Reviewer's report

Title: Experimentally induced incomplete burst fractures - A novel technique for calf and human specimens

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Reviewer: Gereon Schiffer

Reviewer's report:

The subject of the paper is of great interest for spine surgeons. Indeed there is neither a real understanding of incomplete burst fractures nor a consented treatment algorithm although these fractures have the highest incidence among vertebral fractures. I agree with the author’s statement that existing fracture models published so far do not match the needs for reproducible in vitro results. These models are important for several reasons, e.g. for implant stability testing.

The authors describe several restrictions, e.g. the availability of osteoporotic human specimen and the problems of the animal model. As these restrictions cannot be solved the paper shows an appropriate approach for these kind of surveys.

Despite smaller recommendations I think that this is a very good and important paper which should be accepted for publication.

1.) Background
This section of the paper describes the basic problem appropriately and points out the relevant literature properly. I would recommend to add a schematic drawing of the Magerl-Classification (A3.1-A3.3).

2.) Methods
The description of inclusion and exclusion criteria and of the experimental set-up is complete and conclusive.

The method for radiological evaluation by two independent investigators has to be judged suitable.

3.) Results
To increase traceability representative axial and sagittal slices from the CT scans of each of the eight human fractures should be added.

4.) Discussion/Conclusion
Conclusive and complete discussion - nothing to add.

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests