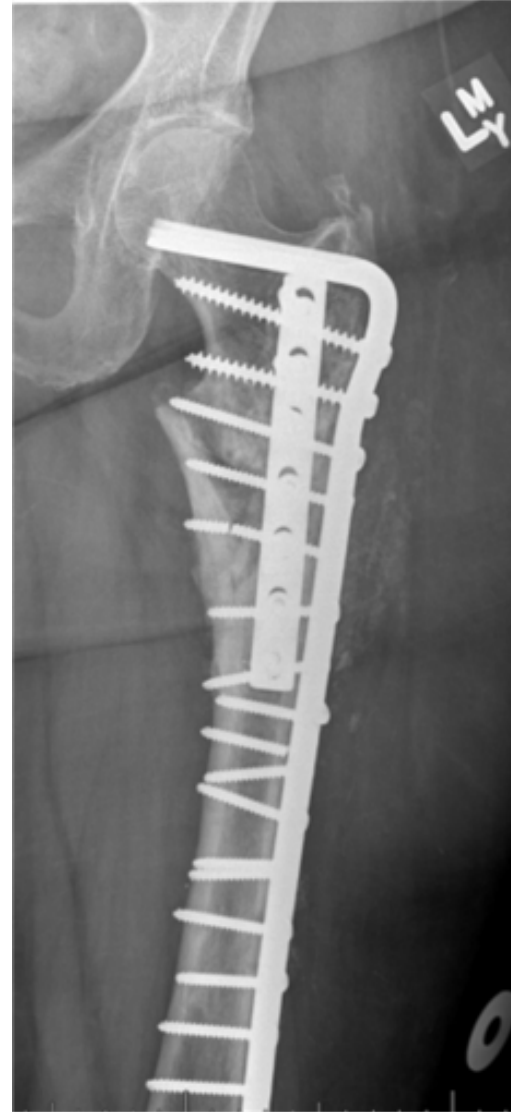
Blade plate re-fixation, anterior plating, fibular strut allograft, INFUSE BMP 2



6/52 post revision 3
16/12 post primary



3 months post revision 3
17/12 post primary

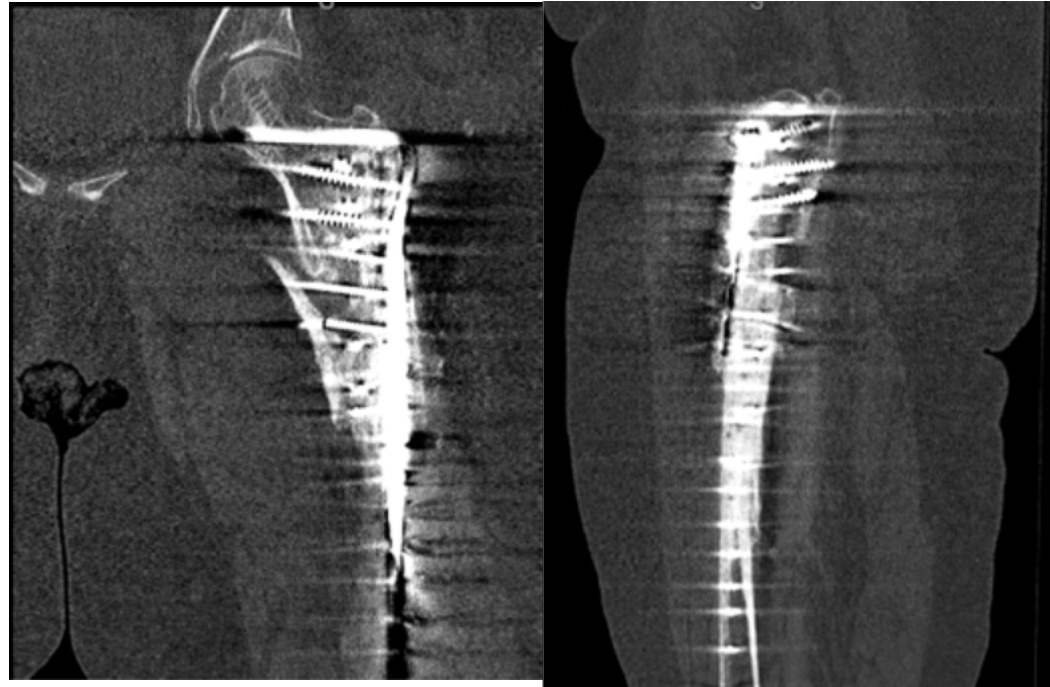


9 clinic follow-ups later ...
1 year post revision 3
2 years, 2 months post primary

