Reviewer’s report

Title: Influence of interradicular and palatal placement of orthodontic mini-implants upon the success (survival) rate

Version: 0 Date: 21 Apr 2017

Reviewer: Cosimo Nardi

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Reviewer Recommendations and Comments for Manuscript Number HAFM-D-16-00140

Influence of interradicular and palatal placement of orthodontic mini-implants upon the success (survival) rate

by Jan Hourfar, Dirk Bister, Georgios Kanavakis, Jörg A. Lisson, Björn Ludwig

Article type: Research

Referee: Cosimo Nardi

Recommendation: Major revision

Comments to Author:

Outline. Devices for skeletal anchorage in orthodontics improve biomechanical possibilities for tooth movement. Hence, to know what are the insertion sites with high success rate is critical since it will affect clinical behavior.

Main strengths

- Wide sample size.
- Patients followed up.

Main Limitations

- Topic extensively investigated. Lack of novelty.
- Strengths and limitations of the study are missing.
- Too many outdated references. I can see only 5 articles out of 60 from 2013 to 2017.

General Recommendations
- What controversies can arise from this study? Describe strengths and limitations of your research. How the limitations can be resolved?
- Need better explanations about what the study adds to the available evidence.
- Include Future research directions.

Abstract
Well written

Background
- Please, remove the names Männchen et al. and Schätzle et al. Keep only the reference citation number.
- The aim of the research is not linked with the conclusions. The aim of the abstract is more clear than the aim of the background. You should mention what are the mini-implant insertion sites.

Methods
- Please, remove the following sentence at the beginning of the methods section: This study investigated the success rates of OMIs inserted for orthodontic anchorage. I think that methods is not the appropriate section for this statement.
- The brand of mini-implants is repeated twice. Remove one of them.
- What does the following sentence mean? "All OMIs were inserted in an orthodontic practice following a standardized protocol". Which standardized protocol did you follow?
Results

- Please, remove the sentence "Data were divided into groups based on anatomical position; 1. Anterior palate and 2. buccal inter-radicular sites." You already described it in the methods. Results is not the appropriate section for this statement.

- The paragraphs Palatal mini-implants and Interradicular mini-implants are not necessary in this section because the text is not extensive and is easy to organize. I suggest you remove the two above mentioned paragraph. Keep the subheading "Analysis by anatomical site" in which you can also include the first sentence of the results section. Remove the second sentence of the results section "Data were divided into groups based on anatomical position; 1. Anterior palate and 2. buccal inter-radicular sites." You already described it in the Methods.

- Please, include the following sentences in the Methods section since they are not results: "All palatal OMIs in this study were used as anchorage support for maxillary molar distalization [46] (Figure 2a), or for rapid palatal expansion using a hybrid RPE ("hybrid hyrax", Wilmes et al. [45]) (Figure 2b). Both of these appliances were directly connected to the OMIs and applied equally heavy forces (>2N) per implant. Exact force values produced by these appliances have been reported previously [46, 51]."

- Please, include the following sentence in the Methods section since it is not a result: "The typical use was molar protraction with a force >2N, using standardized Nickel-Titanium (NiTi) coil springs (Figures 1a and 1b, Figure 2c)."

Discussion

- You stated: "Success rates were significantly influenced by the combination of load and insertion site. Palatal orthodontic mini-implants loaded directly with heavy forces (>2N) to support distalization appliances or hybrid RPE were successful in 98.9% of cases. Buccal miniimplants employed to e.g. support molar protraction were less successful (71.1%)." It is already stated both in the results and discussion. It is a repetition.

- Please, remove the following sentence. Patient-related parameters gender, age and oral hygiene were also assessed (Table 2). It is a further repetition.

- You stated: "Throughout the entire study period" Which is the entire study period. Include it in methods section.
Conclusions

- You attached importance to the force of the load (greater than 2N). Why did not you mention the load in the background and especially in the aim?
- The load is repeated twice. Remove the last one.
- I suggest you include the percentage of the buccal implant success rates.

Figures

OK

Figure captions

Make (a) (b) and c) uniform.

Tables

Top-left boxes had to be completed in table 1.

Some boxes had to be completed in table 2.

Table captions

OK

Level of interest

Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

Declaration of competing interests

Please complete a declaration of competing interests, considering the following questions:

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