Peer Review File
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Reviewer A

Comment 1: The authors present here a high-end study on how to correct an initial failed operation and what difficulties are to be expected. These are surgical techniques for very advanced thoracic wall surgeons. Compliments, very well done. However, as the authors rightly point out, it is important to explain how to proceed so that the initial operation is successful, and a revision is not necessary. This should be given more consideration in the discussion.

Reply 1: We appreciate the reviewer's insightful comment, which underscores a pivotal conclusion of our paper such as the successful completion of the primary procedure. We concur on the necessity of further elaborating how common causes of failure in primary surgery can be mitigated. Such additions will undoubtedly enhance the depth and significance of our manuscript.

Changes 1: Added text elaboration starting from line 382 till line 391.

Reviewer B

I would like to congratulate the authors with their manuscript entitled “Revision After Prior Failed Pectus Excavatum Repair: Higher Risks and 1 Greater Complications Than Primary Surgery”. The article is well-written and covers a very interesting and important topic. The authors describe an impressive single institution retrospective case series of 190 revision surgeries after failed pectus repair. In my opinion, this article is of great value for the JTD readership and international pectus society.
I have the following minor comments:

Comment 1: One of the described inclusion criteria for revision surgery is a Haller index of >3,25. The Haller index is the most used index for determination of pectus depth and severity, however, only describes a single 2-dimensional measurement of a mostly complex 3D deformity. How rigidly do you hold to this index during your treatment decision?

Reply 1: We agree with the reviewer's insights regarding the Haller index. Unfortunately, Haller index >3.25 remains one of the criteria in the U.S. for insurance coverage of a pectus surgery case hence our listing it as an inclusion of it on our list. In our mind, compression of the heart and evidence for functional impairment would be a much better indicator for surgery. While the Haller index may hold significance in our current practice, severity of symptoms, results from echocardiogram, respiratory and cardiopulmonary test collectively contribute to our decision-making process.

Change 1: None.
Comment 2: Especially in case of recurrence and/or failed prior treatment, shared decision forming is crucial. Please elaborate.

Reply 2: We thank the reviewer for emphasizing the importance of shared decision-making, particularly within this patient population.

Change 2: A statement was added from lines 393 – 395.

Comment 3: Line 207: 2x “MIRPE”, please rephrase.

Reply 3: This word seemed indeed repetitive.

Change 3: An adjustment has been made accordingly in line 256.

Comment 4: Consider adding an instructional video on the technical aspects of the hammock stich placement.

Reply 4: The reviewer's suggestion is indeed commendable and could enhance the clarity regarding the surgical techniques employed. We have added a short video of the hammock stich placement technique.

Change 4: Video 1 was referenced in line 219.

Comment 5: Prolonged pain is an important factor in adult patients, especially in redo cases. Therefore, an adequate multimodal and multidisciplinary approach is very important. Please elaborate on the pain protocol used and provide expert advice for the readership.

Reply 5: Thank you for highlighting this very important aspect of pectus repair. We explained our pain protocol in the methods section for these cases and added our institutional pain protocol. A statement was also added to the discussion about the importance of pain management.

Change 5: Added Lines 312 – 323 & 440 – 443. Table 1 is our institutional pain protocol.

Comment 6: How was your follow-up regimen?

Reply 6: Thanks for this suggestion. We added our follow up regimen to the new version of the manuscript.

Change 6: We describe the follow-up regimen between lines 126 and 128 in the methods section of the new version.

Comment 7: Line 330: what do you mean with “significant pain”? Which definitions have been used and how has postoperative pain been scored during follow-up?

Reply 7: Thanks to the reviewer's comment, an important question has been raised. We considered significant pain as any case still requiring intervention for pain control or experiencing pain that interferes with day-to-day activities. In our practice, pain follow-up was conducted via open-ended questions or a pain severity scale ranging from 0 to 10, documented during clinic visits and private in-EMR messages.

Change 7: None.

Comment 8: What definition of cosmetic outcome was used and how has this item been evaluated?

Reply 8: A survey was given to patients post operative and they were asked how they felt the cosmetic outcomes were of their repair. They had the option to answer whether they felt they were good or not and state why they felt this. The definition of “cosmetic outcomes” was up to the patient and not defined. This survey was performed without the presence of the surgeon or staff, therefore, could be interpreted in many ways therefore a patient with a very poor previous outcome may rank their outcome very good cosmetically because it was a significant improvement versus it being cosmetically a perfect outcome. Another patient may feel their cosmetic outcome was poor even though it was a significant improvement from the prior surgery, but they still did not feel like their chest looked “normal”. The report or outcomes was just a summary of what the patient’s reported good or very good versus not.

Change 8: None.

Reviewer C

This is a retrospective study on a group of difficult to treat patients who had failed pectus repair and underwent revision. Their experience is well documented and important to add to the body of literature on this subject.

Reply 1: We thank the reviewer for his positive feedback.

Change 1: None.