Reviewer’s report

Title: Comparison of conventional and primary sutureless surgery for repairing supracardiac total anomalous pulmonary venous drainage

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Reviewer: Karolis Jonas

Reviewer’s report:

The authors provide an interesting paper dealing with post-operative pulmonary vein obstructions in patients with total anomalous pulmonary vein connection. The findings of this article are important to those with closely related research interests.

However, there are some major and minor issues that need to be attended prior to publishing.

Major issues:

1. It would be great if the authors would provide more facts about the operating surgeons, mainly, with regards to the experience of the surgeons. How many TAPVC operations have they performed? Has the surgeon, who is using the sutureless technique, been using conventional technique and then made a switch to sutureless. The same question applies to the second surgeon, who is performing conventional operations, has he or she been doing sutureless repair, and made switch to conventional repair.

2. Please provide more information about the post-operative evaluation of the patients. As the patients were examined using echocardiography, it would be beneficial to know whether the exams were performed by a single specialist or a team, were the patients examined by the same echo specialists prior surgery and then during the follow-up period?

3. Page 5, Line 19: "In sutureless group, PVS assessed 0.2 +/- 0.5 in two groups, showing no statistical differences". This sentence needs revision. It is unclear, what pulmonary vein stenosis score was in each group.

4. Page 5, Line 54: "Kolomogorov-Smirnov (K-S) ..." the test is used to the normality of the distribution of the data, not "analyze normal distributions". K-S test, when testing for the normality of the distribution of data usually lacks statistical power. The authors have already collected the data and could also run more statistical test (like Shapiro-Wilk), visual analysis of the shape of the smooth density curve and / or histogram of the variables.

5. Page 6, Line 46: "One patient in the ..." please elaborate on the treatment of the patients, who developed pulmonary vein obstruction and were re-operated.
6. Page 6, Line 49: "One patient died ..." were the deaths in early post-operative period (30 post-operative days, or late post-operative period?

7. Page 6, Line 57: "Overall mortality or freedom from ..." what statistical methods were used to compare the mortality / freedom from re-operation data between the two groups? Could the authors provide Kaplan-Meier curves with a log-rank test?

8. The authors mentioned that two cases in the sutureless group were performed utilising deep hypothermic circulatory arrest. It would be interesting if the authors could elaborate on these two cases.

Minor issues:

1. Missing abbreviations: post-PVO, TAPVC.

2. Page 3, Line 19: "There were no differences on ICU stays ...". The sentence needs revisions. The authors probably mean that there were no differences in the length of stay in the ICU between the two groups.

3. Page 3, Line 51: "IN rare instances ...", the N in the word in needs to be lowercase.

4. Page 4, Line 15: "Whether sutureless technique better than ..." and "Osami Honjo, Bobby Yanagawa ..." both sentences need grammatical revisions.

5. Page 4, Line 4: "Exclusion criteria included ...", this sentence needs grammatical revision.

6. Figure 1 is just a CT 3D reconstruction of a single patient with supracardiac form of the total anomalous pulmonary connection. It does not provide any beneficial information.

7. Page 6, Line 37: "Average ICU stays of sutureless group was 11 days (range ..." if the distribution is normal then the authors should report the average +/- standard deviation, if the distribution is not normal, the authors should provide the median and the range or interquartile range. And again, the authors here probably mean the length of ICU stay in days.

8. Page 3, Line 10: "... , but there was no differences in aorta clamped time" the sentence needs grammatical revision.

9. Instead of aorta clamped time (Page 3, Line 10), please use aortic cross-clamp time (in text and in tables).

10. Page 4, Line 9: "pulmonary vein." Please clarify, if the anastomosis was made between one single pulmonary vein (if this is true, then please explain which vein was chosen and why", or was the anastomosis between the common pulmonary vein sinus and the left atrium performed?
11. Page 5, Line 35 "... common pulmonary vein confluence" - essentially a common pulmonary vein sinus?

12. The image quality of figure 2 is not sufficient. The handwritten text is hard to read.

13. Table 1: "Crossclamp time" probably means aortic cross-clamp time. It would be great, if the authors would provide additional information of the CPB: the total duration of the CPB, aortic cross-clamp time, reperfusion time, cardioplegia type and count.

14. Table 1: the * showing statistical significance between the duration of the aortic cross-clamp between the two groups should be in the P value column.

15. Table 2: Change ICU stays to length of ICU stay.

Best wishes,

Karolis Jonas, MD

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