

Complex tibia plateau fracture - Circular external fixation



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Message

- Circular frames and plates are not competing methods, but complementary tools
- Select on the basis of fracture patterns and soft tissue status

The Canadian Orthopaedic Trauma Society

Open reduction and internal fixation compared with circular fixator application for bicondylar tibial plateau fractures. Results of a multicenter, prospective, randomized clinical trial.

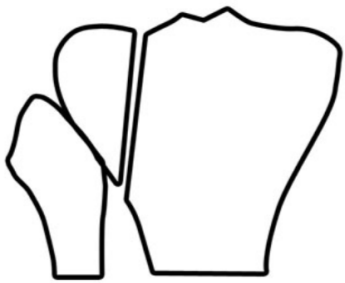
J Bone Joint Surg Am. 2006; 88: 2613-2623

AIM

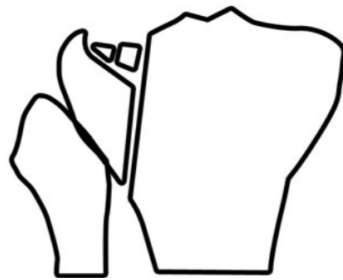
- Respecting the soft tissues
- Reducing the fracture
- Stabilizing the fracture with the appropriate method

Ring fixation

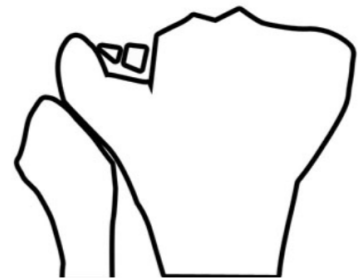
Schatzker J, McBroom R, Bruce D (1979) The tibial plateau fracture: the Toronto experience 1968–1975. Clin Orthop Rel Res 138:94–104



