



Letter to the Editor

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See the article “Comparative Outcomes of Biportal Endoscopic Decompression, Conventional Subtotal Laminectomy, and Minimally Invasive Transforaminal Lumbar Interbody Fusion for Lumbar Central Stenosis” via <https://doi.org/10.14245/ns.2448830.415>.

See the commentary on “Comparative Outcomes of Biportal Endoscopic Decompression, Conventional Subtotal Laminectomy, and Minimally Invasive Transforaminal Lumbar Interbody Fusion for Lumbar Central Stenosis” via <https://doi.org/10.14245/ns.2551030.515>.



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Reply Letter: A Commentary on “Comparative Outcomes of Biportal Endoscopic Decompression, Conventional Subtotal Laminectomy, and Minimally Invasive Transforaminal Lumbar Interbody Fusion for Lumbar Central Stenosis”

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To the editor,

First and foremost, we sincerely thank the authors for their interest in our recent article and for providing thoughtful and insightful comments, “*Comparative Outcomes of Biportal Endoscopic Decompression, Conventional Subtotal Laminectomy, and Minimally Invasive Transforaminal Lumbar Interbody Fusion for Lumbar Central Stenosis*.”¹

We fully acknowledge and share editor’s concerns regarding the potential inaccuracy in the measurement of estimated blood loss (EBL) during biportal endoscopic spine surgery, which has indeed been a subject of considerable deliberation among the authors. Due to the continuous and copious irrigation inherent in endoscopic spine surgery, it is inherently difficult to accurately measure pure blood loss, unlike in conventional spine surgeries where direct suction of blood is more feasible.

Neurospine editor’s suggestion to estimate total blood loss (TBL) using postoperative hemoglobin concentration is a highly valuable and promising methodology, and we agree that it is worth considering for future studies. However, intraoperative intravenous fluid administration may induce hemodilution and decrease hematocrit levels, potentially affecting the accuracy of the TBL calculation in reflecting actual intraoperative blood loss.

In our study, to estimate EBL during endoscopic spine surgery, we employed a water-tight drape to ensure no loss of irrigation fluid and collected all suctioned output in real time. The EBL was calculated by comparing the difference between the total amount of input and output irrigation fluid. As you may be aware, gauze is not typically used during endoscopic spine surgery to absorb blood, making this method reasonably accurate for capturing total fluid output. Although this technique may not perfectly reflect the actual blood loss, we believe it provides a more direct measurement than TBL, which can be influenced by intraoperative hemodynamic changes and intravenous saline infusion under general anesthesia.

Nevertheless, as per neurospine editor's valuable advice, we plan to incorporate the postoperative hemoglobin-based TBL measurement method in our future studies and conduct a comparative analysis with our current EBL estimation approach.

Once again, we truly appreciate neurospine editor's insightful comments and genuine interest in our work.

Sincerely,

- **Conflict of Interest:** The author has nothing to disclose.

REFERENCE

1. Lee MH, Jang HJ, Moon BJ, et al. Comparative Outcomes of Biportal Endoscopic Decompression, Conventional Subtotal Laminectomy, and Minimally Invasive Transforaminal Lumbar Interbody Fusion for Lumbar Central Stenosis. *Neurospine* 2024;21:1178-89.