Proximal 1/3rd Tibia Fractures: Nailing vs Plating

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UCSF/ZSFG

Disclosures

- Nope

Outline

- 1) Why are we talking about this?
- 2) Why we shouldn’t be talking about this.
- 3) My thoughts

Why are we talking about this?

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Pitfall of traditional nailing:

-Patient/leg positioning (Aka, reduction)

-Poor start site

-Nail limitation
- -Number & Orientation of interlocks
- -Location of bend

-Nail/Metaphyseal mismatch
- -Blocking & Caging screws
- -Adjunctive plating

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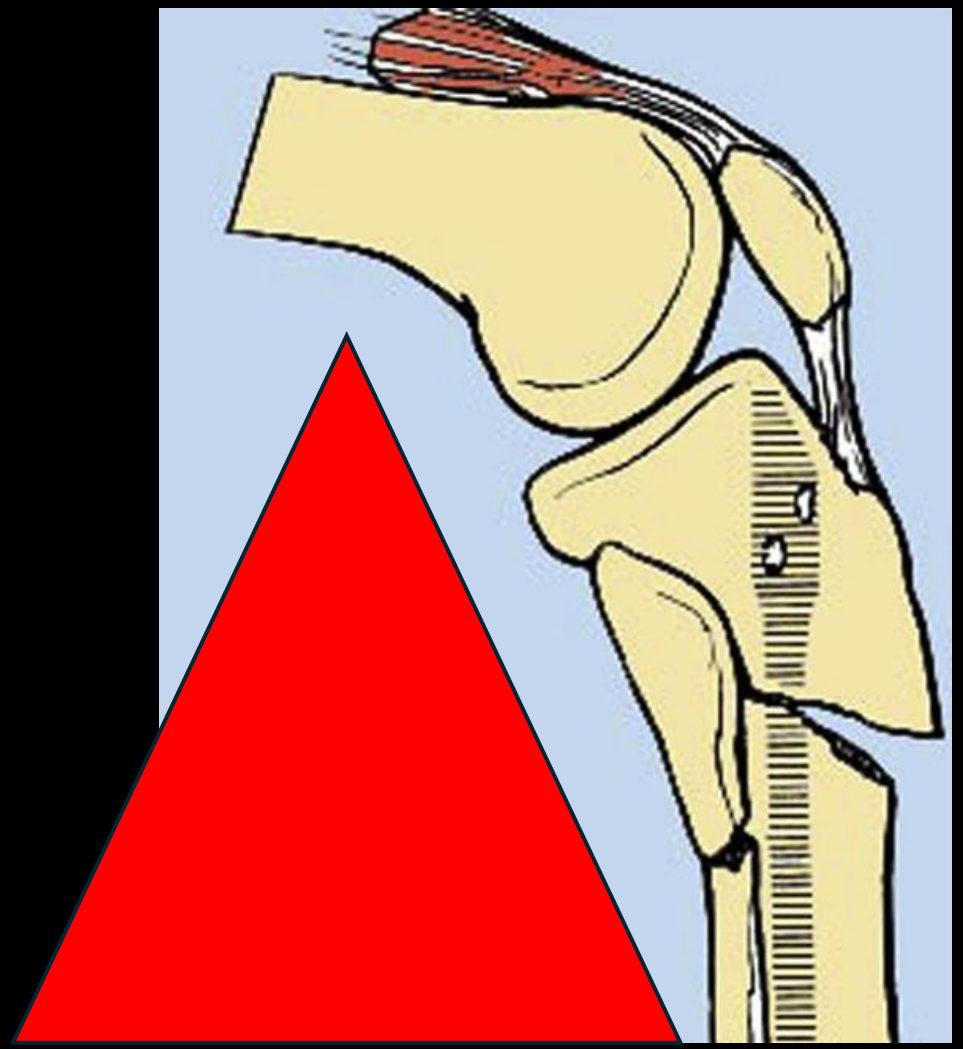

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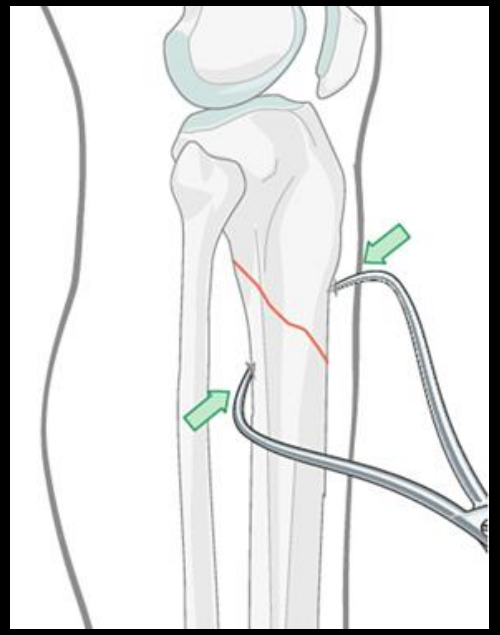

