Author’s response to reviews

Title: Surgical complications in neuromuscular scoliosis operated with posterior-only approach using pedicle screw fixation.

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Authors’ Response to Reviewers’ Comments:

**Title:** Surgical complications in neuromuscular scoliosis operated with posterior-only approach using pedicle screw fixation.

**Reviewer:** Alvin Crawford

**Reviewer’s report:**
Page 2, results: How are the complications divided between major and minor complications? They have mentioned pulmonary edema and effusion as major complications while atelectasis and pneumonia are listed as minor complications....
While both are equally serious conditions especially pulmonary edema and pneumonia..
Answer: We have given table 4 (revised) displaying all major and minor complications with its reason why they were calculated major or minor. We have also included this explanation while mentioning the complications in method section.

Page 5, line no. 15: The objective of the paper was to.........I think it should be “the objective of this study is to”
Answer: Sentence corrected.

Page 9 last sentence: It seems like that authors are trying to compare between patients with pelvic obliquity > 15 degrees and patients who did not have pelvic fixation....it is not clear....needs more explanation.
Answer: we corrected it like patients with pelvic fixation compared without pelvic fixation.

Page 10, line no 7: authors have mentioned 20 and 19 patients with one major and one minor complications respectively....This does not correspond with the abstract in which they have mentioned 21 and 20 respectively....
Answer: We corrected all numbers in revision.

Page 10, third paragraph: authors have mentioned that complications requiring chest tube insertion are classified as majors....but they have mentioned pulmonary edema as major complication and it does not need chest tube insertion.
Answer: We have given reason in table 4 that pulmonary edema required ICU support and that why we considered it as a major complication.

Page 11: line no 10: compression of screw in the cord.......This sentence does not make sense.....
Answer: we have corrected our sentence.

Page 11, line 17: two patients had ileus.....Ileus can significantly delay recovery and according to author’s criteria it should come under Major complications....but they have mentioned under minor complications.
Answer: It was interesting in our study that ileus was not very severe and with restriction of oral intake for few days all patients recovered. It additionally did not altered the recovery period and that’s why it was considered as minor complication. We have added this part in discussion including the reference no 21.

Page 12: out of three patients who had bed sore, two of them have gluteal bed sore and one only is related to the pressure area over the screw.....so can we consider gluteal bed sore as complication of surgery or because of neglected care of the patients??
Answer: We have written that it is due to neglected care.

Page 15: 1st paragraph: authors have mentioned that the thoracoplasty was for better correction while earlier in the paper they mentioned that it is for cosmesis. And they have not mentioned whether they noticed any air leak during surgery and why the chest tube was not inserted during the surgery?
Answer: As advised my reviewer we have excluded all 15 patients who had thoracoplasty. And thus in this revised article our study presents the complications in only 50 patients.

Page 17: one patient with poliomyelities developed deep wound infection probably due to extensive dissection and severe curve…..strange statement? No scientific proof…
Answer: We corrected the statements.

Page 19: coccygodynia because of vertical alignment of the coccyx: strange statement…if sagital balance was restored to normal why there should be abnormal alignment of the coccyx post operatively? The article still needs some explanations ……
Answer: we have corrected it. We could not find this unusual complication in the literature. We think that it is mainly due to increased sitting ability which ultimately increases the pressure over coccyx.
Reviewer: George H. H Thompson
Reviewer's report:
Your revised manuscript is significantly improved and you have recognized the increased complication rate associated with a thoracoplasty. However, I still have major concerns. These include:
(1). I continue to feel strongly that those patients who had a thoracoplasty and iliac fixation should be excluded. They would make an excellent separate study that can be compared to this study. Both these variables are associated with increased operative time, blood loss and complications. They, therefore, distort the results in your two study groups.
Answer: We agree to your nice opinion. We agree to exclude the patients who had thoracoplasty from the study; however we still feel to keep the patients who had pelvic fixation. In neuromuscular scoliosis, there is continuous debate regarding pelvic fixation. We think we should not separate the complications in neuromuscular scoliosis based on pelvic fixation. I think our results will further help the readers regarding the concept of pelvic fixation in this population in terms of correction rate as well as complications. So I request you to consider our argument and please let us keep the patients who had pelvic fixation.

(2). I would also recommend that all adult patients be excluded as it is well-known they are more difficult to treat and have higher rates of complications than children and adolescents. Including them produces another potential, although less severe, distortion of your results. They, too, could be the focus of yet another study. Knowing the results of your two study groups, excluding adult patients and those who had a thoracoplasty and iliac fixation, would be extremely interesting and establish the results by which other studies can be compared.
Answer: If we exclude all patients aged more that 20 years, we have to exclude 20 more patients. Infect we would like to retain those patients and we have compared the correction rates and complications in those patients with the groups below 20 years. We think this would give more meaningful information to the readers as well.
We hope our explanation would put forward our point and you would allow to keep these parameters in the article.
Reviewer: Toru Maruyama  
Reviewer's report:  
I am disappointed that many of the points I addressed were not corrected in the revised manuscript.

1. Page 2, line 14: There were total forty-three complications. However, there seems to be 43 perioperative and 16 postoperative complications in the study. So there were 59 complications in total? 
Answer: We have corrected all mistakes in the revision. We have calculated all statistical parameters again while doing this revision as one of the reviewer suggested to exclude thoracoplasty patients from the study.

2. Page 2, line 21: 18(46.1%), 2(5.1%), 16(41%), 2(5.1%), and 5(12.8%) What do these rates (percentage) indicate? Maybe the number of complications was divided by 39. Why 39? 
Answer: We would rather like to present only numbers instead of percentage in the bracket. We hope this will satisfy the need.

3. Page 2, line 20: Twenty-one and twenty had at least one major and one minor complication respectively. However, at page 10, line 7: Twenty (51.3%) and nineteen (48.7%) patients had at least one major and one minor complication respectively. Which one is correct? 
Answer: We are sorry for that. We have corrected this in revision.

4. Page 6, line 8: to improve cosmetic appearance Page 15, line 14: to get better mobilization for correction. Which one is better describing your indication for thoracoplasty? 
Answer: As advised by the other reviewer, we have excluded those patients who had thoracoplasty. We hope we would publish our results of complications in neuromuscular scoliosis who had thoracoplasty in future in other article.

5. Page 9, line 6: range, 4-32%?, range, 5-42%? 
Answer: Here, we have given the range of flexibility of curve in degrees in the bracket while outside we have given the average percentage of flexibility.

6. Page 11, line 5: How much was the blood loss of the two patients who died of hypovolemia? 
Answer: In this revision there was only one patient who died due to hypovolemia and blood loss was 7800 ml which was included in the manuscript.

7. Page 19, line 14: if we had used low profile screws – What type of the screws did you use and do you recommend? 
Answer: we have used normal pedicle screws for scoliosis correction in every level. Our meaning was to say smaller sized screw which also have small screw head. We have included this. Still if it is not satisfactory we would like to delete this sentence from the manuscript.

8. Table 4, line 3: Complications Minor Major Minor Minor Major Minor – Complications Major Minor Major Minor Major Minor? 
Answer: We have revised table 4 and we hope this table will clear everything.

9. Table 5: The number of patients (complications) seems to be divided by 65. These numbers should be divided by 63.
Answer: We have taken consideration while revising the article after excluding patients who had thoracoplasty. We also excluded patients who died while calculating the percentage.