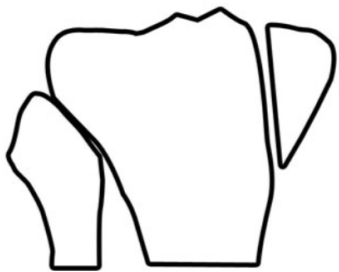
Schatzker I



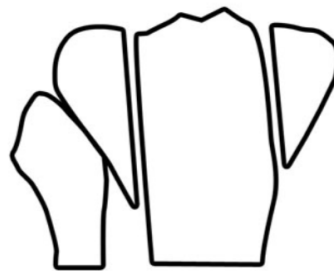
Schatzker II



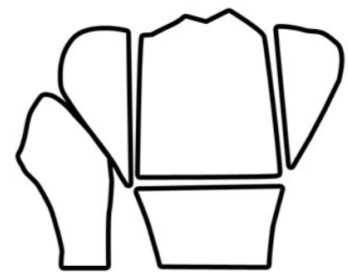
Schatzker III



Schatzker IV



Schatzker V



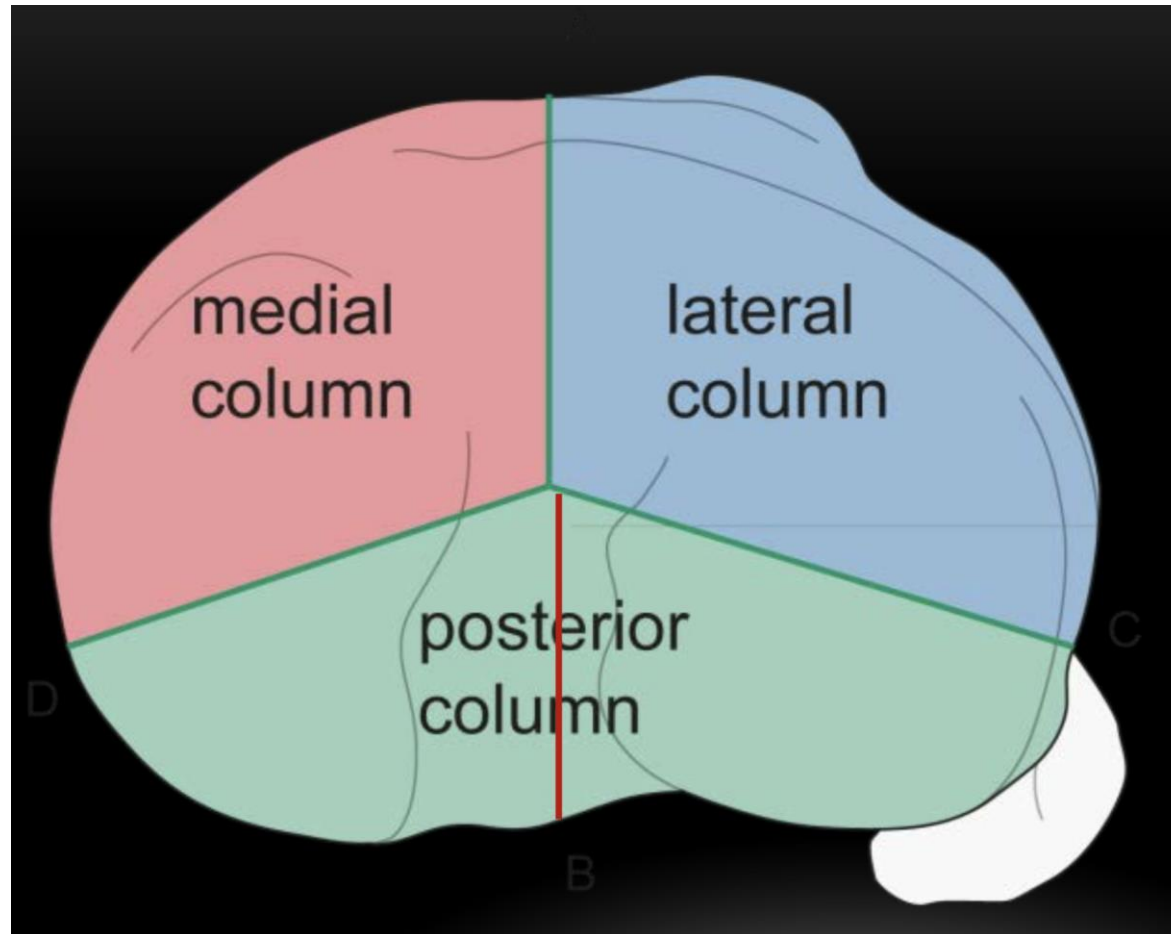
Schatzker VI

Preoperative planning: 3 column concept