2 years, 2 months post primary
Ongoing hip discomfort

CT to assess union

No evidence sepsis

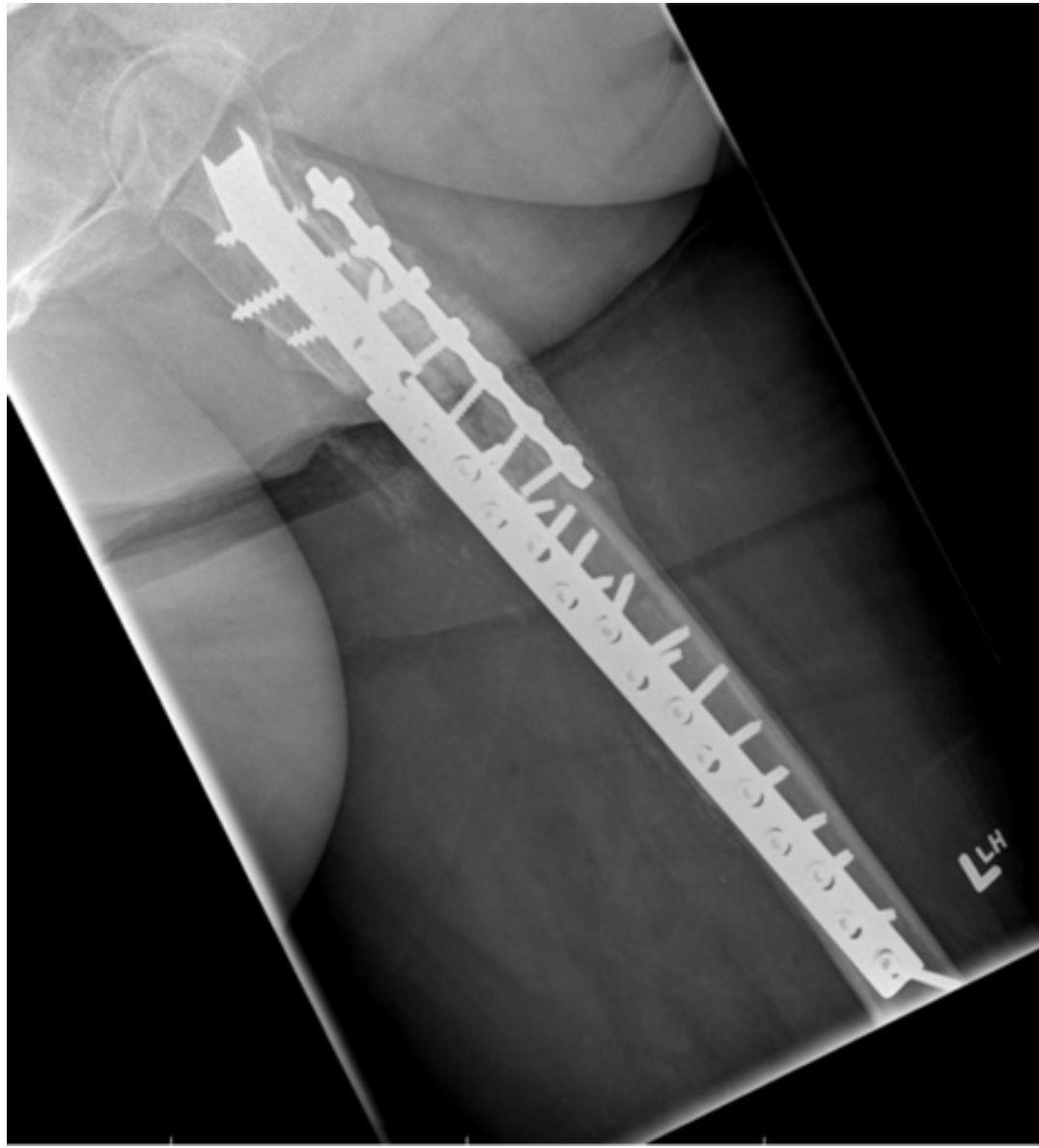


7th July 2018:

