

**Miyanji F, Pawelek J, Nasto LA, Rushton P, Simmonds A, Parent S.** Safety and efficacy of anterior vertebral body tethering in the treatment of idiopathic scoliosis: a multicentre review of 57 consecutive patients. *Bone Joint J.* 2020;102-B(12):1703-1708.

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**Authors' reply:**

*Sir,*

We read with great interest this letter about our paper.<sup>1</sup> Here are our responses to the different concerns raised by the authors.

First, Akbari et al question the apparent discrepancy between our minimum follow-up period of two years and the fact that our mean follow-up was 40.4 months with a range of 11 to 56 months. We did include all patients with a minimum follow-up of two years including those who had undergone conversion to fusion. For two of these patients, the conversion to fusion occurred before 24 months had elapsed but we decided to keep their data in our cohort. This effectively increased our conversion to fusion rate and indicates that early failure can occur. We also included their last radiological measurements prior to fusion to get a better perspective on curve progression prior to fusion. We agree that this apparent discrepancy could have been better described but we felt that excluding these patients would have made our results appear better than they were and would underestimate the actual number of complications.

Their second concern is the apparent maturity of the cohort. They refer to Sanders et al<sup>2</sup> and to the different stages described in this paper. The problem with that description is that it is based on a relatively small cohort of only 22 patients followed during adolescent growth. There is significant variability in the appearance of Risser grades, tri-radiate status, menarchal status, and Sanders score. The Sanders score is one of the tools we used to determine maturity but, as there are significant variables, the decision to operate was based on many factors including menarchal status, Risser grade, Sanders score, and tri-radiate status. The authors recognize that the assessment of maturity for this procedure is still an imprecise science. The range reported only tells part of the story: the Risser grade and Sanders score were confirmed by independent observers.

Last, they suggest that a better selection of patients may have resulted in fewer conversions to fusion based on published recommendations for preoperative flexibility.<sup>3</sup> This landmark paper was published in 2015 while our cohort included patients operated on between 2013 and 2016. Two of the paper's authors (FM and SP) have been early adopters of this new surgical approach: these results are probably linked to this early experience when clinical guidelines did not exist for this procedure. The early experience from Samdani et al<sup>3</sup> was also with curves of slightly lesser severity (mean 42.8°; range 30° to 66°) whereas the curves in our cohort were slightly more severe (mean 51°; range 31° to 81°), reflecting the fact that clear indications for this procedure did not exist at the time these patients were treated.

We would like to thank the authors of this letter for their thoughtful comments and hope we have been able to address their concerns.

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1. **Miyanji F, Pawelek J, Nasto LA, Rushton P, Simmonds A, Parent S.** Safety and efficacy of anterior vertebral body tethering in the treatment of idiopathic scoliosis: a multicentre review of 57 consecutive patients. *Bone Joint J.* 2020;102-B(12):1703-1708.
2. **Sanders JO, Khoury JG, Kishan S, et al.** Predicting scoliosis progression from skeletal maturity: a simplified classification during adolescence. *J Bone Joint Surg Am.* 2008;90-A(3):540-553.
3. **Samdani AF, Ames RJ, Kimball JS, et al.** Anterior vertebral body tethering for immature adolescent idiopathic scoliosis: one-year results on the first 32 patients. *Eur Spine J.* 2015;24(7):1533–1539.