Medial approach in supine position

Lateral approach in supine position

Postero-medial / posterior approach in prone position

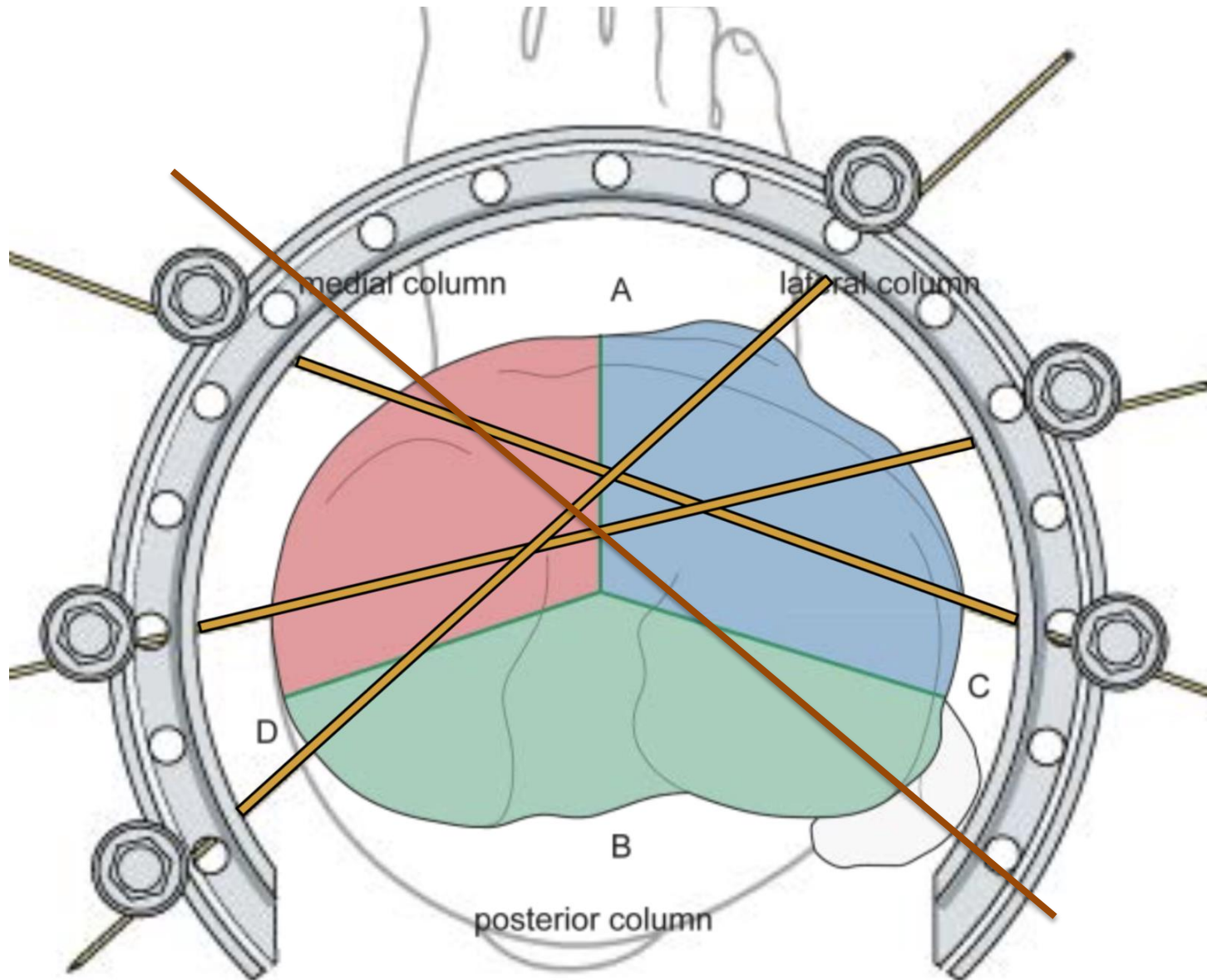


Tibial Plateau Fracture Characteristics: Computed Tomography Mapping of Lateral, Medial, and Bicondylar Fractures

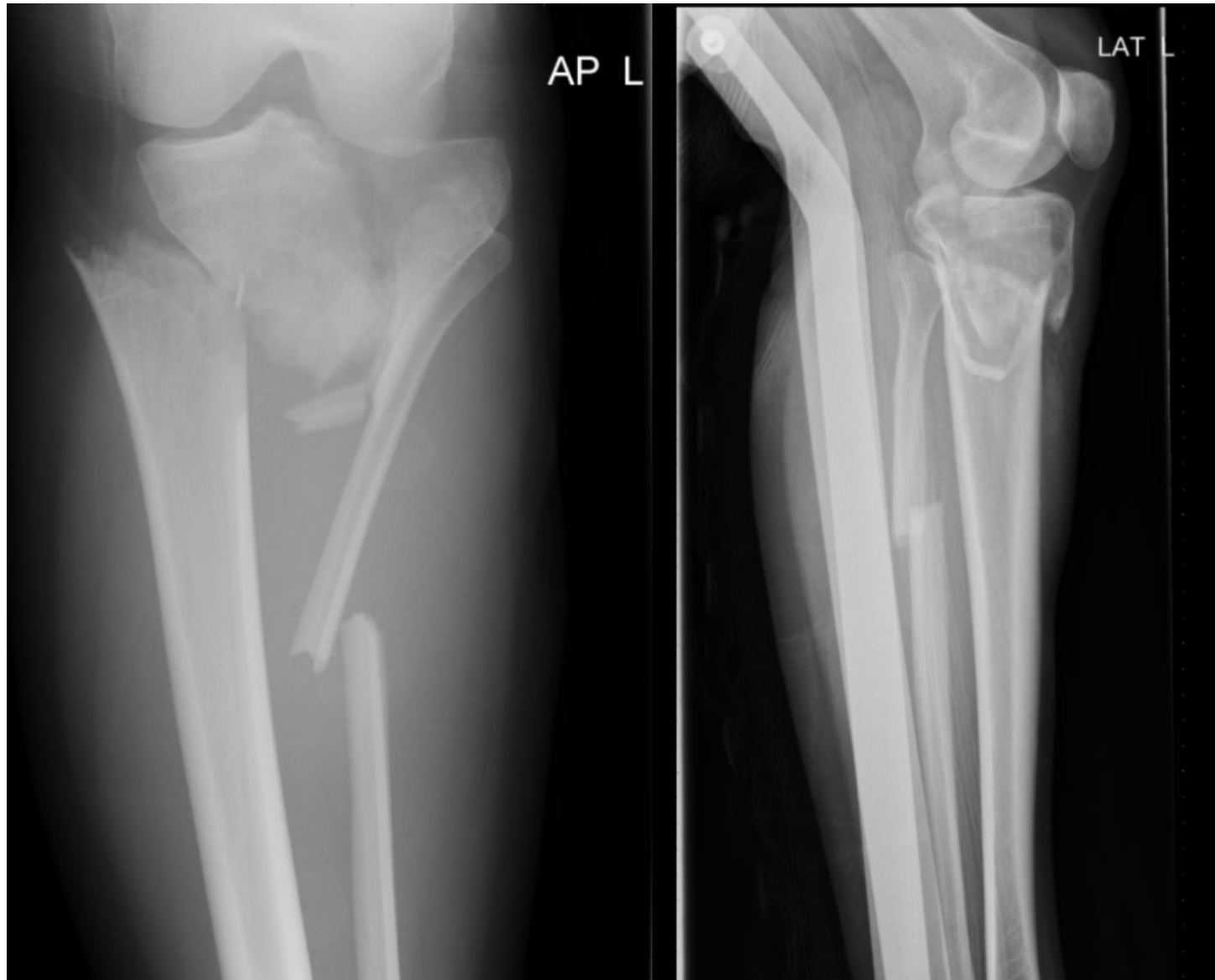
Rik J. Molenaars, BSc, Jos J. Mellema, MD, Job N. Doornberg, MD, PhD, and Peter Kloen, MD, PhD
Orthotrauma Research Center Amsterdam, Academic Medical Center, Amsterdam

