

Proximal Tibia Cases

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27F MVC passenger head-on collision

Discussion points:

- ORIF or IMN?
- Post-op WB ?

PMHx:

- Polysubstance use disorder (meth, heroin, opioid)
- Amphetamine-induced psychotic disorder
- HIV





RESU54

R
YMT



R
YMT
X-TABLE LAT



LAT



Surgical plan:

- Positioning
- Reduction
- Implant
- Post-op WB









Discussion

V

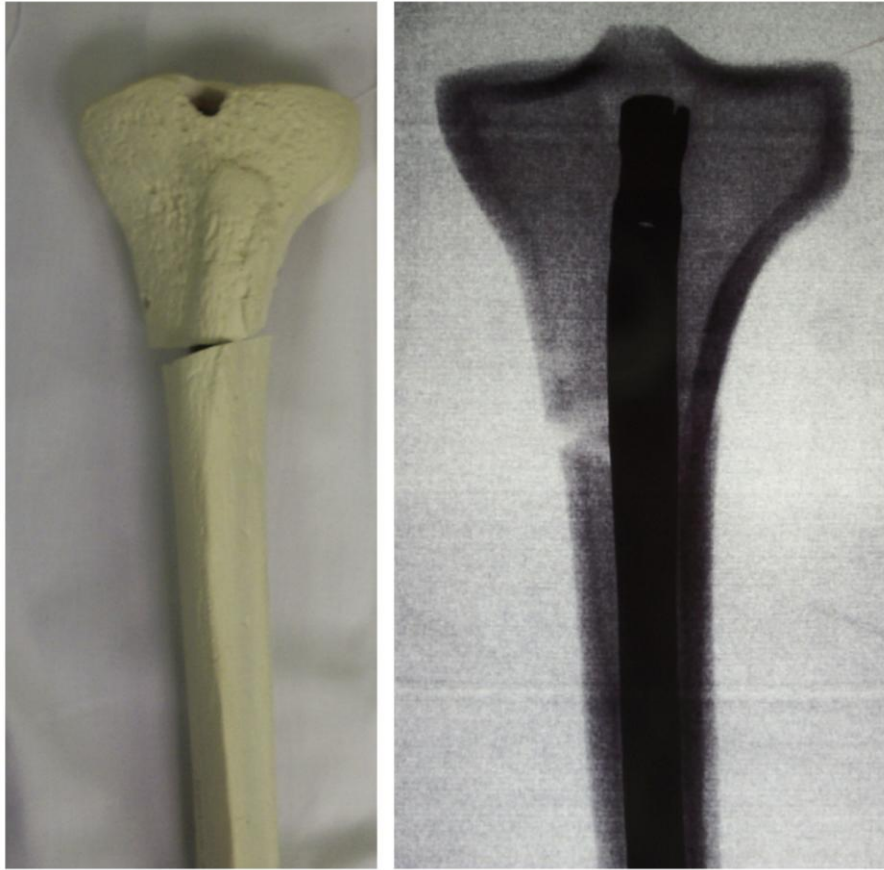
- Proximal tibia shaft
 - Historically high rate of malreduction/malunion (up to 84%):
 - Valgus (pes anserine)
 - Apex anterior / procurvatum (patellar tendon)
 - Conventional alignment goals:
 - 5° varus/valgus
 - 10° flexion/extension
 - 10° malrotation
 - 1cm shortening



