Reviewer’s report

Title: Characterization of a calcified intra-cardiac pseudocyst of the mitral valve by magnetic resonance imaging including T1 and T2 mapping

Version: 2
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Reviewer: Ralf Wassmuth

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The manuscript (unfortunately no page numbers) represents a case report regarding a cardiac mass that was first detected by echo. As an confirmatory test CT was done. The mass was surgically removed. The report focuses on CMR findings. CMR was done at 3 T for presurgical characterization, but CMR did not influence the decision for or against surgery.

The authors used a comprehensive CMR protocol including cine loops, T1- and T2-weightes spin echo images, T1- and T2 mapping, perfusion, post contrast cine and late enhancement as well as postcontrast T1 mapping.

The reference list is up-to-date. The authors included a table summarizing signal characteristics reported in similar cases.

Description of findings

The image material appears appropriate and covers not only CMR, but also echo, CT and intra- and postoperative figures.

Interpretation of findings

1) The contrast uptake during first pass was rather negligible as indicated by the signal-over-time curve. This is expected from a cystic lesion as indicated in other reports (Table). Therefore the authors may consider to adjust their report. Such a tiny amount of contrast uptake in the lesion should not be taken as point to rule out a cyst and indeed as a bottomline the authors suspected a cyst after CMR.

2) The authors cite one case report (ref. #16) to corroborate that the lack of LGE would exclude endocarditis. Given the paucity of CMR data regarding endocarditis this statement should be eliminated.

3) If the authors want to point out the importance of mapping in this case, they should expand the discussion in this regard. What do the T1- and T2-times mean? From the reviewer’s point of view it is not enough to state, that the numbers „were compatible with precontrast signal characteristics. If so, there is no need to obtain maps. For the clinically oriented readers the authors might explain what „high proton density in the mass“ means.

4) Hemorrhagic cyst: T1-times between intraventricular blood and and blood within a cyst may differ depending e.g. on blood degradation and flow. Occasionally T1-time of blood might even differ between cardiac cavities. Please comment.
5) The conclusion should be toned down a bit. The authors state, that „mapping can be used to evaluate the nature of a lesion´s content...“ It is not really clear whether there was indeed an additional benefit of mapping compared to conventional imaging in this case.

Still it is an interesting case worth to be presented to the readership of the journal.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests