Capsulectomy vs. Capsulotomy in Direct Anterior Hip Arthroplasty: A Retrospective Analysis of Complication Rates

Neel Sandella, Andrew R Moya, Pooya M Tehrany, Justin Magnuson, Kassem Ghayyad, Jeffrey Ryan Petrie, Obinna Adigweme, Andrew James Clair, Ramakanth R Yakkanti

INTRODUCTION:
Capsular management in direct anterior approach (DAA) total hip arthroplasty (THA), either via capsulectomy or capsulotomy, remains debated with limited comparative evidence on complication rates. This study aims to compare dislocation rates between these two techniques.
METHODS: We conducted a retrospective cohort study of 8,629 primary unilateral DAA THAs performed between 2018 and 2024. Patients were stratified by capsular management: capsulectomy (n=4,501) or capsulotomy (n=4,128). Mean age: 65.3 ± 10.6 vs 66.2 ± 11.3, male 49.2% vs 41.5%, mean BMI: 28.8 ± 5.5 vs 28.8 ± 5.4. Exclusion criteria included same-day bilateral THA. Primary outcome was postoperative dislocation rate. Secondary outcomes included clinically significant hematoma, periprosthetic fracture (PPFx), prosthetic joint infection (PJI), aseptic loosening, surgical site infection(SSI), wound complications, thromboembolic events, and length of stay(LOS).
RESULTS:
Dislocation rates did not significantly differ between groups(capsulectomy: 0.49% vs. capsulotomy: 0.34%, $p = 0.3$). No significant differences were observed in rates of hematoma (0.04% vs. 0.05%, p=0.99), PPFx (0.47% vs. 0.36%, p=0.46), or aseptic loosening (0.07% vs. 0.15%, p=0.33). However, PJI occurred significantly more frequently in the capsulectomy group(1.11% vs. 0.19%, $p < 0.001$). Other complications, including SSI, wound issues, and thromboembolic events, were similar between groups (p=0.81, 0.49, 0.26, 0.11, 0.87; respectively). LOS was slightly longer in the capsulectomy group (1.36 vs. 1.29 days), though this difference was not statistically significant($p = 0.22$).
DISCUSSION AND CONCLUSION: Capsular management technique did not significantly impact dislocation rates, or hematoma rates indicating surgeon preference and comfort level should dictate technique during DAA THA. Although the capsulectomy group demonstrated a significantly higher rate of PJI, the median CCI was higher in the capsulectomy group compared to the capsulotomy group and could potentially explain this difference. Further randomized studies are warranted to better define the role of capsular management in outcomes of DAA THA.