Discussion

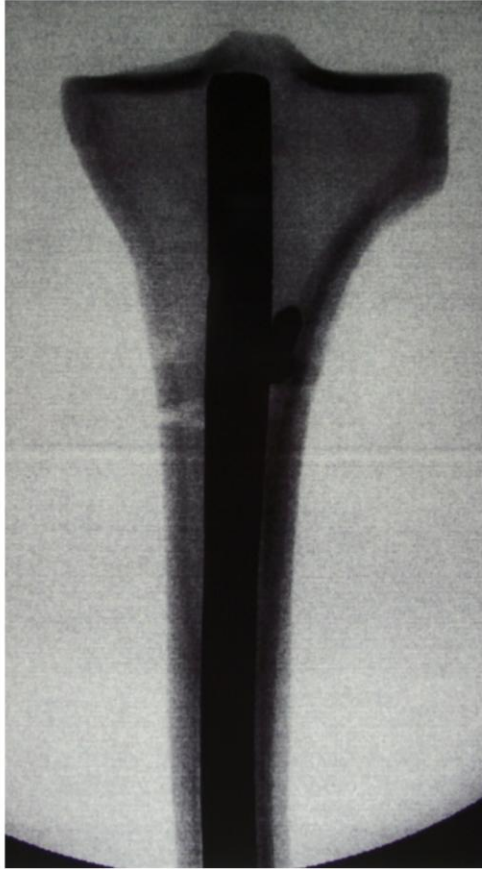
- Positioning: Semi-extended for IMN
- Travelling traction / ex-fix / distractor
- Blocking screws
- Temporary or permanent plate augmentation
- Nail design – multiple proximal oblique screws

