Reviewer’s report

Title: Prospective evaluation of computer-assisted analysis of skeletal lesions for the staging of prostate cancer

Version: 0 Date: 29 Mar 2017

Reviewer: Farzad Khalvati

Reviewer’s report:

This is a validation work on EXINI BoneBSI CAD tool for bone metastatic prostate cancer. It is a well-written paper and the findings are important and useful for the community. I have few comments to be addressed.

- "BSI is derived from whole body bone scans in which the skeleton is outlined and segmented into regions of interest". Is the segmentation done manually or automatically? If fully automatic, this should be clarified in the text. If it is done manually, then the inter-user variability of contouring should be accounted for since this could affect the results.

- Is Table 1 the summary of findings by the experts? If yes, why there is Software Data column. The title is also confusing. Please clarify.

- Table 2: please provide sensitivity and specificity of software compared to expert readings as well. This would help to compare it to Table 3 which uses true reference.

- The results shown are based on 'balanced mode' of the software. This leaves it open to speculation on how the software would perform in 'high specificity' and 'high sensitivity' modes. This is particularly important given that in some scenarios (e.g., BSI>0) the software over- or under-detects. For example, in Table 3, it is clear that with BSI>0 (first column), the software over-detects. The question is, if it was used with 'high specificity' in this scenario, how would it perform? The same is true for the second column where 'high sensitivity' mode might have performed well. Please consider adding these two experiments as well to make the study a comprehensive evaluation of the software.

- To help readers understand the workflow, a figure should be added showing a representative example in EXINI Bone with the bone segmentation outlined.

Please proofread for a couple of typos.

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.

Yes

**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:

Needs some language corrections before being published

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