Peer Review File

Article information: https://dx.doi.org/10.21037/vats-22-43

Reviewer A

A review of the manuscript entitled "Experiences of broncho-pleural fistula after pulmonary resection in minimally invasive approach and open thoracotomy."

In a scientific article that I received for review, the authors try to compare the incidence of broncho-pleural fistula in groups of patients operated in open and minimally invasive approach. The authors present their experience on a very large number of patients operated in a minimally invasive approach, which I would like to congratulate them on.

Unfortunately, the study has significant methodological errors. The groups of MIA and open lung resections are poorly balanced, with all pneumonectomies in the open group. This imbalance resulted in more common occurrence of BPF in the open group, which should be interpreted as a bias that significantly affected the results.

If the authors want to compare minimally invasive access with open access, the groups of patients offered in these accesses should be similar, which can be achieved in many ways.

Reply: Thank you for important suggestion. We compared the patient background with and without BPF. The incidence of BPF was higher in the open thoracotomy group, the pneumonectomy group, and the benign disease group. Multivariate analysis with these three items revealed that pneumonectomy was an independent risk factor. Pneumonectomy is not performed under MIA at our institution. The incidence of BPF in the 189 patients in the open thoracotomy group, which excluded total pneumonectomy, was 1.1%, slightly higher than in the MIA group, but there was not statistically significant between open and MIA. Although pneumonectomy is the most at risk of BPF, the number of cases of BPF except the pneumonectomies was small, only 3 cases, so we considered the comparison after correction by propensity score matching could not available. We considered there will be not any difference in the frequency of BPF between MIA and open thoracotomy, we describe that the statistical analysis is insufficient as one of the limitations.

Changes in the text:

1. Table 1 was changed to describe the background comparison with and without BPF.
2. Table 2 was added which shows the results of the multivariate analysis to identify risk factors for BPF.
3. We changed the sentence in Statistical analysis (see Page10, line 24－Page11, line10).
4. We added the part with the result of analysis in Abstract (see Page3, line22-23) and in Result (see Page7, line26-27, Page8, line1-4).

5. We added the above description in Discussion (see Page3, line 27-)
6. We changed the conclusion both in Abstract (see Page3, line 27-) and Main text
 (see Page11, line22-26).

Reviewer B
In their paper, the authors examined a challenging topic: the occurrence of one of the most critical complications in thoracic surgery, the bronchopleural fistula (BPF), after different surgical approaches. The size of the group that the authors examined is impressive. We can see the vast experience in thoracic surgery and the unique operating value of the center where this study was carried out. Currently, not many studies adequately address the problem of BPF occurrence in the context of the approach. Congratulations on your excellent results, low fistula percentage, and various techniques used. Before being accepted, however, the paper requires major revision.

Abstract
Line 8 I suppose the abbreviation MIA should be explained in that place in the Abstract.
Patients and Methods I suggest adding the types of approaches in that segment: MIA, RATS, VATS, etc.
Reply： Thank you for the suggestion.
Changes in the text: We added an abbreviation MIA and changed the part of approaches to Patients and Methods section in Abstract (see Page3, line 10-12).

Line 29-30 (Conclusion) - The sentence "The coverage of bronchial ..." - I do not understand: where does this conclusion come from? You have you not assessed it in your article with the appropriate statistical tests. In my opinion, you are not entitled to such a conclusion in this particular paper.
Note to the entire article. There are no citations in some places where quite essential statements are made.
Reply: Thank you for your comment. The incidence of BPF in the 189 patients in the open thoracotomy group, which excluded pneumonectomy, was 1.1%, slightly higher than in the MIA group, but there was not statistically significant between open and MIA. No statistical analysis was performed on the coverage, so we will remove the sentence as you suggested.
Changes in the text：We changed the result of analysis (see Page3, line22-23) and the conclusion (see Page3, line 27-) in Abstract.