Blocking screws



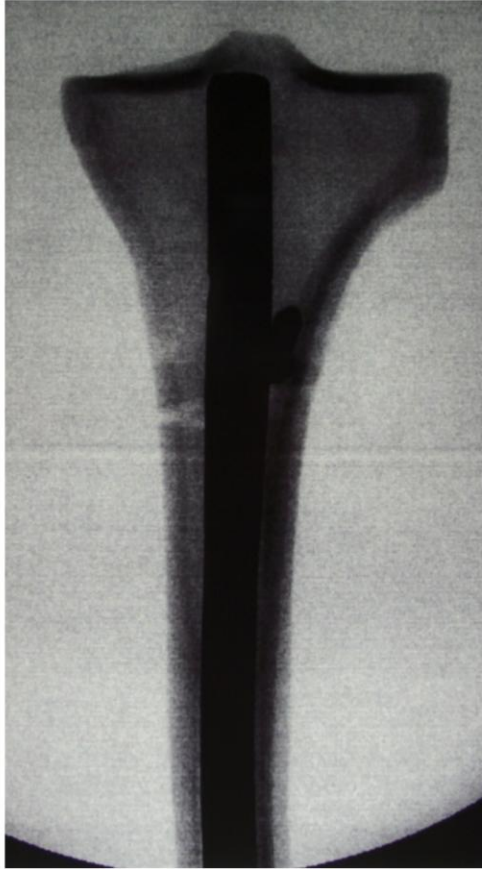
Valgus

Blocking screws



Valgus

Blocking screws

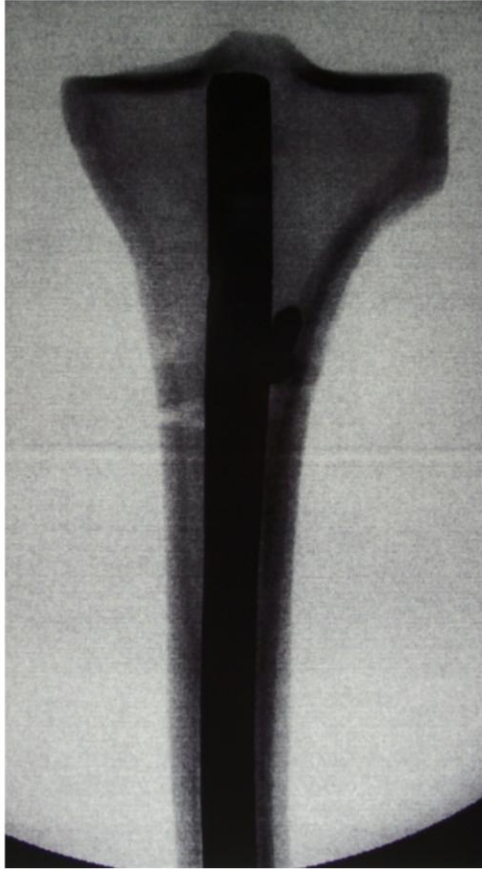


Valgus

Apex
Anterior

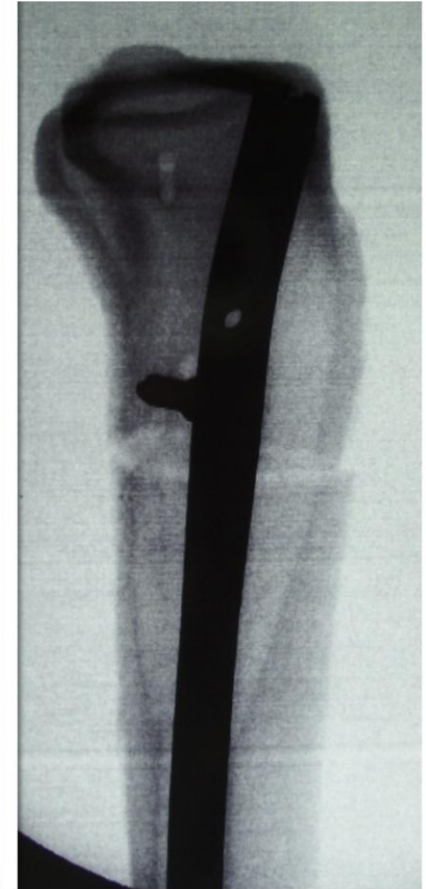


Blocking screws



Valgus

Apex
Anterior



Supplemental plate



FIGURE 6. Theoretically increased stiffness can be obtained if the locking screw is placed through the plate and through the nail (arrow).

Liporace et al. *JOT* (2013)

Discussion

- Positioning: Semi-extended
- Travelling traction / ex-fix / distractor
- Blocking screws
- Temporary or permanent plate augmentation
- Nail design – multiple proximal oblique screws

28M healthy. Fall down stairs.

