Direct Anterior Approach Versus Other Approaches for Bipolar Hip Hemiarthroplasty in Hip Fractures: Short-Term Functional Outcomes

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Purpose: Direct anterior approach (DAA) is a widely recognised approach for elective hip surgery. However, literature on outcomes of DAA in bipolar hip hemiarthroplasty in hip fractures remains limited. The aim of this study is to compare the short-term functional outcomes of patients who underwent bipolar hip hemiarthroplasty using the DAA with those who used other approaches (OA) to the hip.

Methods: This is a retrospective study conducted in a single tertiary institution. Data were obtained from the institution hip fracture registry database. All patients who underwent bipolar hip hemiarthroplasty for hip fracture between January 2018 to January 2023 were included in this study. Propensity score matching (PSM) was performed by accounting for age, gender, and pre-fracture Modified Barthel Index (MBI) scores, utilizing the nearest-neighbor method to obtain 1:3 matching ratio with matching tolerance of 0.001.

Results: A total of 898 patients were included in this study (839 DAA, 59 OA cases). PSM yielded 57 DAA cases and 148 OA cases. Age, gender, premorbid mobility status, American Society of Anesthesiologist score, premorbid MBI (DAA: 90.32; 8.80 vs OA: 89.81, 8.52, P= 0.705), and Parker Mobility Index (PMS) (DAA: 5.98, 2.71 vs OA: 5.70, 2.80, P= 0.578) were similar in both groups. Change in MBI 6 months post-operation compared to premorbid score (DAA: –15.42 ± 19.11 vs OA: 22.10 ± 26.74, P 0.047) yielded statistically significant results. However, change in MBI score and PMS at 12 months post-operation compared to premorbid score yielded similar results (DAA: 20.61, 26.15 vs OA: 24.16, 32.80, P= 0.429 and DAA: 3.11 & 2.56 vs OA: 2.26,2.40, P= 0.064, respectively). Results of 6-month and 12-month post-operation mobility status and use of walking aids were similar in both groups.

Conclusion: DAA significantly improves functional outcomes in the early postoperative period compared to OA. Further study with longer term follow-up is needed to analyze the long-term functional outcomes of DAA compared to other approaches for bipolar hemiarthroplasty in hip fractures.