History of Lumbar Spinal Fusion is Associated With Lower Perioperative Functional Outcome Scores After Total Hip Arthroplasty: A Matched Case-Control Study

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INTRODUCTION:
While patients with lumbar spinal fusion (LSF) and total hip arthroplasty (THA) have increased rates of hip dislocation and revision compared to patients without LSF, there is a paucity of literature evaluating THA functional outcomes in patients with a history of LSF. This study was conducted to determine whether patients undergoing THA with a history of LSF have inferior functional outcomes compared to patients with no history of LSF.
METHODS: A retrospective matched case-control study was conducted at a metropolitan academic center. Patients who underwent both THA and LSF (cases) were matched with controls who underwent THA without LSF. Inclusion criteria required a minimum of one-year follow-up for functional outcome scores (Hip Disability and Osteoarthritis Outcome Score Junior [HOOS Jr.]) Exclusion criteria consisted of revision THA. Patients were propensity score-matched 1:4 based on age, sex, race, body mass index, and Charlson Comorbidity Index. Statistical analysis consisted of T-tests and Chi-Square tests, and statistical significance was defined as a p-value < 0.05.
RESULTS: Following propensity matching, 291 cases and 1,164 controls were included, with no demographic differences. Cases had a significantly lower preoperative HOOS Jr. (44.9 vs. 49.6; $p < 0.001$) and postoperative HOOS Jr. (75.9 vs. 80.9; $p < 0.001$), with no significant difference in Delta HOOS Jr. (32.6 vs. 31.3; $p = 0.834$). Patients with both THA and LSF achieved the patient acceptable symptom state (PASS) at a significantly lower rate (62.1% vs. 78.1%; $p = 0.001$) than those who underwent THA without LSF.
DISCUSSION AND CONCLUSION:
Patients with a history of LSF experience a similar improvement in hip function when undergoing THA compared to patients without a history of LSF. However, due to lower preoperative function, they may have a lower postoperative function. Preoperative expectations should be adjusted using this information to facilitate optimal patient satisfaction.