Reviewer’s report

Title: Cardiac Left Ventricular Myocardial Tissue Density, evaluated by Computed Tomography and Autopsy

Version: 1 Date: 17 Dec 2018

Reviewer: Jonathan Lessick

Reviewer’s report:

The authors have replied to my comments and my reply is as follows:

1. It would definitely have enhanced the study if Archimedes principle had been used additionally but since this was not performed, let's leave this topic.

2. Regarding LV contouring, all studies in the literature, to my knowledge, have been performed with contrast in the chamber therefore any measurements performed in this study are not validated. Likewise window settings have been optimized for contrast-based studies.

3. Since boundaries are sensitive to thresholds and windowing, there is a reasonable chance that the difference in density found may be related to this factor.

4. I have played around with windowing and found that reducing the window center to a value of about 40, which better represents the myocardial HU, results in an increase in myocardial volume. Increasing width results in a similar effect.

5. I would like to request the authors at least to test the sensitivity of myocardial volumes to changes in these parameters. For example a subset of about 20 cases could be remeasured using a window center of 40-50HU and also testing a different window width.

6. The authors should also discuss the relevance of changes in myocardial blood volume to both mass and volume calculations. The beating myocardium consists of ~25% blood volume. What happens to this volume in the cadaver heart?

7. I would tone down the strength of the conclusions and recommendations, to state that current results suggest that myocardial density may currently be underestimated, but that readers need to take into account various assumptions and possible inaccuracies in myocardial volumes measurement.

For example the following sentence should be removed: "However, we determined that this value is not correct, and if a more accurate LVM is desired, then our density value should be used."

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

**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.

No

**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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