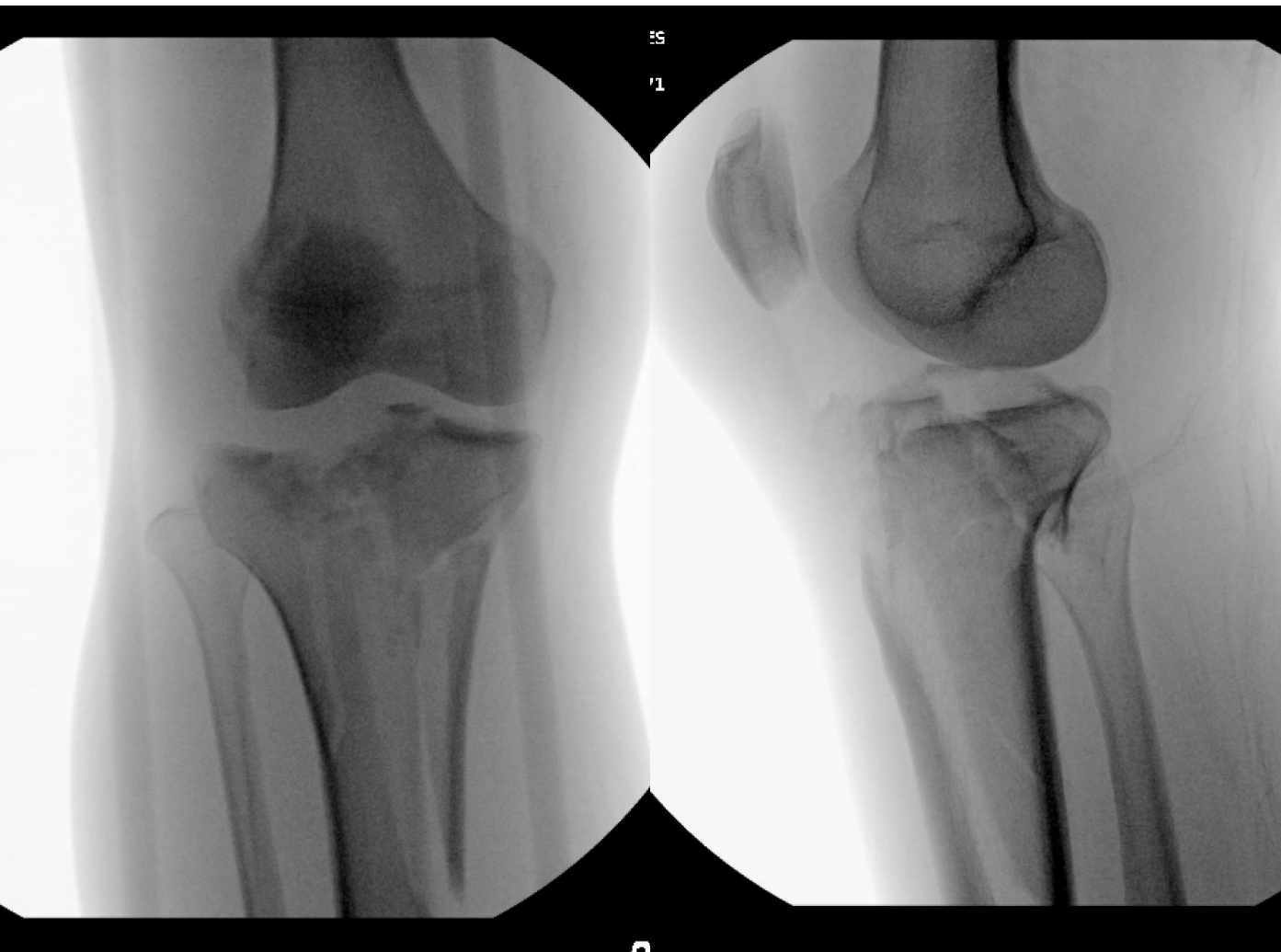


- **Emergency room assessment**
 - Neurovascular examination
 - Compartment check

