Reviewer's report

**Title:** Can we predict necrosis intra-operatively? Real-time Optical Quantitative Perfusion Imaging in Surgery: study protocol for a prospective, observational, in vivo pilot study

**Version:** 0  **Date:** 02 Sep 2017

**Reviewer:** Ian Seppelt

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This is a very interesting proposal that examines four techniques to assess the microcirculation and possibly predict risk of intra-operative necrosis, during major upper-GI surgery (oesophagectomy) and free-flap reconstructive surgery. The experimental procedures will add 20 minutes to the duration of surgery (though I suspect that estimate is very optimistic). There appears to be prospective informed consent by the patients (though the description of the consent process at the top of page 7 is confusing and ambiguous). This study is very much at the level of 'proof of concept' but if any one of the techniques proves effective this may be of major significance to surgeons in these disciplines.

Specific comments:

1. The manuscript needs copy editing in English. It is always clear what is meant but the grammar is sometimes a bit confused (esp changing tenses). The term PER-OPERATIVE does not exist in English (I think you mean INTRA-OPERATIVELY). There are typographical errors e.g. esophagostomy when you mean esophagectomy (a very different procedure)

2. Conclusion of abstract: 'this likely will ....' is a bit strong - more appropriate would be 'this may ....'

3. Background: Second paragraph page 3 assumes cause and effect between lack of perfusion monitoring and complications due to vascular compromise - this needs to be tempered. Some other language such as 'Holy Grail' also needs to be tempered - just impartial science will do!

4. Methods - a detailed description of the four techniques appears in both the background and methods section and is quite repetitive - the techniques only need to be described in
detail once. Consent - please explain what is meant by 'afterwards written informed consent is obtained...' - I don't think you mean retrospective consent after the surgery, but this could be expressed much more clearly

5. I'm not sure how much all the coloured figures add to the manuscript - perhaps just simple diagrams, if anything at all is necessary

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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