

Peer Review File

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Reviewer Comments

Comment 1: The authors have exhaustively exposed the emerging innovations that can be introduced into clinical practice. Perhaps in the lead in the classification criteria of ultrasound-detectable breast lesions, however they did not consider 2DSWE Elastography which among other innovations appears to be one of the most important. Please consider if possible a paragraph dedicated to this imaging technique indicating its pros, cons and what the international literature is thinking about it.

Consider the follow work:

Ventura, C., Baldassarre, S., Cerimele, F. et al. 2D shear wave elastography in evaluation of prognostic factors in breast cancer. *Radiol med* 127, 1221–1227 (2022). <https://doi.org/10.1007/s11547-022-01559-5>

Reply 1: The purpose of this article is to describe the uses of strain elastography, microPure and SMI and to suggest one other use for each of these tool for which they were not originally intended. There are other new ultrasound tools described for breast imaging such as shear wave elastography (SWE), automated whole breast ultrasound (ABUS) etc. Since I do not have any other use for shear wave elastography (SWE) to suggest in this article, I cannot see any purpose for describing SWE or other tools like (ABUS).

Comment 2: T I believe that the authors should consider in the introduction a general explanation on the state of use of these innovations and if they are contained in the ACR BIRADS 2013 atlas, the current reference of worldwide breast ultrasound imaging.

Reply 2: Strain elastography was included in the 2013 ACR BIRADS atlas. I have added this to the review. Thank you for this suggestion. However, MicroPure and SMI do not feature specifically in the atlas. I have therefore just mentioned in general that they aid in the assessment of calcifications and vascularity.

Comment 3: Strain Elastography, Superb Microvascular Imaging, MicroPure Imgaing: The topics are comprehensive and well developed, however the works in the literature are more numerous, please consider the other available works in the bibliography.

Reply 3: There are indeed many more articles on these subjects, particularly strain elastography. However, this article is not intended to be an extensive review on all of these topics. The listed references are meant to highlight the intended uses rather than be an exhaustive reference list. I have therefore tried to quote articles which are meta-analyses wherever possible as these by nature already take the data of numerous articles to come to a more complete conclusion.

Comment 4: the brief and concise conclusions, very well. However, the impression of the authors emerges little, it would be useful to know what they think about the future introduction in the international guidelines.

Reply 4: This article was purpose-written for a translational medicine journal. The impression is that we should be looking out for other possible uses for new techniques in breast imaging in translating them into clinical practice. I suppose this can also be applied to translational medicine in general. I think the conclusion has made this impression very clear. I have added a sentence regarding future introduction in international guidelines.