

Peer Review File

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Response to Reviewer A

Nice case report, sound presentation, which might benefit from a few more data on preexisting prosthetic valve type and size and well developed discussion. Overall the manuscript is well written and might be further improved by a close spelling check.

Reply: Thanks for your suggestion. We have checked this article and changed some words.

Response to Reviewer B

Thank you for your contribution on the rapidly developing new technology such as tricuspid ViV procedure. It's quite interesting because it is very important advance in our clinical practice when it comes to this type of very morbid patient with TVR failure.

I'd like to raise some concerns with additional information.

Comment 1:

As you mentioned that the patients had high Euroscore, what was the main reason of higher score, except reoperation?

Reply 1: Thanks for your suggestion. We considered this to be our mistake. These two patients were facing right heart dysfunction. These cannot be reflected in the STS score.

Changes in the text: see Page 3, line 88.

Comment 2:

The patients were relatively young. Why they put the tissue valve in initial TVR? (and the indication)

Reply 2: Thanks for your suggestion. Considering that there was no suitable mechanical valve specifically designed for tricuspid valves. When we use other mechanical valves, due to slow blood flow in the tricuspid valve, the pressure generated was insufficient to fully open the valve, which could easily lead to thrombosis.

Comment 3:

Could you please add some description or photo of J-valve system?

Reply 3: Thanks for your suggestion. We apologize for not having complete pictures. The J-valve has been in use for many years and has been extensively reported in other articles (Zhao, Weipeng, Wei, et al. A New Transcatheter Aortic Valve Replacement System for Predominant Aortic Regurgitation Implantation of the J-Valve and Early Outcome[J]. JACC. Cardiovascular interventions, 2015, 8(14):1831-1841).

Response to Reviewer C

Comment 1: In lines 42 & 43 you move from talking about tricuspid valve repair vs replacement to deterioration of an already implanted bioprosthetic valve. This is confusing and there should be a clearer transition of thoughts.

Reply 1: Thanks very much for your suggestion. We have changed some words and lines.

Changes in the text: see Page 2 line 67-68. Page3, line 69-71

Comment 2: Lines 52-58 are not relevant to the topic and may be omitted.

Reply 2: Thanks very much for your suggestion. We have deleted this part.

Changes in the text: see Page 3 line 76-77

Comment 3: Line 64 please site validation for this risk scoring.

Reply 3: Thanks very much for your suggestion. We have put STS score in this article.

Changes in the text: see Page 3, line113 and 126.

Comment 4: How many years old was the bioprosthetic valve?

Reply 4: Thanks very much for your suggestion. One was 16 years and the other is unknown.

Changed text: Page 4; Lines 114-115 and 130-131.

Comment 5: seemingly the transvalvular gradient increased? Please discuss.

Reply 5: Thanks very much for your suggestion. In our opinion, solving the problem of tricuspid regurgitation and maintaining a basic valve function may be beneficial for these patients. This could also improve right ventricular function. For the tricuspid valve-in-valve, the J-valve may cause a reduction in valve opening area.

Changed text: Page 6; Lines 192-196.

Comment 6: seemingly the transvalvular gradient increased? Please discuss.

Sources need to be cited including line 120, line 190-191 where stating average mean gradient should be <10mmHg.

Reply 6: Thanks very much for your suggestion. In our opinion, solving the problem of tricuspid regurgitation and maintaining a basic valve function may be beneficial for these patients. This could also improve right ventricular function. For the tricuspid valve-in-valve, the J-valve may cause a reduction in valve opening area.

Changed text: Pages 6; Lines 195-202.

Comment 7: Though it is interesting to discuss the history of ViV technology, it is not necessarily relevant to your case. Nor is the history of your own institution. It would be more interesting to discuss risks/benefits for ViV replacement compared to surgical replacement, and why ViV was elected. Were these patients at prohibitive surgical risk? Or just elevated risk that was thought to be better treated with ViV.

Reply 7: Thanks for your suggestion. Patients can be replaced with a new valve by the tricuspid VIV technique, avoiding valve regulation, maintaining valve function, and reducing right atrial

load and venous congestion. Many patients may not want to redo valve replacement surgery after circulatory arrest. This technology provided a new option for these patients

Comment 8: Please also discuss technique difference - why would one elect for right atrial approach as compared to jugular or femoral vein access. What are the risks/benefits?

Reply 8: The sheath of J-valve is a device designed for trans apex approach. It cannot be bent noticeably. It was thick and hard, and not suitable for trans vein approach.

Comment 9: Line 194-196: If you are going to comment on improved symptoms and decreasing RA size, please include these points in the case presentation. What were the patients symptoms prior to ViV replacement, what were their echo dimensions and LVEF? If they had heart failure please classify their symptoms into a scoring system.

Reply 9: Thanks for your suggestion. We have added in the article
Changes in the text: see Page 4, line 115-123,129-135.

Comment 10: It will be important to discuss surgical outcomes with bioprosthetic SVD and why it is less favorable, and why ViV should therefore be considered.

Reply 10: Thanks for your suggestion. Patients can be replaced with a new valve by the tricuspid ViV technique, avoiding valve regulation, maintaining valve function, and reducing right atrial load and venous congestion. Many patients may not want to redo valve replacement surgery after circulatory arrest. This technology provided a new option for these patients.

Changed text: Pages 5-6; Lines 146-151, 166-173, 185-187.

Response to Reviewer D

The authors presented two cases of tricuspid ViV implantation using J-valve system. I'd like to congratulate the authors for the good results.

Tricuspid valve in valve has already in practice since several years and large series were published. The current cases don't add to the current knowledge and larger studies are required. Evaluation of the performance of the prosthesis requires a prospective study with a good number of patients. There is already an international registry for tricuspid ViV and hundreds of cases were published.

The authors mentioned that the study was reported according to the Strobe guidelines. This is not specific to case reports and study should be reported according to the Care checklist.

Reply: Thanks very much for your suggestion. We have changed our article.