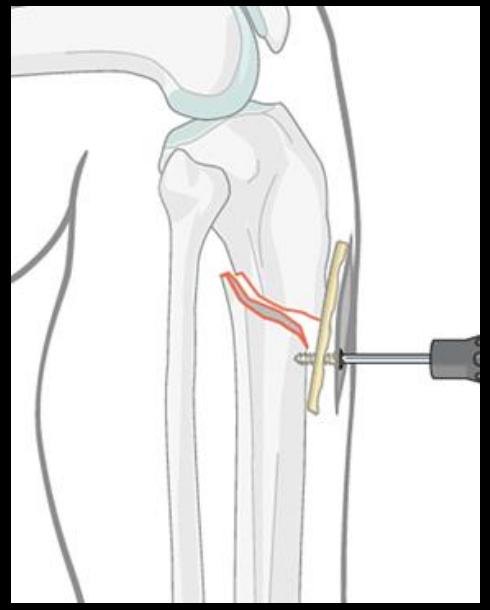

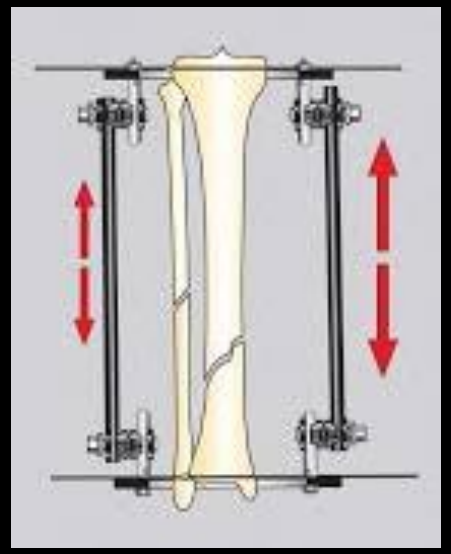

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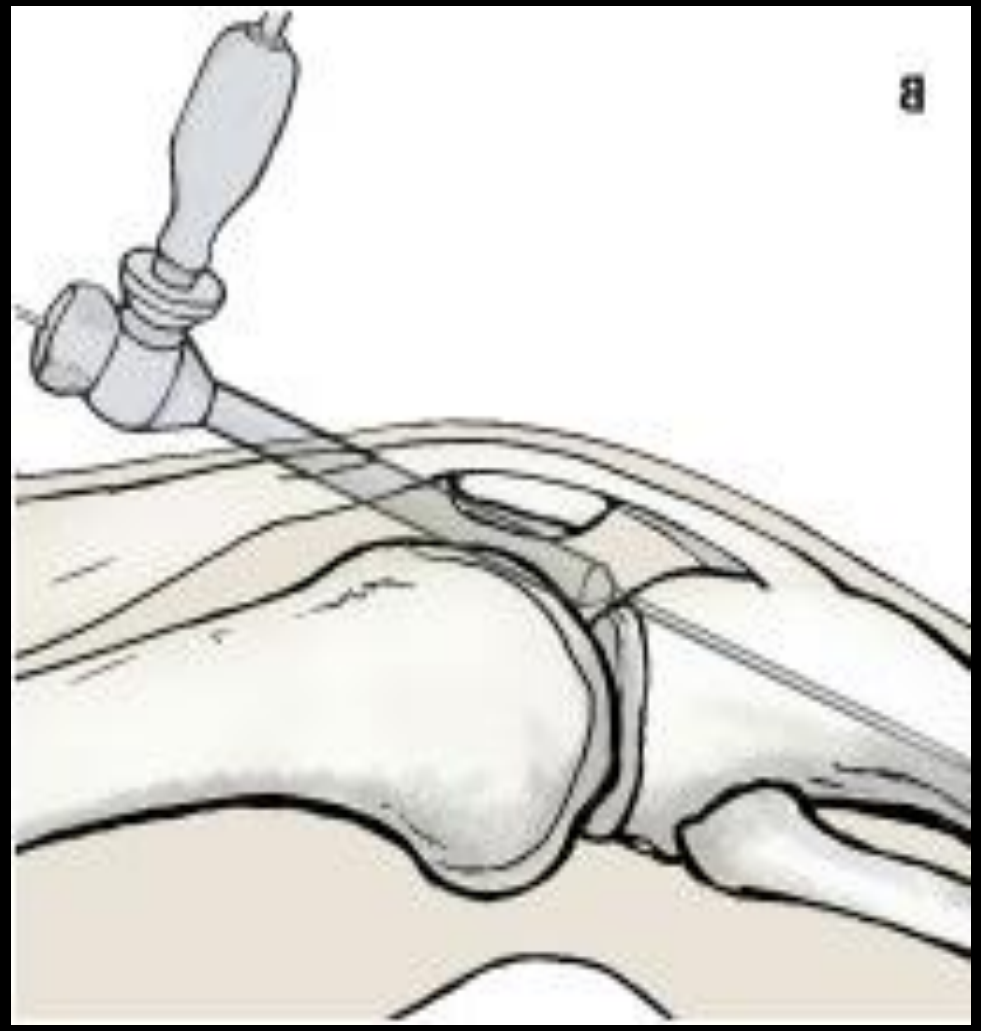

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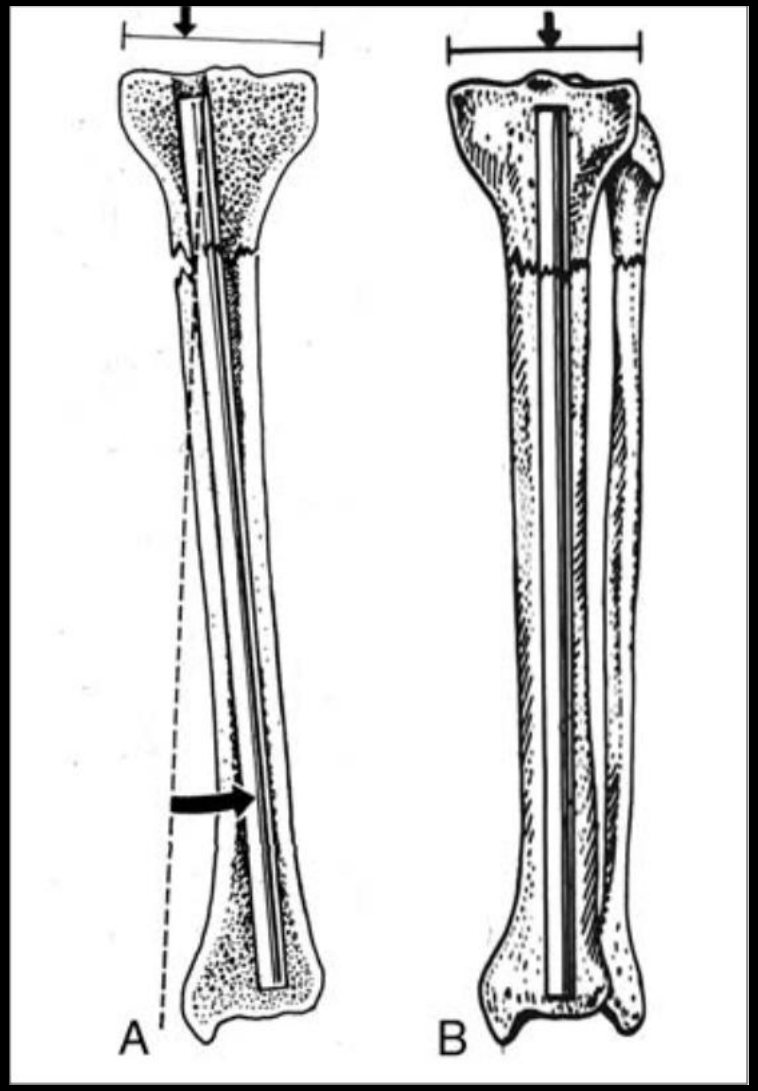
Too medial!



