

Post Tibia Nailing Is It Rotated? To Revise Or Not To Revise

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INTRODUCTION:

To date there is scarce data showing objective methods to assess the magnitude of rotation intraoperatively. Hence it is a clinical dilemma to surgeon on the accurate amount of correction during revision surgery. This report demonstrated accurate tibia torsion intraoperative assessment using both clinical and fluoroscopic methods.¹⁻³

REPORT:

21-year-old, gentleman with no comorbidity who alleged motor-vehicle accident sustained closed fracture midshaft right tibia underwent intramedullary nail. Postoperative day 2, on bedside examination noticed right lower limb was significantly externally rotated. He proceeded with revision surgery. To aid accurate revision of the nail, surgeons decide to perform examination under anesthesia prior to the surgery.

Evaluation clinically using thigh-foot-angle appears to be symmetrical. Tibia torsion fluoroscopy assessment were performed by rotating C-arm according to Kinami et al technique³. The magnitude of external rotation was measured by deducing from angle obtaining image Figure 2. After comparing with contralateral side, we identified right tibia is 5 degree externally rotated in relation to left tibia. However assessment with Clementz technique² magnitude of external rotation was objectively deduced, and the right tibia was 10 degree externally rotated in relation to left tibia.

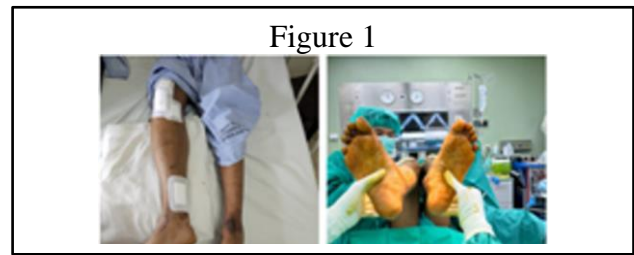


Figure 1: Clinical Picture & Thigh-Foot-Angle

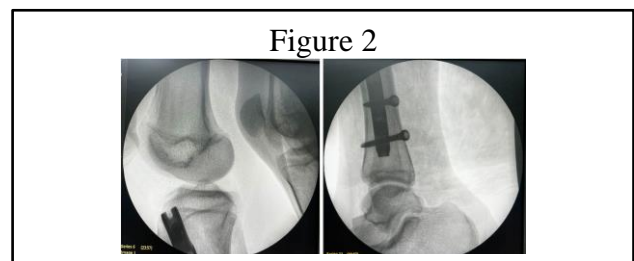


Figure 2: Perfect Knee Lateral View & Ankle transbimalleolar axis view

CONCLUSION:

This report demonstrated both clinical and fluoroscopic methods in tibia torsion assessment. Classical method by Clementz and the novel method by Kinami et al are both practically reproducible in operation theatre.

REFERENCES:

1. Staheli LT, Corbett M, Wyss C, et al. Lower-extremity rotational problems in children. Normal values to guide management. *J Bone Joint Surg Am* 1985;67:39-47.
2. Clementz BG, Magnusson A. Fluoroscopic measurement of tibial torsion in adults. A comparison of three methods. *Arch Orthop Trauma Surg* 1989;108:150-3.
3. Kinami Y, Yamamoto N, Fujiwara K. Intraoperative Measurement of Tibial Rotation With Lateral Axis Views Using C-arm for Tibial Fractures. *Cureus* 2023;15:e47091.