

## Peer Review File

**Article information:** <https://dx.doi.org/10.21037/fomm-21-57>

### **Reviewer A**

My considerations about the article are:

1. The study limitations should not be in the Conclusion of the Abstract, but in the topic Discussion of the article.

Reply 1: Agreed, the study limitations are now included within the subsections of the Discussion section. (See lines 197 to 764).

2. However, there is no discussion in the article (this is necessary and important to have in the article).

Reply 2: Agreed, the manuscript was reformatted such that the main topics (existing imaging techniques, periodontal endoscopy, optical coherence tomography, fluorescence, differential reflectometry, and emerging techniques) are now listed as subsections within the Discussion section. (See lines 197 to 764).

3. The article does not follow a narrative review checklist.

Reply 3: Agreed, proper Methods (See lines 188 to 196), Discussion (See lines 197 to 764), and Summary (See lines 881 to 892) sections were added.

4. The citations of the references are out of order - from number 9 to number 17.

Reply 4: Agreed, the reference style was changed to Vancouver (according to the Submission Checklist) and the references were put in sequential order in which they appear in the text.

5. There are no explanations in the texts about the figures (Figure 1 to Figure xx)

Reply 5: Agreed, I added further explanations in the text for each of the figures. However, as this manuscript focused on various imaging techniques, I found that the purpose of the figures was to give the reader an idea of what each of the imaging techniques entailed (illustrated diagrams and actual image of devices) and how each imaging device performed (actual image of calculus from devices or signal data received from detecting calculus). Therefore, my mentions of the figures in the text are brief. (See lines 240, 258, 354, 355, 449-451, 467-469, 558, and 607)

Unfortunately, I was unable to revise the specific content of the article sent to me because I did not have technical knowledge in the field of periodontics, which could compromise the result of the decision to publish the work.

Sorry!

However, I am at your disposal for further revisions in my specific area - Public Health.

### **Reviewer B**

This is a good and useful piece of review article that educates researchers and perhaps also physicians who are interested in developing and operating imaging tools for imaging subgingival calculus. I enjoyed reading the article and believe that this would be a great addition to the current literature. A couple of minor comments:

1) When talking each imaging techniques, it would be good to add key summary statements of the authors' opinion about the pros and cons of that technique.

Reply 1: Agreed, I added summary statements to each of the following sections: Periodontal Endoscopy (See lines 310-313), OCT (See lines 388-393), Fluorescence (See lines 577-583), and Differential Reflectometry (680-686).

2) At line 237. "the main key identifiers of the SS-OCT system are the multiple fiber couplers and a data acquisition interface" is not accurate. It should state as "the main key identifiers of the SS-OCT system are the swept laser source and a data acquisition interface."

Reply 2: Agreed, at line 339, I substituted "multiple fiber couplers" with "swept laser source".

3) There is currently a good attempt and effort that try to integrate a number of imaging techniques together to image the tooth and gingival. The authors may comment on this trend in the imaging of subgingival calculus. Below paper is an example:

"N Le, H Subhash, L Kilpatrick, RK Wang, "Non-invasive multimodal imaging by integrating optical coherence tomography with autofluorescence imaging for periodontal applications." J. Biophotonics. Volume 13, Issue 7: e202000026 (2020). <https://doi.org/10.1002/jbio.202000026>"

Reply 3: Agreed, this is great advice! I included more detail about this in the "Emerging Techniques" section. (See lines 753-764).