28M healthy. Fall down stairs.

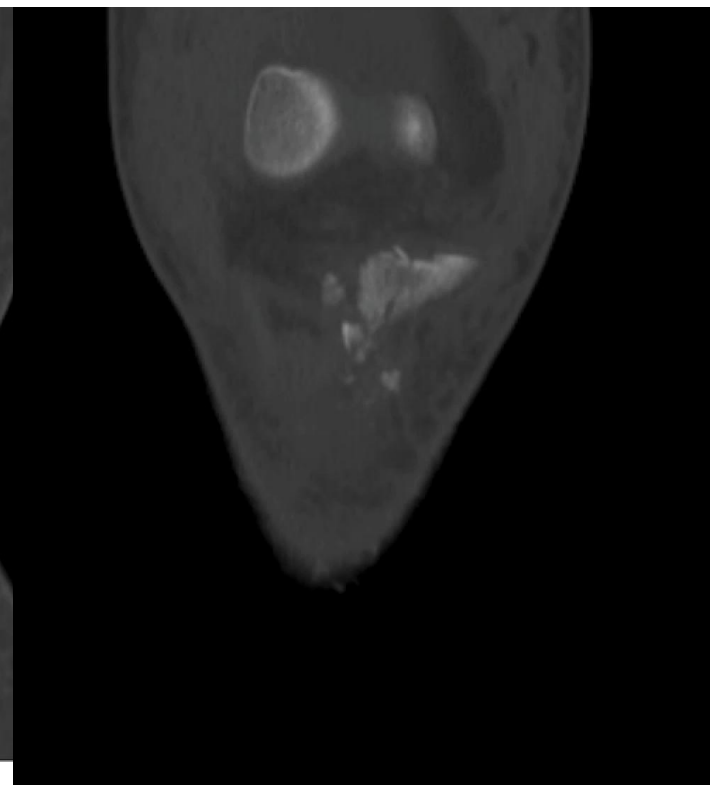
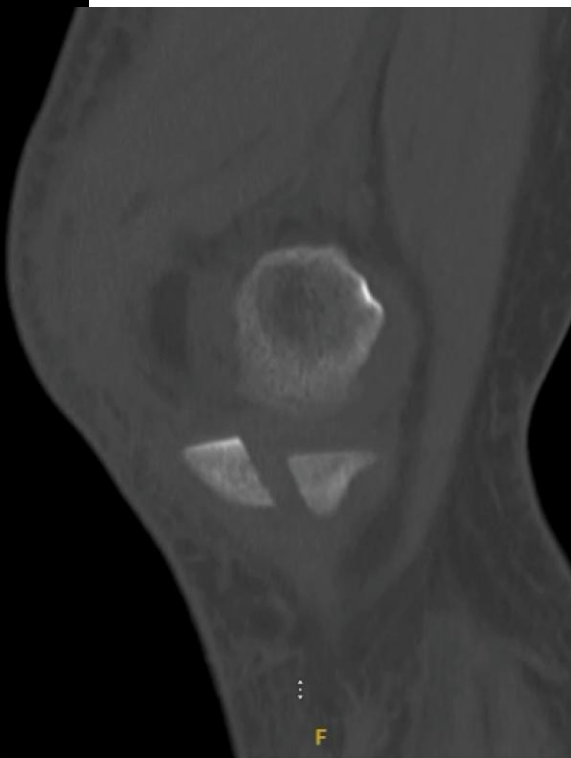
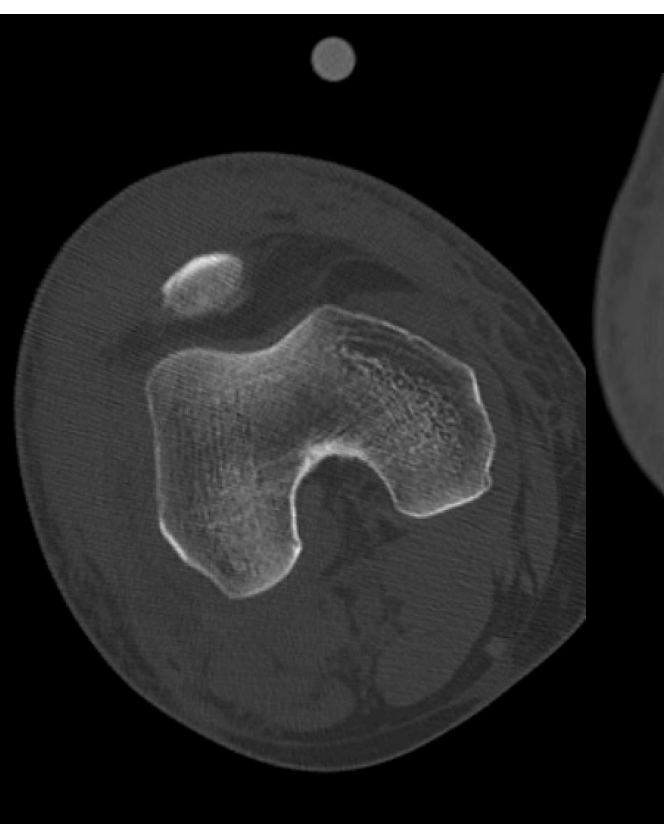


