**Surgical Approach and Dislocation Rate Following Hemiarthroplasty in Geriatric Femoral Neck Fracture Patients with Cognitive Impairment: Is There an Association?**

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**Purpose:** Our objective was to evaluate patients who sustained femoral neck fractures treated with hemiarthroplasty (HA) to determine if there is an association between surgical approach and cognitive impairment on dislocation rate.

**Methods:** A retrospective chart review was conducted of 1481 patients who underwent HA for femoral neck fractures between January 1, 2014 and October 31, 2018, within our health system. Inclusion criteria included age greater than 60 years, traumatic femoral neck fractures treated with HA, and at least 1 month of radiographic and/or clinical follow-up. Exclusion criteria included history of previous surgery to the injured hip, and HA for non-trauma indications (ie, tumor, infection, or atraumatic fracture). Included patients were divided into three groups based on surgical approach: direct anterior approach (DA), modified Hardinge approach (MH), and posterior approach (PA).

**Results:** 828 hips met inclusion criteria. 290 hips (35%) also had a documented diagnosis of cognitive impairment. Median follow-up was 329 days (range, 26 to 2034 days). The overall dislocation rate was 17 of 828 (2.05%), with a median of 20.5 days (range, 2 to 326 days) from surgery to dislocation. A significant association between surgical approach and dislocation rate was detected among the three intervention groups ($P = 0.0035$). Patients in the PA group had a greater association with dislocation compared to the MH group ($P = 0.0017$). Six of 533 patients (1.08%) in the MH cohort dislocated while 11 of 217 patients (5.07%) in the PA group dislocated. There were no dislocations observed in the DA group. 10 of the 17 dislocations (58.8%) were observed in patients with a diagnosis of cognitive impairment. In patients without cognitive impairment, a significant difference was not detected in the dislocation rate of patients between the various approaches ($P = 0.2660$) (3 of 351 MH, 4 of 148 PA, and 0 of 39 DA). Within subjects who underwent the MH approach, no association between cognitive impairment and dislocation was demonstrated ($P = 0.6735$), while a significant association was demonstrated between these variables within the PA group ($P = 0.0397$). Lastly, among patients with a diagnosis of cognitive impairment, a significant association between surgical approach and dislocation rate was detected among the three intervention groups ($P = 0.0061$). Patients who underwent a PA had a greater association with dislocation compared to the MH group ($P = 0.0033$). Three of 202 patients (1.49%) dislocated who underwent MH, while 7 of 69 patients (10.14%) in this cohort who underwent PA dislocated.

**Conclusion:** The results of our study suggest that patients with cognitive impairment who undergo a PA have a higher rate of dislocation than patients treated using a MH or DA surgical approach. The authors of this study suggest careful surgical approach selection in patients with cognitive impairment.