Medial aspect of lateral tibial spine

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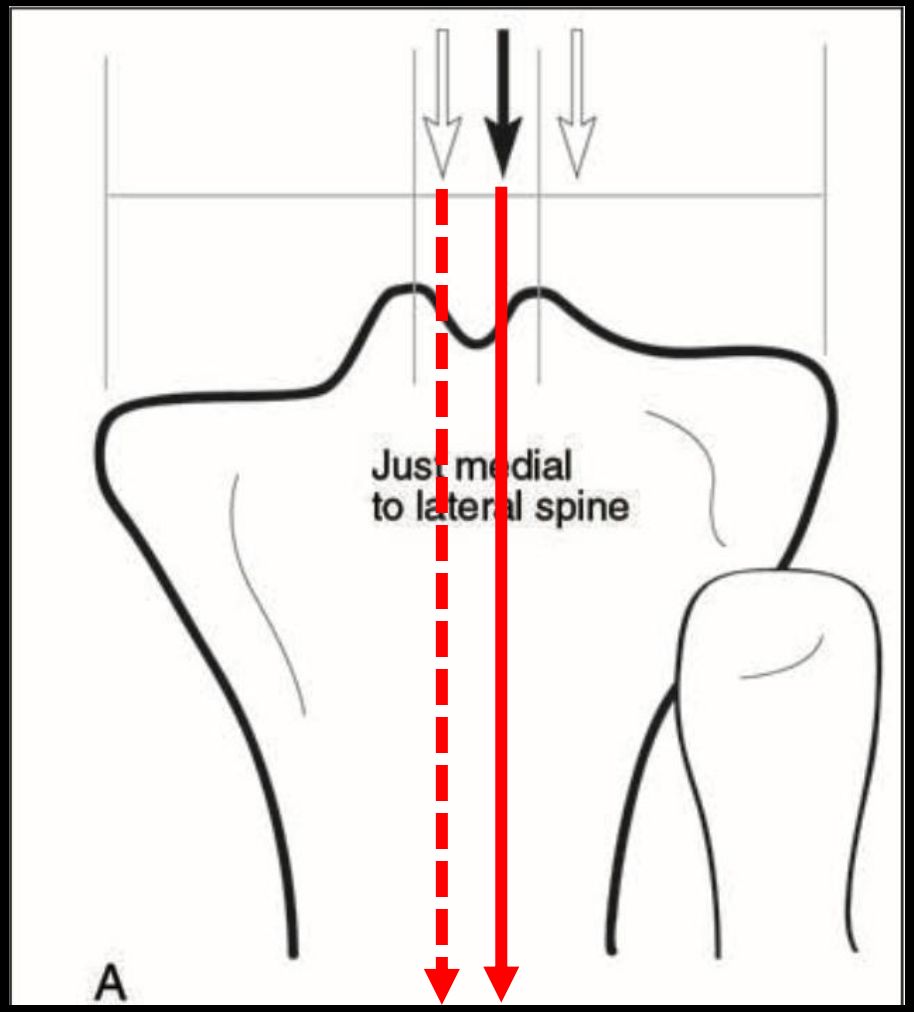

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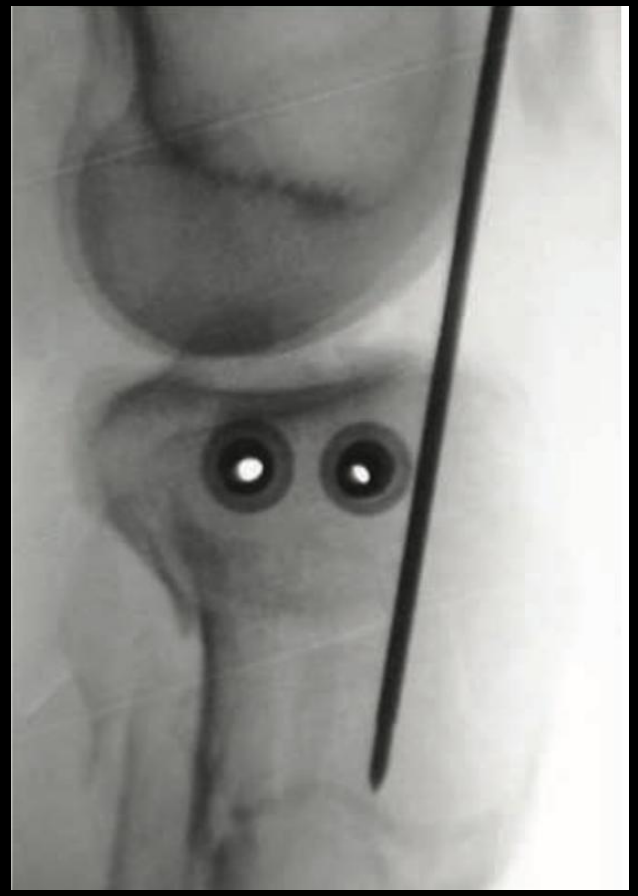
Too anterior!



