



Prior Lumbar Spinal Arthrodesis Increases Risk of Prosthetic-Related Complication and Revision Surgery in Primary Total Hip Arthroplasty

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Introduction: Eighteen percent of patients who undergo total hip arthroplasty (THA) have coexisting degenerative lumbar spine diagnoses, known as the ‘hip-spine syndrome’. Limited data on this cohort suggests that they may have inferior functional improvement and pain relief. We hypothesize that prior lumbar spine arthrodesis (SA) increases risk of complications within 2 years following subsequent primary THA.

Methods: We retrospectively analyzed the prevalence of prior lumbar SA among 811,601 Medicare patients undergoing THA from 2005-2012. Patients with history of spinal arthrodesis undergoing hip arthroplasty (SAHA) were stratified by length of fusion construct (1-2 levels [SAHA<3] vs 3 or more levels [SAHA≥3]). The main outcome measure was the relative risk of developing prosthetic-related complications and undergoing revision arthroplasty within 24 months comparing SAHA and control THA patients.

Results: Out of 811,601 patients undergoing primary THA, 16,574 (2.0%) SAHA patients were identified. 12,757 (1.6%) patients were identified as SAHA<3 and 3,817 (0.4%) patients were identified as SAHA≥3. Age, sex, and regional distribution was similar between control patients compared to SAHA patients. The relative risk of developing any prosthetic complication within 24 months compared to control was 1.52 (95% CI [1.42,1.63]) for SAHA<3 patients and 1.93 (95% CI [1.73,2.15]) for SAHA≥3 patients. Risk of dislocation was 2.4% in control compared to 7.5% in SAHA≥3 patients (RR 3.19, 95% CI [2.74,3.70]). Two-year revision arthroplasty rate was 3.4% in the control group, 5.6% for SAHA<3 patients (RR 1.62, 95% CI [1.46,1.78]), and 7.8% for SAHA≥3 patients (RR 2.26, 95% CI [1.95,2.62]).

Conclusions: Greater than 2% of all patients undergoing total hip arthroplasty have a history of spinal arthrodesis, which significantly increases the risk of prosthetic-related complication and revision after primary THA. The interplay of coexisting degenerative hip and spine disease deserves the attention of both arthroplasty and spine surgeons to optimize patient outcomes.