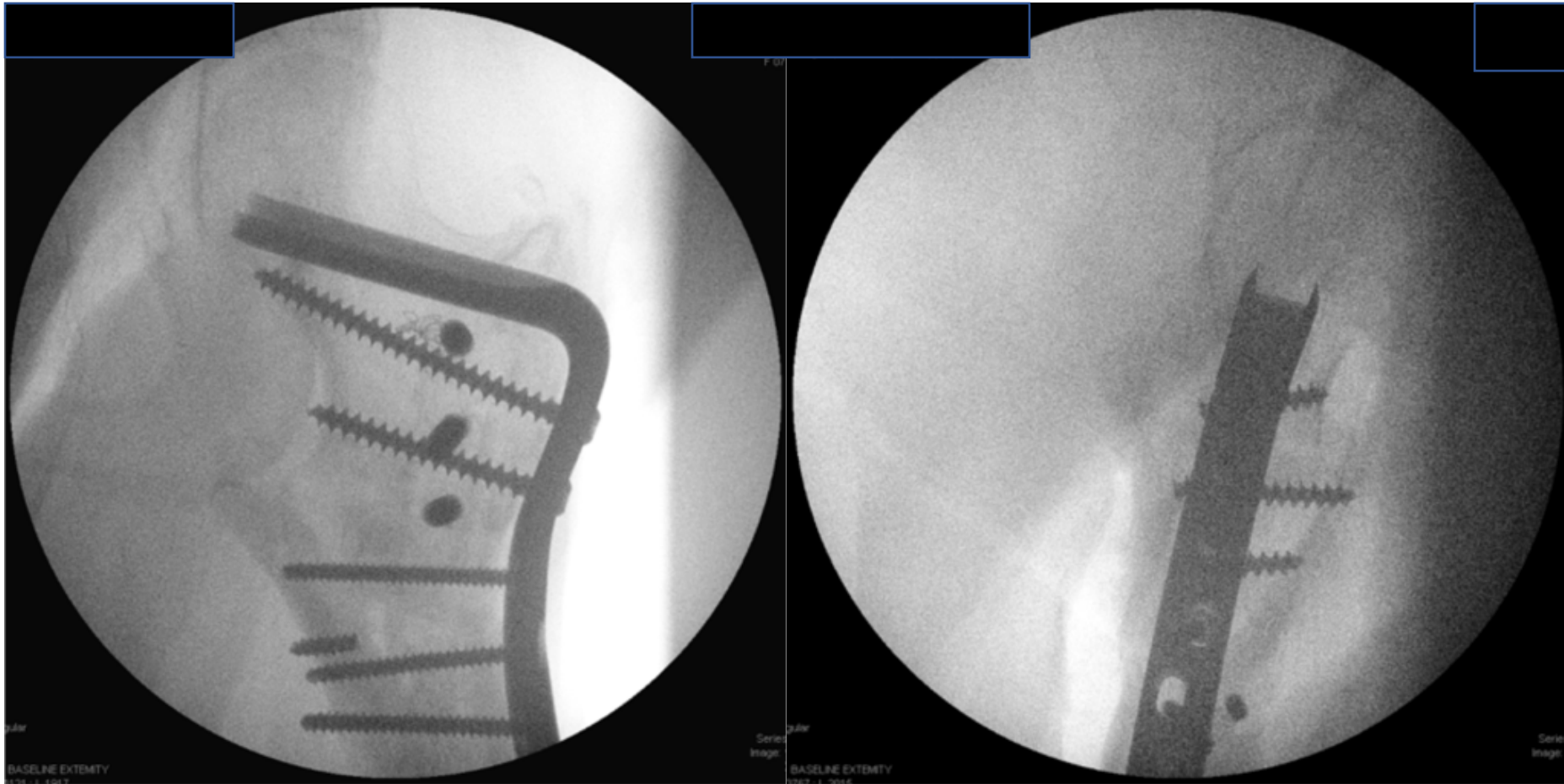
Using walker to ambulate to fridge

Leg gave way, no fall

Pain, unable to weightbear



18 months post revision 3
2 years, 4 months post primary

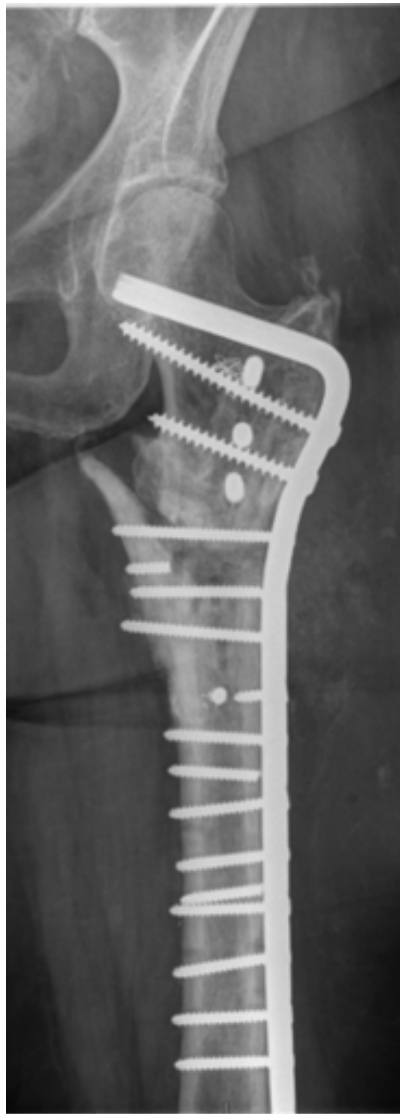


Surgeon D – Trauma centre revision at 18 months:

