Reply to Letter to the Editor

Surgical Technique: Hemilaminectomy and Unilateral Lateral Mass Fixation for Cervical Ossification of the Posterior Longitudinal Ligament

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On behalf of my coauthors, I thank Singh et al. for their comments regarding our study [2]. We agree they have raised valid questions.

We believe that traction or tethering effect on the nerve roots due to spinal cord shift occurring after spinal canal decompression is the cause of postoperative C5 palsy [4]. The rationale for choosing this technique is to preserve ligamentous attachments and bony posterior elements as much as possible to control posterior shift of spinal cord after suitable decompression, instead of excessive decompression. The mean improvement ratio of neurologic function (Japanese Orthopaedic Association score) was 59% at last followup in this study. Because we did not have

a control group for this study, it is unclear whether the suitable decompression of hemilaminectomy decreases the degree of cord function compared to excessive decompression of laminectomy. It is true that the hemilaminectomy approach may provide a relatively narrow exposure of the spinal canal, but does more decompression lead to a better clinical result? The surgical results for multilevel continuous/mixed cervical ossification of posterior longitudinal ligament involves various aspects, including neurological function and complications (especially C5 palsy and kyphosis) at short- and long-term followup.

Previous studies [1, 3] reported that unilateral fixation had comparable efficacy to bilateral fixation in lumbar spinal fusion. Unilateral fixation is one of the remarkable novel ideas of this technique. We performed contralateral fixation because it was convenient to perform bone grafting on this side, and there was sufficient bone graft bed to afford adequate stabilization of the cervical spine. Because the cervical spine was not unstable, we tried unilateral fixation after multilevel hemilaminectomy and found it was enough for stabilization of the cervical spine. Our last followup indicated a spinal fusion rate of 100%. There were no instances of pseudoarthrosis, rod breakage, or pullout of screws. Fixation on both sides may be more rigid, but unilateral fixation can be acceptable if the approach stabilizes the cervical spine. Future research studying the long-term biomechanical outcomes of unilateral fixation is necessary.

Thank you for highlighting some interesting issues relevant to this surgical technique.

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