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SURGICAL VERSUS CONSERVATIVE TREATMENT STRATEGIES FOR ODONTOID FRACTURES IN THE ELDERLY: REVIEW OF CASES FROM THREE TERTIARY REFERRAL CENTRES IN THE NETHERLANDS

Introduction/Aim

Odontoid fractures (OF) are the most common traumatic fractures of the geriatric spine. The optimal treatment is still subject to controversy. The aim of this study was to compare outcomes of surgical and conservative treatments for OF in the elderly.

Materials and Methods

Patient records were screened for patients who met the selection criteria (type II/III OF, ≥ 55 years old, < 2 weeks after trauma, no rheumatoid arthritis/ankylosing spondylitis). Treatment strategies differed between centres ('low threshold for surgery' in two centres, 'primarily conservative' in one centre). Radiological (union/stability) and clinical outcomes were assessed. The influence of age (≥ 55 -80 versus ≥ 80 years) and potential prognostic factors were studied.

Results

Included were 105 patients (18 treated surgically, 87 conservatively). No difference was found in fracture union (68% overall, $p=.778$) or -stability (88% overall, $p=.379$) between treatment groups. Unfortunately, clinical outcome was reported in only 41 patients and was therefore not subjected to statistical analysis. Outcome between centres was similar. Patients ≥ 80 years had worse outcomes in both arms. Baseline functioning did not influence outcome. Type-III fractures yielded better results than type-II fractures. Treatment/follow-up duration did not differ between treatments. The most common complication was failure of initial treatment (2/18 in surgical, 18/87 in conservative group). Two surgically treated patients died (both > 80). Eleven conservatively treated patients died (eight > 80).

Discussion

The patient cohort in this review is one of the largest in literature. However, still no extensive data analyses were possible. Group heterogeneity may have flattened the findings (e.g. surgery for severest cases). The correlation between radiological and clinical outcome could not be studied. Prospective studies are needed, which will also provide better understanding of what the exact treatment goal should be (to achieve union, stability, favourable clinical outcome, or a combination).

Conclusion

No differences in radiological outcome between surgically and conservatively treated patients were observed. The majority of patients achieved fracture healing. Advanced age and type II fractures are associated with worse radiological outcomes, irrespective of the applied treatment.