Author's response to reviews

Title: Is vertebral rotation correction maintained after thoracoscopic anterior scoliosis surgery? A low dose computed tomography study

Authors:

Luke Reynolds (luke.reynolds@uqconnect.edu.au)

Maree Izatt (m.izatt@qut.edu.au)

Eric Huang (Eric.M.Huang@albertahealthservices.ca)

Robert Labrom (robert.labrom@qcosspine.com.au)

Geoffrey Askin (gnaskin@mc.mater.org.au)

Clayton Adam (c.adam@qut.edu.au)

Mark Pearcy (m.pearcy@qut.edu.au)

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Author’s response to reviews:

We again thank the reviewer for the constructive comments and appreciate the recommendations which have improved the manuscript. We have responded to each comment in detail and the resulting changes made to the manuscript are highlighted in the R3 Manuscript.

Reviewer #3.

This manuscript has been revised to include key information that was lacking previously. In particular the statement of aims at the end of the Introduction is helpful. The findings of the rotational correction remaining stable and lack of rib hump recurrence are important, though specific to an anterior fusion technique. However, the manuscript still is difficult to understand, and several recommendations are made for including additional information to improve its clarity and readability:

1. Abstract: The abbreviation TASF should be defined at its first occurrence.

Response: This has now been corrected, many thanks for noticing this error.

2. Page 6, line 3: under Post-operative Imaging: "the rib hump was clinically measured with a Scoliometer." The Scoliometer is not an Imaging method. Then, Results are subsequently given for pre- and post-operative changes in rib hump and Cobb angle. So authors should provide a
section also on Pre- and Post-operative measurements, and also move the details about the Scoliometer and smart-phone methodology from the Introduction to the Methods.

Response: As requested, the sentence concerning the measurement of rib hump has been removed from the Postop Imaging paragraph in Methods section and is now under a separate new Methods heading entitled ‘Pre- and postoperative rib hump and Cobb angle measurements’. The details about the methods of rib hump measurement from the Introduction has also been moved to this new Methods sub heading which we agree is more appropriate and logical.

3. Page 9, line 12: The heading ‘Cobb Angles’ is unclear - it apparently refers only to the use of reformatted CT images post-operatively. The Results (Page 10, line 12) give findings about both pre- and post-surgery Cobb angles - both should be included in the Methods as noted above. The point about validity of comparisons (page 9, line 17) should be expanded to address the pre-post Cobb angle comparison results.

Response: The ‘Cobb Angles’ heading and paragraph in the Methods section has been removed and a new Methods sub heading has been created (as above) and the paragraph expanded as per both the above reviewer’s comments. A new Results sub heading and paragraph ‘Changes in rib hump and Cobb angle measurements’ has been added to provide the corresponding results to the new Methods paragraph.

4. Page 11, line 11-12: This reference to the Figures showing examples of rotational changes is not a result, and should be moved down into next paragraph to illustrate the result.

Response: This sentence has been moved to the end of the first paragraph of Results as recommended.

5. Also the Figure and/or legends should be expanded to indicate which (all?) levels were fused, and the level of the curve apex.

Response: Additional information has been added to the Figure Legends to describe the levels were instrumented and the apex of the scoliosis for the selected patients.