Reviewer's report

Title: Multi-parametric Muscle and Fat Correlation of Computed Tomography Parameters to Outcomes in a Total Hip Arthroplasty Population

Version: 1  Date: 01 Sep 2017

Reviewer: Rebecca Crawford

Reviewer's report:

The paper has improved with the inclusions made in response to my comments; however, the authors should consider the following:

1. Introduction: The novelty of this study is not clear and should be elaborated in the introduction and outlined in the main objective. Why do you consider yet another time-consuming (albeit shorter than some) parameter could add any value to a busy clinician's prognostic capacity? On what precedence do you base this? Is there other literature on muscle composition parameters that point to its importance, others joints or anatomical regions, perhaps?

2. Methods: Indicate what comprised (in hours) of the training of the medical students, which has been shown to relate to the repeatability of segmentation methods (e.g. Mhuiris et al. 2016 BMSD); indicate what year the medical students are in (is this a final year project?); please clarify how your definition of ROI relates to the literature (either as a method used previously, or anatomically-defined text); clarify how the readers 'worked together' on the first three CTs (do you mean they agreed to the definition of each ROI per slice and then independently encircled them? In which case you should have almost 'perfect' agreement (an advantage); while there has been improved clarification that the results represent the mean of two (?relatively novice) readers, there remains question for me as to the intra-rater repeatability of the methods, which is crucial in such a proof of concept/validation-type study and certainly in convincing a readership examining the utility of a method.

3. Discussion: This remains unconvincing in terms of meaningfulness of this study to the readership. I find the justification for the study to be a precursor to a more detailed (and larger sample) study to be inadequate. While I appreciate the succinct nature of the reporting, it is arguably not enough just to list other studies; e.g. how does your study better those before it?
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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

Acceptable

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