Neurosurgical Forum

LETTERS TO THE EDITOR

Transvertebral screws

TO THE EDITOR: I read with interest the article by Rodriguez-Martinez et al.⁵ (Rodriguez-Martinez NG, Savardekar A, Nottmeier EW, et al: Biomechanics of transvertebral screw fixation in the thoracic spine: an in vitro study. *J Neurosurg Spine* 25:187–192, August 2016). The authors have done biomechanical studies and have determined that transvertebral screws in the thoracic spine had a reasonable level of stability. They discuss this technique as novel.

I would like to invite the authors to review my articles on the subject of transvertebral cervical screws.^{1–4} I placed intervertebral tricortical screws in the cervical vertebral

bodies, as shown in Fig. 1. The screws passed from the anterior surface of the vertebral body and then traversed through the cortices adjoining the disc space, making the purchase of the screw “tricortical” and “transvertebral.” In our articles, we have shown multiple permutations and combinations of the use of such screws in a stand-alone manner and in association with plates.^{1–4}

For transvertebral fixation, we have used a single screw, 2 screws, 3 screws, and plates and screws in single- and multiple-level fixations. I have found such screws to have the capability for strong purchase as they traverse the firmest zone of the vertebral body. Our clinical results have demonstrated the effectiveness of the technique. Although we used our technique for the cervical spine, there is a remarkable conceptual similarity in the technique demonstrated on the thoracic spine in cadavers by the authors. I believe that my original technical description of transvertebral tricortical cervical screws did deserve to be acknowledged by the authors.

Atul Goel, MCh

King Edward VII Memorial Hospital and Seth G. S. Medical College,
Parel, Mumbai, India

FIG. 1. Line drawing showing the Goel technique for the use of plates and tricortical screws.

References

1. Goel A: Alternative tricortical methods of screw implantation for anterior cervical plate fixation: a preliminary report. *J Clin Neurosciences* 7:134–136, 2000
2. Goel A: Tricortical cervical interbody screw fixation. *J Postgrad Med* 43:4–7, 1997
3. Goel A: Tricortical method. *J Neurosurg Spine* 99:245–246, 2003 (Letter)
4. Goel A, Cacciola F: Anterior approaches for multilevel cervical spondylosis, in Quiñones-Hinojosa A (ed): **Schmidke and Sweet's Operative Neurosurgical Techniques**, ed 6. Philadelphia: Elsevier Saunders, 2012, pp 1789–1800
5. Rodriguez-Martinez NG, Savardekar A, Nottmeier EW, Pirris S, Reyes PM, Newcomb AGUS, et al: Biomechanics of transvertebral screw fixation in the thoracic spine: an in vitro study. *J Neurosurg Spine* 25:187–192, 2016

Disclosures

The author reports no conflict of interest.

Response

We appreciate the interest from Dr. Goel in our recent article. Our idea for this study stemmed from the original 2013 article by Nottmeier and Pirris describing the clinical use of thoracic transvertebral pedicle screws.⁵ Previously, Dr. Goel had published extensively on his technique of transvertebral screw placement from an anterior approach in the cervical spine.¹⁻⁴

Our technique differs from Dr. Goel's in that our study involved the placement of transvertebral screws posteriorly through the thoracic pedicles. In contrast, Dr. Goel's technique entails anterior placement of transvertebral screws through the vertebral body in the cervical spine. Although these 2 techniques differ in essential ways, we acknowledge that Dr. Goel's work did relate to our study and should have been cited. We apologize for this oversight.

Nestor G. Rodriguez-Martinez, MD
Amey Savardekar, MCh
Eric W. Nottmeier, MD
Stephen Pirris, MD
Phillip M. Reyes, BSE
Anna G. U. S. Newcomb, MS
George A. C. Mendes, MD
Samuel Kalb, MD
Nicholas Theodore, MD
Neil R. Crawford, PhD

Barrow Neurological Institute, St. Joseph's Hospital and Medical Center,
 Phoenix, AZ

