

Is Distal Locking Necessary in Long Cephalomedullary Nailing of Intertrochanteric Fractures?

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Purpose: Intramedullary nailing has become the treatment of choice for intertrochanteric (IT) fractures. Some surgeons have proposed that with the use of long nails, distal locking is not required. The purpose of this study is to compare the complication rates in a series of long cephalomedullary nails for the treatment of IT fractures with and without distal locking.

Methods: A single-surgeon series of patients were treated prospectively entered into a database. All patients were treated with an Intertan long cephalomedullary nail. Demographic data, fracture type, and complications were prospectively entered. Patients with subtrochanteric and reverse obliquity fractures (A3) were excluded. All fractures were treated with a double integrated screw into the femoral head. During the first half of the study distal locking screws were not used and in the later part of the study, all nails were locked distally. Complications were categorized as major (neck axis shortening ≥ 10 mm, axial shortening ≥ 10 mm, return to the operating room [OR], clinical malrotation, distal nail perforation, or distal fracture) and minor (neck axis shortening of 5-10 mm, broken distal screw with < 10 mm axial shortening, distal abutment without need for change in treatment).

Results: We prospectively evaluated 341 patients; mean age 84 years with average follow-up 436 days. There were 27 2-part, 75 3-part, and 239 4-part fractures. There were 68 complications (42 major and 26 minor). Complications were more common in the unlocked group (27% vs 14%). Most important, major complications were more common in the unlocked group (21% vs 5%). Unplanned return to the OR was 3 times more common in the unlocked cohort but did not reach statistical significance. Basicervical type fractures had the highest complication rate for both cohorts (25% locked and 39% unlocked group).

Conclusion: We evaluated the complications of patients with intertrochanteric fractures treated with the same brand of long nail with and without distal locking screws. The complication rate was significantly different and 2 times higher and the major complication rate was 4 times higher in the unlocked cohort despite having more 4-part fractures in the locked group. We conclude that when treating intertrochanteric hip fractures with a long nail, distally locking will decrease the overall and major complication rates and we recommend their routine use.