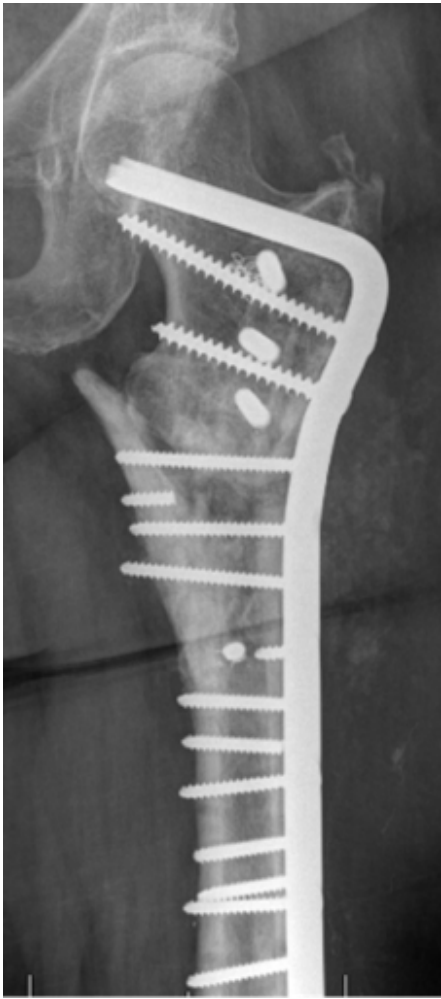
Blade plate re-fixation number 3

Shortening, compression

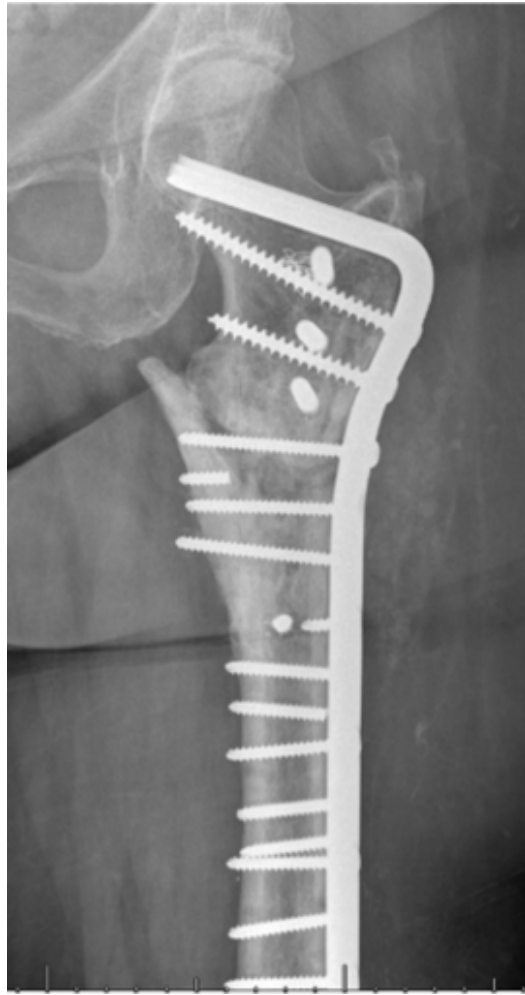
Iliac crest autograft



2 weeks post revision 4
2 years, 5 months post primary



3 weeks post revision 4
2 years, 7 months post primary



4 months post revision 4
2 years, 10 months post primary



4th March 2019

6 months post revision 4

3 YEARS POST PRIMARY

Currently:

