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Understanding adjacent segment disease

Statement of Problem: More than 20% of patients undergoing lumbar deformity surgery will develop Adjacent Segment Disease (ASD) within 8 years, most of which occurs early with 40% requiring revision within 6 months. However, a complete understanding of the etiology of this problem remains unclear. The purpose of this study is to describe the factors involved in the development of ASD.

Methodology: A review of the literature, in combination with basic science research is used to describe each proposed factor.

Findings: Non-modifiable risk factors include age, degeneration and stiffening from fusion. Modifiable risk factors include denervation and devascularization of the spinal musculature, facet joints and subchondral endplate, disruption of the posterior ligamentous complex, implant related disruption of the adjacent facet, disturbance of the intervertebral disc diffusion and malalignment.

Conclusion & Significance: ASD is a significant problem after spinal deformity surgery. Both non-modifiable and modifiable risk factors play a role. New technologies to eliminate modifiable risk factors are necessary.

Biography

David Kieser is a Spinal Orthopedic Surgeon in Christchurch, New Zealand. His practice is based in the South Island city of Christchurch at 9 Caledonian Road. Dr Kieser along with his clinical team are fully committed to providing patients with contemporary orthopaedic solutions that are supported by sound academic research. We seek to deliver the highest standard of personal care for spine surgery, optimised hip replacement, and general orthopaedics.

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