

Do Arthroplasty Outcomes Differ Between Displaced and Non-Displaced Femoral Neck Fractures? A Short-Term Comparative Analysis

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Purpose: Femoral neck fractures (AO/OTA types 31B1) have been classified as “displaced” and “nondisplaced” and represent patterns that may be indicated for arthroplasty (hemiarthroplasty or total hip arthroplasty [THA]). The purpose of this study was to assess outcomes following arthroplasty for femoral neck fractures based on displacement, as these distinctions may guide clinical decision-making and postoperative care planning.

Methods: A total of 830 consecutive patients treated with arthroplasty for femoral neck fractures from 2014 to the present were identified in a prospective hip fracture research database. Those with minimally impacted or nondisplaced fractures (Types 31B1.1 and 1.2; n = 116) were compared to those with displaced fractures (Type 31B1.3; n = 714) to assess for short-term outcomes following either hemiarthroplasty or THA. Continuous variables were analyzed using Independent Samples T-tests, while categorical variables were assessed using χ^2 tests with standardized adjusted residuals.

Results: No significant differences were observed in age, sex, race, or baseline ambulatory status. Pre-injury use of assistive devices was higher in those who sustained a displaced fracture (54.6%) compared to nondisplaced (39.7%; $p = 0.003$). Patients with displaced femoral necks were sicker than those with impacted or nondisplaced fractures (CCI, STTGMA, ASA all significant; $p < 0.05$). Interestingly, nondisplaced fractures were more likely to need THA compared to the displaced fracture group ($p < 0.001$). Length of stay was longer in the displaced group (6.64 days) compared to nondisplaced (5.31 days; $p = 0.004$). 30-day readmission rates were significantly higher in the displaced group (10.4%) compared to nondisplaced (2.6%; $p = 0.007$), and this pattern persisted at 90 days (13.2% vs 6.0%; $p = 0.029$). No significant differences were observed in major and minor in-hospital complications, mortality rates, revision rates, or rates of infection and dislocation ($p > 0.05$).

Conclusion: Surgeons and patients can expect different outcome profiles following arthroplasty for femoral neck fracture based on initial fracture displacement. Those with displaced fractures were characterized by a poorer baseline health status, longer hospital stays, and higher readmission rates, underscoring the need for tailored post-acute care strategies addressing these differences.