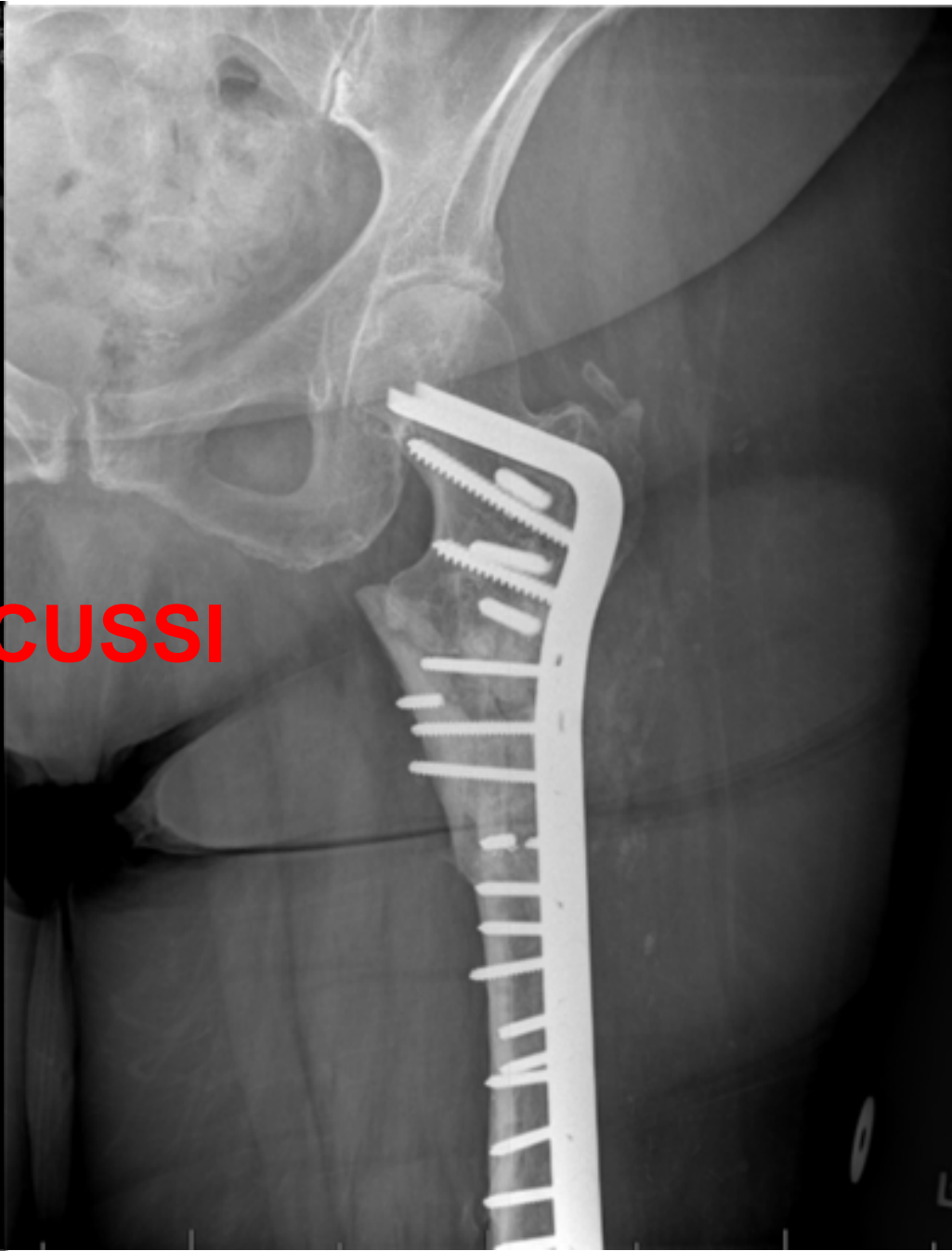
Walks with a shoe raise and 1 cane

Ongoing PT

Ongoing intermittent hip and knee pain

Full WB, no restrictions

Clinic follow up in 2 months ...



