

In Reply: Incidence and Predictive Factors of Sepsis Following Adult Spinal Deformity Surgery

To the Editor:

We appreciate the thought-provoking letter¹ in response to our original article, *Incidence and Predictive Factors of Sepsis Following Adult Spinal Deformity Surgery*.² The mention of “sparse data bias” is important, especially when aiming to predict rare complications using large databases. In our statistical analysis, preoperative factors demonstrating univariate associations of $P < .10$ were incorporated into the multivariable model, a statistical method used in many clinical studies of adult spinal deformity (ASD) and large databases.³⁻⁹ We certainly agree that the confidence interval for the preoperative risk factor “ascites” was wide, and significance should be interpreted with caution. This was likely due to the low number of patients with ascites, which was 4 out of 6158. An alternative option would have been to remove this variable altogether given the low number of patients. We wholeheartedly agree with the author’s concluding statement that “sparse data bias” should be more widely addressed in the literature to avoid spurious statistical associations. While the request for reanalysis of the data through penalization mentioned is worthy, we will instead look forward and use this constructive suggestion for future studies.

Perhaps more important is to qualify the a priori objective of the present study, which is similar to other NSQIP analyses.^{3-5,10-14} Our a priori objective was to better understand risk factors for the rare and devastating complication of sepsis and draw conclusions that are difficult to ascertain from single institution studies. These data were not intended to provide definitive or finite risk factors for sepsis. The concluding point is for surgeons and anesthesiologists to understand the possible—not absolute—risk for patients with ascites, decompensated cirrhosis, or end stage liver disease, in potentially developing sepsis after a large ASD surgery. Preoperative liver function has not typically been studied in predictive studies examining morbidity and mortality following ASD surgery,^{3,8,9,15} and despite the wide confidence interval, we felt it most beneficial to the spine surgery community to report this information. It is our hope these data can be used to improve clinical care and inform future research. We thank the authors for their interest in our article and constructive commentary.

Disclosure

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

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