Instability in Patients with Lumbar Spine Disease or Fusion Undergoing Posterior Approach vs. Lateral Approach Primary Total Hip Arthroplasty

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Background and Hypothesis:

Dislocation rates after total hip arthroplasty (THA) in patients with fixed spinopelvic motion due to lumbar spine disease or fusion have been reported as high as 20%. Few studies exist that compare dislocation rates in patients with spine pathology undergoing THA via different surgical approaches. The purpose of this study was to compare postoperative dislocation rates in patients with lumbar spine disease or fusion between those undergoing a primary THA using a posterior versus direct lateral surgical approach.

Experimental Design or Project Methods:

With IRB approval, 1,205 primary THAs performed by two surgeons were retrospectively reviewed. One surgeon routinely performs THAs with a posterior approach while the other surgeon routinely uses a direct lateral approach. Chart review from the electronic medical record was conducted to identify patients who have lumbar spine disease or a lumbar spine fusion. Dislocations for patients with and without lumbar spine disease were compared by posterior approach and direct lateral approach.

Results:

767 posterior approach and 431 direct lateral approach THAs were available for analysis. 43.6% of all THAs had lumbar spine pathology (337/767 posterior and 185/431 direct lateral). The overall dislocation rate was 1.26% (15/1195). The main predictors of dislocation in binary logistic regression were the presence of lumbar spine pathology (OR 5.24, 95% CI: 1.47–18.69, p=0.018) and posterior surgical approach (OR 7.93, 95% CI: 1.04–60.6, p=0.046). The dislocation rate for direct lateral approach THAs with lumbar spine pathology was significantly lower compared to posterior approach THAs with lumbar spine pathology (0.0% vs 3.6%, p=0.011).

Conclusion and Potential Impact:

Although there were few dislocations, the study results suggest a direct lateral approach for primary THA may be beneficial to reduce postoperative dislocation for patients with limited spinopelvic motion due to lumbar spine pathology.