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COMMENTARY

Commentary on article 200_15, Amir Abbas Ghasemi, Behshad Behfar, Asian J Neurosurg 2016 (3);282-286.

There is no evidence that laminoplasty results in improved outcomes compared with laminectomy in cervical spinal cord injury without instability

Authors of the accepted paper entitled "outcome of laminoplasty in cervical spinal cord injury (CSCI) with stable spine" in their retrospective study, performed laminoplasty on 41 patients with CSCI without instability. Thirty-three patients showed significant improvement in American Spinal Cord Injury Association impairment scale and Japanese Orthopaedic Association grading scale at the 12-month follow-up.

It is previously demonstrated that in CSCI without bone and disc injury, there is no need for reduction or stabilization.[1] The clinical dilemma here is the concomitant canal stenosis which could predispose these patients to neurologic deterioration after trauma; since in a narrow spinal canal, the effective size of the cerebral spinal fluid cushion is reduced.[2] In such cases, the role and timing of surgical decompression are in question.

There are reports of both success and failure after decompression surgery in this group of patients. Some surgeons believe that decompression is not effective here, because the compression may have existed before the injury in asymptomatic patients. Therefore, the symptoms develop after a CSCI without bone and disc injury are probably not a result of the compression itself.[3]

If we assume that such symptoms are a direct result of the compression, then why perform a laminoplasty when it is possible to perform skip laminectomy with lower postoperative morbidities such as persisting axial pain, and restriction of neck motion (often seen after laminoplasty).[4] There is no evidence that shows laminoplasty is superior compared with skip laminectomy in CSCI without instability.[4-7]

In the current study, the degree of cord compression was not significantly associated with neurological outcome. However, the cord compression is the reason for performing a laminoplasty, and lack of such association raises some concerns about the effectiveness of decompression, particularly in the absence of a control group. Hence, we could not discriminate between spontaneous improvement of CSCI after 12 months of follow-up, and the improvement obtained by laminoplasty. Future studies with more sophisticated methodology may help to answer the question.

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References

1. Lenehan B, Fisher CG, Vaccaro A, Fehlings M, Aarabi B, Dvorak MF. The urgency of surgical decompression in acute central cord injuries with spondylosis and without instability. Spine (Phila Pa 1976) 2010;35 21 Suppl: S180-6.
2. Del Bigio MR, Johnson GE. Clinical presentation of spinal cord concussion. Spine (Phila Pa 1976) 1989;14:37-40.
3. Kawano O, Ueta T, Shiba K, Iwamoto Y. Outcome of decompression surgery for cervical spinal cord injury without bone and disc injury in patients with spinal cord compression: A multicenter prospective study. Spinal Cord 2010;48:548-53.
4. Sivaraman A, Bhadra AK, Altaf F, Singh A, Rai A, Casey AT, *et al.* Skip laminectomy and laminoplasty for cervical spondylotic myelopathy: A prospective study of clinical and radiologic outcomes. J Spinal Disord Tech 2010;23:96-100.
5. Traynelis VC, Arnold PM, Fourney DR, Bransford RJ, Fischer DJ, Skelly AC. Alternative procedures for the treatment of cervical spondylotic myelopathy: Arthroplasty, oblique corpectomy, skip laminectomy: Evaluation of comparative effectiveness and safety. Spine (Phila Pa 1976) 2013;38 22 Suppl 1:S210-31.
6. Yukawa Y, Kato F, Ito K, Horie Y, Hida T, Ito Z, *et al.* Laminoplasty and skip laminectomy for cervical compressive myelopathy: Range of motion, postoperative neck pain, and surgical outcomes in a randomized prospective study. Spine (Phila Pa 1976) 2007;32:1980-5.
7. Shiraishi T, Fukuda K, Yato Y, Nakamura M, Ikegami T. Results of skip laminectomy-minimum 2-year follow-up study compared with open-door laminoplasty. Spine (Phila Pa 1976) 2003;28:2667-72.

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