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Preoperative planning

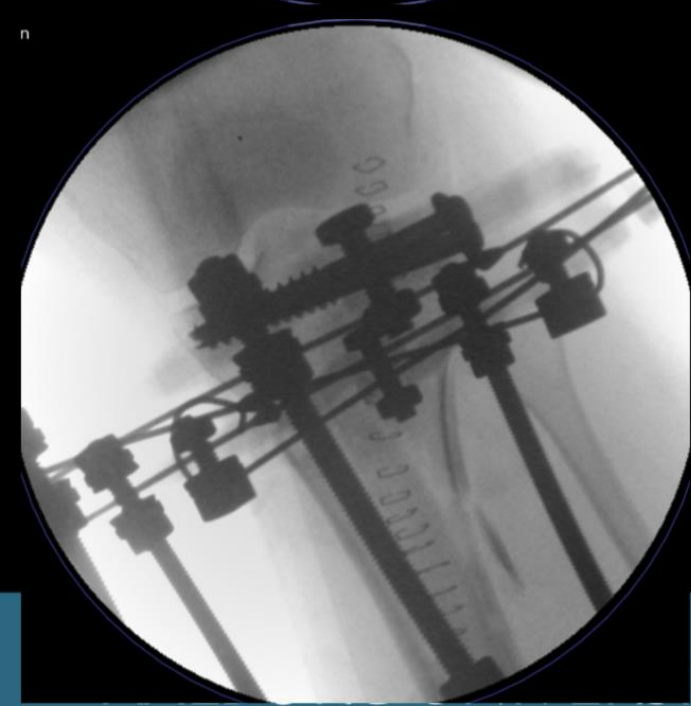


24 years old female; high-energy open Schatzker VI



Span – Scan - Plan





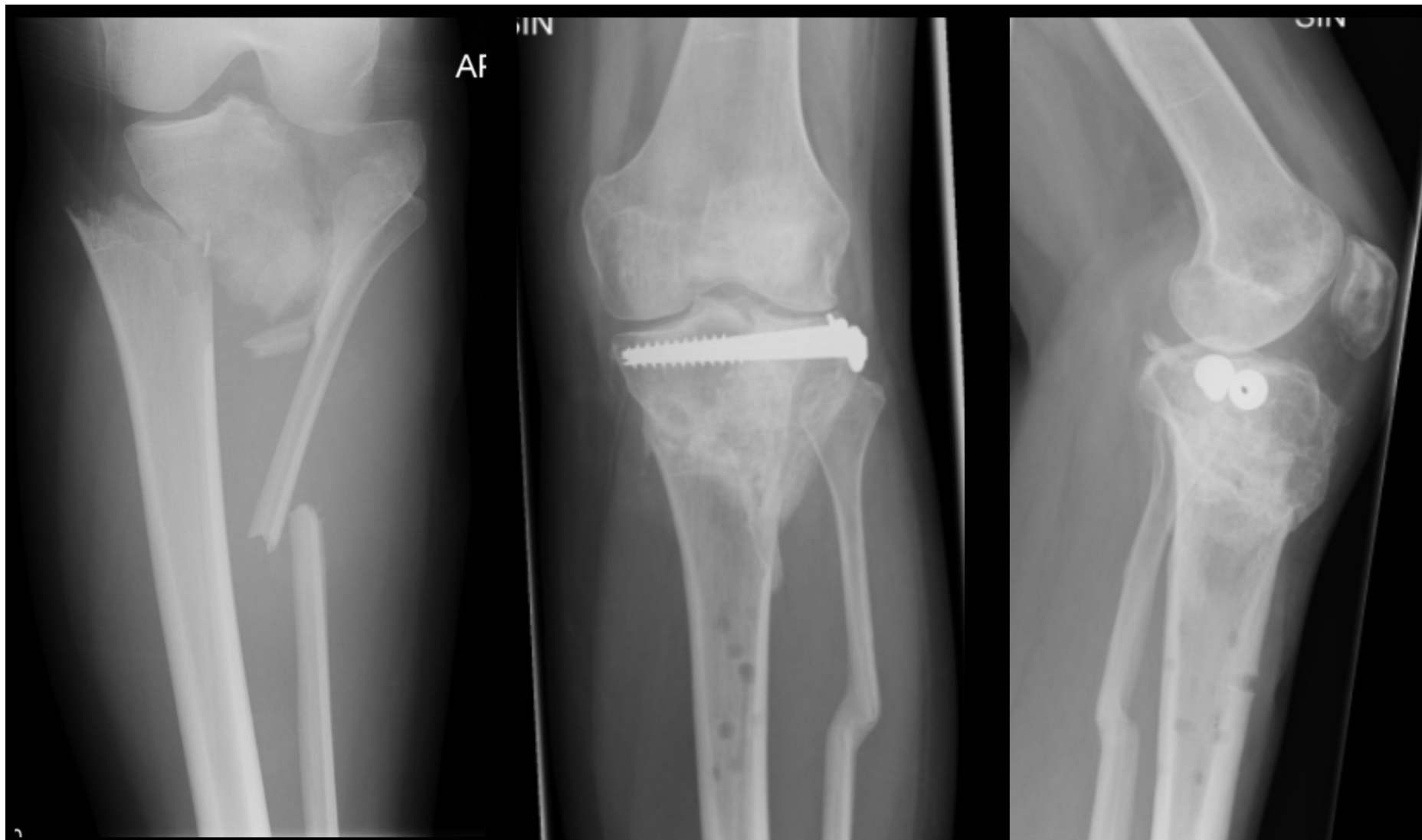
Circular frame strategy

- 1) Basis frame – Femur ring: Ligamentotaxis (condylar height)
- 2) Open reduction: allograft; cannulated screws: absolute stability of intra-articular fragments
- 3) Proximal tibia ring: relative stability of metaphyseal fracture

