Medical Device Surveillance and Assessment (MDSA) | Newsletter

Are there differences in the reoperation rates for operative adjacent-segment disease between ALIF+PS, PLIF+PS, TLIF+PS, and LLIF+PS? An analysis of a cohort of 5,291 patients

A recent publication in *Journal of Neurosurgery Spine* highlighted a study undertaken to determine if there are differences in the reoperation rates for adjacent segment disease (ASD) by placement of interbody with pedicle screw in adults with degenerative disc disease at L3-S1. 5,291 patients had one of the following treatments -

- Anterior lumbar interbody fusion plus pedicle screws (ALIF+PS, 23%)
- Lateral lumbar interbody fusion plus pedicle screws (LLIF+PS, 3%)
- Posterior lumbar interbody fusion plus pedicle screws (PLIF+PS, 21%)
- Transforaminal lumbar interbody fusion plus pedicle screws (TLIF+PS, 53%)

> Reoperation rates after fusion are relatively low and less common than previously reported based on current findings. Concerns of reoperation after spinal instrumentation appears to have less to do with the type of interbody implant used than other potential factors like natural aging, genetics, and baseline patient factors.
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Study Details

The study population included 5,291 patients with a mean age of 60 and follow up of 6 years. Overall incidence rate of operative ASD was 8.37% (95% CI 7.6–9.2). Crude incidence of operative ASD at 5 years was the lowest in the ALIF+PS cohort (7.7%, 95% CI 6.3–9.4). In the adjusted models, we failed to detect a statistical difference in operative ASD between ALIF+PS (reference) versus PLIF+PS versus TLIF+PS versus LLIF+PS.

Practice Considerations

In a large cohort of over 5,000 patients with an average follow-up of > 6 years, the authors did not observe a difference in the reoperation rates for symptomatic ASD.

Bains RR, Royse KE, Fennessy J, Norheim EP, Tabaraee E, Harris JE, Kuo CC, Guppy KH (2024). **Are there differences in the reoperation rates for operative adjacent-segment disease between ALIF+PS, PLIF+PS, TLIF+PS, and LLIF+PS? An analysis of a cohort of 5291 patients** *J Neurosurg Spine*, 40 (6): 733-740.