Reviewer’s report

Title: BRG1 overexpression in smooth muscle cells promotes the development of thoracic aortic dissection

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Reviewer: Annalisa Angelini

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Major Compulsory Revision

This is a well written paper on an hot topics, and the results are of interest in the field of aortopathies and our need to understand their pathophysiology.

I have some points that I would like the authors clarify before publication.

1) the authors should state more clearly the tissue sampling made during the surgery since ascending aortic dissection can start even 1 cm above the commissure valves, or can have the inlet break even at aortic arc level. This could imply inclusion of the dissection or a segment not involved. This could have implication considering apoptosis of SMCs.

2) there are no reported data on age, gender, associated diseases, imaging procedures previously performed.

3) it would be of interest to know if the aortas were dilated or aneurysmatics.

4) the authors could add a short description or a table with the major pathological findings at classical histology (HE, FvG, Alcian) to make clear for the readers the type of aorta they were evaluating. It is not easy to assess the figures which are high power view and not panoramic.

5) As for the figures I would like to have the same orientation of SMCs for controls and affected samples.

6) please modify legend of figure 4, since the authors mentioned for controls a more intense expression for SMCs staining, since in immunohistochemistry we know that this can be misleading since intensity can be influenced by many technical variables as well as different time of collection and storage. In the methods you have correctly indicated the cells involvement instead of the cell intensity.

Level of interest: An article of importance in its field

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