Reviewer’s report

Title: Pulmonary tuberculosis: comparative detection with MR imaging and Helical CT.

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Reviewer: Michael Puderbach

Reviewer’s report:

The manuscript “Pulmonary tuberculosis: comparative detection with MR imaging and Helical CT” focuses on the comparison of MRI with HRCT for assessing pulmonary tuberculosis.

Major Compulsory Revisions
- The manuscript needs to be checked by a native speaker.

Abstract:
- Ok

Introduction:
- There are several groups that work in the field of proton MR imaging of the lung in various diseases. The authors should give a more detailed introduction into this topic.

- MR imaging of the lung is difficult due to several reasons. The authors should give some more background information here.

- The authors state: “.... litter information exists on MRI pneumonia patterns ....” and cite 4 papers. I do not think that this is little information and searching the literature the authors will find additional scientific articles on this topic.

Subjects and Methods:
- Please provide details for how the pulmonary tuberculosis was proven.

- When the images were take were the patients under treatment or not?

- I am not sure if follow up examinations should be included in this evaluation as these are following treatment and do not show an acute situation.

- MRI was performed in expiratory respiration. How was the CT performed, in expiration as well? If not this causes a discrepancy between the breathing position of the images and they might be complicated to compare.

- Only one MR sequence was used and evaluated? The sequence utilised shows a very low to no parenchyma signal (from my point of view one of the reasons why parenchyma findings were not that obvious like in the CT study, I am not convinced that only the lower spatial resolution of the MRI is responsible for
this discrepancy).

- The authors should have used a FR FSE T2 without fat sat for the visualization of the parenchyma. It is known that the fat sat destroys parenchyma signal.

- The sequence utilized took 120 s. The in-room time was 15 min. There is a discrepancy between study time and in-room time. Were additional images acquired?

- I guess the images were displayed in a pseudonymous fashion?

- Please describe the image evaluation in more detail. In detail it remains unclear to me how the images were evaluated. Was a scoring sheet used? How did the algorithm for independent reading and consensus reading exactly work?

- It would have been nice to see the differences in between both readers.

- Why were the CT images not scored independently?

- What influence did the direct comparison of the MRI and CT images have on the final results?

- I am a radiologist, not a statistician. Who performed the statistical evaluation? Was it performed by a statistician?

Results:

- The analysis of pleural effusion/pleural involvement remains unclear to me. Could it be that pleural effusion and signs of an inflammatory changes of the pleura are mixed up in this evaluation?

- The analysis of the lymph node involvement and the “establishment” of MRI to show “higher performance” remains unclear to me.

Discussion:

- In the first paragraph of the discussion section the authors state: “..., MRI has currently no clinical application”. I think the authors should be a bit more differentiated in their statements reflecting the work of several groups that has been done in this field.

- Further more the authors state: “... a significant advantage of using MRI over CT not appeared; ...” again I think the authors should be a bit more differentiated in their statements reflecting the work of several groups that has been done in this field.

- The authors state that MRI failed to show tree in bud 4 times. As mentioned before this might be due to the sequence design with fat sat.

Literature:

- The authors should include additional relevant literature in this manuscript and as mentioned before reflect some of their statements.
Minor Essential Revisions

Introduction:
- Please introduce the abbreviation (TB) before using it.
- The numbering of the figure legend and the figures is inconsistent.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.