



PEER-REVIEW REPORT

Name of journal: World Journal of Radiology

Manuscript NO: 54747

Title: Diagnostic problems in two-dimensional shear wave elastography of the liver

Reviewer's code: 03732464

Position: Peer Reviewer

Academic degree: MD

Professional title: Associate Professor

Reviewer's Country/Territory: China

Author's Country/Territory: Japan

Manuscript submission date: 2020-02-25

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-02-27 00:27

Reviewer performed review: 2020-03-03 12:45

Review time: 5 Days and 12 Hours

| SCIENTIFIC QUALITY | LANGUAGE QUALITY | CONCLUSION | RE-REVIEW | PEER-REVIEWER STATEMENTS |
|--|--|--|------------------------------|------------------------------------|
| <input type="checkbox"/> Grade A: Excellent | <input type="checkbox"/> Grade A: Priority publishing | <input type="checkbox"/> Accept (High priority) | <input type="checkbox"/> Yes | Peer-Review: |
| <input type="checkbox"/> Grade B: Very good | <input type="checkbox"/> Grade B: Minor language polishing | <input type="checkbox"/> Accept (General priority) | <input type="checkbox"/> No | <input type="checkbox"/> Anonymous |
| <input type="checkbox"/> Grade C: Good | <input type="checkbox"/> Grade C: A great deal of language polishing | <input type="checkbox"/> Minor revision | | <input type="checkbox"/> Onymous |
| <input type="checkbox"/> Grade D: Fair | <input type="checkbox"/> Grade D: Rejection | <input type="checkbox"/> Major revision | | Conflicts-of-Interest: |
| <input type="checkbox"/> Grade E: Do not publish | | <input type="checkbox"/> Rejection | | <input type="checkbox"/> Yes |
| | | | | <input type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

This review analyzed the impacts of US artifacts on 2D SWE , using a computer



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simulation modle besides the literature review. The manuscript is well written and helpful for the understanding of artifacts encountered in clinical use of 2D SWE. However, there are several issues need to be addressed or clarified. 1. In the paragraph of "Reverberation artifact", the mechanism that reverberation artifact at the liver capsule cause the overestimation of SW speed should be addressed. 2. In the paragraph of "Motion artifact". For the example of SW measurement of the left lobe of the liver, the authors pointed out that the "colorless area" should be avoid due to inable or inaccurate measurement. Moreover, it should be also addressed that the reddish part of the cursor is also unreliable due to the motion artifact. 3. "The easiest way to measure SW values under this condition is to perform 2D-SWE through the least deformed hepatic surface possible." Compared with the motion and reverberation artifact, the measuring error caused by reflection and refraction on the rough surface of cirrhotic liver is ignorable. Therefore, this recommendation is not practicle. 4. In the paragraph of "2D-SWE in liver tumors", the authors pointed out that accurate stiffness measurement of liver tumors is not possible by 2D-SWE, in most cases. This is true in the tumor-liver border. However, it is possible to achieve the measurement inside tumor with certain size. Because the SW fades about 10mm, the speed of SW could be measured before it reaches the tumor capsule. Moreover, it should be noted that the measurement is still a valurable for the judgment of relative stiffness of tumor and surrounding liver. 5. In the paragraph of "Tracking US beam-related problems". Images of clinical cases should be added in Figure 9. 6. Figure 1. the direction of push pulses should be along with the ultrasound beam.

INITIAL REVIEW OF THE MANUSCRIPT

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PEER-REVIEW REPORT

Name of journal: World Journal of Radiology

Manuscript NO: 54747

Title: Diagnostic problems in two-dimensional shear wave elastography of the liver

Reviewer's code: 02861244

Position: Peer Reviewer

Academic degree: PhD

Professional title: Professor

Reviewer's Country/Territory: South Korea

Author's Country/Territory: Japan

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| SCIENTIFIC QUALITY | LANGUAGE QUALITY | CONCLUSION | RE-REVIEW | PEER-REVIEWER STATEMENTS |
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| <input type="checkbox"/> Grade A: Excellent | <input type="checkbox"/> Grade A: Priority publishing | <input type="checkbox"/> Accept (High priority) | <input type="checkbox"/> Yes | Peer-Review: |
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| <input type="checkbox"/> Grade E: Do not publish | | <input type="checkbox"/> Rejection | | <input type="checkbox"/> Yes |
| | | | | <input type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

Dear authors The narrative review on 2D shear wave elastography that you submitted



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showed very good clinical implications for clinicians and observers. The submitted manuscript was short and easy to read. One minor comment was suggested to improve the manuscript better. A computer simulation model need to be shown in more detailed manner in page 6. The model you applied in the study might not so be familiar with readers. Please, provide more description on the model. In addition, please provide the strength of the new computer simulation model in the discussion (page 7). Please, provide more explanation on the legend of Fig. 7.

INITIAL REVIEW OF THE MANUSCRIPT

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