Letter to Editor

Spinal cord decompression: Is country of surgery a predictor of outcome?

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Received: 30 December 11 Accepted: 28 January 12 Published: 19 March 12

This article may be cited as:
Rahimi-Movaghar V, Rasouli MR. Spinal cord decompression: Is country of surgery a predictor of outcome?. Surg Neurol Int 2012;3:36.
Available FREE in open access from: http://www.surgicalneurologyint.com/text.asp?2012/3/1/36/94034

Dear Sir,

We read the important paper of Shamim et al. about the question as to whether patients with spinal cord injury (SCI) benefit from spinal stabilization. We believe that the decision to perform spine surgery on patents with SCI should not be made only based on duration of hospital stay, economic issues, and neurological outcome. However, we would emphasize the apparent advantage of non-operative management of SCI patients in developing countries.

In Zahedan, a city located in a poor socioeconomic province of Iran, we managed 108 patients with SCI during a 12-year period from 1994 to 2005. Of these patients, 50 were followed for more than 12 months. Assessment of outcome of these patients not only confirmed superiority of non-surgical management in patients with complete SCI in terms of cost and duration of hospitalization, but also, surprisingly, showed that the neurological outcome of patients with incomplete SCI in the non-surgical group was not different from that of the surgical group. Length of stay in surgery group of SCI patients was 11.1 ± 5.46 days, which was significantly longer than 5.8 ± 0.96 days in non-surgical patients (P = 0.017).

All groups of patients with incomplete SCI including those treated non-operatively, patients had early operation or cases underwent late surgery, had significant and similar improvement, when compared to the preoperative examination (P = 0.02), with no difference among these three groups.[2,3]

Our results differ from those of the meta-analysis of La Rosa et al.,[1] which concluded neurological improvement after early decompression in incomplete SCI patients compared to late decompression or non-surgical management. In this meta-analysis, 26 studies were evaluated, all of which had been performed in developed countries, with no study from developing countries. The results of this meta-analysis is also different from the study performed by Shamim et al.,[5] which may indicate different outcome of spinal cord decompression in developed and developing countries. Despite the limitations of the study by Shamim et al.,[5] such as heterogeneous cohort of patients, inconsistent prednisolone prescription, late decompression in considerable number of patients, different surgical procedures, and lack of post-operative neurologic assessment of patients, it can be hypothesized that the country where surgery is performed (developing vs. developed countries) may have an effect on the outcome of SCI patients. Thus, results of some reports on favorable outcome of patients undergoing spinal decompression/stabilization from developed countries should be interpreted carefully if they are to be used in developing countries since many pre-, intra- and post-operative factors may contribute to the outcome of these patients. Further studies from developing countries should be performed to provide better guidance for spine
surgeons in these countries to decide whether an SCI patient is likely to benefit from spinal decompression/stabilization or not.

ACKNOWLEDGEMENT

We authors would thank Professor Leland Albright for his careful edit of the letter.

REFERENCES

1. La Rosa G, Conti A, Cardali S, Cacciola F, Tomasello F. Does early surgical decompression improve neurological outcome of spinal cord injured patients? Appraisal of the literature using a meta-analytical approach. Spinal Cord 2004;42:503-12.
2. Rahimi-Movaghar V. Efficacy of surgical decompression in the setting of complete thoracic spinal cord injury. J Spinal Cord Med 2005;28:415-20.
3. Rahimi-Movaghar V, Vaccaro AR, Mohammadi M. Efficacy of surgical decompression in regard to motor recovery in the setting of conus medullaris injury. J Spinal Cord Med 2006;29:32-8.
4. Rasouli MR, Rahimi-Movaghar V, Vaccaro AR. Reduction of hospital stay cannot be considered as a reason for early spine stabilization for thoracic spine fractures. J Trauma 2010;68:751.
5. Shamim MS, Ali SF, Enam SA. Non-operative management is superior to surgical stabilization in spine injury patients with complete neurological deficits: A perspective study from a developing world country, Pakistan. Surg Neurol Int 2011;2:166.

