



Predicting morbidity and mortality of lumbar spine arthrodesis in patients in their ninth decade

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**STUDY DESIGN:** All patients aged 80 years or older, treated surgically for lumbar spine disorders from 1996 to 2001, were analyzed in a retrospective case series. The purpose of this study was to determine if higher than expected morbidity and mortality was observed for patients undergoing lumbar spine surgery in their ninth decade of life, and if any preoperative factors correlated with this outcome. **OBJECTIVE:** To determine how comorbidity affected surgical morbidity and mortality in patients older than 80 years.

**SUMMARY OF BACKGROUND DATA:** Major complication rates for elderly patients approach 20% for spine surgeries, and mortality approaches 10% in some series. Chronic disease has been shown to impact mortality dramatically, with inpatient mortality 20 times higher if 3 comorbidities exist. In contrast, age is not a negative predictor for outcome after stenosis surgery; elderly patients fare as well as younger ones.

**METHODS:** Twenty patients had complete medical records with an average follow-up of 2.57 years (range 0.42-8.77). Comorbidities, diagnoses, procedures, operative data, complications, and deaths were recorded. The diagnoses were stenosis (80%), spondylolisthesis (60%), scoliosis (30%), and instability (10%). A total of 95% of patients were treated with decompression. All patients underwent fusion, 75% with instrumentation. **RESULTS:** Four patients (20%) had a major complication as an inpatient, 4 as an outpatient (20%). There were no deaths. Comorbidity, hospital stay, and intensive care stay were the only factors that correlated significantly with the presence of an inpatient complication. No factors correlated with outpatient complications. The odds ratio for comorbidity, with regard to predicting a complication, was 9.20 ( $P = 0.04$ , 95% confidence interval 1.11- 72.4). Another strongly significant correlation occurred between levels fused, blood loss, operating time, and days spent in the intensive care unit.

**CONCLUSIONS:** The negative effect of age on surgical morbidity and mortality has been established. However, the effect of comorbidity has not been linked to the occurrence of major complications. Comorbidity may predict major complications. Choosing patients with less preoperative comorbidity will help to minimize complications.

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