Δ Intramedullary Versus Extramedullary Fixation of Unstable Intertrochanteric Hip Fractures: A Prospective Randomized Control Study

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Purpose: This study was designed to evaluate the clinical and radiological results of patients with unstable intertrochanteric hip fractures stabilized with an extramedullary device versus an intramedullary (IM) device. The hypothesis is that there would be no significant difference in clinical or radiological outcomes between the two groups.

Methods: 205 patients with unstable (AO-A2) intertrochanteric fractures were enrolled in the study and randomly assigned to receive a DHS or an IM device. The patients were followed for 12 months. Their function was assessed using the Lower Extremity Measure (LEM), a 2-minute walk test, the Timed Up and Go (TUG) test, the functional independent measure (FIM), and a Trendelenburg test. The radiographs were evaluated for tip-to-apex distance (TAD), femoral neck shortening, and heterotopic ossification. Patients were evaluated initially, at 6 weeks, and 3, 6, and 12 months postoperatively.

Results: 168 patients completed the 12-month follow-up visit. Two DHS implants and one TFN failed and required revision to hip arthroplasties. No significant differences were found in the primary outcome, the LEM scores, at any of the follow-up time points. Furthermore, there was no difference in any of the other clinical parameters between the two groups. Radiographically, the intramedullary devices led to less femoral neck shortening and the DHS led to less Brooker stage 1 and 2 heterotopic ossification.

Conclusion: While the use of intramedullary devices radiographically leads to less femoral neck shortening when compared to the DHS for the treatment of unstable intertrochanteric fractures, this does not translate into a better clinical outcome.

Δ OTA Grant

See pages 91 - 132 for financial disclosure information.