Reviewer's report

Title: Computer-assisted determination of left ventricular endocardial borders reduces variability in the echocardiographic assessment of ejection fraction

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Reviewer: Rosa Sicari

Reviewer's report:

This is a well written manuscript addressing a long lasting methodological question such as the most objective way to assess EF by ultrasounds. There are a few issues that authors should address:

1. Please state if the proposed method is a proprietary software. This would make the method not particularly appealing for the echo community.

2. Authors discuss at length the choice of MPI as the reference method for EF assessment. Nonetheless, the gold standard for volumes assessment is MRI and the use of MPI makes the results less reliable. They also acknowledge the limitations of 3D echocardiography, in which the quality of images have to be high to be reconstructed. However, 3D echo has demonstrated to have a very high correlation with MRI: Please comment.

3. The autoEF method needs to be corrected by manual definition in case of bad contour visualization. Again, the method suffers of the common limitation of echocardiography: when you cannot see you cannot measure.

4. It would be very interesting to have the eyeballing assessment of EF by export readers. We all agree that it is very important to be quantitative but, especially with patients with preserved LV function as is the present case, eyeballing exerts a very high diagnostic accuracy.

5. Authors study patients with preserved or mildly reduced LV function and as they state in the discussion section of the manuscript, it is a major limitation of the study. Please discuss if they believe that the presented method may be as reliable also in patients with altered LV geometry.

Level of interest: An article whose findings are important to those with closely related research interests

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'