DISCUSSION



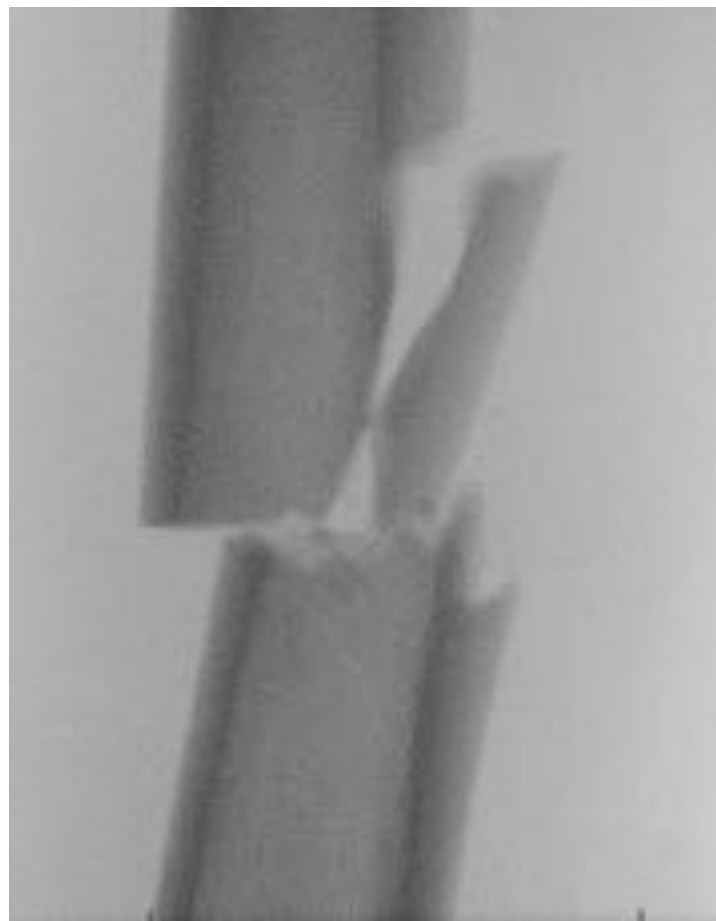
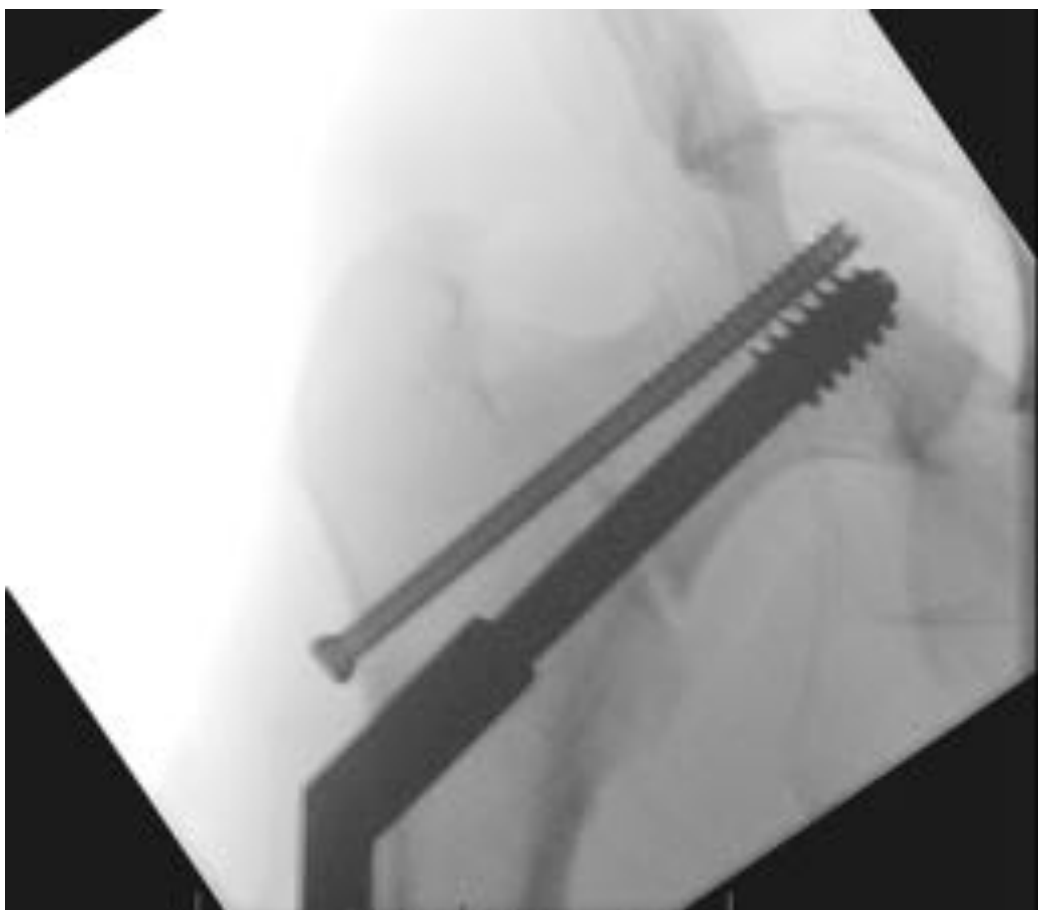
Spin: -1
Tilt: -1





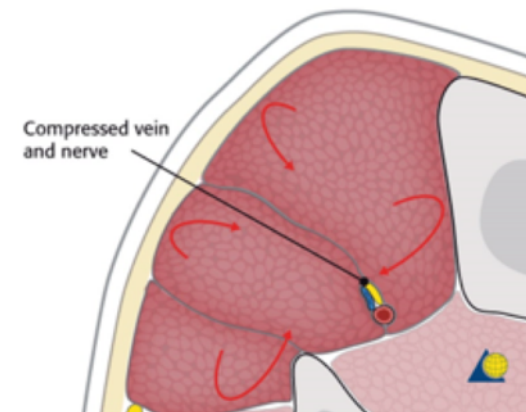
A

- What do you see?
- What are your priorities for the patient?
- Ok you take them to theatre, where do you start?
- Lactate rising, on max inotropes, very sick anaesthetist concerned, 11pm
- You have only fixed the hip, what next?
- Anaesthetists very concerned over post-op pain and wants to give a spinal?
- Pt has a dense lumbo-sacral block with an effusion and transferred back to ward?
- Any concerns?



