ΔExtramedullary Versus Intramedullary Implants for Intertrochanteric Hip Fractures: 30-Day Outcomes Among 4432 Cases from the ACS-NSQIP Database

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Background/Purpose: For more than 35 years, the sliding hip screw, an extramedullary (EM) implant, has been the "gold standard" for stabilization of intertrochanteric fractures. However, over the last decade, intramedullary (IM) implants have surpassed EM implants as the most commonly used type of implant in the United States. This change in surgical practice has occurred without strong evidence of superior outcomes. The purpose of this study is to use a large national database to evaluate for differences in general surgical adverse event rates and other perioperative and postoperative outcomes between treatment of intertrochanteric hip fractures treated with EM and IM implants.

Methods: A retrospective cohort study was conducted using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database. Patients over 70 years old with intertrochanteric fractures that were treated with EM or IM implants during 2009-2012 were identified. Outcomes were compared between implant types with adjustment for demographics and comorbidities.

Results: A total of 4432 patients were identified, of whom 1612 (36.4%) were treated with EM implants and 2820 (63.6%) were treated with IM implants. Demographics and comorbidities did not differ by implant type. The rates of "serious adverse events" and "any adverse events" did not differ by implant type. Postoperative length of stay was shorter with IM than EM implants (5.4 vs. 6.5 days; $P < 0.001$; Figure 1). Operation time, operating room time, and the rate of hospital readmission did not differ by implant type.

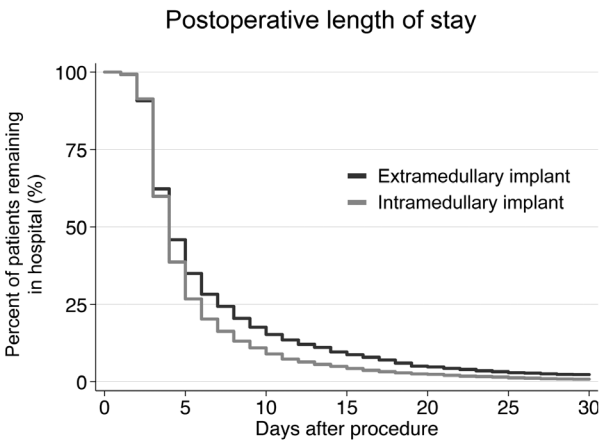

Figure 1

Conclusion: These results reinforce the results of randomized trials, demonstrating little difference in rates of general surgical adverse events between implant types. Due to its much larger sample size and nationally representative sample, this study presents an important departure from the trials in its finding that patients treated with IM implants have on average a shorter postoperative length of stay (by 1.1 days). The finding has significant implications, as it may negate or reverse the excess cost perceived to be associated with IM treatment.

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See pages 99 - 147 for financial disclosure information.