Answering reviewers

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We would like to thank the reviewers for their enthusiasm about our report, judicious comments and the thoughtful suggestions. Below is our point-by-point response (our responses are in bold and the original comments in their reviews are in italics). The review reports have been very helpful and we hope that the reviewers will now find the revised version of our manuscript suitable for publication in World Journal of Clinical Cases.

Reviewer 1:
Reviewer's code: 00529915
Reviewer's country: Ireland
Minor revisions
Dear authors The central idea of the report is interesting. In this report the discussion part is the most important and that should be impressive. Please give references where outcome was not good/positive. Please mention any factors which can impact the outcome and are modifiable. Some specific corrections are required as well: 1. The surgery used simultaneous intubation of the femoral and radial arteries. In this sentence "canulation" may be more appropriate than "intubation". 2. TTE is difficult to perform with the patients' cooperation because of acute chest pain In this sentence "with" should be replaced with "without" 3. instead of preforming hysterectomy was safe and effective in reducing secondary Instead of preforming it should be performing 4. Using cardiopulmonary bypass is dangerous Here "dangerous" may not be appropriate. The message could be that CPB carry serious risks

1.Please give references where outcome was not good/positive.
The reviewer's comments and suggestion are highly appreciated and well

taken.

We have summarized some references where outcome was not good/positive in the table (Table 1). Moreover, we further analyze the results of these literatures. In these 13 patients, all mothers survived. Only one fetus died and one fetus had neurological abnormalities. Moreover, half of the patients were in the second trimester. In spite of fetal death and postnatal neurological abnormalities, the results showed that most fetuses survived and brought up healthily. Thus, if the immature fetuses can survive after hypothermic circulatory arrest surgery in the second trimester, they may have a high possibility of full-term delivery and healthy growth.

(The revised contents were highlighted in yellow)

Table 1. Outcomes of 13 pregnant women with type A aortic dissection treated by aortic repair surgery using hypothermic circulatory arrest in literature

No.	Author	Age (Y)	GWs	HCA (°C)	HCA (min)	CPB (min)	MBFR	MPP	SCP	Fetus	Mother
1	E. Buffolo	28	21	19	37	120	2.4	60	—	S/N	Alive
2	W.H. Shaker	34	35	18	11	—	—	—	ACP	S/N	Alive
3	M. Sakaguchi	33	26	20	80	367	—	—	—	Died	Alive
4	S. Ham	43	37	11	37	—	—	—	ACP	S/N	Alive
5	A. Barrus	31	21	18	25	228	>4.5	70	RCP	S/N	Alive
6	J. Seeburger	27	17	22	20	244	—	—	—	S/N	Alive
7	A.	28	33	23	37	137	—	—	—	S/N	Alive

8	Marumoto H. Kunishige	32	16	22.8	46	302	>4.5	80	—	S/N	Alive
9	J. Easo	28	24	28	21	—	—	—	ACP	S/N	Alive
10	XH Dong	27	29	24.6	21	198	—	—	—	S/N	Alive
11	BN Nonga	29	29	—	56	253	—	—	—	S/N	Alive
12	M. Shihata	36	35	—	—	260	—	—	ACP	S/N	Alive
13	F.M. Mul	32	29	28	5	—	>5.5	>70	—	S/A	Alive

2.Please mention any factors which can impact the outcome and are modifiable.

Thank you for the instruction of the reviewer in report writing. We believe that some factors may impact the outcome as below:

First, we believe that CPB will seriously affect the treatment outcome. Because CPB induces a systemic inflammatory response. Moreover, the processes of cooling and rewarming both decreased blood flow to the uterus and placenta and increased contractions that prompt fetal bradycardia and intrauterine hypoxia. All of these will increase the risk of maternal and fetal death, which are approximately 3% and 20%, respectively.

Vasoconstrictors should be avoided for pregnant patients during the perioperative period. Because it will increase contractions resulting in the fetus hypoxia. Although beta-blockers are thought to reduce aortic dilatation and aortic growth, the evidence is still insufficient and controversial. The common side effects are fetal bradycardia and growth restriction. Besides, Warfarin is considered teratogenic as well. In the present case, the aortic valve was preserved, thus the effects of Warfarin were avoided. In addition, although the patient was treated with beta-blockers and calcium channel blockers, fetal development did not be affected. Generally, the fetuses should be closely monitored to avoid adverse outcomes if mothers are treated

with the above drugs.

(The revised contents were highlighted in yellow).

3.Some specific corrections are required as well: 1. The surgery used simultaneous intubation of the femoral and radial arteries. In this sentence "canulation" may be more appropriate than "intubation". 2. TTE is difficult to perform with the patients' cooperation because of acute chest pain In this sentence "with" should be replaced with "without" 3. instead of preforming hysterectomy was safe and effective in reducing secondary Instead of preforming it should be performing 4. Using cardiopulmonary bypass is dangerous Here "dangerous" may not be appropriate. The message could be that CPB carry serious risks

Thank you for the advice of the reviewers.

1. We have revised the manuscript according to your suggestion.

2. Moreover, to emphasize the validity of the CTA, we have removed the description of other methods of diagnosis.

3. To make the sentence more concise, we change the original sentence "instead of preforming hysterectomy was safe and effective in reducing secondary" in to "the insertion of a Cook balloon was safe and effective in reducing secondary damage."

