

Conversion from Intramedullary Nail to Total Hip Arthroplasty is Associated with Increased Risk of Medical and Surgical Complications

Travis Mark Kotzur, Lindsey Noelle Peng, Daanish S Sheikh, Blaire Christine Peterson, Aaron Singh, Zachary Jodoin, Frank A Buttacavoli

INTRODUCTION: Osteoarthritis is a common orthopaedic condition necessitating total hip arthroplasty. While primary total hip arthroplasty is associated with good overall outcomes, preexisting hardware may lead to a more complex conversion procedure. The aim of this study was to investigate the impact of a previously implanted intramedullary nail on patient outcomes when converted to a total hip arthroplasty.

METHODS: This was a retrospective cohort study employing the TriNetX research network. Patients undergoing a conversion from IMN to THA, as well as patients undergoing primary THA, were identified using CPT codes. Propensity score matching was utilized to match patients based on comorbidities and demographics. Risk ratios were calculated to assess postoperative outcomes between conversion THA and primary THA groups.

RESULTS: 175,141 patients undergoing conversion or primary THA were included. Of those, 1,041 (0.60%) underwent an IMN to THA conversion procedure while 174,100 (99%) underwent a primary THA without conversion. After matching, patients undergoing conversion THA had an increased risk of medical complications, including increased risk of deep venous thrombosis (Risk Ratio (RR) 1.74; p=0.024) and pulmonary embolism (RR 2.37; p=0.011). Conversion THA was also associated with increased risk of surgical complications such as mechanical complications (RR 2.50; p<0.001), periprosthetic joint infection (RR 2.97; p<0.001), and periprosthetic fracture (RR 3.67; p<0.001).

DISCUSSION AND CONCLUSION: This study found that patients undergoing conversion THA from a prior IMN had an increased risk of medical and surgical complications when compared to patients undergoing primary THA. Overall, IMN to THA conversions may present worse outcomes compared to primary THA and thus the increased associated risks should be taken into account and discussed with patients in preoperative planning.

