

**Reaming Is Beneficial in Trochanteric Fracture Patients Managed with IMNs:
A Secondary Analysis of the INSITE Trial**

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Purpose: There has been recent debate surrounding the necessity of reaming the medullary canal prior to the insertion of intramedullary nails (IMNs) for trochanteric fracture fixation. We aimed to use data from the INSITE trial to compare outcomes between patients managed with reamed vs unreamed IMNs.

Methods: The INSITE study followed ambulatory patients aged 18 years and older with trochanteric fractures for 1 year post-surgery. Our current analysis only included patients who were managed with an IMN device and had complete data concerning whether the medullary canal was reamed prior to nail insertion. Our outcomes included medical (organ failure, respiratory distress, stroke, deep vein thrombosis [DVT] gastrointestinal upset, pneumonia, myocardial infarction, sepsis, or urinary tract infection [UTI] and fracture-related adverse events (AEs; femoral shaft fracture, implant failure, surgical site infection, nonunion, limb shortening, and pain). We used chi-squared and Fisher exact tests to compare the unadjusted rates of these outcomes between groups, and logistic regression to examine the independent association between reaming and outcomes.

Results: A total of 409 patients were included in our analysis, 267 (65.3%) in the reamed group and 142 (34.7%) in the unreamed group. Patients in the unreamed group had higher rates of comorbidities, unstable fractures, long nails (260-460 mm) vs short (170-200 mm) and were more likely to weight-bear on postoperative day one. We observed a higher rate of medical AEs in the unreamed group (14.1%) compared to the reamed group (7.9%). Similarly, the rate of fracture-related AEs was higher in the unreamed group (8.5% vs 3.4%). The most common fracture-related AEs in the unreamed group included hardware failure (1.4%), surgical site infection (1.4%), and screw protrusion (2.1%). Patients in the unreamed group continued to show a higher odds of fracture-related AEs following adjustment for nail length and relevant comorbidities (odds ratio [OR] 2.98 [1.12-7.89]). Alternatively, we found no significant association between reamed vs unreamed IMNs and medical AEs (OR 1.83 [0.92-3.66]) following adjustment for relevant covariables.

Conclusion: These data suggest that reaming the medullary canal prior to nail insertion may be beneficial in managing patients with trochanteric fractures via IMNs. However, further research with larger sample sizes is required to confirm these findings.