Reviewer’s report

Title: Adding Trans-abdominal Elastography to the Diagnostic Tool for An Ileal Gastrointestinal Stromal Tumor: A Case Report

Version: 0 Date: 23 Jul 2019

Reviewer: Yann Jamin

Reviewer's report:

This case study highlights the potential of transabdominal strain elastography for the differential diagnosis of small bowel GI stromal tumour. This study demonstrates further application of Elastography for the differential diagnosis of tumours and how it can complement established methods. This case study will be of great interest for oncologist, surgeon and for the growing field of elastography.

I do have major comments:

1- Throughout the manuscript there is a lot of inaccuracies in the definition of elastography, e.g.:

P3 line 62: "Elastography" is "not an emerging sonographic technique". It is a whole field of imaging research. This needs to be address throughout the paper. The introduction will benefit from a brief description of the principle of elastography, including more precisely how strain elastography work.

P7 line 129: Again this statement is incorrect "Elastography does not depicts the relative stiffness of the tissues". Strain elastography does.

2- There seems to be a lot of heterogeneity in the tumour elastogram. The paper concentrates on the stiff lobe but there is no mention of the softer one. It would be good to discuss this. How does it fit with the gross pathology presented, the histological assessment (was it done in the stiffer lobe), the appearance on the CT scan images? This may help the authors to further demonstrate the potential used of this technique for differential diagnostics. Please includes the CT images in the paper.

3- I am not sure it is very clear throughout the paper that the potential application of the strain elastography in this setting is based on the fact that gastric GIST have been reported to be stiffer than other SMT (as stated on page 4). This should be reiterated in the discussion. Are these tumour rich in extra-cellular matrix and collagen fibers or is the cellular density driving the stiffness. Please discuss.

4- Presentation of the figures and legend is poor. The legend should be self-explanatory out of the context of the main paper. For the broader audience (including myself) of BMC Medical Imaging I would suggest to describe what the different panel represent ( elastogram and …). I believe that these images are taken from the scanners which is fine. However there is a lot of information on them and if you are not familiar with them it is overwhelming. The most important information: the scale (soft-hard) is hard to read and I think it is especially important again for the wider BMC MI community, for whom this colour scale may be counter intuitive. Please replace. Please also point/label at the reference ROI…etc.
Other comments:

Discussion.

4- Briefly discuss the advantage of strain elastogrophy compared to shear wave elatogrophy (quantitative) if any (or if it was not available for the experiment then discuss its potential use).

5- P8 Lines 150-155 more concise please.

6- P8 line 156 replace "application" by "use".

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.

Unable to assess

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.

Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal