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Dear Editor,

Re: **SINGLE ROD INSTRUMENTATION CORRECTION TECHNIQUE IN THE TREATMENT OF SCOLIOSIS IN PAEDIATRIC PATIENTS WITH SEVERE MEDICAL CO-MORBIDITIES: INDICATIONS AND OUTCOMES**

We would like to thank you and the Reviewers for taking the time to go through our paper and for making suggestions for changes that can improve its content.

Reviewer 1

1. We have compared the results of the single rod technique in AIS to our previously published series of AIS patients treated with a bilateral, unilateral or convex segmental pedicle screw technique (references 10 and 11) and documented reduced surgical time, as well as intra-operative blood loss. This data is presented under Results in the section Group C – Patients with AIS. In the same section we have compared the curve correction and SRS-22 outcomes achieved across the segmental pedicle screw/dual rod and the single rod techniques in our practice. In the same section under Results but also in the second last paragraph of the Discussion we have pointed out that the thoracic scoliosis treated in our single rod series was significantly lesser degrees when compared to our dual rod series. Therefore, for severe AIS we would certainly recommend the use of a dual pedicle screw/rod correction technique.

We have changed the final statement in the Conclusion section of our Abstract to say that '…this technique has achieved low operative time, blood loss and associated surgical morbidity.' We have incorporated the Reviewer's suggestion on the need for further studies to compare outcomes of different techniques as an end statement under Research perspective in the section under ARTICLE HIGHLIGHTS.

2. We have statistically compared the SRS-22 outcome scores between preoperative and 2-year follow-up in the AIS patient group (Group C) across the different domains and have documented significant improvement. This information is now included in the legend of Figure 4.
3. We agree with the Reviewer that in an ideal situation comparison of our results using the single rod technique should be performed against dual instrumentation techniques across the same groups of underlying diagnosis and type of deformity. However, due to the heterogeneity of diagnosis in Groups A and B direct comparison with other series would not be possible. This point has been made in the first sentence of the last paragraph of the Discussion.

   In addition, in the senior author's series similar groups of patients with complex medical co-morbidities treated using dual instrumentation technique are not available as the whole point of using the single rod technique among these patients was to limit surgical time and blood loss and hopefully reduce surgical morbidity of the procedure.

   In the same last paragraph of the Discussion we made the point that we have used the single rod technique in less than 10% of our paediatric deformity patients as the senior author's practice comprises of minimum 200 deformity procedures per year over the reported 10-year period of our study.

   We have, however, compared the results of the single rod technique to our previously published results of the use of dual instrumentation with a bilateral, unilateral or convex segmental pedicle screw technique in patients with AIS (section under Results, Group C – Patients with AIS; references 10 and 11).

Reviewer 2

Introduction

1. Reference 5 (Wattenbarger JM et al. J Spinal Disord 2001) has been explained further as suggested by the reviewer (first paragraph under Introduction).

Material and Methods

1. We calculated preoperative flexibility (flexibility index) in all AIS patients (Group C) in whom this could be performed consistently on supine maximum lateral bending radiographs. This information has been included in the Results section under Group C – Patients with AIS (along with an explanation of the formula used to calculate the flexibility index).

Results

1. We agree with the Reviewer's comment on the need to evaluate our results long-term in order to confirm that there are no further complications. We are prospectively collecting all data in our patients and we are planning to assess the outcomes of this technique in mid and long term follow-up analysis. However, in our present series we already have a large number of patients who have 10 or more year postoperative follow-up and this demonstrates that their satisfactory results have been maintained over time.

Table 1

1. We have corrected the total number of complications in Table 1 from 2 to 4.

We would like to thank you again for considering our paper for publication in the World Journal of Orthopedics. We hope that in light of our corrections you will now find our paper suitable for publication in your Journal.

We are looking forward to hearing from you soon.

Kind regards,

Yours sincerely,

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