Commentary

We read with interest the letter to editor titled, “Spinal cord decompression: Is country of surgery a predictor of outcome?” The authors hail from a poor socioeconomic province of Iran and report their results on managing a large number of SCI patients with a mean follow-up exceeding 12 months. First and foremost, we would like to commend the authors for the tremendous service they are providing in a resource-stricken setup. What impressed us even more is that despite their limitations, they continue to audit and critically analyze their outcomes, proving that resource deprivation is not an excuse for lack of scientific approach to patient management.

The authors share their results of managing complete SCI patients with and without surgery, validating our own results and then go on to share results from comparing neurological outcome between incomplete SCI patients with or without surgical intervention. Here, they mention that their results differ from a meta-analysis done by La Rosa et al., published nearly 7 years earlier, and point out that none of the studies in the meta-analysis were from developing countries. Although in our own practice, we tend to agree with the recommendations of La Rosa et al. and other studies on incomplete SCI published more recently, we certainly agree with the authors that not all studies done in developed countries can be directly applied to developing countries. Especially in conditions where clear-cut evidence does not exist supporting one treatment modality such as that for surgical intervention in complete SCI, one must choose the management option best suited for one’s own circumstances.

To propose that the country of surgery may affect outcome would not be a fair statement. Outcomes depend on a whole lot more than just the country and, even within countries, developed or developing, outcomes vary greatly from center to center. This is especially true for more complex specialties like neurosurgery, and hence the argument for developing regional referral centers for such specialties. We believe that proper referral centers with specialized care even in developing countries can produce equivalent results. Citing our own example, despite working in a resource-restricted country, we have shared our results for various surgical procedures and shown that our results do not differ markedly from the available literature. In the absence of specialized centers or when one is forced to provide advanced care despite limitations, such as during disasters, the results are bound to be inferior and to our mind, should not be compared with the set standards. One must realize that provision of care under these circumstances is out of necessity. It is bound to have limitations, and where each surgeon wants to provide the best care to his/her patient and continues to strive for it, it is perhaps unfair to compare his/her outcomes with surgeons working in controlled environments, be it in a developing country with resource limitations or a developed one with limitless abundance of resources.

REFERENCES

1. Bagnall AM, Jones L, Duffy S, Riemsma RP. Spinal fixation surgery for acute traumatic spinal cord injury. Cochrane Database Syst Rev 2008;CD004725.
2. Fehlings MG, Perrin RG. The timing of surgical intervention in the treatment of spinal cord injury: A systematic review of recent clinical evidence. Spine (Phila Pa 1976) 2006;31 Suppl 1:S28-35; discussion S36.
3. Hamid RS, Haq T, Shamim MS, Kazim SF, Salam B. Endovascular approach as primary treatment for traumatic carotid cavernous fistula: Local experience from Pakistan. J Pak Med Assoc 2011;61:989-93.
4. Kazim SF, Shamim MS, Enam SA, Bari ME. Microsurgical excisions of vestibular schwannomas: A tumor size based analysis of neurological outcomes and surgical complications. Neurol Int 2011;2:41.
5. La Rosa G, Conti A, Cardali S, Cacciola F, Tomasello F. Does early decompression improve neurological outcome of spinal cord injured patients? Appraisal of the literature using a meta-analytical approach. Spinal Cord 2004;42:503-12.
6. Shamim MS, Bari ME, Khursheed SF, Jooma R, Enam SA. Pituitary adenomas: Presentations and outcomes in a South Asian country. Can J Neurol Sci 2008;35:198-203.
7. Shamim MS, Parekh MA, Bari ME, Enam SA, Khursheed SF. Microdiscectomy for lumbosacral disc herniation and frequency of failed disc surgery. World Neurosurg 2010;74:611-6.
8. Shamim MS, Razzak JA, Jooma R, Khan U. Initial results of Pakistan’s first road traffic injury surveillance project. Int J Inj Contr Saf Promot 2011;18:213-7.
9. Sobani ZA, Shamim MS, Qadeer M, Bilal N, Murtaza SG, Enam SA, et al. Cranioplasty after decompressive craniectomy: An institutional audit and analysis of factors related to complications. Neurol Int 2011;2:123.

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