

Previous spine surgery and the risk of failure following surgery for Adult Spinal Deformity in patients over 65 years of age

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Introduction

- Adult Spinal Deformity (ASD) incidence increases with increasing age and according to recent studies, so does the surgical frequency.
- The benefits of surgery on health-related quality of life, pain and disability is well established.
- However, the rate of postoperative complications including implant failure and revision surgery remain a considerable concern.
- Especially in patients with a history of previous surgery.

Purpose

- The aim of the current study was to investigate if previous spine surgery increases the risk of mechanical failure following surgery in the elderly.



Methods

- In a retrospective consecutive one-center cohort all patients undergoing surgery from 2013 – 2015 were screened for analysis.
- Patients ≥ 65 years of age undergoing posterior instrumentation of minimum 4 levels for ASD.
- Patients with less than two years of follow-up were excluded.
- Revision surgery was defined as revision within two years due to mechanical failure.

Results

- 62 patients with a mean age of 70.7 years (SD: ± 4.9) were included.
- 3-Column Osteotomy (3CO) was performed in 37 procedures (60%).
- A history of previous instrumented surgery was present in 39 cases (63%).
- 24 patients (39%) underwent revision surgery within two years.
- Median time to revision was 17 months (IQR: 3-27).

Results of logistic regression models

- A history of previous spine surgery showed significantly higher odds of mechanical failure (OR = 3.4, 95%CI = 1.1-11.1, $p=0.04$).
- When adjusted for age, 3CO, number of levels instrumented and sex there was still a significantly higher odds of failure (OR = 4.9, 95% CI = 1.3-19.2, $p=0.02$).

Conclusion

- In a retrospective study of patients ≥ 65 years of age undergoing surgery for ASD we report a two-year revision rate of 39%.
- There was significantly higher odds of mechanical failure in patients with a history of previous spine surgery.
- The current study presents a relatively small sample size of patients with severe sagittal plane deformity and studies on larger cohorts are required.

Conflicts of interest

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