Author's response to reviews

Title: Surgical Repair for Aortic Dissection Accompanying A Right-Sided Aortic Arch

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Author's response to reviews: see over
Dear Editors and Referees

We are submitting our revised manuscript entitled “Surgical Repair for Aortic Dissection Accompanying A Right-Sided Aortic Arch.” for consideration as publication in “The Journal of Cardiothoracic Surgery”. Our comments to the Editors and Referees as below.

Referee 1:

The present case report describes the successful surgical repair of right-sided aortic arch associated with Kommerell’s diverticulum and aberrant left subclavian artery after type B aortic dissection. It would be possible to be published in the JCTS, after minor revisions as below.

Comments:
1. With regard to brain protection, is it necessary to perfuse from 4 orifices of vessels ?
Was the left vertebral artery originated from the left subclavian artery ?
And did you think of the retrograde cerebral perfusion ?

   We have used selective cerebral perfusion for the cerebral protection in aortic arch repair because this technique has the advantage of the unlimited duration of time and moderate hypothermia.

   We have considered the importance of vertebral perfusion for the cerebral protection, we performed four vessels perfusion because the bilateral vertebral artery arising from the bilateral subclavian artery.

2. In the manuscript, mixed expression was used as subclavian artery.
In the abstract I2, I4, and Background I2, you use “subclavicular artery”, however you use “subclavian artery” in other parts. You should use the same expression in the manuscript. “Subclavian artery” should be better to change.

   We corrected " subclavicular artery " to " subclavian artery ".

3. There is a typo in Abstract. “Kommerell diverticulum” should be “Kommerell’s
diverticulum”.

We corrected "Kommerell diverticulum" to "Kommerell’s diverticulum".

4. Is the expression “one-stage surgical repair” correct? “one-staged surgical repair” might be correct.

We corrected "one-stage surgical repair" to "single-stage surgical repair" because Kouchoukos and associates* used the term of “single-stage repair” in their report.


5. In Figure Legends, regarding to using abbreviation “CT”, you should list in the expression in the manuscript. In the p.3, 2nd paragraph l5, you can put the abbreviation (CT).

We corrected "computed tomography" to "computed tomography (CT)".

Editor:

1. What is meant on line 56 by "damage to bypass"?

We corrected "damage to bypass" to "the bypass graft injury".

2. There is no legend for the figures in the revised manuscript. In addition fig 1A should be made into a single column. Please use arrows which can be referred to in the legend to indicate important features of the images.

Figures 1a and 2a were changed to show the CT images, and figure legends were also modified.

Figure 1a: CT on admission showed a 55-mm aortic aneurysm (arrow) at the anastomotic site in the thoracic descending aorta.

Figure 2a: CT prior to TEVAR showed a thoracic descending aortic aneurysm (arrow) at
the proximal anastmosis site

3. You have not included a number of the points raised by the second reviewer. There is a lot of scope to reduce the current word count to allow inclusion of these. Please try to do this but in any event include the points that have not been covered. If the manuscript remains too long then it will be edited by ourselves.

We corrected the comments to reviewers as below. Please see the reply to comments for the second reviewer.

Reviewer 1:

The aim of a short report is to describe novel conditions, complications and technical innovations or modifications in order to give a valuable message. Unfortunately this paper does not conform to this statement.

Comments:
1. How was the diagnosis made? Probably it was made by CT scan so a volume rendering or a MIP CT reconstruction could be more appropriate than what you have proposed (figure 1a and 2a).

   Figures 1a and 2a were changed to show the CT images, and figure legends were also modified.

   Figure 1a: CT on admission showed a 55-mm aortic aneurysm (arrow) at the anastomotic site in the thoracic descending aorta.

   Figure 2a: CT prior to TEVAR showed a thoracic descending aortic aneurysm (arrow) at the proximal anastmosis site

2. Although anastomotic pseudoaneurysms seem to be quite frequent after bypass surgery for aortic coarctation, they could be a sign of graft infection. How did you exclude such condition?

