## Paper #10

## **Lumbar Fusion Involving the Sacrum Increases Dislocation Risk Eight-Fold in Total Hip Arthroplasty**

Christopher G. Salib, MD, Nicolas Reina, MD, PhD, **Kevin I. Perry, MD**, Michael J. Taunton, MD, Daniel J. Berry, MD, Matthew P. Abdel, MD

**Notes** 

**Introduction:** Limited data exist on concurrent spine and hip pathologies in the context of primary total hip arthroplasty (THA). This study examines the impact of lumbar spine fusions on dislocation risk after primary THAs.

**Methods:** From 16,453 THAs, we identified 58 patients (67 THAs) between 1998 and 2015 who had spine fusions prior to primary THA at our institution. Patients were stratified into three groups: i) one level of lumbar fusion, ii) two or more levels of lumbar fusion, or iii) any fusion involving the sacrum. Mean age was 69 years, with mean follow-up of 5 years. Patients were 2:1 matched to patients with primary THAs without any previous spine fusion. Hazard ratios (HR) were calculated.

**Results:** Risk of dislocation in the fusion group was 6% at 1 year, vs. 1.6% in the control group (HR=4). The HR for dislocation was 3 in the one level fusion group (p=0.4), 1.4 (p=0.8) in the two or more level fusion group, and 8 (p=0.03) in the fusion to sacrum group, with a one year dislocation rate of 14%. Patient demographics and surgical characteristics of the THA (i.e. operative approach, femoral head diameter, and cup diameter) did not significantly impact dislocation risk (p>0.05). Mean cup anteversion was 19° in the sacral fusion group vs. 23° and 26° in the groups with one or multiple levels of lumbar fusion, respectively (p=0.06). Five-year KM survivorships free of any revision was 97% in the fusion group and 95% in the controls (p=0.4).

**Conclusions:** Lumbar spine fusions prior to THA increase the risk of early dislocation. Fusions involving the sacrum notably increased the risk of postoperative dislocation compared to a control group and other lumbar fusions, regardless of number of levels fused. Surgeons should be cognizant of cup positioning, and may consider high-stability implants in this cohort.

 ·