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Letter to the Editor

Letter to the Editor: Commentary on In-Fracture Pedicular Screw Placement During Ligamentotaxis Following Traumatic Spine Injuries, a Randomized Clinical Trial on Outcomes (*Korean J Neurotrauma* 2023;19:90–102)

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▸ See the article "In-Fracture Pedicular Screw Placement During Ligamentotaxis Following Traumatic Spine Injuries, a Randomized Clinical Trial on Outcomes" in volume 19 on page 90.

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Conflict of Interest
The author has no financial conflicts of interest.

Dear Editor,

Thank you for the opportunity to review the paper "In-Fracture Pedicular Screw Placement During Ligamentotaxis Following Traumatic Spine Injuries, a Randomized Clinical Trial on Outcomes."[8]

A thoracolumbar bursting fracture can commonly result in damage to the spinal cord and nerve roots by bone fragments due to the direct impact of traumatic loading on the anterior and middle columns of the spine.[2,7] In cases where the canal invasion by bone fragments in a bursting fracture is severe, direct reduction of the bone fragments and anterior reconstruction surgery are typically required.[5,9] However, in bursting fractures where the bone fragment invasion is less than 50%, an indirect reduction using ligamentotaxis with the posterior longitudinal ligament (PLL) can be attempted.[3,10] In the reported studies, the rate of canal reduction was less than 25%, and one study reported only 6% reduction.[4,7] The mechanism of canal remodeling by ligamentotaxis is that the intact PLL is distracted to reduce bone fragments, but bone fragments can also be further reduced by cord pulsation of the thecal sac and venous pulsation of the anterior internal longitudinal plexus. However, the exact mechanism has not yet been elucidated.[6] Moreover, ligamentotaxis is not effective in patients with ruptured PLL, and bone reduction using ligamentotaxis should be considered a contraindication in patients with free bone fragments in which the bone fragment is inverted 180°.[1] Accordingly, this study suggests a more minimally invasive management method for bursting fractures.

However, I would like to comment on the classification of the patient groups, the rationality of the surgical method, and an explanation of the results. Patients with intact pedicles on one or both sides were included, whereas patients with fractures in both pedicles were excluded. However, there was no mention of a control group. If there were no specific limitations in

the control group, it is possible that patients with more severe fractures were assigned to the control group. This could potentially introduce problems in the interpretation of the results. Therefore, further explanation regarding the patient group classification is needed. Many studies have reported that ligamentotaxis can be induced without pedicle screw insertion at the fracture level. This is because ligamentotaxis can be easily induced by applying distraction using screws above and below the fracture level.[1,7,10] In this study, it is necessary to explain why the screw is inserted only on one side of the pedicle at the fracture level and also to elucidate the mechanism that induces ligamentotaxis. In addition, it would have been better if you had mentioned whether screw insertion into the fractured vertebra was effective for pain and clinical outcomes. Personally, I believe that inserting pedicle screws into fractured vertebrae can help with canal encroachment and provide stability, which may affect pain management. I hope that my comments will be helpful in your research.

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