AUTHOR'S REPLY

Answer to the Letter to the Editor of V. Kumar et al. concerning "Endoscopic endonasal odontoidectomy: a long-term follow-up results for a cohort of 21 patients" by Penner F, De Marco R, Di Perna G, et al. (2022) Eur Spine J 31:2693–2703

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Having read the comments and question concerning our paper, we appreciate the observations and inquiry on our topic.

The radiological criterion used to determine possible preoperative cranio-vertebral junction (CVJ) reducibility on dynamic X-rays was the presence of any reciprocal movement. No traction was performed. Also, a CT scan was obtained and the rate of CVJ fusion was taken into account [1].

In order to preserve C1 anterior arch, a deep anatomic knowledge is needed along with technological assistance. Every case was accurately pre-operatively studied with CT scan and 3D reconstruction; neuronavigation is also mandatory in order to always double check the cranio-caudal bone removal. This is especially true in the presence of partial fusion and malformation [2].

For the nine patients that underwent posterior fixation, four patients (2, 9, 14 and 15) had a complex malformation and it was not easy to determine the presence of pre-operative stability (possible millimetrical subluxation in flexion–extension in malformed CVJ) so for the patient's safety, the classical technique was applied. Patient n. 5, 8 and 16 arrived to the team's attention with respiratory insufficiency and acute presentation; therefore, it was not possible to obtain a dynamic X-ray. Patient 21 and patient 4 had an inflammatory destruction of the arch, as well as unstable X-rays, so it was deemed not safe to perform single stage anterior surgery.

The statistical analysis comparing the two group was not performed considering the limited number of patients. Additionally, all the patients are still being monitored for possible new instability. So far, as mentioned in the article, only one patient developed neck pain and indication for surgery from another center, however, he did not undergo posterior fixation.

The complications were divided into medical and surgical. Two patients had an intra-operative CSF leak without postoperative fistula. One underwent only anterior decompression and the other both, anterior and posterior procedures. The medical complication consisted of four cases of pneumonia. Three patients also had posterior fixation, and one patient had only anterior decompression. One of the patients had complications which consisted of intra-operative CSF leak and pneumonia; she underwent anterior decompression and posterior fixation. No statistical analysis was made for the different complication rates in the two subgroups because of the limited number of subjects.

If posterior fixation was determined necessary, the two surgeries were done subsequently with fixation immediately after anterior decompression except in two patients in whom the anesthesiologist preferred to divide the procedure in two steps about a week apart.

References

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2. Pacca P, Tardivo V, Pecorari G, Garbossa D, Ducati A, Zenga F (2019) The endoscopic endonasal approach to craniovertebral junction pathologies: surgical skills and anatomical study. Acta Neurochir Suppl 125:25–36. https://doi.org/10.1007/978-3-319-62515-7_5. (**PMID: 30610299**)

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