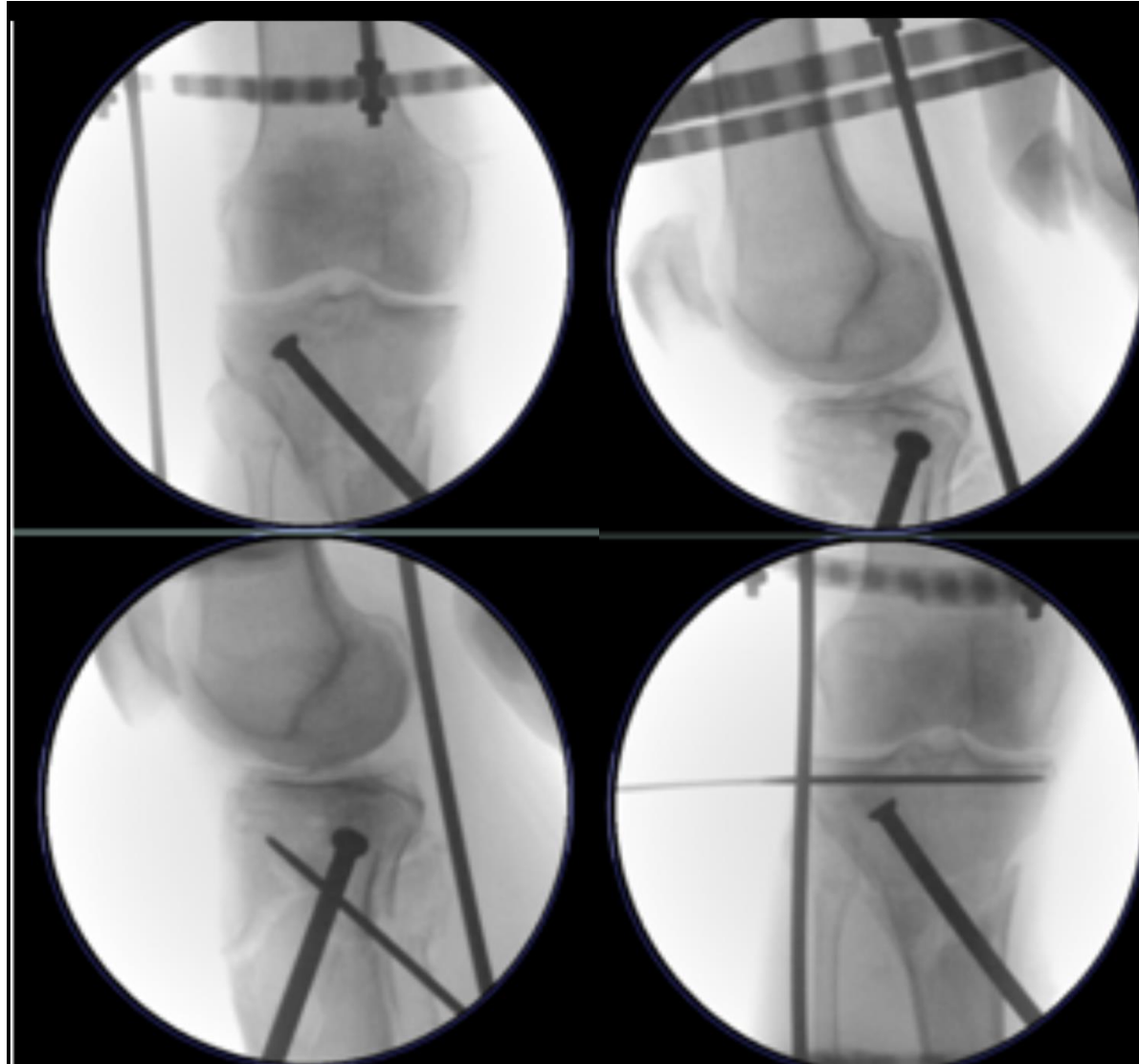


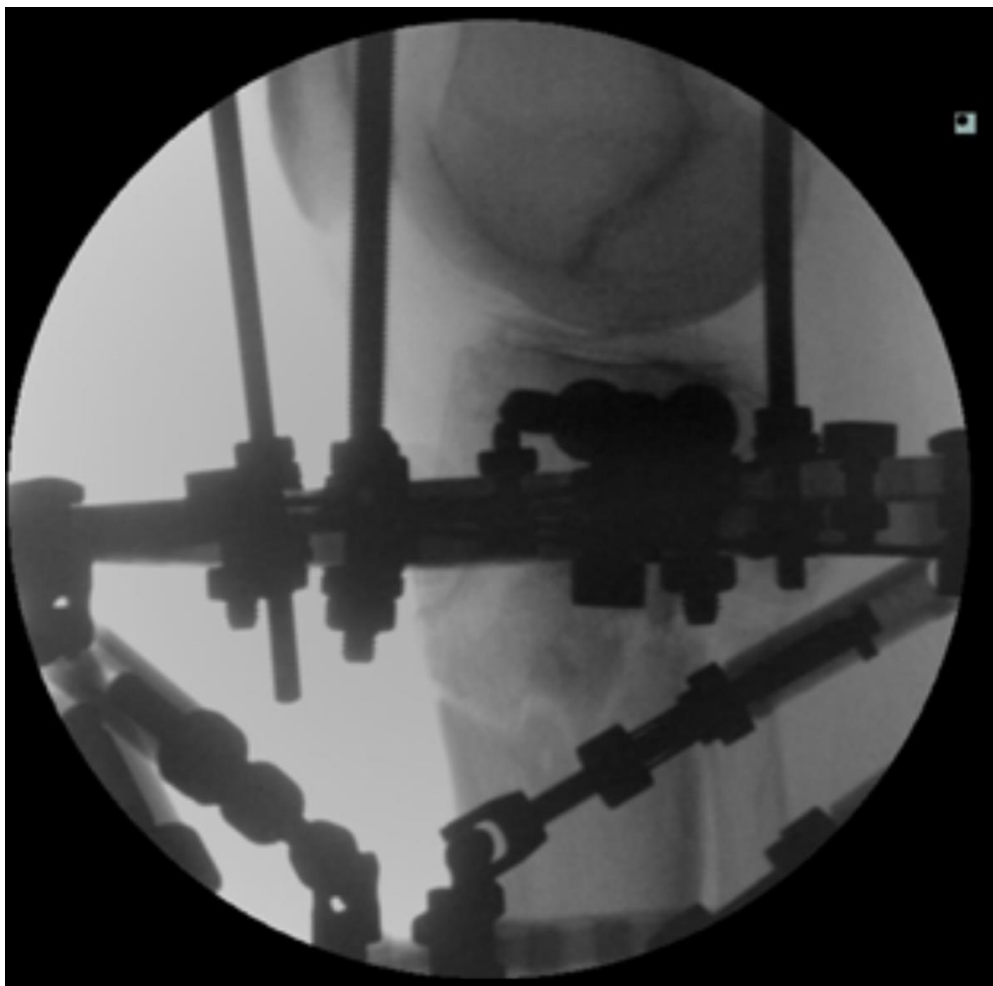
- Non-weight bearing for 6 weeks
- ROM exercises with orthoses for 6 weeks
- Frame-time: 6 months

