Response to “Questionable Supremacy of C1-C2 Fusion for Chiari Without Apparent Instability: Comments on ‘Surgical Outcomes of C1-2 Posterior Stabilization in Patients With Chiari Malformation Type 1’ by Arslan et al”

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We thank Salunke et al for their criticism of our manuscript. Obtaining certainty on the path of science is of course a long and tiring process.

We have compared the content of the articles they referenced for their criticism with the results we obtained.

First, let us state that Type 3: central atlantoaxial instability (no radiologically demonstrable evidence of instability— it is diagnosed during surgery) was the question that required to be considered. It was also in this article and was a question we answered in the referee’s review. Briefly, we have illustrated that the presence of syringomyelia indicates micro instability and acts as a kind of natural airbag that the body creates for its own defense. We have shown this as a result of the work done by Goel prior to ours.

In Salunke et al,1 the researchers applied C1-2 fixation + Cage + without FMD to 38 patients with AAD, BI, and CM. Only 28 (73%) of these patients had preoperative syringomyelia. Twenty-five of them improved postoperative radiologically and 3 clinically. In other words, 89% of the patients with syringomyelia recovered radiologically, and all (100%) of them clinically (Note: same as the result we found in patients with syringomyelia). And in this article, they suggested C1-2 fixation + Cage + without FMD application as we do in such cases.

In Salunke et al,2 the researchers applied C1-2 fixation + Cage + without FMD to 40 patients with CM without AAD (ie, Type 3). Twenty-eight patients (70%) improved. When we look at their series, 29 (72.5%) of 40 patients have preoperative syringomyelia and 7 of patients with syringomyelia have bone anomalies. Seventeen of them improved postoperative (58% of patients with syrinx). And as a result, they stated that there was no difference between the application of C1-2 fixation + Cage + without FMD in patients with CM who were thought to have type 3 AAD and those who underwent FMD.

There are no postoperative X-rays in any of the radiological images in neither publication of Salunke et al.1,2 At the same time, they did not verify atlantoaxial instability in any preoperative and postoperative CT. We probably attribute their lower success rate to their inadequate reduction and fusion. In our manuscript,3 adequate reduction and fixation can be clearly observed in our postoperative X-rays and CTs (E, F, G, H sections in the Figures 2, 3, and 4)

In response to issues they criticize.

1. Additionally, the authors’ classification of C1-C2 instability based upon single parasagittal section can never be the marker of true instability. Answer: Preoperative sagittal and parasagittal pictures (a and b sections) are available in the 3 samples we have presented in our article. Contrary to what has been said above, there are 2 preoperative sections, not just one.

Our series is different when compared with that of Salunke et al. All of our case series have syringomyelia (approximately 70% of their series have preoperative syringomyelia). It also covers all AAD types in our range.

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As a result, the presence of type 3 AAD cannot be confirmed radiologically. The presence of mobility during the operation and the decrease in syrinx in the postoperative period are clinically proven.

Declaration of Conflicting Interests
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References
1. Salunke P, Karthigeyan M, Malik P. Foramen magnum decompression without bone removal: C1-C2 posterior fixation for Chiari with congenital atlantoaxial dislocation/basilar invagination. Surg Neurol Int. 2019;10:38.
2. Salunke P, Karthigeyan M, Malik P, Panchal C. Changing perception but unaltered reality: how effective is C1-C2 fixation for Chiari malformations without instability? World Neurosurg. 2020;136:e234-e244.
3. Arslan A, Olguner SK, Acik V, et al. Surgical outcomes of C1-2 posterior stabilization in patients with Chiari malformation type 1. Global Spine J. Published online August 13, 2020. doi:10.1177/2192568220945293