Reviewer’s report

Title: Errors according to the number of registered markers used in navigation-assisted surgery of the mandible

Version: 0 Date: 04 Nov 2018

Reviewer: Ayman Hegab

Reviewer’s report:

First; I would like to thank the editor to give me the chance to review this article.

The article is well written but need some corrections to improve the quality of the article:

1- Figures 2, 3, 4, 6, & 7 are poor quality

2- The conclusion should be more clear and precise, you mentioned in the conclusion "It is important to determine the minimum number of image registration markers at which the smallest TRE would be observed for different surgical sites." This should be consider as question to be answer by your study. How many markers based on your study is enough?

3- You mentioned "Furthermore, large errors were found at the condylar head and posterior border when four markers were used. At the antilingula, the smallest error was found when seven markers were used. At the mandibular angle, the smallest error was found when four markers were used. The smallest errors were found at all anatomical sites excluding the antilingula and the mandibular angle when registration was performed with five markers. These results demonstrate that an increase in the number of registration markers is not associated with a decrease in the TRE, and that a specific number of registration markers might reduce the TREs at each anatomical site." this paragraph need to be re-written in more details.

Why large errors foe condylar head with 4 markers while the mandibular angle showed smallest error with 4 markers? And the 7 markers with antilingula showed smallest errors? That is mean if you increase the markers the errors will be decreased which is against your conclusion? You need to explain why the error change per location? It is relation to the bone thickness of the specific anatomical relation or to the morphology of the bone at specific anatomical location?

4- The discussion is too long and many of the paragraphs need to be moved to the introduction

5- In the discussion section you need to add an explanation for your results and its better if you compare your results with other studies results to explain why your results is different. For example you mentioned in the discussion" In this study, the number of markers for the tooth image overlay was set between 3 and 7. However, to resolve the registration errors, at least three nonplanar markers are required. Theoretically, the
registration markers should be placed over a large area around the surgical site, and as close to the surgical site as possible to increase the accuracy when five or more markers are used”. what is the relation between the first paragraph highlighted in red with the second one highlighted in blue.

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