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Subaxial cervical spine fractures with facet joint dislocation: management, technique and results in a series of 35 patients.

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Background: Subaxial spine fractures with zygo-apophyseal dislocation are burdened by a high risk of neurological impairment and morbidity. The aim of treatment consists in reduction and realignment, stabilisation of the spine and decompression of neurological structures.

Research question: The surgical management of this severe clinical condition is poorly standardized and still matter of debate. The main controversies concern the role of closed reduction and the use of anterior, posterior or circumferential approaches. We performed a retrospective evaluation of our series from 2013 to 2024, in order to assess the safety and efficacy of our surgical strategy. DESIGN: Retrospective analysis of clinical and radiological data, regarding 35 patients treated consecutively in our institution.

Methods: Transcranial traction was progressively applied and an additional manual reduction was executed if needed. Anterior decompression and arthrodesis was thus performed. Whether adequate reduction was not obtained with traction, a combined posterior-anterior approach was undertaken. The aims of the posterior procedure were the disengagement of facets, laminectomy and fusion. RESULTS: 35 patients were treated in this series (26 M and 9 F, mean age 57). The most frequently affected level was C6-C7 (13/35), and MVA was the most common mechanism of injury (19/35). According to AO-Spine Subaxial classification, C-F4 was the main type of lesion (20/35). The anterior approach was effective in 20 out of 35 cases, whereas a combined approach was needed in 12/35. 3 patients were operated only posteriorly.

Discussion: If compared to preoperative, Frankel grade at follow up was unchanged in 27/35, ameliorated in 6, and 2 patients died within 7 days. The anterior approach resulted to be sufficient in more than half of patients, and our findings corroborate the usefulness of closed traction. Among patients initially treated anteriorly, a second operation was deemed necessary in only 2 cases.

Fig. 1



Fig. 2

