
DISCUSSION

One-stage odontoidectomy and posterior fixation
Tek oturumda odontoidektomi ve posterior tespit

To the editor: Köksel et al. recently reported a patient with a traumatic atlanto-axial subluxation (type II odontoid fracture) who had been treated with one-stage transoral decompression and posterior fixation (Köksel T, Dilek I, Çıkkatekerlioğlu Ö, Bedük A, Acka G, Türkan H. One-stage transoral odontoidectomy and posterior fixation in odontoid fracture: Technical note. *Turk Neurosurg* 6:44-47, 1996). We agree with the authors' preoperative planning. They have clearly demonstrated that their surgical positioning was convenient for a simultaneous anterior and posterior approach to the cervical spine. We question however, whether their posterior occipitoaxial fixation procedure after the successful removal of the odontoid was adequate. On the lateral x-ray projection we noticed some potential pitfalls that could lead to instability and related catastrophic complications in the future. The fixation and fusion procedures should extend from C1 to C3 when atlantoaxial instability is present and from occiput to C2 for occipitoatlantal instability (1,2). The fixation of the Hartshill-Ransford loop had been accomplished with occipital and C1-C2 sublaminar wiring, and the loop was extremely long reaching to the seventh cervical vertebra. In addition, there was no information about bony fusion which is indeed the best way of providing any kind of stabilization especially in this patient who we feel was treated with unsatisfactory fixation and discharged with a soft collar. Although a firm stabilization between the occiput and C1 vertebra was maintained with this procedure, the diseased C2 vertebra was still mobile during neck movements because of the lack of its related stability mechanisms. Since the paired C2 sublaminar wiring points constitute a single coronal line for the stabilization of C2 vertebra against flexion and extension movements of the cervical spine, we feel that further reinforcement using distal sublaminar wirings on the third cervical vertebra should also be performed. Also, excessively long caudal part of the loop exerts a high amount of force on lower cervical spine and facilitates the turning of C2 around the wiring points which form a single coronal line on its laminae. We feel that the length of the caudal part should not be beyond the last wiring

point to avoid this complication. Any instrument used for a fixation procedure should be reinforced by a bony fusion in order to achieve the best result. This point was also not mentioned in the article.

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1. Van Gilder JC: Abnormalities of the craniovertebral junction, in Long DM (ed), *Current Therapy in Neurological Surgery*, Burlington: B.C. Decker Inc., 1989, 229-232 pp.

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Reply: In response to Güner and Erbayraktar's critical letter on our report I wish to emphasize the following points. Posterior fixation by Hartshill-Ransford loop was applied between the occiput and laminae of C1 and C2 in our patient. Bony fusion is not indispensable in these cases (1,2). We agree with Güner and Erbayraktar on the length of the Hartshill-Ransford loop. It was extremely hard and we did not have a suitable instrument to cut these hard steel bars in the operating theatre. Our patient has been working in the Turkish army as an officer since then (1991), and he has no problem or complaint except limited neck movement. I thank Drs. Güner and Erbayraktar for their attention.

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2. Crockard HA, Calder I, Ransford AO: One stage transoral decompression and posterior fixation in rheumatoid atlantoaxial subluxation. *J Bone Joint Surg* 72(B):682-685, 1990