1 year post-injury: Full ROM



64 years-old skiing injury

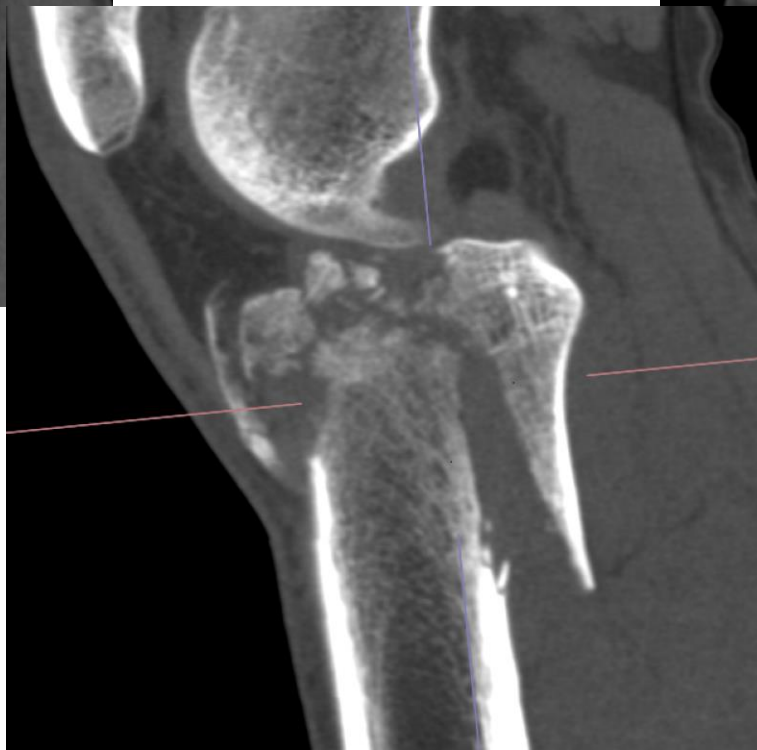
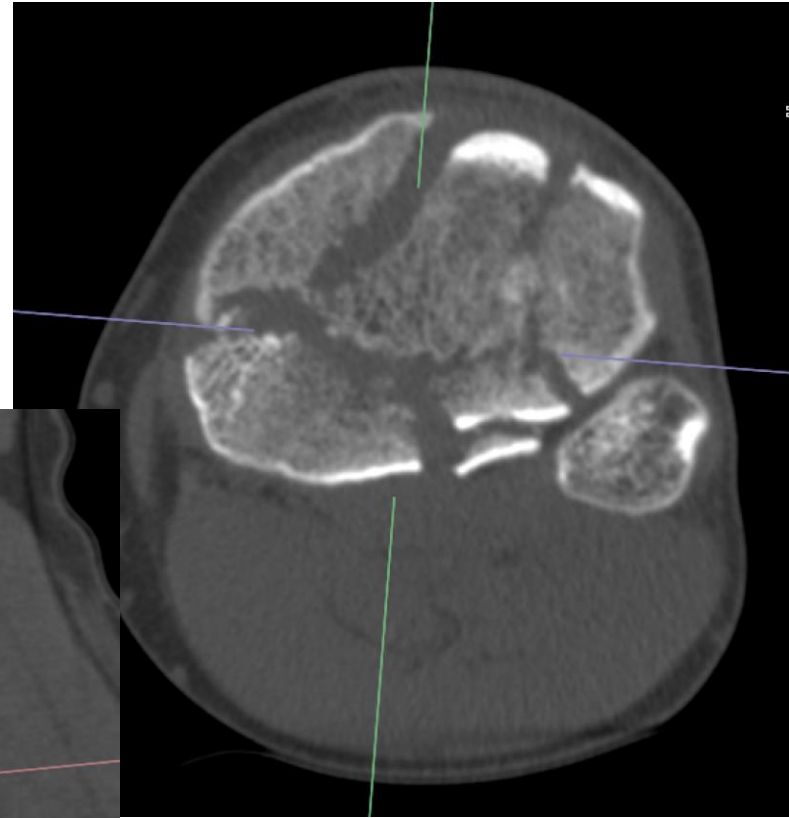




Frame ?



