Author’s response to reviews

Title: Clinical applications and effectiveness of guided implant surgery: A critical review based on randomized controlled trials

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Author’s response to reviews:

Dear Reviewers,

Thank you for your revisions on our work “Clinical applications and effectiveness of guided implant surgery: A critical review based on randomized controlled trials”. Following your constructive considerations, we felt that we had to provide the necessary explanations and changes:

To Reviewer 1 (Irfan Abas):

1. Here were two arms with bone-supported guide (24 patients) of two different brands, two arms with mucosa-supported guide (24 patients) of two different brands, one arm with mental navigation (12 patients) and one arm with guides only for pilot drill (12). Please explain what mental navigation is / do you mean free handed? With arms the author means groups? Can you clarify this? Are arms the correct english term?

Mental navigation means freehand surgery without any surgical stent or guide; we have changed “mental navigation” with “free-hand” in the text to avoid misunderstandings, specifying also how implants have been inserted in this group.
In our opinion, the term “arm” can be used as a synonym of “group” especially in parallel studies where more than two case groups are present (multiple-armed RCT).

2. Vercruyssen did all the treatments himself?

In the included paper (Vercruyssen M, van de Wiele G, Teughels W, Naert I, Jacobs R, Quirynen M. Implant- and patient-centred outcomes of guided surgery, a 1-year follow-up: An RCT comparing guided surgery with conventional implant placement. J Clin Periodontol. 2014 Dec;41(12):1154-60) and in all the other papers published by the same group concerning the same intervention on the same population of patients (Vercruyssen, M., Cox, C., Coucke, W., Naert, I., Jacobs, R. & Quirynen, M. (2014a) A randomized clinical trial comparing guided implant surgery (bone- or mucosa-supported) with mental navigation or the use of a pilotdrill template. J Clin Periodontol. 2014 Jul;41 (7):717–23) (Vercruyssen, M., De, L. A., Coucke, W. & Quirynen, M. (2014b) An RCT comparing patient-centered outcome variables of guided surgery (bone or mucosa supported) with conventional implant placement. J Clin Periodontol. 2014 Jul;41(7):724–32) the only information that we could draw about the number and specializtion of operators who performed the interventions was that all patients were treated under local anaesthesia at the department of Periodontology of the KU Leuven University Hospital.

3. Pozzi: all mucosal or teeth based guides? Difference between these?

In the work of Pozzi et al. within the group of patients treated with guided surgery, no differentiation was made between edentulous, partially edentulous, or with hopeless teeth; tooth-supported on tooth-mucosa-supported guides have been used when possible, and mucosa-supported in other cases. In the text, it’s also specified that “surgical templates were placed using the silicon surgical index derived from the mounted casts, and stabilised with two to three pre-planned anchor pins”.

4. Discussion: what's the difference between conventional guide and CAD/CAM-guide?

In our work, several papers and reviews have been mentioned that we believe clearly show how CAD/CAM surgical guides exhibit greater accuracy with less variability of deviation values (page 11 lines from 23 to 28 and from 42 to 45). Hopefully enough to answer your question.
To Reviewer 2 (Lodewijk van Zwol):

It’s a good paper. The need for more research is required and need to be stimulated. You maybe can highlight some parts of the other (not the 2 included articles) for example the accuracy is higher, less complications etc, so this article can be a stimulant for more articles and research at the topic Guided Surgery.

We are completely in agreement with the fact that research retards implant guided surgery should be further stimulated. Most of the articles present in the literature are case-series only about a specific systematic. Furthermore, also papers with controlled trials show results, but do not go to discern what are the variables that have determined them. We believe that many factors are contributing to determining the effectiveness of a guided surgery from diagnostic and planning to surgical intervention.

We have better defined these concepts in the discussion (page 13 lines from 49 to 46).

We really hope these changes and clarifications are provided can meet with your approval. Thank you very much.

Best regards