References

1. Goel A: Alternative tricortical methods of screw implantation for anterior cervical plate fixation: a preliminary report. *J Clin Neurosci* 7:134–136, 2000
2. Goel A: Tricortical cervical inter-body screw fixation. *J Postgrad Med* 43:4–7, 1997
3. Goel A: Tricortical method. *J Neurosurg Spine* 99:245–246, 2003 (Letter)
4. Goel A, Cacciola F: Anterior approaches for multilevel cervical spondylosis, in Quiñones-Hinojosa A (ed): *Schmiddek and Sweet's Operative Neurosurgical Techniques*, ed 6. Philadelphia: Elsevier Saunders, 2012, pp 1789–1800
5. Nottmeier EW, Pirris SM: Placement of thoracic transvertebral pedicle screws using 3D image guidance. *J Neurosurg Spine* 18:479–483, 2013

Disclosures

Dr. Nottmeier is a consultant for Medtronic Surgical Navigation, Globus Medical, DePuy Spine, and K2M Inc., and receives royalties from Globus Medical. Dr. Crawford is an employee of Globus Medical.

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Defining the overall hallmarks of young patients undergoing lumbar discectomy

TO THE EDITOR: We read the salient clinical article by Strömqvist and colleagues⁵ with immense interest (Strömqvist F, Strömqvist B, Jönsson B, et al: Predictive outcome factors in the young patient treated with lumbar disc herniation surgery. *J Neurosurg Spine* 25:448–455, October 2016). Based on the SweSpine Register, the expert authors bring to the scientific spine community novel insights into predictive outcome factors for young patients with lumbar disc herniation (LDH) undergoing discectomy. Using a variety of preoperative instruments, Strömqvist and colleagues successfully identified preoperative mental health as the key predictive outcome factor. Undoubtedly, the article brings and will bring the instructive guidance on achieving better clinical outcome for young patients with LDH if they choose surgery. We have a number of comments aimed at enhancing the scientific knowledge on LDH.

Accumulating evidence indicates that mental health status plays important roles in a variety of scenarios. Mindfulness, or living in the moment, is increasingly recognized as a way to prevent and treat low-back pain.^{1,2,4} Novel evidence indicates that mindfulness-based stress reduction may be an effective treatment strategy for chronic low-back pain.¹ The current study provided another line of evidence supporting the importance of mental health for the clinical outcome of LDH.

In the current article Strömqvist and colleagues⁵ studied 180 young patients between 2000 and 2010 drawn from the SweSpine Register. Notably, Lagerbäck et al.³ addressed the hallmarks of 151 young patients with LDH after 2011 based on the same register. Overall, the conclusions of the two articles are consistent on general good clinical outcome for young patients undergoing discectomy. The integrated analyses of all 331 young patients in the register might be more likely to shed new light on the features of clinical outcome. Therefore, we would suggest the expert authors perform such profound and beneficial analyses for the scientific community.

Jun Zhang, MD^{1,2}

Ping-Heng Lan, MD, PhD¹

Hai-Qiang Wang, MD, PhD¹

¹Xijing Hospital, Fourth Military Medical University, Xi'an, China

²Baoji Municipal Central Hospital, Baoji, Shaanxi Province, China

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References

1. Cherkin DC, Sherman KJ, Balderson BH, Cook AJ, Anderson ML, Hawkes RJ, et al: Effect of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care on back pain and functional limitations in adults with chronic low back pain: a randomized clinical trial. *JAMA* 315:1240–1249, 2016

2. Goyal M, Singh S, Sibinga EM, Gould NF, Rowland-Seymour A, Sharma R, et al: Meditation programs for psychological stress and well-being: a systematic review and meta-analysis. **JAMA Intern Med** **174**:357–368, 2014
3. Lagerbäck T, Elkan P, Möller H, Grauers A, Diarbakerli E, Gerdhem P: An observational study on the outcome after surgery for lumbar disc herniation in adolescents compared with adults based on the Swedish Spine Register. **Spine J** **15**:1241–1247, 2015
4. Morone NE, Greco CM, Moore CG, Rollman BL, Lane B, Morrow LA, et al: A mind-body program for older adults with chronic low back pain: a randomized clinical trial. **JAMA Intern Med** **176**:329–337, 2016
5. Strömqvist F, Strömqvist B, Jönsson B, Gerdhem P, Karlsson MK: Predictive outcome factors in the young patient treated

with lumbar disc herniation surgery. **J Neurosurg Spine** **25**:448–455, 2016

Disclosures

The authors report no conflict of interest.

Response

No response was received from the authors of the original article.

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