Reviewer's report

**Title:** Autologous Bone Graft versus Demineralized Bone Matrix in Internal Fixation of Ununited Long Bones

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**Reviewer:** Jeffrey S. Augenstein

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This study retrospectively analyzes the clinical outcome of 20 patients who presented with ununited fractures of upper and lower extremity long bones. Half received a bone graft (autograft) and half received a demineralized bone matrix graft (allograft). During the observational period 62 consecutive patients with ununited long bone fractures were identified. Various exclusionary criteria brought the study group to 20 patients.

There were no major clinical differences between patients in the two groups. The mean time for clinical healing and radiological consolidation was equivalent in both groups. However, there was a lack of bone bridging in two patients treated with the autologous graft. The allograft group had 100% completed bone healing.

In the allograft group there is obviously no donor site. In the autograft group there was a 20% donor-site-related morbidity rate.

All patients in the allograft group were satisfied or only minimally dissatisfied with the non-union treatment versus only 40% of the autograft-group.

The allograft procedures were reported to cost €160 more than the autograft procedures.

The authors point out the obvious limitations of the study. These include: the small number of patients, the lack of blinding and the lack of randomization.

The study provides useful preliminary information on safety and efficacy of this allograft approach to the treatment of ununited long bone fractures. As the authors acknowledge, to conclude that this is an appropriate replacement for the gold standard of allograft repair, a multicenter randomized study needs to be performed.

In the Conclusion section the sentence beginning on line 13 with the word "Moreover," contains the term "morbid patients" in line 14. It may be better to describe the patients as having significant comorbidities.

**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.