Just anterior to joint line

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2 screws, 1 trajectory

5 screws, 4 trajectories

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Distal bend

Proximal bend

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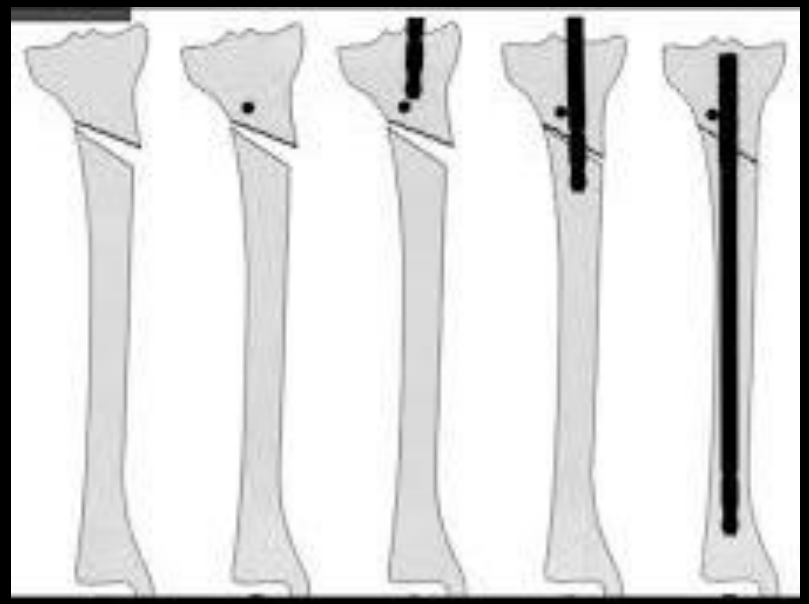

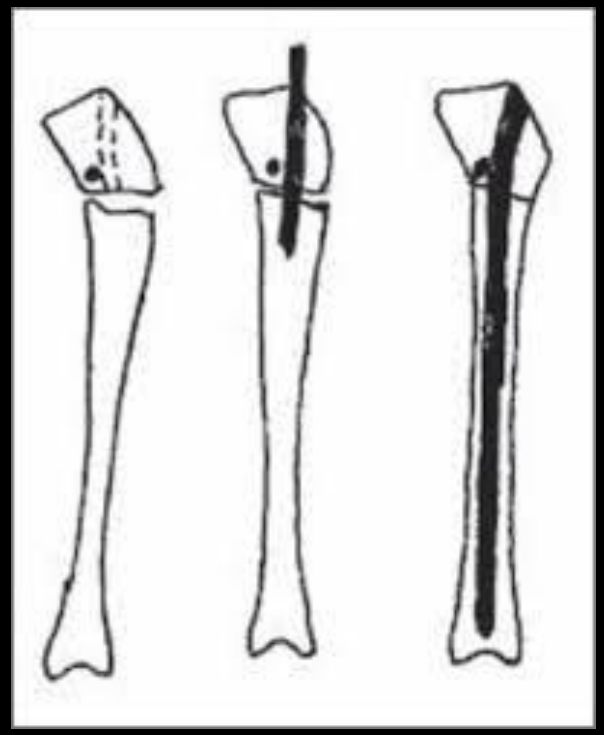

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BLOCKING Screws: Nail place & deformity induced → Nail removed, blocking screw placed, re-ream → Nail replaced & no deformity

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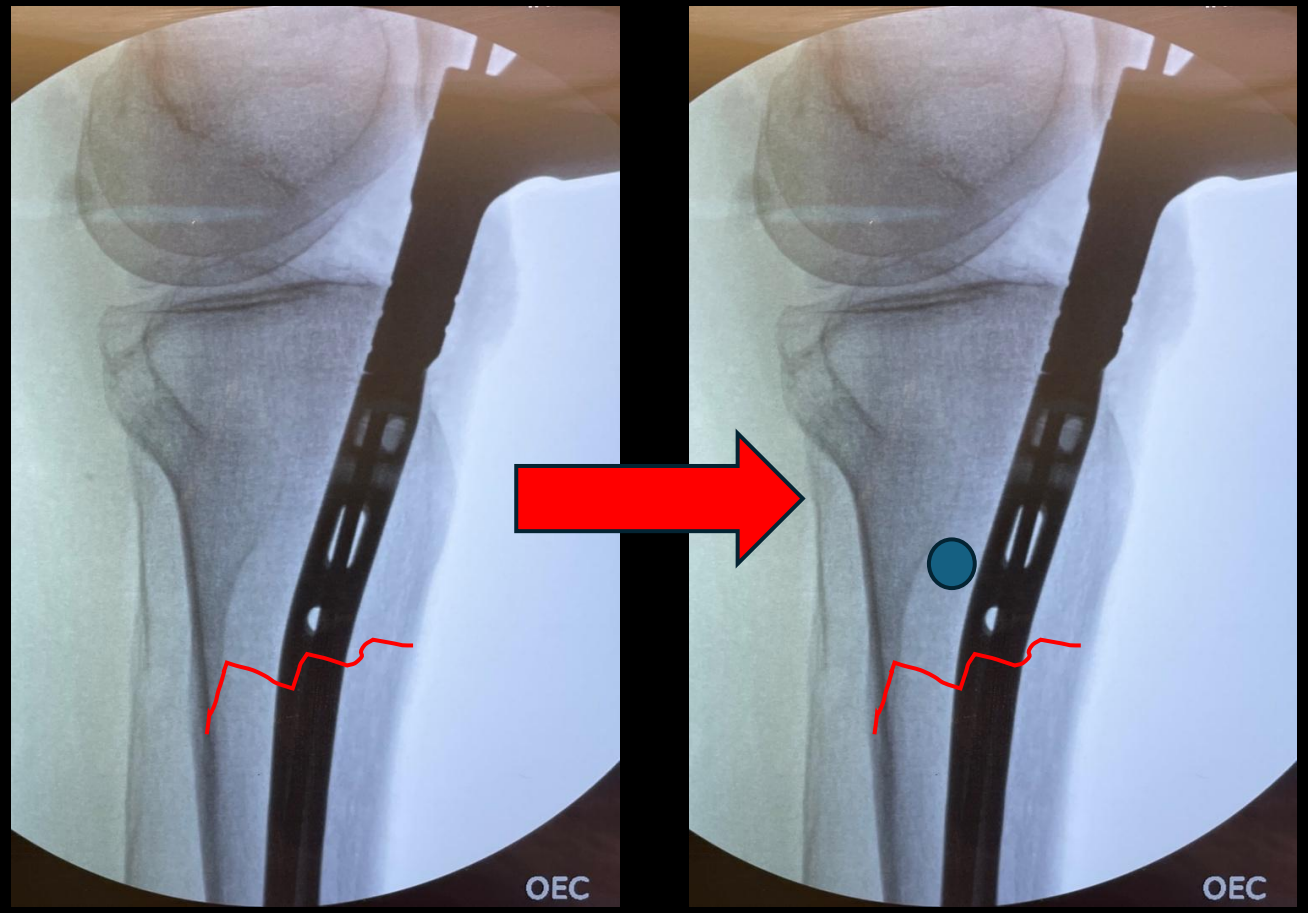

