Reviewer's report

Title: Characterization of bone repair in rat femur after treatment with calcium phosphate cement and autogenous bone graft

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Reviewer: Johannes Kleinheinz

Reviewer's report:

Puricelli et al. present the results of an animal study aiming at the evaluation of the influence of an alpha-tricalcium phosphate cement on bone repair. In a histological study alpha-TCP and autogenous bone were filled into defined cavities of the rat femur. The third whole was left empty. The methods in the study where adequate and the carrying out was standardized.

The results show, that alpha-TCP is a useful alternative in the repair of bony defects if autologous bone is not available. There were no signs of inflammation or foreign body reactions. But the prolonged time for resorption still is a problem concerning the recovery of biomechanical stability of the defect area.

The authors should explain, for which clinical indications in humans they would prefer to use the cement instead of autogenous bone and if they could think about a combination of cement and autogenous bone material.

There are a few remarks and change requests:
1. The front page is not in accordance with the guidelines and has to be adapted
2. page 2: add histological after analyzed (line 7), exchange “e” by “and” (line 10)
3. page 3: exchange “therapeutic area” by “anatomic area for therapeutic intention” (line 14), exchange “resorptible” by “resorbable” (line 15)
4. page 6: “Vicryl” not “Vycril” (line 3)
5. page 7: “marked” not “markedly” (line 6), add bone after cortical (line 6)
6. page 8: add bone after cortical (line 5)
7. page 9: add bone after cortical (line 2)
8. page 11: exchange “e” by “and” (line 19)

Level of interest: An article whose findings are important to those with closely related research interests

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