Reviewer’s report

Title: Vertebral column decancellation in Pott's deformity: use of Surgimap Spine for preoperative surgical planning, retrospective review of 18 patients

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Reviewer: Zairan Liu

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In this manuscript, the authors demonstrate the effectiveness of using Surgimap Spine to perform preoperative planning vertebral column decancellation (VCD). The authors conclude that VCD is an effective treatment option for severe Pott's kyphosis and Surgimap Spine serves as a reliable planning tool for evaluating the parameter before operation. They showed successful surgery results from 18 patients and compared VCD with (vertebral column resection) VCR and pedicle subtraction osteotomy (PSO).

The topic of the paper would be of interest for readers of BMC Musculoskeletal Disorders, as the advancement in surgical options for Pott's kyphosis is of significant value to the patients. The demonstration the authors exhibit is well suited for adoption and could thus help other surgeons treat similar situations. Together with the help of Surgimap Spine, it should help surgeons decide on the surgical plan for the patients. The paper is recommended for publication with some minor issues for the authors to explain or add data. The issues are listed below.

First, while demonstrating the advantages of using VCD for Pott's kyphosis, the authors should also discuss in detail what are the challenges and why it has not prevailed before. Then the authors should explain how they solved the challenges. Second, the authors mentioned there were 26 patients and they are only reporting 18. They should explain what happened to the rest of the patients and why VCD would not work for them. Third, in order to make a comprehensive comparison between VCD and VCR and PSO, the authors need to show the statistics of disease parameters and rates of complications and recovery of VCR and PSO as well. Last, the authors should describe the process of using Surgimap Spine in more detail with a figure to demonstrate its ability to aid pre-op design. They should also explain how to address the caveats from previous literatures such as estimation of bleeding amount and buckling of the spinal cord. More specifically, under the Surgimap Spine, what are the other factors surgeons should take into consideration and how to parametrize them.

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.
No

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

Yes

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

Quality of written English
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