CAGING Screws: Nail in place & no deformity → screws placed around nail to increase rigidity and reduce risk of loss of reduction with time

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Particular useful with
open fractures

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Pitfalls of traditional plating:

-Reduction
    -ORIF
    -MIPO

-Isolated non-locked lateral plating

-Dual plating

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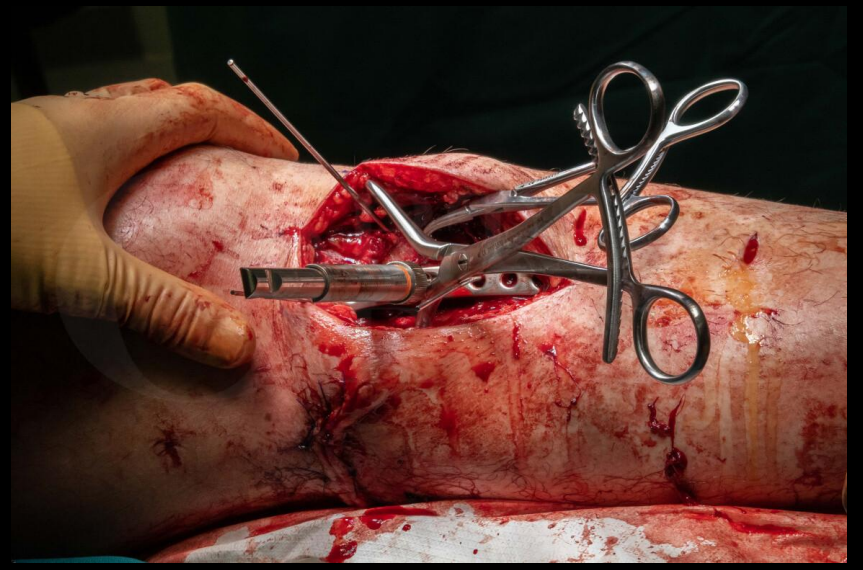
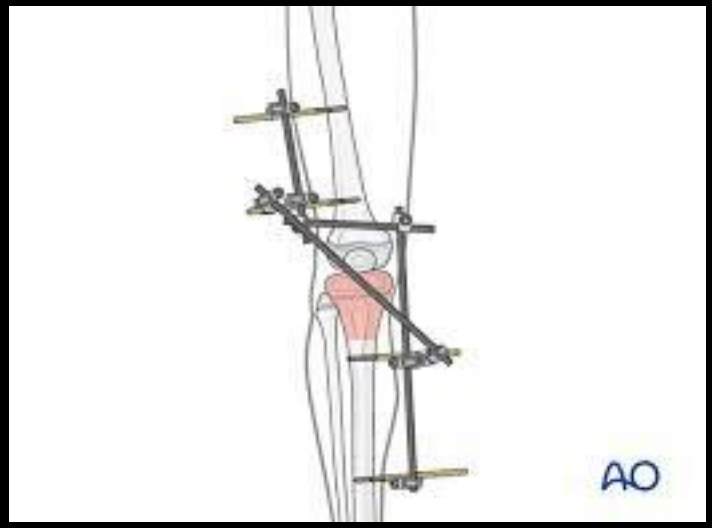
Pitfalls of traditional plating:

-Reduction
  -ORIF: Simple pattern, anatomic, direct reduction, primary bone healing
  -MIPO: Comminuted pattern, indirect reduction, secondary bone healing

