Peer Review File
Article information: https://dx.doi.org/10.21037/jtd-23-631

Reviewer A

The author wrote about the impact of postoperative cerebrospinal fluid drainage on neurological improvement following thoracic aortic and thoracoabdominal aortic surgery. The author emphasizes that even though preoperative CSFD is not done, postoperative CSFD can improve neurologic outcomes. Also, the author is trying to claim postoperative CSFD is safe with no difference in survival curve between preoperative and postoperative CSFD. In my opinion, this manuscript has some point of originality and has enough integrity in clinical and scientific attitude. But major revision is needed to be published in JTD.

Comments:
1. If the author wants to prove the impact of postoperative CSFD on neurologic outcomes, comparing MMT in 2 groups must be needed. First group with no preoperative and postoperative CSFD, and second group with no preoperative CSFD and postoperative CSFD done. All two groups must be diagnosed with paraplegia.
Reply: We thank the reviewer for this comment. As the reviewer suggested, we compared MMT by dividing the patients diagnosed with paraplegia into two groups as a "no preoperative and postoperative CSFD" group and a "no preoperative CSFD and postoperative CSFD" group. The results are shown in Table 3. Of the patients who developed paraplegia, 13 remained paraplegic and did not undergo CSFD. In contrast, of the 14 patients who underwent postoperative CFSD, 4 showed a slight recovery of MMT and 10 remained paraplegic. The analysis of the results of the present study, as the reviewer indicated, show that CSFD is less effective in patients with complete paraplegia. We have added a table in the revised manuscript and added relevant text in the Discussion section. Thank you very much.
Changes in the text: We added text on Page 6, line 133–136.

2. Survival curve between preoperative CSFD and postoperative CSFD needs more interpretation or author's opinion. Does the author want prove postoperative CSFD is safe or does the author want to prove preoperative CSFD is unnecessary?
Reply: Thank you for pointing this out. We did not express our results clearly. Figure 4 compares the survival curves of patients with preoperative CSFD and those with postoperative CSFD. The data that we derived from this comparison show that postoperative CSFD is safe.

As pointed out in Comment 1, the effect of postoperative CSFD may be insufficient if only paraplegic patients are included in the analysis. If postoperative paraplegic and paraplegic patients are included, the effect of postoperative CSFD may be sufficient, as shown in Figure 2. Figure 2 shows that postoperative CSFD effectively restored MMT in patients with postoperative paraplegia and paraplegia-sufficient paraplegia. The survival rate of patients who received postoperative CSFD did not change compared with those who received preoperative CSFD, indicating that CSFD is safe. The above information has been added to the Discussion section.
Changes in the text: We added text, in accordance with the reviewer's recommendation, on

Page 8, line 191–201.

Reviewer B

The Authors reported their experience to evaluate the neurological efficacy of postoperative cerebrospinal fluid drainage in patients undergoing thoracic aortic and thoracoabdominal aortic surgery. They concluded that postoperative CSFD significantly improved the neurological prognosis in these patients, but 25% of the patients remained paraplegic despite postoperative CSFD

Although the question raised by the author is pertinent and legitimate, the methods and especially the number of cases reported does not allow for a reliable answer. The data currently presented are indicative however do not increase our knowledge in the field. That question has indeed been raised by many authors before and a large study would be needed.

Reply: Thank you very much for your valuable comments. Your points are valid and we have taken them into consideration.

We reported that postoperative CSFD improved MMT in 75% of the patients; however, 25% of the patients continued to have paraplegia. In this study, postoperative CSFD was performed in patients with paraplegia and paraplegia-incompetent paraplegia. We hope you will find this information useful.

We agree that large studies with a large number of cases are necessary to provide reliable answers. However, in this study, we examined the cases at a single center in detail. By confirming the efficacy of postoperative CSFD, we considered it possible to examine its efficacy compared with preoperative CSFD. We examined the efficacy in 61 patients who underwent preoperative CSFD in this study and found only 1 case of paraplegia. In contrast, 6 of 24 (25%) postoperative CSFD patients remained paraplegic, as described above. Considering this finding, postoperative CSFD may be considered ineffective; however, the 75% of the patients who improved with postoperative CSFD would likely have become paraplegic without CSFD. The MMT outcomes of the 24 patients who received postoperative CSFD have been followed closely and are scientifically credible.

Your comments are very convincing. We have considered your comments and made changes in the discussion, accordingly. I would appreciate your consideration.

Changes in the text: We added text to the discussion, in accordance with your recommendations, on Page 8, line 191–201.

Reviewer C

First of all, I'd like to appreciate your valuable work to find the way to resolve very complex problem of paraplegia after thoracic aortic surgery.

However, I have some questions which need to be solved.

#1. As your title showed the impact of "postoperative" CSF drainage, there is a discrepancy of study vs control group. Do you mean the comparison between preoperative and postoperative CSF drainage or CSFD vs non-CSFD comparison?

Reply: Thank you very much for your comment. The former is correct. This study aimed to compare preoperative and postoperative CSF drainage.
Changes in the text: We added a sentence on Page 3, line 54–55.

#2. Also, there is a discrepancy between objective and conclusion. Please check.
I think the expression of "significant improvement" is not adequate for remaining paraplegia of 25%.
Reply: Thank you very much for your comments. Reviewer A and Reviewer B raised similar points. We reported that 25% of the patients who received postoperative CSFD remained paraplegic, but 75% of the patients who would likely have been paraplegic without CSFD may have improved. Accordingly, we described the "75% improvement" as "significant improvement". However, as you pointed out, considering the fact that 25% of the patients remained paraplegic, the phrase "significant improvement" is inappropriate.
Changes in the text: We added text, in accordance with your recommendation, on Page 8, line 191–201. We also deleted the word "significantly" on Page 2, line 31 and 36; Page 6, line 132; Page 8, line 188; and Page 18, line 288.

#3. There is quite different incidence of paraplegia according to the type of DTA or TAAA. As your data include GR and TEVAR, there is intrinsic heterogeneity, especially indication of preop. CSFD in terms of AKA. What is the reason of the difference indication between GR and TEVAR group?
Reply: Thank you very much for your comment. As you pointed out, this study was a 17-year analysis at a single center and included all patients who underwent dissection, true aneurysm, replacement, and stent graft placement; therefore, the cohort is definitely heterogenic. This study was performed to evaluate the primary endpoint of the efficacy of postoperative CSFD in patients who underwent thoracic and thoracoabdominal aortic procedures. The study period spanned 17 years, and the indications for GR and TEVAR have changed over time. In the TEVAR group, preoperative CSFD was not performed because of the minimally invasive nature of stent grafting and the lower frequency of paraplegia compared with GR.
Changes in the text: We added relevant text on Page 4, line 87–89.

#4. Nowadays, even in the very complex case of type II TAAA, average postoperative paraplegia rate is around 8-10% in many centers. What is the proportion of type II TAAA in your patients? Please make it sure to show the distribution of anatomical subtypes.
Reply: Thank you for your comment. Six patients (7% of the total) had Crawford type II TAAA; four received preoperative CSFD and were free of paraplegia. The remaining two patients received preoperative anticoagulants, which precluded preoperative CSFD. One of the six patients developed postoperative paraplegia and remained paraplegic despite postoperative CSFD. The anatomical subtypes are described in Table 2.
Changes in the text: We added text, in accordance with your recommendation, on Page 5, line 112 and in Table 2.