

Rates of Revision Fixation Between Synthes Trochanteric Fixation Nail (TFN) and Trochanteric Fixation Nail Advanced (TFNA) in a U.S. Hip Fracture Database: Analysis of 7979 Cases

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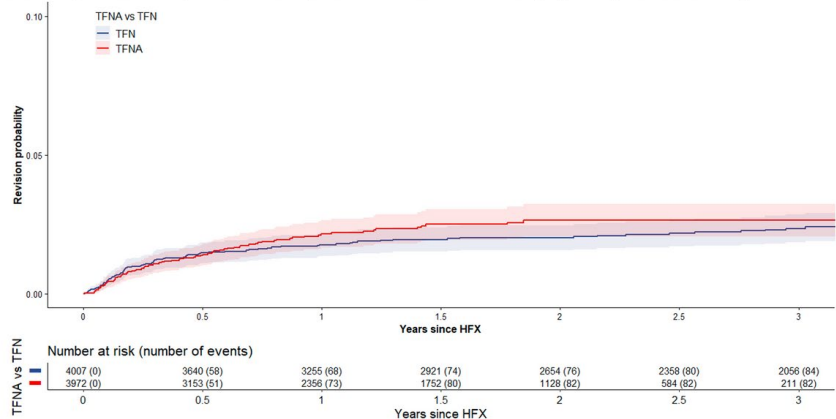
Purpose: Cephalomedullary nails (CMNs) are frequently used to achieve stable fixation of extracapsular hip fractures. Prior reports of the Synthes Trochanteric Fixation Nail Advanced (TFNA) revealed a potential mode of fatigue failure at the proximal screw aperture. However, the incidence of revision surgery of the TFNA has not been described. The purpose of this study was to compare all-cause revision rates between the TFNA and its prior generation forebear, the trochanteric fixation nail (TFN), in the treatment of hip fractures.

Methods: A retrospective cohort study was performed from a U.S. integrated health-care system’s hip fracture registry. The study sample comprised patients who underwent CMN fixation of hip fractures from 2014 to 2019 with TFN (N=4007) or TFNA (N=3972). Exclusions included pathologic fractures, bilateral fractures, metastatic cancer, and missing implant data. Multivariable Cox proportional hazard regression was used to evaluate all-cause revision risk with adjustment for age, sex, body mass index, American Society of Anesthesiologists classification, smoking, anesthetic type, and Elixhauser comorbidities.

Results: At 3-year follow-up, the cumulative revision probability was 2.35% for TFNs and 2.64% for TFNAs (Fig. 1). After adjustment for covariates no difference was observed in revision risk for TFNA (hazard ratio [HR] 1.21, 95% confidence interval [CI] = 0.89-1.65) when compared to TFN. Reasons for revision included fixation/implant failure (51.8%), nonunion (27.7%), and periprosthetic fracture (14.7%).

Conclusion: In a large cohort from a U.S. hip fracture registry, TFNA had comparable revision rates to the earlier TFN. Subsequent analyses will determine if the TFNA is indeed associated with idiosyncratic modes of failure, and if there are predisposing injury patterns or vulnerable populations.

Figure 1: Cumulative revision probability (solid line) and 95% confidence limits (shaded area) during follow-up. Number of patients at risk (number of cumulative events) by each year of follow-up.



See the meeting app for complete listing of authors’ disclosure information. Schedule and presenters subject to change.

POSTER ABSTRACTS