- **Initial operative plan:**
 - Closed reduction and ex-fix?
 - Acute ORIF (within 24h)?

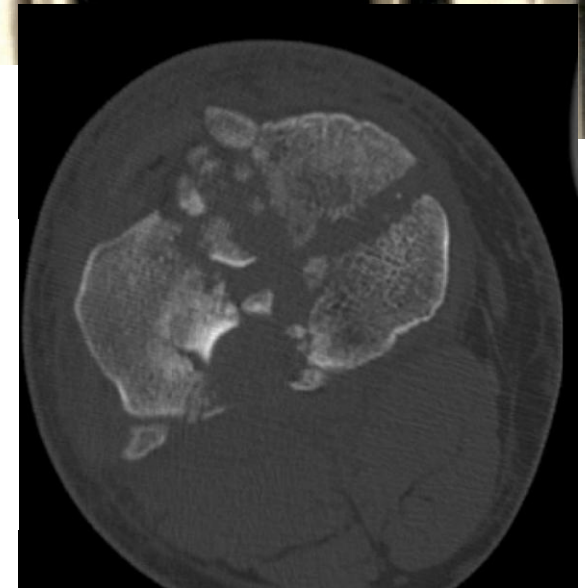
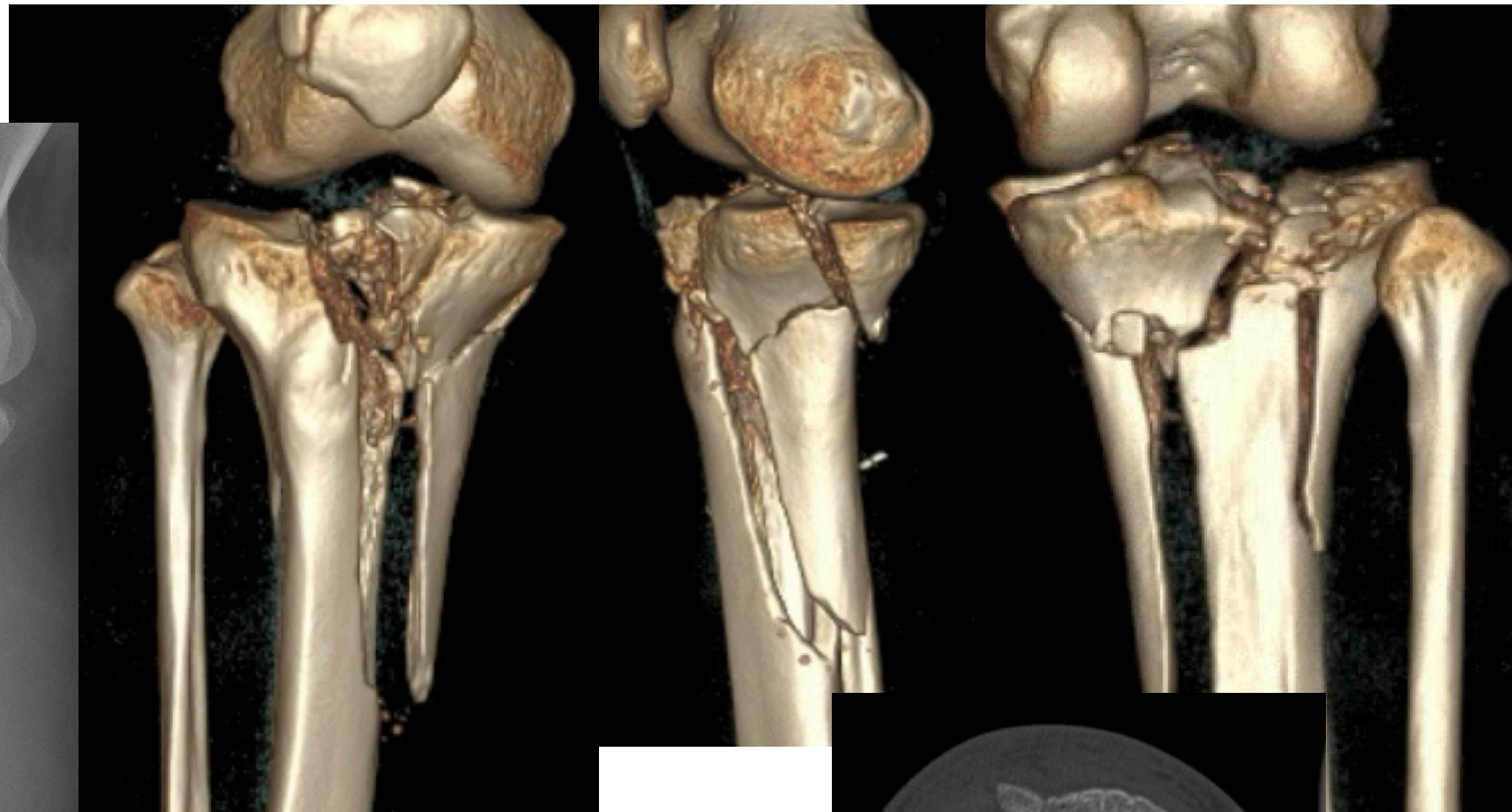


Need distraction through joint





MRI?



Discussion points:

