

Abstract #1678.doc

ANALYSIS OF A PROSPECTIVELY ACQUIRED DATABASE OF COMPLICATIONS IN INSTRUMENTED CERVICAL SURGERY AND ASSOCIATED RISK FACTORS

Aim/introduction

Reported complication rates on instrumented cervical spinal surgery vary widely in literature. In patient counselling and decision making, it is however of high importance to adequately be informed on complication rates. The purpose of this study was to determine the incidence of complications of instrumented cervical spinal surgical interventions and to assess the correlation of these complications to patient-related risk factors.

Methods

We prospectively collected data from all patients receiving an instrumented cervical surgical intervention from January 1, 2003 to July 31, 2012 in the LUMC neurosurgery department. We excluded interventions in which merely cages were implanted. Complications were collected in a standardized manner, up to 30 days after surgery. For evaluation, complications were marked as minor or major impact.

Results

Of patients treated with anterior (n=90), posterior (n=232), combined anterior-posterior (n=29), or anterior posterior in 2 tempi (n=10) procedures, respectively 32%, 40%, 59% and 90% had 1 or more complication (total 255 complications). The incidence of major complications was 14%, 10%, 13%, 29% (total 34 major complications). The most common complications were wound infections (6.3%), dysphagia (5.9%) and CSF leakage (4.7%). Wound infections were more common in anterior/posterior procedures (17.2%) compared with anterior only (1.1%) or posterior only procedures (5.0%) (p=0.009). Complications were associated with more levels of fixation (p=0.016), trauma surgery (p=0.009), and tumour surgery (p=0.043), but were not associated with ASA score or increased operation time. Major complications were associated with increased operation time (p<0.001), smoking (p=0.05), combined anterior posterior procedure (p=0.049) and combined anterior posterior procedures in 2 tempi (p<0.001) and tumour surgery (p=0.005). Multivariate analysis of factors associated with complications identified trauma surgery (OR 4.3, p=0.004). Multivariate analysis of factors associated with major complications identified combined anterior-posterior surgery in 2 tempi (OR 49.8, p=0.005) and tumour surgery (OR 8.6, p=0.041).

Conclusion

Instrumented cervical surgery has a substantial complication incidence, although most of the complications are minor and without long-term impact. Factors associated with major complications are combined anterior-posterior procedures in 2 tempi, and surgery for spinal tumours.