-Isolated non-locked lateral plating

-Dual plating





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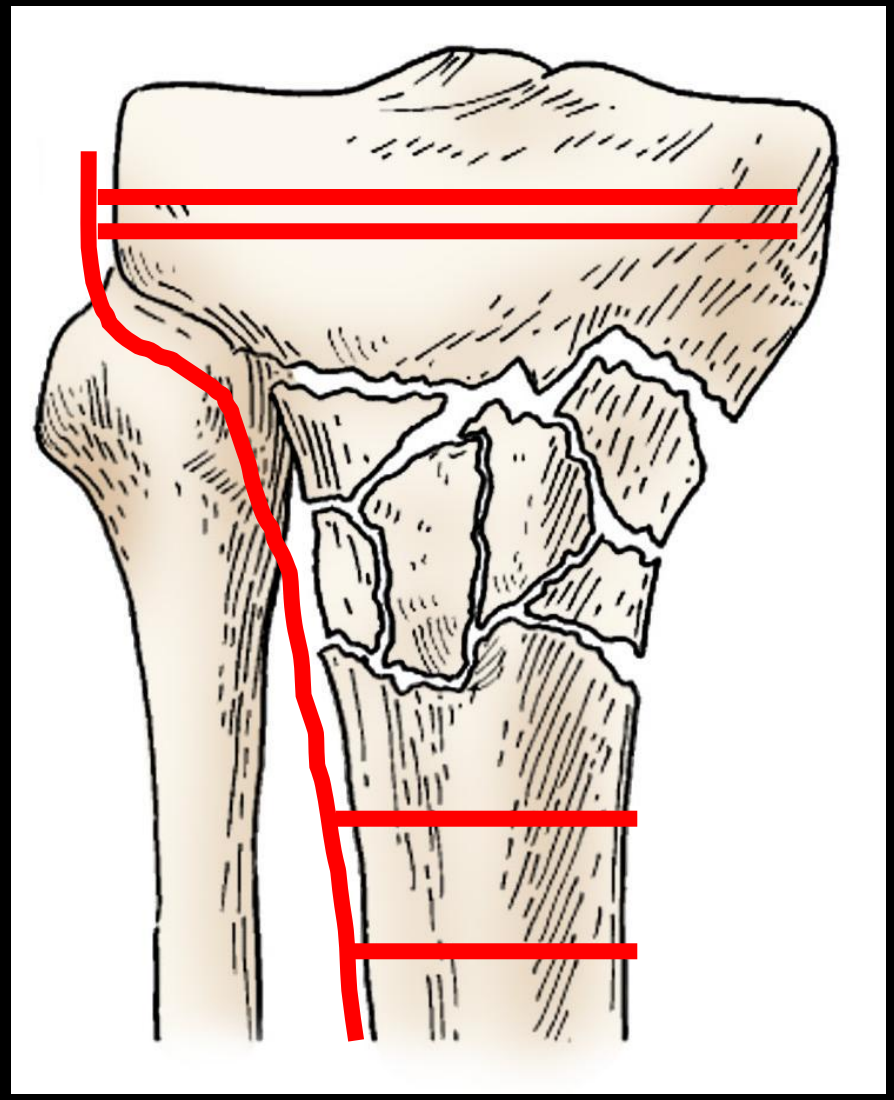

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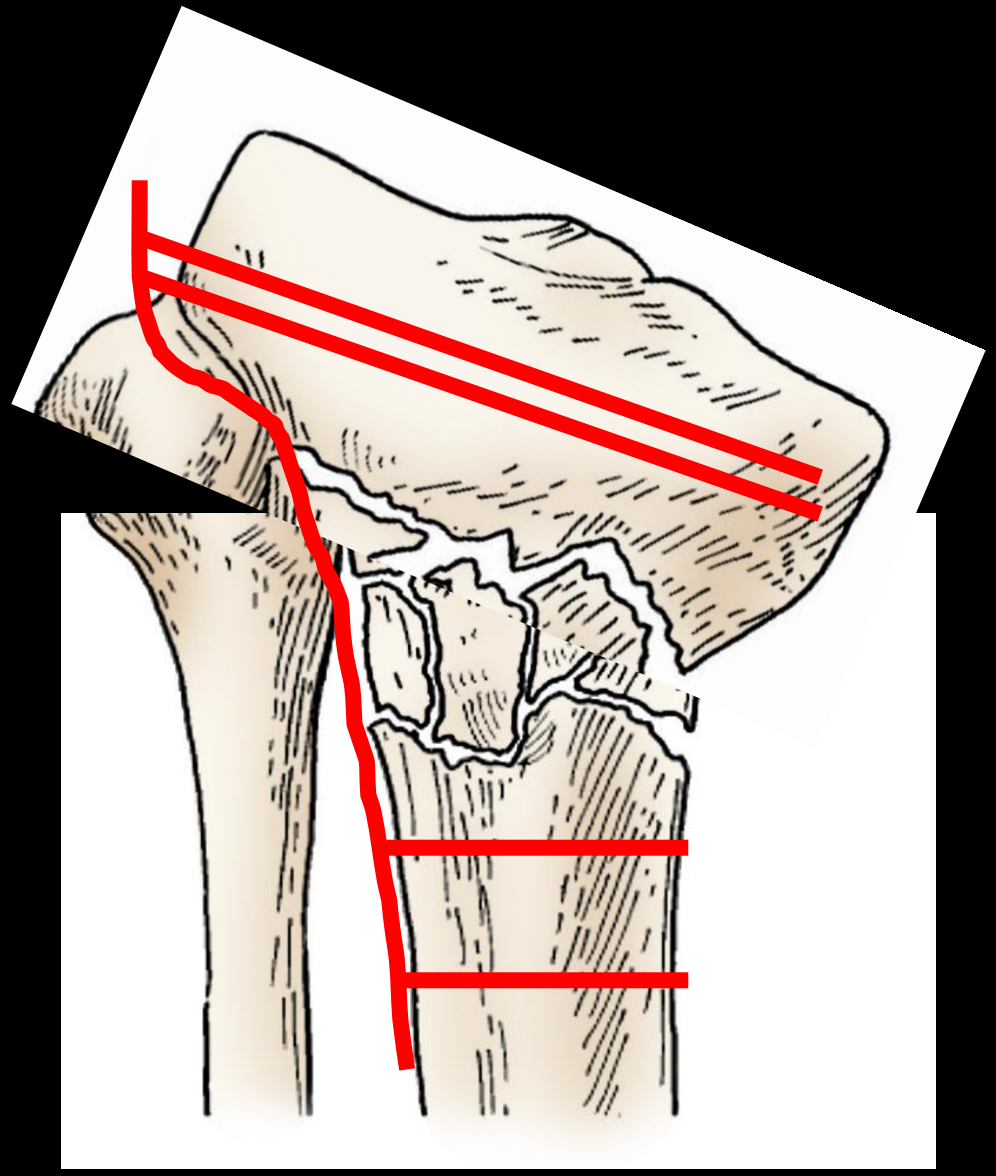