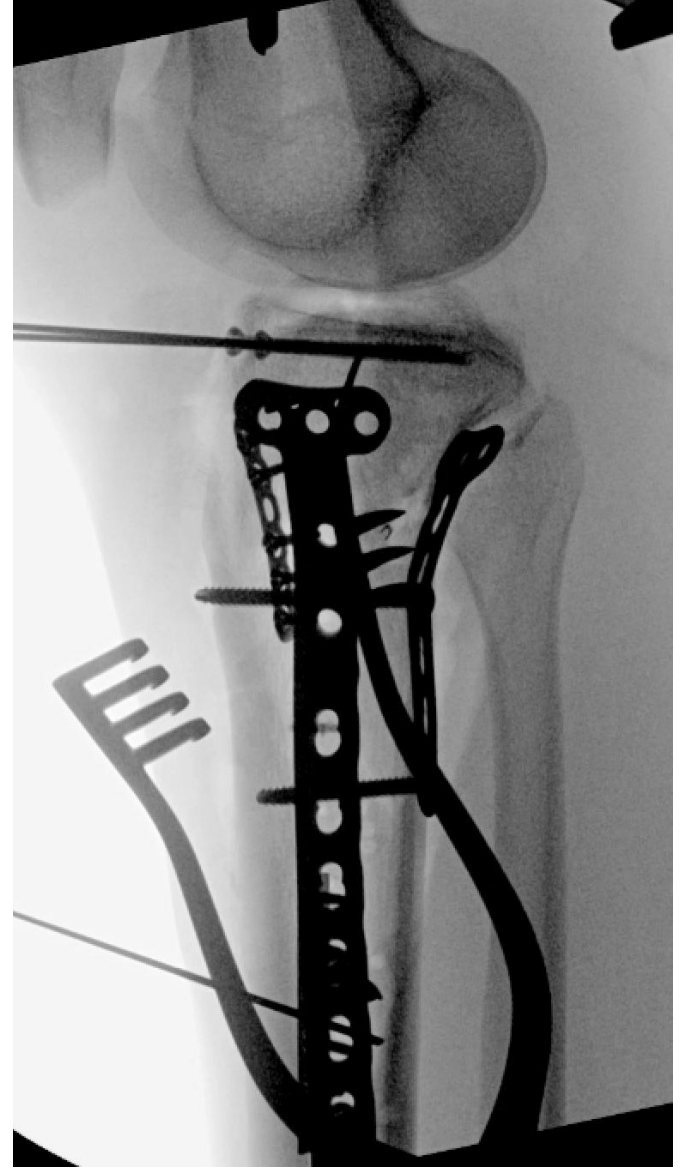
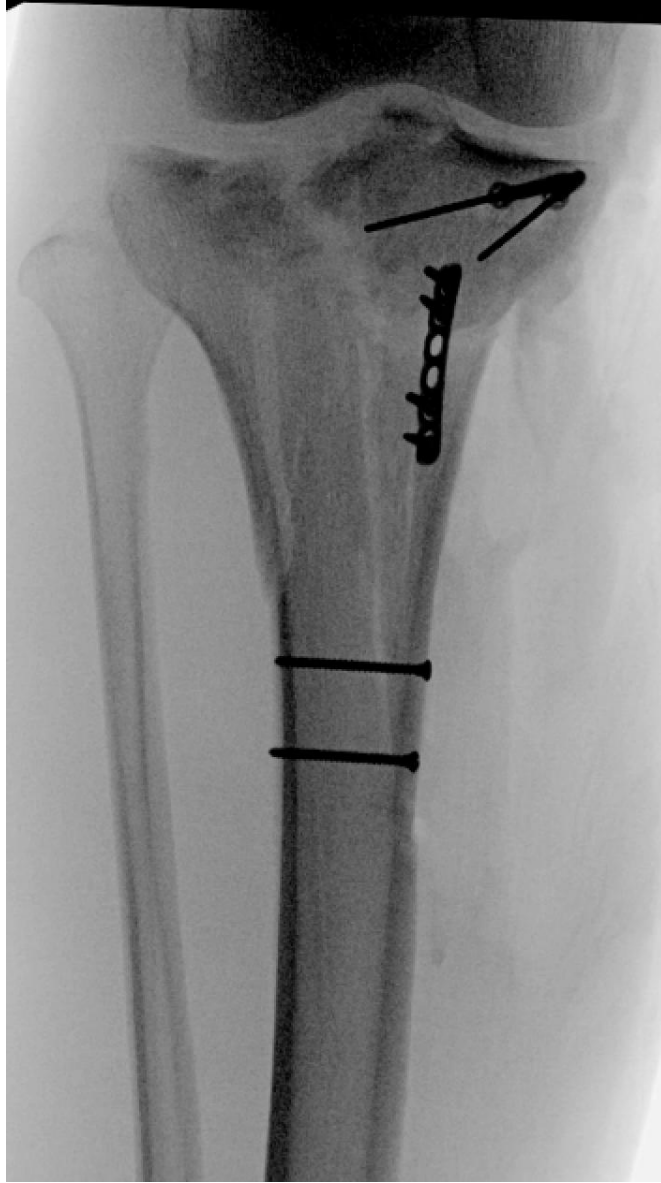
- What fracture fragments need a plate?
- How do you assess reduction of the medial coronal split?
- Lateral plateau (split depression) – how do you reduce and fix?
- How do you assess/manage potential meniscal injuries?