4. In order to make the sentence more reasonable, we change the original sentence "Using cardiopulmonary bypass is dangerous" in to "CPB induces a systemic inflammatory response."

(The contents revised were highlighted in yellow)

Reviewer 2:

Reviewer's code: 03340662

Reviewer's country: India

This case report appears alright. However, there is too much of repetition in the abstract, introduction and discussion. Please minimize repetition. Please provide demonstrative figures (intraoperative as well as CT angio and post

repair). Please provide the information in the period between gestation week 16 and week 38.

Minor revisions

1. *However, there is too much of repetition in the abstract, introduction and discussion. Please minimize repetition.*

Thank you for your advice. We have revised the manuscript according to your suggestion (the revised contents were highlighted in blue).

2. Please provide demonstrative figures (intraoperative as well as CT angio and post repair).

We thank the reviewer for pointing this oversight.

We have revised the manuscript according to your suggestion. We added preoperative and postoperative CT images and described them. Simultaneously, we also added fetal ultrasound results (the contents revised were highlighted in blue).

3. Please provide the information in the period between gestation week 16 and week 38.

Thank you a lot for your review.

The patient underwent periodic prenatal examination and TTE between gestation week 16 and week 38. No obvious abnormality was found in the mother and the fetus. The patient and the baby didn't receive any further intervention. At the 38th gestational week, the patient delivered a healthy female infant by cesarean section. The Apgar score of the newborn was 10/10/10 (the contents were highlighted in blue).

Reviewer 3：

Reviewer's code: 03491752

Reviewer's country: Jordan

Accept (General priority)

Dear the authors Thank you for writing this case report which outlines a rare catastrophic complication in pregnancy I personally found it very informative and I liked the way of management described I have 3 points to be considered:

1. it would be of high value to describe to the readers the technique of surgical repair (method of cannulation, way of cerebral perfusion, extent of aortic replacement, etc) 2. could you describe the status of the descending aorta, and did you provide any kind of intervention later during the follow up period 3. Did you provide any kind of medications during surgery that augment stabilization of the uterus Thank you very much.

1. It would be of high value to describe to the readers the technique of surgical repair (method of cannulation, way of cerebral perfusion, extent of aortic replacement, etc)

Thank the reviewer for the positive feedback, we have added the technique of surgical repair as follows:

An emergency Sun's procedure was performed with the fetus *in situ*. Our surgical technique was previously described in detail. In brief, a median sternotomy was performed under MHCA with selective anterograde cerebral perfusion (SACP). The right axillary artery (RAA) cannulation was used for cardiopulmonary bypass (CPB) and SACP. The right femoral artery (RFA) cannulation was also utilized to increase the blood flow of the uterus. The distal ascending aorta was cross-clamp and the heart was arrested with perfusion of cold blood cardioplegia. The ascending aorta was replaced during the cooling phase. When the nasopharyngeal temperature reached 25°C, the supra-arch vessels were cross-clamped and SACP was started (5-10 mL/kg/min). A stent elephant trunk (SET) (Cronus ®, MicroPort Medical, Shanghai, China) was inserted into the true lumen of the descending aorta, the anastomosis between the distal end of the four-branched prosthetic graft and the distal aorta incorporating the SET was performed. Therewith, the blood perfusion of the lower body was started via the limb of the prosthetic graft and RFA. Then, CPB was gradually resumed to normal flow and rewarming started. During the rewarming phase, the left common carotid artery, left subclavian artery and innominate artery were reconstructed sequentially. The times of CPB, aortic cross-clamp, and SACP were 152 minutes, 66 minutes and 17 minutes, respectively. During the surgery, the patient's blood pressure was monitored via the radial artery and dorsal pedal artery. We also monitored the fetus using ultrasound and electronic fetal

monitoring. No fetal distress was observed during the procedure. (the revised contents were highlighted in green)

2. Could you describe the status of the descending aorta, and did you provide any kind of intervention later during the follow up period

Thank you very much for your suggestions. We have revised the manuscript according to your suggestions.

Aortic CTA revealed an acute Stanford Type A aortic dissection with the initial tear located at the ascending aorta. The aortic dissection involved the aortic arch and its branches and extending to the iliac arteries. The bloodstream of the vital abdominal organs, including the celiac trunk, the mesenteric arteries, and the renal arteries, came from the true lumen. The diameter of the descending aorta was normal(the revised contents were highlighted in yellow).

The follow-up of the patient and newborn was satisfactory. The baby had no neurological or physiological abnormalities. Moreover, the patient and the baby didn't receive any further intervention. (the revised contents were highlighted in green)

3. Did you provide any kind of medications during surgery that augment stabilization of the uterus

Vasoconstrictors should be avoided for pregnant patients during the perioperative period. Because it will increase contractions resulting in the fetus hypoxia. Although beta-blockers are thought to reduce aortic dilatation and aortic growth, the evidence is still insufficient and controversial. The common side effects are fetal bradycardia and growth restriction. Besides, Warfarin is considered teratogenic as well. In the present case, the aortic valve was preserved, thus the effects of Warfarin were avoided. In addition, although the patient was treated with beta-blockers and calcium channel blockers, fetal development did not be affected. Generally, the fetuses should be closely monitored to avoid adverse outcomes if mothers are treated with the above drugs (the revised contents were highlighted in yellow).

Best regards

Chen Su-Wei MD