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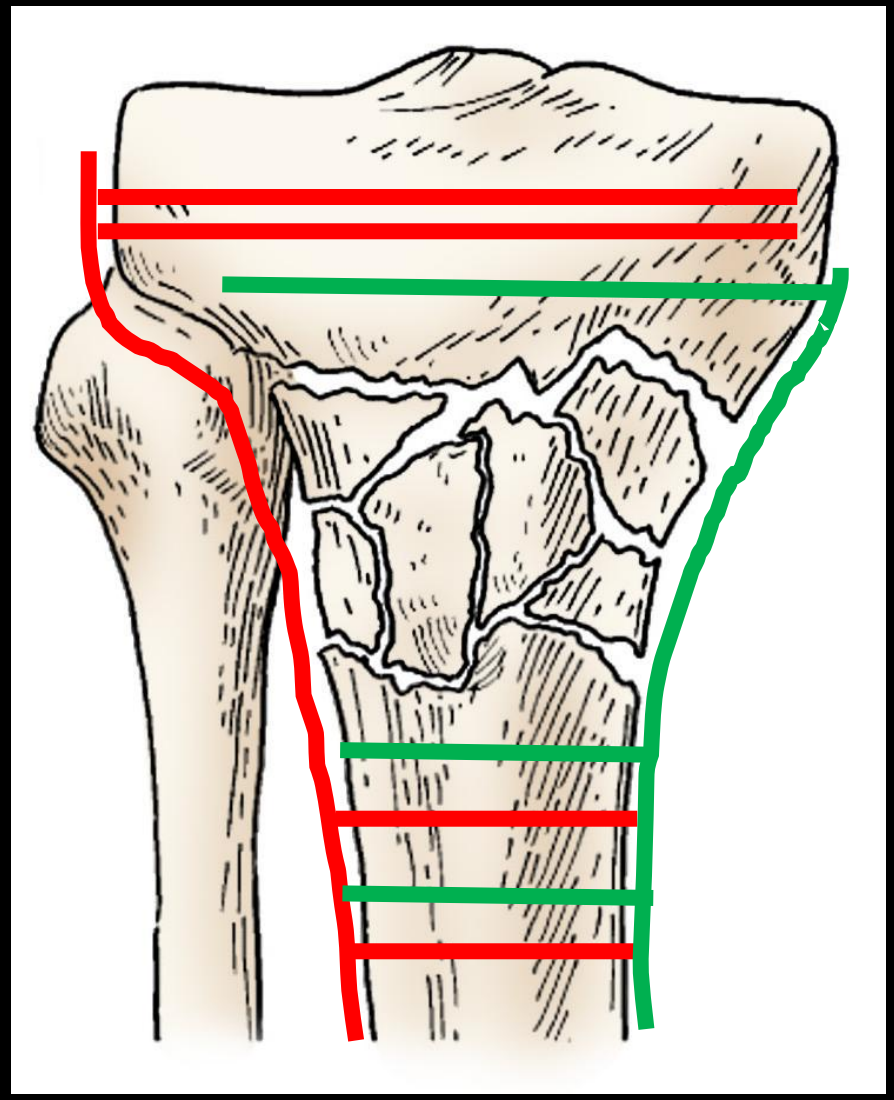

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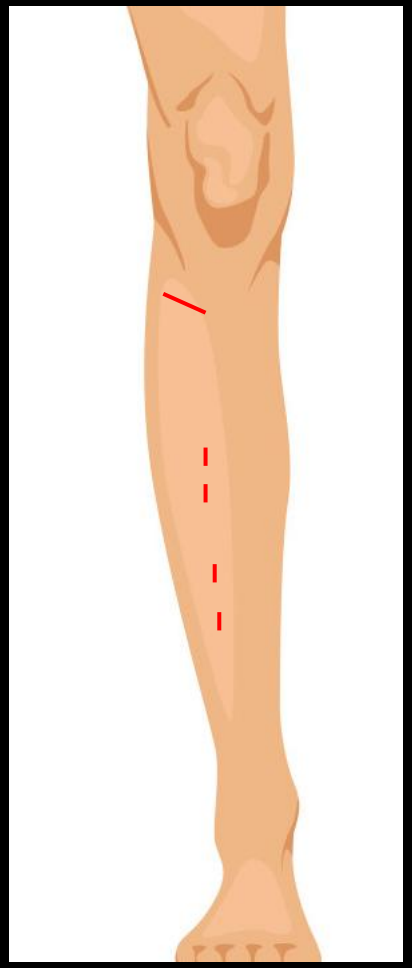

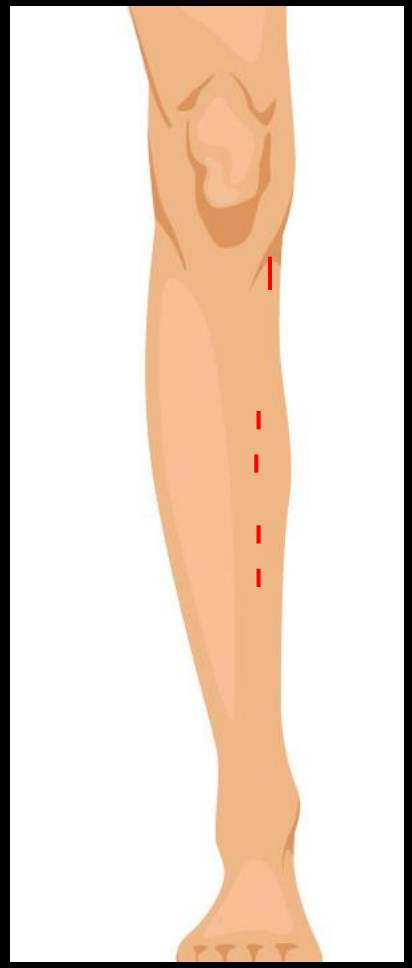

Why we shouldn't be talking about this.

