

## Response to Letter to the Editor

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To the Editor,

We would like to express our gratitude to Dr Ali for his interest in our study and for providing insightful comments. We acknowledge the concern raised regarding the clinical correlation of a 5° kyphosis progression and agree that its significance may be limited. However, we opted for a 5° threshold to represent kyphosis progression considering the potential influence of radiographic and measurement errors, which could result in differences of less than 5°. It is indeed the goal of every surgeon to prevent any kyphosis progression in their patients.

Given the retrospective nature of our study, we did not have systematic records of back pain. Furthermore, it is important to note that pain can originate from various sources beyond kyphotic deformity. Factors such as mechanical instability or pseudoarthrosis of the injured vertebra, degeneration of compensatory segments in other regions of the spine, or fatigue of the muscular apparatus as a compensatory mechanism can contribute to pain.<sup>1</sup> To provide more comprehensive information on this aspect, a well-designed prospective study is warranted.

Regarding the diagnosis of posterior ligamentous complex (PLC) injuries, we acknowledge that there are no standard and widely used criteria. During the study period, we used an interspinous widening of more than 2 mm and other criteria mentioned in the study as routine diagnostic criteria for PLC injuries in our institution.<sup>2-5</sup> The higher percentage of PLC injuries in our study compared with the study by Aly MM et al<sup>6</sup> could be attributed to 2 factors: (1) our study included only operated patients who had a higher likelihood of having PLC injuries and (2) differences in the population and mechanisms of injuries compared with other studies.

In summary, Dr Ali has raised concerns about the definition of PLC injuries and the clinical correlation of kyphosis progression. However, we maintain that when considering the study in its entirety, we have demonstrated a significant association between PLC injuries and kyphosis progression.

## REFERENCES

1. De Gendt EEA, Vercoulen TFG, Joaquim AF, et al. The current status of spinal posttraumatic deformity: a systematic review. *Global Spine J.* 2021;11(8):1266–1280. doi:10.1177/2192568220969153
2. Haba H, Taneichi H, Kotani Y, et al. Diagnostic accuracy of magnetic resonance imaging for detecting posterior ligamentous complex injury associated with thoracic and lumbar fractures. *J Neurosurg.* 2003;99(1 Suppl):20–26. doi:10.3171/spi.2003.99.1.0020
3. Rajasekaran S, Maheswaran A, Aiyer SN, Kanna R, Dumpa SR, Shetty AP. Prediction of posterior ligamentous complex injury in thoracolumbar fractures using non-MRI imaging techniques. *Int Orthop.* 2016;40(6):1075–1081. doi:10.1007/s00264-016-3151-1
4. Barcelos ACES, Joaquim AF, Botelho RV. Reliability of the evaluation of posterior ligamentous complex injury in thoracolumbar spine trauma with the use of computed tomography scan. *Eur Spine J.* 2016;25(4):1135–1143. doi:10.1007/s00586-016-4377-8
5. Choovongkomol K, Piyapromdee U, Tanaviriyachai T, Jongkittanakul S, Sudprasert W. Incidence and associated factors for kyphosis progression in short-segment fixation thoracolumbar spine fractures. *Int J Spine Surg.* 2022;16(5):815–820. doi:10.14444/8343
6. Aly MM, Al-Shoaibi AM, Abduraba Ali S, Al Fattani A, Eldawoody H. How often would MRI change the thoracolumbar fracture classification or decision-making compared to CT alone? *Global Spine J.* 2022;21925682221089579. doi:10.1177/21925682221089579

**Funding:** The authors received no financial support for the research, authorship, and/or publication of this letter.

**Declaration of Conflicting Interests:** The authors report no conflicts of interest in this work.

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Published 25 July 2023

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