Reviewer’s report

Title: The value of 3D visualization operative planning system in ultrasound-guided percutaneous microwave ablation for large hepatic hemangiomas: a clinical comparative study

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Reviewer: Hui-Chuan Sun

Reviewer's report:

Comments to the Author

This study investigated the value of a 3D visualization operative planning system in ultrasound-guided percutaneous microwave ablation (US-PMWA) for large hepatic hemangiomas (LHHs). A total of 58 patients with LHHs were enrolled in the study and divided into 3D and 2D groups. The ablation time and energy applied in the 3D group were lower than that of 2D group. The 3D group had higher complete ablation rate, lower incidence of hemoglobinuria after ablation and lower post-ablation ALT, AST, ALP, Cre compared with the 2D group. The 3D visualization operative planning system has a relatively high clinical application value in providing therapy for LHHs by US-PMWA. I have a couple of concerns on the paper.

Major concerns
1. The authors are trying to demonstrate the improvement of efficacy and safety of US-PMWA by changing from 2D to 3D analysis before operation. Although the results seem to support the difference between two groups, it is hard to attribute the difference to the change of pre-operative planning from 2D to 3D. It also could be a result from accumulation of operation experience, by which the ablation is conducted with less energy and ablation time, more accurate placement of antenna.
2. How to calculate the ablation rate for each tumor?

Minor concerns
1. The grammar and syntax need to be improved by a native English speaker.
2. The authors stated that the 3D planning system helps to minimize the insertion of antenna in the first paragraph in Page 8, however, in Table 3, the 3D group had more insertions than the 2D group did.
3. The authors stated that the therapeutic effect was assessed by the contract enhanced images 1, 3, 6, 12 months and then …, however, the results were not demonstrated.
4. The Introduction section is too long, and part of it are better to be discussed in the Discussion section.
5. In the Statistical analysis section (Page 11, Line 31), the authors used "paired t-test or χ2 test to
compare values between two groups". However, comparison of continuous variables between two groups should use Students' t-test or the Mann-Whitney U-test. Changes in hepatic and renal function before and after ablation could be compared using paired t-test. Please describe the statistical methods more clearly.

6. In Table 3, it is better to demonstrate and compare not only the exact values of post-ablation test results, but also the increases of those factors. As the author described in Page 14, Line 40, "increases in …" was not appropriate because they only reported data of the exact values instead of the increases.

7. There were some inaccurate expression in the manuscript: 1). In the abstract (Page 2, Line 45) and discussion (Page 16, Line 12), it would be better to use "P < 0.001" rather than "P = 0.000"; 2). The abbreviation "CDFI" was not explained when first appeared.

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.

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

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