Locked Plating versus Nailing for Proximal Tibia Fractures: A Multicenter RCT

Robert P. Dunbar, MD,[a] Kenneth A. Egol, MD,[b] Clifford B. Jones, MD,[c] Robert F. Ostrum, MD,[d] Catherine A. Humphrey, MD, MBA,[e] William M. Ricci, MD,[f] Laura S. Phieffer, MD,[g] David C. Teague, MD,[h] H. Claude Sagi, MD,[i] Andrew N. Pollak, MD,[j] Andrew H. Schmidt, MD,[k] Andrew Sems, MD,[l] Hans-Christoph Pape, MD,[m] Saam Morshed, MD, PhD,[n] Edward A. Perez, MD,[o] and Paul Tornetta III, MD, PhD [p]

Patients/Participants: 108 patients were enrolled. 99 patients were followed for 12 months. 52 patients were randomized to IMN, and 47 patients were randomized to LLP.

Results: Functional testing demonstrated no difference between the groups, but both groups were still significantly affected 12 months postinjury. Similarly, there was no difference in time of surgery, alignment, nonunion, pain, walking ability, ability to manage stairs, need for ambulatory support, or complications.

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Conclusion: Either surgery, when done well, yields the same results.

My thoughts

- Both: can be done minimally invasively and ultimately on average have same outcomes
- Plates: Better fixation in small articular block, less likely to induce a deformity during insertion
- Nails: Better mechanical loading in metaphysis/diaphysis

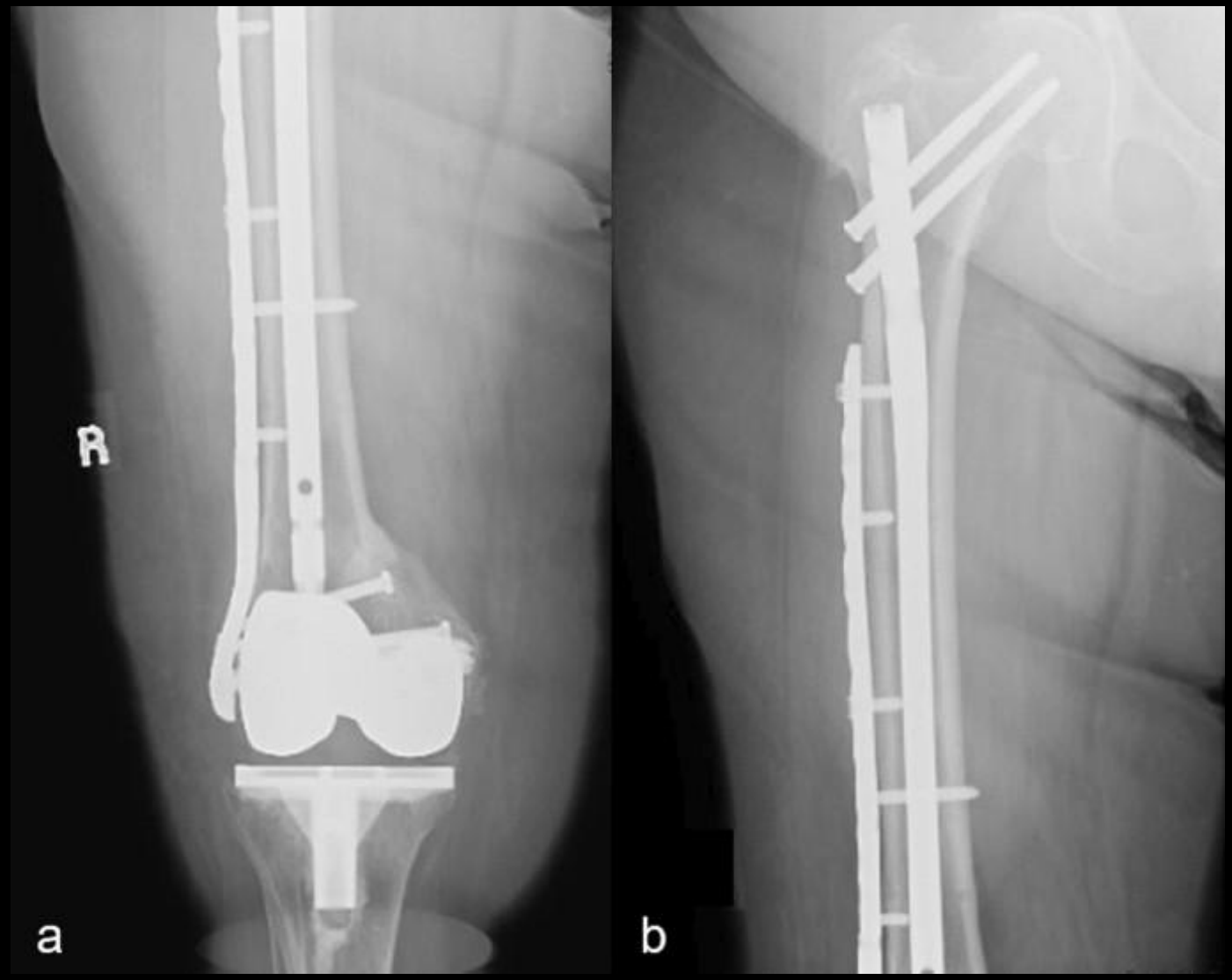
My thoughts:

- Ideal plating case
  - Small articular block
  - Osteoporosis
  - Struggling to obtain/maintain reduction during case
  - Compliant patient

My thoughts:

- Ideal nailing case
  - Larger articular block
  - Good bone stock
  - Little struggle to obtain/maintain reduction during case
  - Non-Compliant patient

Just saying…



Closing thoughts

- REDUCTION, REDUCTION, REDUCTION
- Nailing: Semi-extended position, proper start site, lots of interlockings and blocking/caging screws
- Plates: Locking, MIPO