

Extent and Morbidity of Trochanteric Fixation Nail Blade Lateralization

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Purpose: This study examined the incidence and risk factors associated with lateral helical blade migration and trochanteric pain in the commonly used trochanteric fixation nail (TFN).

Methods: A retrospective review was performed on 141 cases of pertrochanteric femur fractures treated with a TFN over 42 months at one Level I trauma center. Exclusion criteria included <60-day follow-up, preexisting osteonecrosis of the femoral head, or prophylactic TFN treatment. Patient demographics, operative findings, and radiographic findings were recorded. Medical records were reviewed to determine the presence of symptomatic hardware.

Results: Overall, 27 patients were symptomatic (19.1%), with 3 (2.1%) requiring revision surgery for blade prominence. 42 patients (29.8%) had >1 cm of lateralization, 16 of whom (38.1%) were symptomatic ($P < 0.02$). Risk factors for lateralization were AO classification, with 46.1% of A2 fractures lateralizing >1 cm. The quality of calcar reduction was nearly significant, with 44.8% of patients without an adequate reduction lateralizing >1 cm, compared with 26.4% with an adequate medial calcar reduction ($P = 0.054$). Lateralization >1 cm was directly associated with being symptomatic ($P < 0.001$) and having hardware removed for trochanteric pain ($P = 0.007$). Multivariate analysis revealed increasing tip apex distance, inadequate calcar reduction, and increasing fracture severity to all be predictive of excessive lateralization >1 cm.

Conclusion: This study demonstrates that nearly 20% of patients have lateral hip pain associated with cephalomedullary rodding. Final lateralization of the helical blade >1 cm was a very strong predictor of symptoms. Comminuted fractures tended to have more frequent problems although careful attention to calcar reduction may be protective. Attention to accurate blade placement within the femoral head should also be closely scrutinized. Surgeons should caution patients about this relatively frequent, likely underreported complication during preoperative counseling.