Reviewer’s report

Title: What is the Difference in Morphologic Features of the Lumbar Vertebrae Between Caucasian and Taiwanese Subjects? A CT-based Study: Implication of Pedicle Screws Placement via Roy-Camille or Weinstein Methods

Version: 2 Date: 19 Jun 2018

Reviewer: Harvinder Singh Chhabra

Reviewer’s report:

General Comments

1. Authors have described the screw trajectory by Roy Camille method, in which screw expiry violates the facet joint. Authors may explain the rationale behind using this technique.

2. Authors may justify the sample size for the study. They may discuss how they come to the decision on what would be an adequate sample in order to draw conclusions, especially the comparison between races.

3. The study group mentioned in the article is not normal distribution of Taiwanese population, so authors may justify as to how they could draw conclusions generalized to Taiwanese population.

4. Authors may discuss the clinical implications of the study and how it would affect the patient management.

Specific Comments

1. Page 4 line 7. Authors have mentioned "Safe placement of pedicle screws without jeopardizing neurovascular structures medially and anteriorly is important during spine surgery." Inferior breech is also dangerous as margin of error is less. Authors may clarify.

2. Page 6 line 46,49. Authors have mentioned "So the study group was not normal distribution of the Taiwanese population." Authors have also concluded "and elucidates racial differences in the lumbar morphology and pedicle orientation between Taiwanese and Caucasian populations" Authors may then justify as to how they could draw conclusion in this regard.

3. Page 8 line 20. Authors have mentioned "The PAD was assumed as the pedicle screw length with Roy-Camille method." PAD is more medially directed. Authors may explain how the screw length measured in Roy camille technique.

4. Page 13 line 10. Authors have mentioned "The PA could be referred as the trajectory angle for pedicle screw placement for Roy-Camille method." Trajectory is relatively straight in Roy
Camille method. Authors may quote evidence that PA could be reference as trajectory angle for Roy Camille method.

5. Page 14 line 14. Authors have mentioned "The PAD or MAD may be referred as the pedicle screw length with Roy-Camille method based on the surgeons preferences with different trajectory angles." Authors may quote evidence to show that PAD and MAD are the same.

6. Author may add some more radiological images depicting the screw trajectory of both methods.

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

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**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 recommend additional statistical review

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Acceptable

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