Femoral Shaft Medialization After Intertrochanteric Hip Fracture Fixation: Should We Be Concerned?

*Sanjit R. Konda, MD; **Mackenzie Bird, BA**; Rachel Ranson, MS; Abhishek Ganta, MD; Kenneth A. Egol, MD*
NYU Langone Medical Center, New York, NY, United States

Purpose: Femoral shaft medialization is thought to negatively affect patient outcomes by decreasing the hip abductor moment arm thereby leading to a Trendelenburg gait. This study aims to determine if femoral shaft medialization after intertrochanteric (IT) hip fracture fixation has an effect on patient-reported outcomes at 1-year follow-up.

Methods: An IRB-approved, prospectively collected hip fracture registry at an academic, urban health system was queried for IT fractures treated with sliding hip screws (SHS) and short and long cephalomedullary nails (CMN). Patients were excluded if they did not have a 1-year follow-up evaluation. All patients had radiographic evidence of a healed fracture. Patient demographics, injury characteristics, implant usage, radiographic analysis of femoral shaft medialization, and EuroQol-5 Dimensions (EQ-5D) 1-year functional outcomes were recorded. Univariate analysis of femoral shaft medialization affecting EQ-5D index was performed and multivariate analysis, controlling for age and implant type, was performed using IBM SPSS.

Results: 50 patients with intertrochanteric fractures were identified and met inclusion criteria. Average patient age was 78 years (range, 60-97). Mean femoral shaft medialization with SHS was 0.314 cm (range, 0-0.9) and with CMN it was 0.153 cm (range, 0-0.98). Univariate analysis showed no correlation between shaft medialization and EQ-5D index ($R2 = 0.03$, $P = 0.256$). Multivariate analyses controlling for age and implant type demonstrated that shaft medialization and implant type were not significant factors in determining 1-year functional outcome ($P = 0.411$, $P = 0.230$) and that only age was an independent predictor of outcome ($P = 0.003$).

Conclusion: Femoral shaft medialization is a radiographic finding that can be concerning after fixation of IT fractures with either an SHS or CMN. This study demonstrates that medialization does not significantly impact patient outcomes at 1-year follow-up.