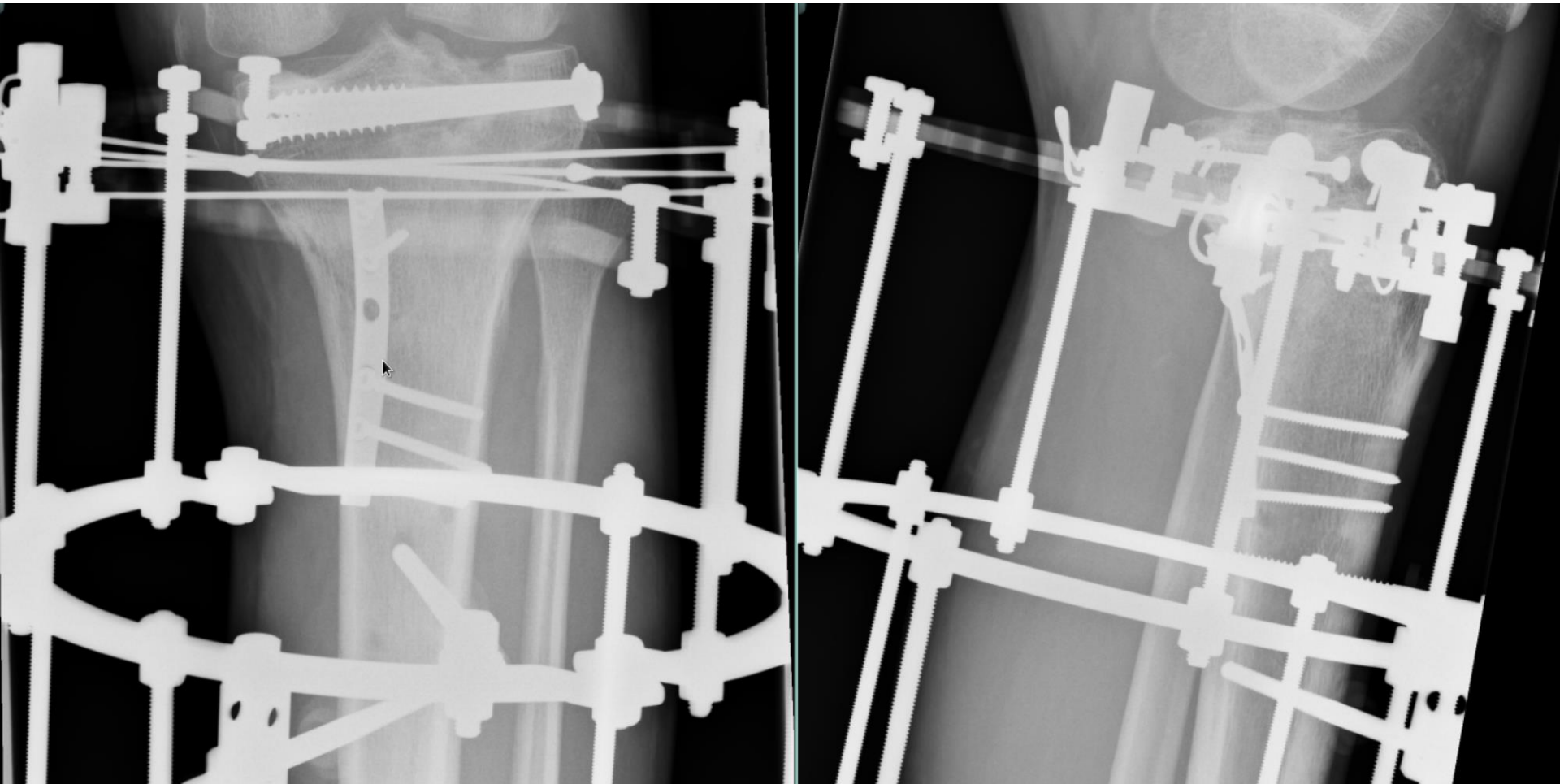
3 column fracture



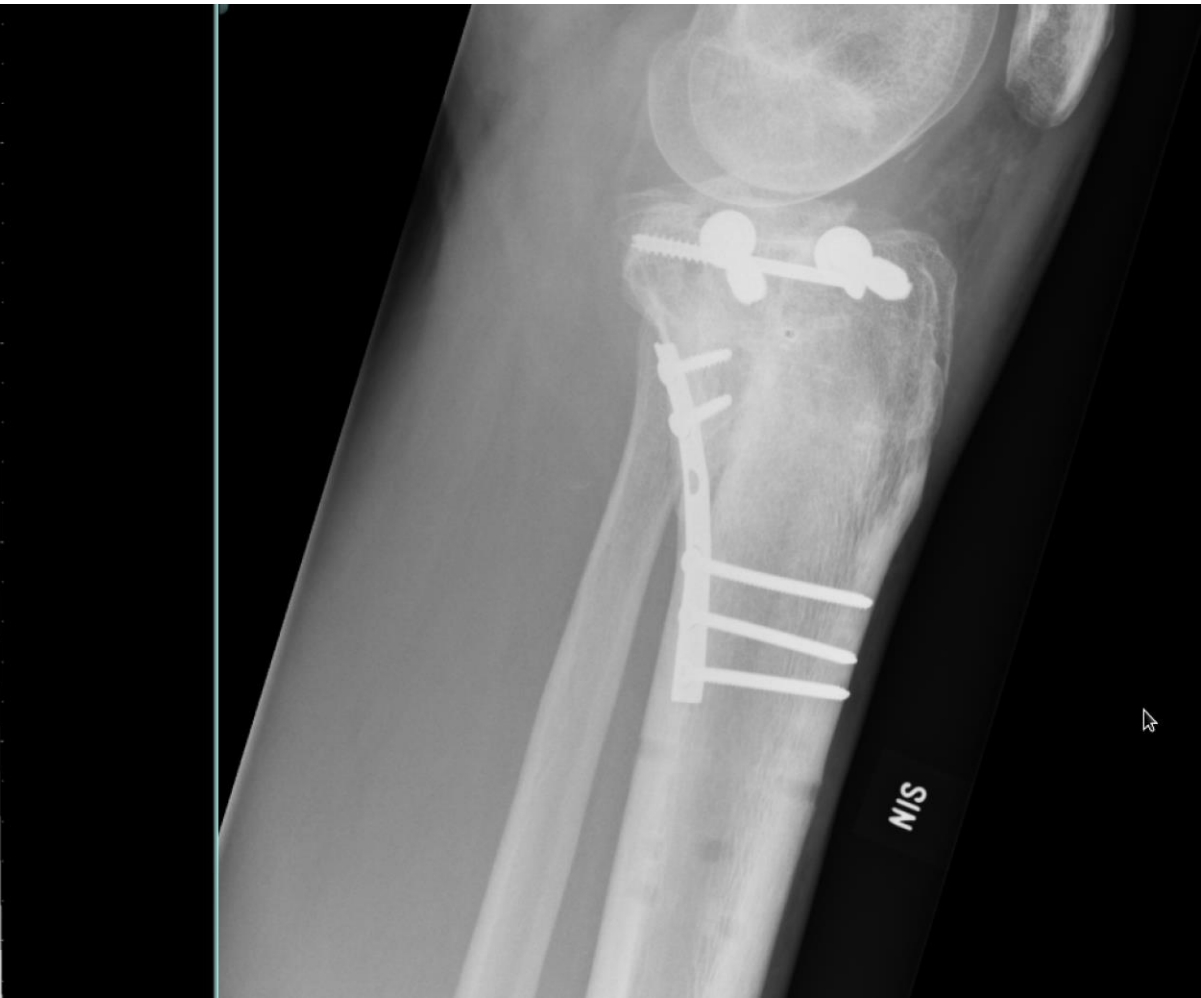
3 column fracture



3 column fracture



3 column fracture



Take Home Message

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