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: 09 Jan 2017

Reviewer: Vichithranie Madurasinghe

Reviewer's report:

I think this is an important study that could improve outcomes for patients undergoing surgery. However, study methods do not explain some of the stated objectives would be achieved.

comment 1: page 4, last line
delete the duplicate words 'in'

comment 2: page 6, first line
abbreviation 'ROI' not explained

comment 3: page 7, line 9
add references for e Good Clinical Practice Guidelines and Principles of the Declaration of Helsinki

comment 4: page 7, study design
Please add where this study is taking place i.e. which hospital

comment 5: page 8, line 3
....and written informed consent - not clear what you are saying here

comment 6: sample size calculation
authors used an effect size of 0.66 defined arbitrarily in their sample size. Please give your reasons for using this effect size for each of the surgery type studied.

comment 7: sample size calculation
an intra-class correlation of 0.80 ('substantial agreement') under the alternative hypothesis when the intra-class correlation under the null hypothesis is 0.40 ('moderate agreement')

Please add references for using stated ICC values as substantial agreement and moderate agreement
comment 8: patient outcome
how anastomotic leakage and necrosis is measured not clear. also these two outcomes are not clearly defined.

comment 9: statistical analysis
first please explain in a sentence or two what is feasibility analysis, accuracy analysis and what study objectives these two analyses would achieve. Authors state 'The repeated data structure will be additionally analyzed using linear mixed models'. But why this is done is not clear.

comment 10: how patient outcomes are analysed is not explained. also how these outcomes would be linked to perfusion measures from 4 techniques under study is not clear.

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:

Acceptable

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