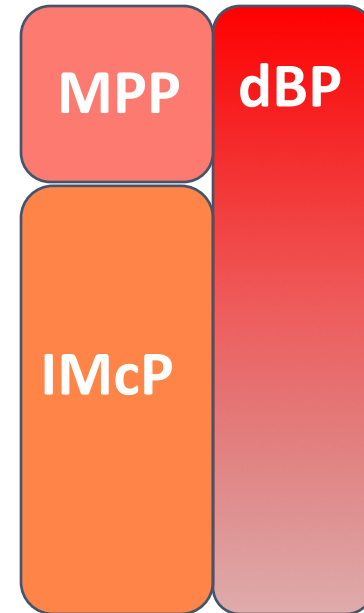
Definition

- = critical increase of pressure in a closed muscle compartment
- Exceeds pressure within capillaries
- Capillary perfusion of muscle compromised
- Critical hypoxia within muscle
- Can cause irreversible damage to:
 - Muscle
 - Nerves
 - Vessels



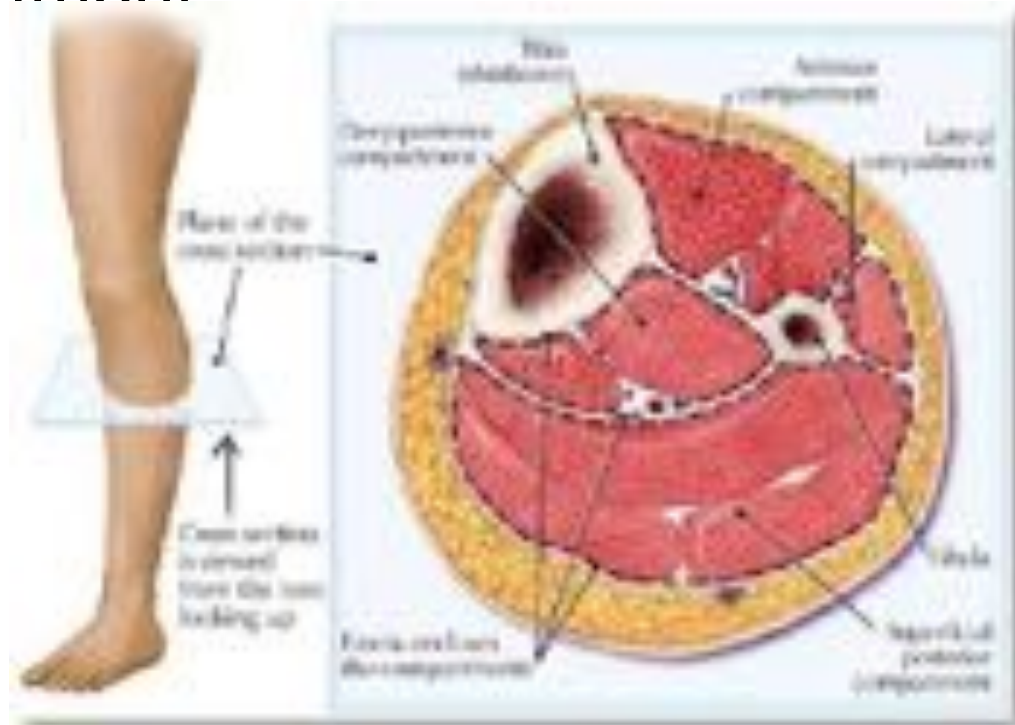
Definition

- Muscle perfusion pressure (MPP) = diastolic BP (dBP) – intramuscular compartment pressure (IMcP)
- If MPP < 30mmHg – muscle hypoxia



Anatomy

- Limb muscles in muscle groups encased by fascia
 - Each muscle group occupies own fascial / osteofascial compartment
 - Vessels and nerves
- Leg
 1. Anterior
 2. Lateral
 3. Posterior
 4. Deep posterior



Pathophysiology

- Muscle injury
- Reperfusion injury
- Bleeding – oedema
- Increased IMcP – pressure on nerves and veins
- Muscle necrosis

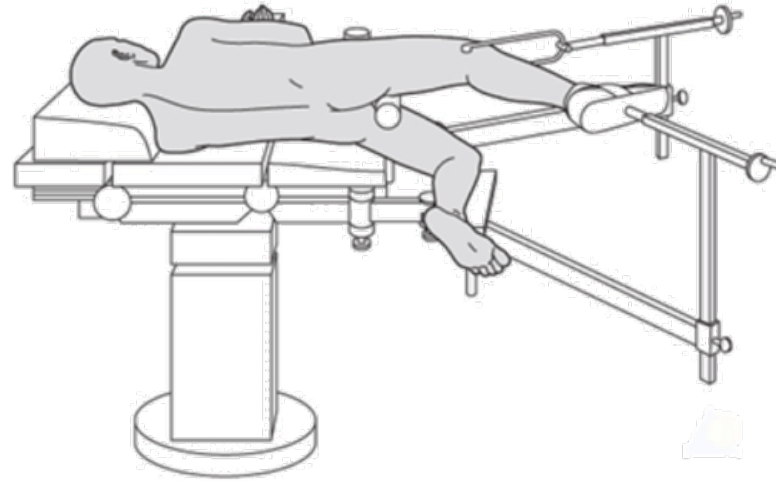
Effect of increased IMcP

- Muscles: pain passive stretch; contractures
- Veins: poor return; further swelling
- Nerves: paraesthesia – later paralysis
- Arteries: not occluded

