Letter to the Editor Concerning “Does the Level of Pedicle Subtraction Osteotomy Affect the Surgical Outcomes in Ankylosing Spondylitis-Related Thoracolumbar Kyphosis With the Same Curve Pattern?” by Tang ZL et al (Global Spine Journal. 2021 Mar 2: 2192568220980716).

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Keywords
ankylosing spondylitis, thoracolumbar, kyphosis, osteotomy

To The Editor, Global Spine Journal

We have read with great interest the recent article published by Tang ZL et al in this journal regarding the effect of pedicle subtraction osteotomy (PSO) level on the surgical outcomes in ankylosing spondylitis-related thoracolumbar kyphosis with the same curve pattern. We would like to congratulate the authors for their novel work as only sparse literature is available describing the effect of level of osteotomy on surgical and radiographic outcomes in ankylosing spondylitis patients. However, we would like to highlight a few points and seek clarification from the authors for better generalizability of the results.

The authors have compared pre-operative and last follow-up radiographic parameters and found no significant difference in sagittal and spinopelvic parameters between the two groups on the basis of level of osteotomy (Group L1 and Group L2). However, it would be better if the authors had compared the pre-operative and immediate post-operative parameters for the change in sagittal alignment as the results could be confounded due to the ongoing disease process and development of new flexion contractures of hip or secondary arthritis at final follow-up (average, 37.2 months). The authors have not mentioned regarding other important factors like concomitant cervical kyphosis, osteopenia, previous hip surgery which have an important effect on planning and surgical outcomes. Although the authors have tried to compare the results in curve-matched ankylosing spondylitis patients but they have not mentioned regarding the method of matching chosen for their study like 1:1 matching or 1:n matching, allotment of any propensity scores, weighting adjustment and variance estimation.

The authors have used only VAS and ODI as functional outcome measures. However, it would be better to use other health-related quality of life measures (HRQOL) like SF-36, or EQol-5D or ankylosing spondylitis functional scores like Bath Ankylosing Spondylitis Functional Index (BASFI) which are more specific to the disease.

Among radiographic parameters, the authors have not included some important sagittal parameters like ChinBrow Vertical angle (CBVA) and C2C7 lordosis which have an important impact on patient’s forward-looking ability and quality of life in ankylosing spondylitis. Also, some new parameters like spinosacral angle (SSA) which are a better indicator of global kyphosis from T1 to S1 could have been included.

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included to better interpret the change in sagittal alignment in these patients with surgery.

The authors have not mentioned the selection of instrumentation levels in the surgical technique which also have an important bearing on change in spinopelvic parameters. Table 4 shows that in most of the cases, the authors have chosen lowest instrumented vertebrae (LIV) as L4/L5 which is usually three vertebrae below the level of osteotomy in accordance with the 3-column osteotomy principles. However, 1 patient in Group L1 and 2 patients in Group L2 have their LIV at S1. The authors have not cleared the need for extending the instrumentation to sacrum in these 3 patients. Since the instrumentation was extended to sacrum in 3 cases, it is important to mention complications like proximal junctional kyphosis/distal junctional kyphosis/pseudoarthrosis at L5-S1 at final follow-up. The authors have compared only two levels of osteotomy, L1 and L2. However, as we know, the correction of sagittal balance improves as the level of osteotomy moves more caudal due to the long lever arm and greater degree of angle of correction due to large pedicle size. Also, L3 is the routine chosen site for osteotomy in ankylosing spondylitis in patients with global kyphosis. It would be better if the authors have also compared their outcomes after the L3 osteotomy level. Finally, the manuscript would have been more useful if some correlation analysis would have been performed between level of osteotomy and change in sagittal radiographic parameters rather than just evaluating the difference between the two groups.

Declaration of Conflicting Interests
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

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