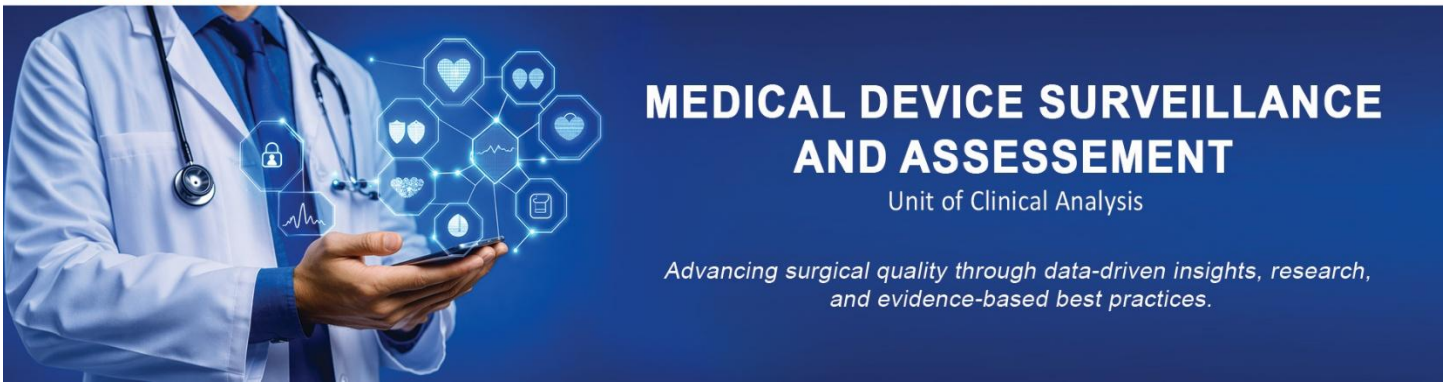
KAISER PERMANENTE



Reoperation Risks Between Cervical Disc Arthroplasty and Anterior Cervical Discectomy With Fusion: It's Not Always About Adjacent Segment Disease

Investigators using the Kaiser Permanente Spine Registry evaluated 6,318 patients who underwent one-level or two-level cervical disc arthroplasty (CDA) or anterior cervical discectomy and fusion (ACDF) between 2009 and 2023 to evaluate if preserving motion with CDA reduces the need for future cervical spine surgery. With an average follow-up of nearly seven years and propensity-matched analyses, the study provides important real-world evidence on the long-term durability of both procedures.

> "Our study challenges the widely held belief that CDA substantially reduces the risk of adjacent segment disease (ASD) compared with ACDF. These findings underscore the multifactorial nature of reoperation risk and suggest that the long-term clinical advantages of CDA may be more nuanced than commonly perceived." - Shayan Rahman, MD, Neurosurgery, LAMC

Study Details

- No significant difference was found in the
  - risk of ASD between one-level CDA and ACDF.
  - all-cause reoperation rates for either one-level or two-level procedures.
- ASD-related reoperations occurred, on average, within four to five years after the initial surgery, regardless of procedure type.
- Although CDA is designed to preserve motion and reduce stress on adjacent spinal segments, motion preservation alone did not eliminate the risk of future surgery.

Practice Considerations

Much of the existing evidence supporting CDA outcomes from industry-sponsored investigational device exemption trials. By leveraging data from a large, multi-surgeon, real-world spine registry, this study provides a broader perspective on long-term outcomes in routine clinical practice. The findings suggest that factors beyond adjacent segment degeneration may contribute to reoperation risk, including the natural progression of cervical spine disease and other patient- and procedure-related factors.

Link to Published Manuscript

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