Causes

- Fractures – tibia, forearm
- Crush injury
- Reperfusion injury
- Positioning
- Tight cast / dressings
- Burns
- ? Tight repair of surgical defect
- (Snake) bites

Causes



Diagnosis

- High index clinical suspicion
- PAIN
- Disproportionate
- Passive stretch
- Tense compartments
- Asymmetry
- Paraesthesia
- **Tissue pressure > 30mmHg**

Diagnosis



Treatment

- Surgical emergency
- Split cast / release tight dressing
- Elevate limb
- Correct hypoxia – O₂
- Dermofasciotomy
- External fixator
- (Vac-dressing)

Treatment

- 2-incision fasciotomy – anterolateral (2cm lateral to crest)

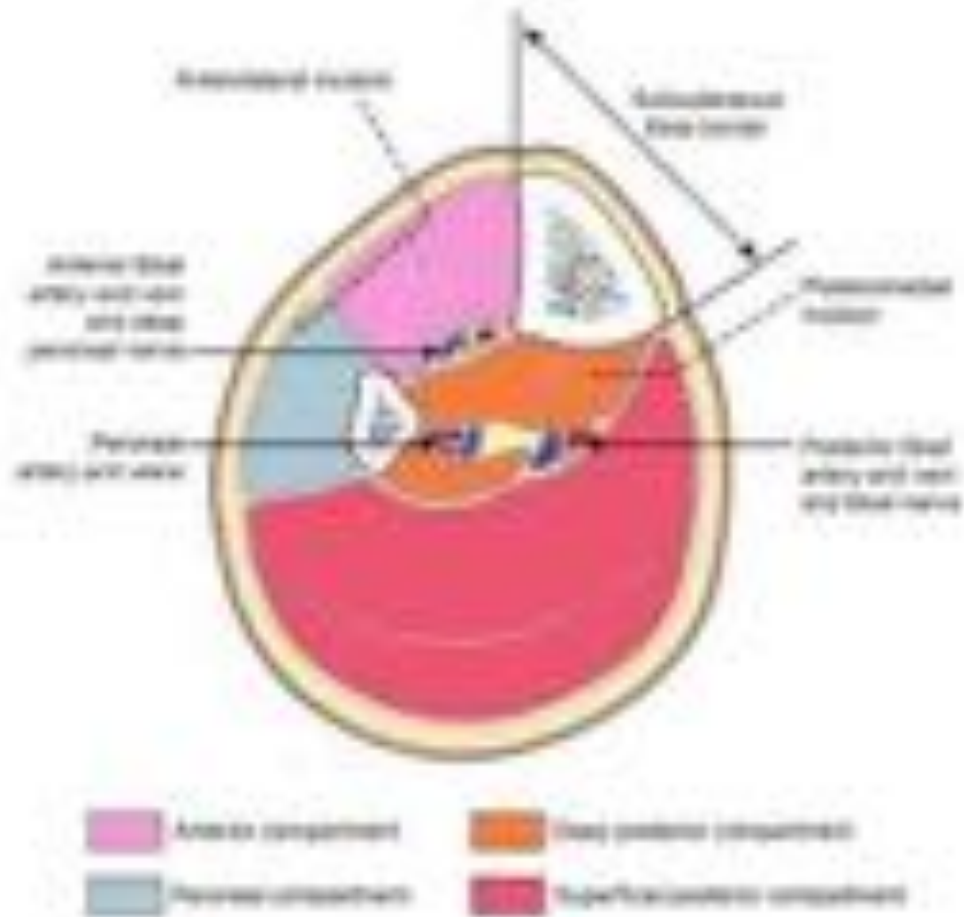


Treatment

- 2-incision fasciotomy – posteromedial (1cm posterior to posterior border)



Treatment



Treatment



Summary

- Definition
- List causes
- Importance of prompt diagnosis
- Anatomy and pathophysiology
- Treatment



- What is this image
- What would you ask in the history
- What are the important examination findings
- Is the PR examination relevant
- How would you manage
- Timing of decompression and evidence
- Outcome





CROSS TABLE



