Neurosurgical Forum

LETTERS TO THE EDITOR

Risk of recurrence of lumbar disc herniation after microdiscectomy for scoliosis

TO THE EDITOR: We read with interest the retrospective case series by Chang et al.¹ investigating the risk of recurrence of lumbar disc herniation (LDH) in patients with scoliosis who underwent microdiscectomy (Chang HK, Chang HC, Wu JC, et al: Scoliosis may increase the risk of recurrence of lumbar disc herniation after microdiscectomy. *J Neurosurg Spine* 24:586–591, April 2016). The effect of scoliosis in terms of risk of LDH recurrence has not been previously addressed. This study attempted to demonstrate for the first time the association between scoliosis and recurrent LDH in young adults. Specifically, the authors identified a significantly higher rate of recurrence in LDH patients with uncorrected scoliosis. However, we consider that the represented result should be interpreted with caution.

On the one hand, the authors did not identify the type of scoliosis. In the entire article, the description of scoliosis was ambiguous. We are not certain whether adolescent idiopathic scoliosis (AIS) or sciatic scoliosis may affect recurrence. Actually, in most young individuals, the scoliosis is idiopathic, but it may also occur as a part or complication of an underlying health condition, such as neuromuscular disorders, lower limb discrepancy, as well as LDH.^{3,5,6} Sciatic scoliosis has been found coincident with LDH in both adolescents and adults;^{3,5} in addition, it may be improved once the pain is relieved. The authors' inference that patients with thoracolumbar scoliosis would have altered biomechanical wearing in their lumbar intervertebral discs does not take into account that such wearing may not occur in patients with sciatic scoliosis. Therefore we consider that this conclusion would be more convincing if the authors identified the type of scoliosis in their patients.

On the other hand, the authors summarized and statistically analyzed factors such as sex, year, body mass index, diabetes, smoking, traumatic event, and heavy weight bearing in this study, but they ignored the level and type of disc herniation that may affect the recurrence. In a study performed by Dewing et al.,² patients who underwent microdiscectomy with disc herniations at the L5–S1 level had significantly better outcomes than did those with herniations at the L4–5 level, and patients with

sequestered or extruded lumbar disc herniations had significantly better outcomes than did those with contained herniations. In addition, patients with caudally migrated LDH experienced recurrence significantly more often than those with rostrally migrated or nonmigrated LDH.⁴ In our opinion, level and type of disc herniation should be included in the general information of patients, and univariable analysis combined with multivariable analysis will make this result more convincing.

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Disclosures

The authors report no conflict of interest.

Response

We read with interest the comments on our paper by Tu and colleagues. Certainly the risk factors for the re-

currence of disc herniation after lumbar discectomy have been debatable for a long time. The merit of our study was that we set out to answer an important question for which the answer has been intuitively obvious but not necessarily substantiated with data in the literature. We reviewed a series of young adult patients with spinal deformity and found that they had a higher rate (33.3% vs 2.3%, $p = 0.001$) of disc re-herniation after surgery than those without deformity.

The inclusion criteria in our study were clear and strict. Patients of the scoliosis group were all under the age of 40 and unanimously had AIS. During the more than 2 years of follow-up of these patients, the report clearly demonstrated that lumbar microdiscectomy would not alter the curvature of deformity among these patients. Once again, none of these patients fit the ambiguous diagnosis of sciatic scoliosis.

There was no doubt that the operated level and type of disc herniation might affect the rate of recurrence.^{1,2,3-5} The majority (98.3%) of discs operated on during the current study were L4–5 and L5–S1, and they were all (100%) symptomatic and refractory to medical treatment. Thus there was little controversy on the decision of microdiscectomy and the study results were highly relevant and applicable clinically. Furthermore, all patients' AIS caused minimal symptoms and remained uncorrected throughout the follow-up period. The report therefore demonstrated that microdiscectomy provided at least short-term benefit for these patients with spinal deformity. The paper also raised another important issue: what is the optimal surgical strategy for disc herniation in patients with scoliosis?

Although this retrospective study successfully demonstrated equal effectiveness of microdiscectomy in patients with scoliosis (i.e., the reoperation rates were not significantly different between the groups), longer-term studies are necessary to corroborate the findings. Future investigations, with potentially larger patient populations, are required to determine the most efficient and durable management of LDH in patients with AIS.

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Published online April 21, 2017; DOI: 10.3171/2016.11.SPINE161246.

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