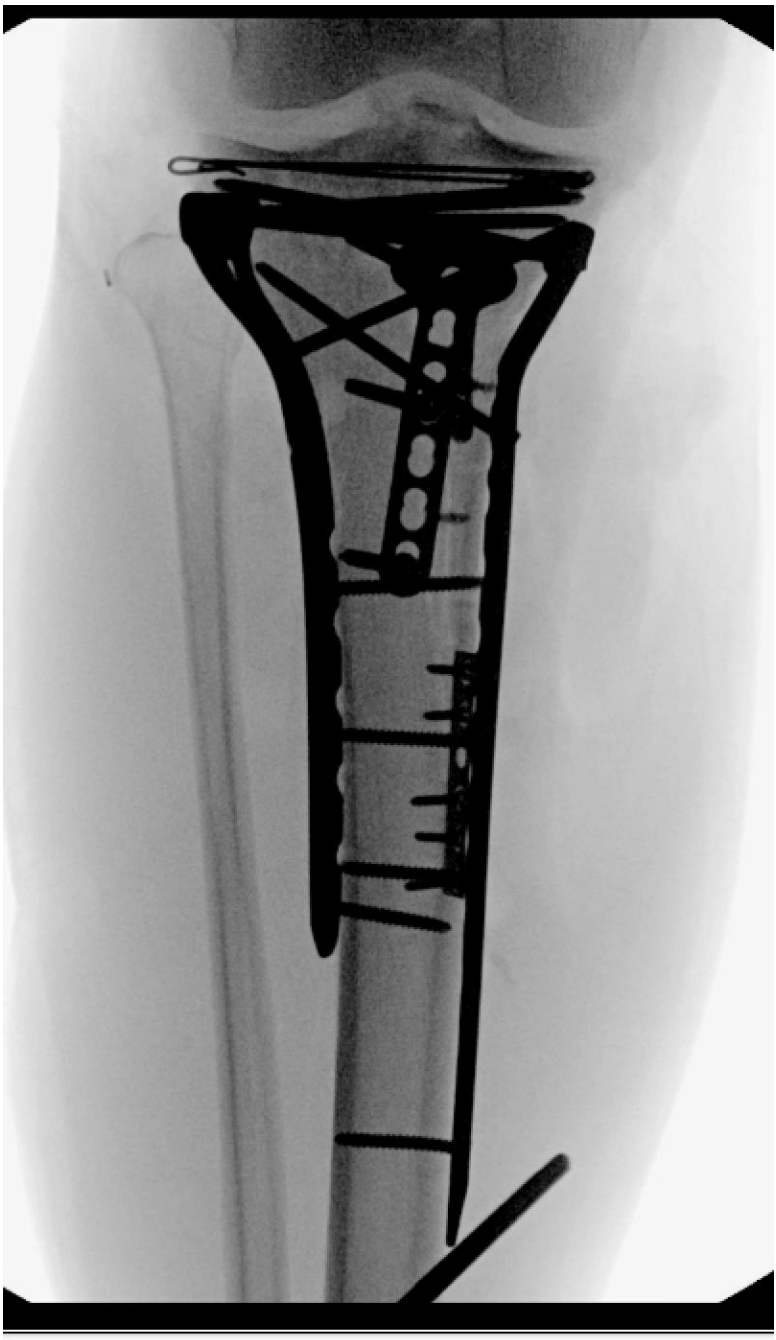
Helpful to obtain contralateral knee XR



Medial joint reduction









Discussion points

- Assess for compartment syndrome pre- and post-op
- Soft tissue swelling
 - Staged procedure
- Medical coronal split – assessment and reduction
- Lateral plateau – split depression
 - Open book vs containment method
 - Fill void – ie. autograft, allograft, calcium phosphate
 - Fixation – supplemental rafting screw, rafting K-wires, shelf plate
- Meniscal injury

Thank you!

