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C0341 - TRAUMATIC INJURIES OF THE CRANIOCERVICAL JUNCTION IN ELDERLY PATIENTS: PRELIMINARY RESULTS OF AN INTRAOPERATIVE NEUROPHYSIOLOGICAL MONITORING AND CT SCAN IMAGING BASED APPROACH

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Resumen

Objectives: Craniocervical junction fractures among elderly patients remain a complex clinical problem with significant morbi-mortality. It remains unclear if a surgical approach based on intraoperative multimodal monitoring (IOMM) would improve clinical and radiological outcomes. We aim to describe the IOMM approach and to determine the outcome in this patient subgroup.

Methods: 11 consecutive elderly patients with craniocervical junction fractures surgically treated from 2012 to 2016 were reviewed. The IOMM included 3D imaging-based navigation system (O-arm/StealthStation, Medtronic) and intraoperative neurophysiological monitoring. Occipitocervical fixation or modified Goel-Harms fixation was performed in all cases regarding individual clinical features. The autologous graft was secured under a crosslink to increase the stability of the construct. All screws were placed with navigation guidance and placement accuracy was assessed intra and postoperatively with CT scan. Postoperative screw positioning and spinal fusion were assessed. Visual analogue scale, Barthel index and Neck Disability Index were used to assess functional outcome.

Results: Mean age was 82 years (range: 71-95). There were one C1 fracture (9%), five C2 fractures (45%) and five C1-C2/C1-C2-C3 fractures (27%). Mean operative time was 228 min without any intraoperative neurophysiologic impairment. 51 C1-C4 image-guided screws were placed without any replacement. Mortality was 27%, due to bronchoaspiration episodes in all cases. The main complication was surgical site infection (36%). On average, hospital stay was 10.2 days and follow up was 25 months. Position was assessed in 37 screws: 32 (86%) were grade 0 and 5 (14%) were grade 1. Five (83%) out of 6 patients achieved grade 3 fusion. Four out of 6 patients had a good functional outocome, whereas 2 had moderate-severe dependence and significant neck pain.

Conclusions: In this patient subgroup, the multimodal intraoperative monitoring results in a more accurate screw placement, significantly reducing the necessity of intraoperative screw replacement without prolonging the operative time.