Reviewer’s report

Title: Left ventricular geometric patterns in patients with type A aortic dissection

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Reviewer: Chan Seok Park

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Title: Left ventricular geometric patterns in patients with type A aortic dissection

Thank you for providing me an opportunity to review the paper entitled to “Left ventricular geometric patterns in patients with type A aortic dissection”.

General comments

In this manuscript, the authors retrospectively reviewed the data of type A non-Marfan aortic dissection patient in respective of the relationship between left ventricular (LV) geometry and maximal ascending aorta (MAA). The total duration is 13 years and the number of the patients was 161. But echocardiographic exams were only performed only 50 patients preoperatively. The authors only reviewed the MAA and echocardiographic data which can be easily acquired during the routine echocardiographic exam. And the relationship between aortic diameter and LV hypertrophy is already published by other authors (Iarussi et al. 2001. Angiology 2001:52:447-455). But the authors also concluded that there are significant differences in MAA according to the LV geometry. This finding is surprising considering the number of the patient subject to the analysis.

Major comments

1. First of all, the data itself is frustrating because the demographic and computed tomographic (CT) data were acquired from 151 patients but the echocardiographic data was retrieved from 50 exams.

The number of the patient should be same and the data from only 50 patients should be demonstrated in the article.

2. Aortic root size showed no differences according to the LV geometry. But the authors did not describe how they measured the aortic root size. Aortic root size should be measured at the aortic valve annulus, the sinuses of Valsalva, the sinotubular junction and proximal ascending aorta.
from the parasternal long axis view of 2-dimensional echocardiography according to the 2015 ASE/EACVI recommendation.

Adding the data and analysis according to aortic root size measured at various site according to the 2015 ASE/EACVI recommendation can help the manuscript better. And it also can provide the possibility to reveal another insight of the relationship between MAA and aortic root size.

3. How did you analyze the differences MAA diameter according to LV geometry? You described that you used ANOVA. There is no description how to perform the post-hoc analysis such as Scheffe, Tukey or Duncan method. It should be demonstrated in the method section. And Figure 2 also should be corrected if concentric hypertrophy showed the differences with normal geometry and concentric remodeling (Do not use only "*" but "*" and other symbol).

4. Authors described in the discussion section that the one of the major finding of the study is (i) MAA diameter correlated…

But this is not a novel finding as I previously mentioned in the general comments.

The numbering of the major findings should be corrected. And the article published by Iarussi at al. must be added to the references.

Minor comments

1. How the patients of genetic disorders were excluded? Did the subjects of this study undergo the genetic exam? Describe it precisely in the method section.


Authors used the recommendation of chamber quantification by ASE/EACVI both old and new versions. Only use the recommendation published in 2015. It covers all the measurements used in this manuscript.


The symptoms of the patients were chest pain (82.1%)….

Should be described as

The symptoms of the patients were chest pain (n=…, 82.1%)…

Echocardiographic data is also demonstrated in table 2. So these section can be removed from the article.

5. Table 2 is frustrating because MAA diameter is acquired from CT of 151 patients and other data is from echocardiographic exam of 50 patients. Use only CT data of the 50 patients who were undergone echocardiographic exam preoperatively.

6. Cut-off value of relative wall thickness (RWT) classifying concentric and eccentric geometry is 0.42. The value of RWT is demonstrated as

0.40±0.10

Not

0.4±0.1

And RWT has no unit because length is divided length. Correct it.

7. Figure 1 shows the Pearson correlation between MAA and LV mass index. The number of the subject is 50 so the number of the dots showed be 50. But there are only 45 dots in the figure. Check it.

**Level of interest**

Please indicate how interesting you found the manuscript:

An article of limited interest

**Quality of written English**

Please indicate the quality of language in the manuscript:

Acceptable

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