Reviewer’s report

Title: Do the disc degeneration and osteophyte contribute to the curve rigidity of degenerative scoliosis?

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Reviewer: Fabio Zaina

Reviewer's report:

This is an interesting paper about the correlation of coronal spinal stiffness and disc degeneration and osteophytes.

There are many issues that must be clarified.

The Spearman correlation is not strong but "moderate to low" (0.49...) and moderate (0.6....). Please correct

Flexibility: on which side was it assessed? Why not both sides? Why this formula? For sure this formula takes into account the curve size, and somehow it normalizes values, but could not be applied in case of a straight spine, and this would prevent any comparison with healthy population. Actually, the missing of a control group is a big issue for such a study, since the don't know what we should expect in healthy people.

The grading of discs is not totally clear, when you speak about score 1 and score 5. Please give more details.

You defined these cases as degenerative scoliosis. How was the diagnosis made? Do the authors have a previous x-ray showing straight spine for each patient? Otherwise it would be impossible to state this.

Facet joint and rotation can contribute and age can contribute to rigidity. Could you add them to the analysis? In case you can't, please list this limitation in the discussion. Size of curve was considered? Apparently only in flexibility formula...please discuss.

Surgery results correlate to flexibility? Can you crosscheck these data? It would be very interesting.

Some conclusions not supported by data: when commenting of the posterior release around apical region with SPO osteotomy.....I'm afraid this paper is not suited for such a comment.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

Acceptable

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