Please, add relevant citations and data sources. For example:
Introduction
Line 6 sentence part: "...the standard surgical technique for early-stage lung cancer."
Citation?

Reply: Thank you for your important suggestion. Pulmonary resection under VATS is widely used, but whether it is gold standard or not.

Changes in the text： We deleted the part.

Line 12 sentence part: "...is experienced with MIA" Citation?

Reply: Thank you for your comment.

Changes in the text： We added the references (5-7).

Line 16 sentence: "Conversely..." Citation?

Reply: Thank you for your comment.

Changes in the text： We added the references (8).

Discussion

Line 4 "Its occurrence is more..." Citation?

Reply: Thank you for your comment.

Changes in the text： We added the references (9).

Overall, the discussion is pretty well written, but one piece that needs some fine-tuning is buttressing the bronchial stump. In my opinion, the part describing the bronchial stump's buttressing should be corrected and supplemented with citations. Indeed - in patients with risk factors, Sfyridis et al. (DOI: 10.1016/j.athoracsur.2007.02.088), reported a profit in a randomized trial, but as shown in one of the newest studies (DOI: 10.21037/jtd-22-240), the actual advantages in all patients remain controversial, as well as the choice of the ideal buttressing tissue.

Reply: Thank you for your very useful suggestion. Since the coverage could not prevent BPF completely in our experiences, the merit for coverage and tissue selection is controversial, as you pointed out.

Changes in the text: These 2 reports were added to refences (23,26). We added the description in Discussion (see Page10, line6-23).

There is no citation after the sentences: "Additional procedures, such as .." and "The autologous tissue covering ...". Please complete them, you can use some of those I mentioned.

Reply: Thank you for your important suggestion. "Additional procedures, such as .." is our consideration from experiences.

Changes in the text: We added the word "It is considered" in Page10,line 3, and added the citation (26) to "The autologous tissue covering ..."(see Page 10, line20-22).

Case presentation - in my opinion, this segment is entirely unnecessary. Complete removal may be considered. Instead, think about some summary - first of all, gathering in the text or table how bronchopleural fistula was treated.

Reply: Thank you for your important suggestion.

Changes in the text: We deleted this case presentation part and added the

summary and treatment in Figure legends and Table3.

I would also have a technical question:
- how did you treat BPF? Do you prefer fenestration (creating a bone window in the chest, through which betadine-soaked dressings are placed and replaced every day for several months), stents, or mentioned fibrin glue? In your opinion, is the treatment of fibrin glue an effective method of treating BPF?
Reply: In our department, fenestration is the first procedure and gauze drainage is continued every day. Then closure of BPF with filling the cavity using a muscle and/or omentum is performed. I have one successful experience with stents, but no cases with Fiblin glue, which I think whether it is effective or not. We think NPWT is effective to reduce the size of the large chest cavity if the fistula is small or temporally closed using around tissues. As for case 1, a completion peumonectomy was forced to choose due to the risk of pulmonary artery bronchopleural fistula because of the presence of whole blood sputum.
Changes in the text: We added the part about the treatment of BPF in Mehods (see Page6, line27-Page7, line 3) and in Discussion (see Page11, line3-9).

Limitations
In my opinion, the limitation in your case is the selection bias - I understand that the surgeon chose, for example, the type of tissue for the buttressing of the bronchial stump or the access method based on his experience?
Reply: As you mentioned, the type of tissue and method of coverage or approach were selected at the surgeon's choice. This selection bias is the limitation.
Changes in the text: We added and changed the description (see Page11, line 10-15).

Conclusions
I think the Conclusions segments, both in the abstract and in the main text, require some rewriting. This part should contain the essential conclusions from your study that you have researched using scientific methods! You have pretty interesting results - it should not be a problem, but the conclusions are unacceptable in this form.
Reply: Thank you for your important suggestion. Please see the second comments.
Changes in the text: We changed the conclusion both in Abstract (see Page3, line 27-) and Main text (see Page11, line22-26).