Neurological injury as a complication of spinal surgery: incidence, risk factors, and prognosis

Abstract

Study design

Retrospective cohort study.

Objective

To assess the rate, injury site, aetiology and outcomes in elective spinal surgery patients who sustained a spinal cord injury (SCI).

Setting

SCI national centre Toledo, Spain.

Methods

The study sample included patients who sustained an SCI after elective spinal surgery from 2013 to 2017. Oncological patients and patients receiving interventional therapies were excluded. Data collected included: demographics, aetiology, precipitating cause, injury mechanism, injury site, neurological status (AIS), SCIMIII at admission and discharge, hypertension, diabetes mellitus, obesity, dyslipidemia, depression and hospital length of stay.

Results

One thousand two hundred and eighty-two patients were admitted in this period of whom 114 met the inclusion criteria with a median (IQR) age of 58 (45–69) years; 46% female. The prevalence of SCI as a complication following spinal surgery in the total number of patients admitted to our centre was 9%. In 43%, the injury was to the dorsal spine with T12 being the most common neurological level of injury (20% of cases following laminectomy secondary to spinal canal stenosis). The most frequent precipitating cause was epidural haematoma (38% of cases). The median (IQR) SCIMIII scores at admission and discharge were (31) points (20–54) and (67) points (34–81), respectively. General AIS at admission were C (35%) and D at discharge (54%). The presence of hypertension, diabetes mellitus, obesity and

dyslipidemia adjusted by age was not linked to a higher complication rate. The median (IQR) hospital length of stay was 120 days (60–189).

Conclusion

In total 8.9% of patients admitted with SCI were the result of elective spinal surgery.

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