   Both patients had chronic Takayasu arteritis, and during the follow up period, they did not have fever, elevated WBC, or increased CRP, ruling out infected aneurysm.

   In the case report section, the following sentence was added, “During the follow-up period, neither patient experienced inflammation-related findings.”

3. Why did you prefer to use, in the second case, a branched endograft? I'm not familiar with
the Najuta stent-graft but in my opinion a "conventional" thoracic endograft with proximal bare stent configuration associated to left subclavian to left carotid transposition could have been more effective and safe considering the age of the patient.

In terms of stent grafting, Japan is still a developing nation, and the national health insurance approved stent grafting for abdominal aortic aneurysm only in April 2007 and for thoracic aortic aneurysm only in July 2008. Previously we used to perform TEVAR using our original stent grafts. The following explanation about the Najuta graft was added to the case report section.

“The Najuta graft was a stainless steel modified Z-stent skeleton connected by two support wires and covered with a expanded PTFE artificial vessel. The exact configuration was customized for each patient. Details of the stent graft have been reported previously.”


We changed references 4 and 5 to the studies above. Thank you very much for your comments.

Reviewer 2:

This is an interesting case report paper about a subject that it is not common in the Western world. The authors provide us with significant information about Takayasu disease since they have the opportunity to treat such patients more often than us in Europe.

Paper's merit however is in the use of TEVAR for the treatment of the pseudo-aneurysms. It would be better if the authors could use one of the commercially available endografts in Europe or USA, however it is understandable why the cannot do so. They could however provide us with more details about the endograft itself:

In terms of stent grafting, Japan is still a developing nation, and the national health
insurance approved stent grafting for abdominal aortic aneurysm only in April 2007 and for thoracic aortic aneurysm only in July 2008. Previously we used to perform TEVAR using our original stent grafts. The following explanation about the Najuta graft was added to the case report section.

“The Najuta graft was a stainless steel modified Z-stent skeleton connected by two support wires and covered with a expanded polytetrafluoroethylene artificial vessel. The exact configuration was customized for each patient. Details of the stent graft have been reported previously. ¹”

1) What is made of? Fabric and stent skeleton
   We have specified this within the explanation of the Najuta graft.

2) What was the size?
   Stent sizes vary from 24 to 42 mm, increasing in 2-mm increments, we added the following sentence to the case report section:
   In Case 1, a 140-mm long stent graft with a 22-16 mm tapered design was used, and in Case 2, two stent grafts were used, a 190-mm long and a 150-mm long one with a 30-22 mm tapered design. In Case 2, a fenestration type stent graft was used and performed pressure fixation using a balloon (Fig.1b, 2b). The size of stent graft were decided using 3DCT and a graduated catheter during angiography.

3) What was the size of the pseudo-aneurysm?
   This is specified in Figures 1a and 2a.

4) What was the size of the pre-existing graft?
   Please see the reply to Comment 2).

5) What kind of measurements did they make?
   We performed measurements using 3DCT and a graduated catheter during angiography. Please see the reply to Comment 2).

6) Did they oversize or not?
   We oversized by 10%. Please see the reply to Comment 2).

7) Was there any provisions made for cerebral protection in the fenestrated graft?
   We routinely perform cerebral CT and carotid ultrasonography, and we assess high-risk
patients by MR angiography, but we do not make special cerebroprotective provisions.

8) Were there any additional endovascular maneuvers necessary? What kind of fixation mechanism is there in the graft itself?

   When angiography is needed during surgery, we perform pressure fixation using a balloon. Please see the reply to Comment 2).

All these details would be more useful to the readers than general information about the disease as given by the authors in the Discussion part of the paper.
Such revision could make the paper really interesting

P.S. It would also be better if the authors could provide us with a CT reconstruction image if there is such.

   We modified Figures 1a and 2a to show the CT scans.

Thank you for your consideration. We look forward to hearing from you soon.

Your Sincerely.

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