

Peer Review File

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Reviewer A

We were interested in this study that investigated the impact of the COVID-19 pandemic on perioperative factors and postoperative outcomes for patients undergoing lumbar fusion procedures.

They recently concluded that surgeries performed in 2020 were associated with longer operative times and less frequent non-home discharge disposition.

I have reviewed this paper with great interest.

However, there are several questions to clarify before deciding the publication.

1) RVU should be spelled out in full the first time appearing in the abstract or text. Also, a brief description of the RVU should be provided in METHOD.

Reply 1: Thank you very much for your time and effort spent into reviewing our manuscript. We sincerely appreciate your feedback and suggestions for improvement. All authors have reviewed every comment, and we have collectively attempted to address every comment to the best of our abilities. Thank you for pointing out that RVU should be spelled out initially and that there should be a brief description of RVU in the METHOD. We have spelled out “RVU” in its first mention and have added a description of RVU in the methods (see Page 5, lines 15-19).

2) We are wondering if there have been any cases of COVID-19 infection in emergency surgery cases. If included, how would this affect the results?

Reply 2: Thank you for the comment. All emergency and non-elective cases have been excluded from the analysis to establish a relatively more homogeneous study population for comparison (see Page 4, lines 20-21).

3) We are wondering if there were any previous cases of COVID-19 infection. If included, how would this affect the results?

Reply 3: Thank you for this thoughtful comment. The authors agree that this would be an interesting analysis to attempt. Unfortunately, consideration of previous COVID-19 cases was not possible due to the limitation of the database utilized (ACS-NSQIP), which does not allow for long-term longitudinal follow-up of the same patients included in the database.

4) How many emergency surgeries and elective surgeries were performed in this study?

Reply 4: Thank you for the comment. All emergency and non-elective surgeries were removed from the analysis to establish a more homogenous study population for comparison. All cases included in the study were elective lumbar fusions. Please see Page 4, line 20 – page 5, line 2 for the complete exclusion criteria.

5) If the impact of postoperative rehabilitation is not being evaluated, shouldn't it be mentioned in the limitation?

Reply 5: Thank you for this very insightful comment. We agree that this is a limitation of the study and have included it to the limitations section of the manuscript (see Page 12, lines 9-12). We appreciate your suggestion for helping to improve our paper.

Reviewer B

Line 30: Needs RVU full-form.

Reply 1: Thank you for the comment. We have added RVU full-form in its first mention (See page 5, line 15).

Line 102: It would be worthwhile mentioning quantum of pneumonia patients due to covid versus non-covid.

Reply 2: Thank you for this insightful comment. We agree that this would be interesting to analyze, but unfortunately this was not possible due to the limitations of the data provided by the ACS-NSQIP database.

Line 186: Describe reason for undertaking more complex surgeries in 2020 versus 2019

Reply 3: Thank you for this suggestion for improvement. The authors agree that adding a potential reason would be helpful. We have added a possible explanation to the discussion section – “It is possible that the pandemic led to more frequent postponement of less complex procedures for less severe pathology, whereas more complex procedures may have been still performed due to the greater urgency” (see Page 9, lines 2-4).

Reviewer C

The authors present a well written analysis of the NSQIP database on the impact of COVID-19 on our practices. While the application of to our practice is limited in some sense, I do think it's an important piece of history to record in the spine literature.

Reply: Thank you very much for your time and effort. We sincerely appreciate your feedback and suggestions for improvement.

Would be interesting to comment on how shift to outpatient surgery and potentially move of sicker patients to the hospital contributed to these observations.

Reply 1: Thank you for this insightful comment. The authors agree that this would be an interesting addition to the discussion. Although an in-depth analysis of this question was not deemed to be appropriate in this specific study based on the limitations of the dataset utilized, we have included additional discussion regarding shift to outpatient surgery (see Page 11, lines 14-20).