

Peer Review File

Article information: <https://dx.doi.org/10.21037/vats-23-51>

Reviewer A

Review of the paper entitled: "Pulmonary resection using polyglycolic acid sheet without fibrin glue and its surgical complications" by Hideki Endoh et al. Department of Thoracic Surgery, Saku Central Hospital Advanced Care Center, Japan.

The authors reported their experience with the application of polyglycolic acid (PGA) sheet without fibrin glue on the parenchymal suture after lung resection to reduce the incidence of air leak and consequent complications (prolonged air leak, longer chest tube maintenance, empyema and so on...). However, the conclusion of the paper are not in line with the title and the results: the authors did not use the fibrin glue and so any comment or judgment on its use are not corroborated by the reported results. Only a direct comparison between two techniques, better with randomization, can show the pro and cons of the two procedures. Then, I suggest reviewing completely the paper from the title to the methods, results and so on.

These are my comments and suggestions that could improve the paper:

1) the title should be revised in the light of results and I suggest removing the comparison with the fibrin glue because it is not used into the study;

Reply 1: Thank you for your suggestions. We wish to emphasize that pulmonary resection without fibrin glue is tolerable, and the title does not include a description of a comparison.

2) in the abstract, some results are inserted into the methods paragraph;

Reply 2: Thank you for your suggestions. We have changed the methods and results description (lines 36-37).

3) the paragraph methods should be completely revised and rearranged: first of all I suggest including, in a clear way, inclusion and exclusion criteria; secondly the period of analysis; next I suggest excluding pulmonary resection for **infection or empyema leading to** a more homogeneous study cohort;

Reply 3: Thank you for your suggestions. We have changed the methods section (lines 72-76) and reanalyzed the cases omitted due to infection or empyema. Therefore, we have revised the manuscripts regarding the numbers of cases and statistical results.

4) the paragraph results should be sub-divided into: a) patient population and procedures; b) post-operative results; c) complications in detail, complication rate; d) regression analysis on complications of PAL;

Reply 4: Thank you for your suggestions. We have changed the results section accordingly (lines 116, 125, 130, 143).

5) why did the authors use non-parametric analysis with such great study population? Were all the variables not normally distributed?

Reply 5: Thank you for this question. I think that a nonparametric analysis is a more robust method of statistical testing, and maybe some outlier numbers existed in drainage duration and hospital days. There were also usually no numbers of 0 or 1 in drainage duration and hospital days, and these variables might not be normally distributed. That was the reason for an analysis using the Kruskal-Wallis test, and we have added a description of our use of a t-test to the methods section (lines 107, 135-141).

6) I suggest including n and percentages into the tables and also confidence index into regression analysis table;

Reply 6: Thank you for your suggestions. We have added the 95%CI values to Table 3.

7) what about the costs?

Reply 7: The redemption price of Neobeil sheet is 167 yen per 1cm² (10x5cm; 8,350 JY). If fibrin glue is used, usually a 3ml kit with a 33,459 JY cost is needed. This sentence was added to the Introduction section (lines 60-61).

8) I suggest excluding patient who did not have air leak at the end of surgery to better understand the role of the PGA sheet in this setting and in particular in which kind of patients it could be useful.

Reply 8: Thank you, we agree with your suggestion. We apologize that the exact number could not be examined during this study, although cases without air leaks were thought to have all been cases with no reinforcements necessary.

Reviewer B

I read with interest the manuscript entitled “Pulmonary resection using polyglycolic acid sheet without fibrin glue and its surgical complications” by Endoh and colleagues. Herein, authors tried to evaluate the role and the efficacy of polyglycolic acid sheets on the stapler line without using fibrin glue for pulmonary resection to prevent eventual air leak.

They concluded that pulmonary resections using PGA sheets without fibrin glue is effective in preventing air leak and hence to reduce postoperative drainage duration and hospital stay.

The article is quite interesting and well-written but there are some issues and concerns that should be solved.

In the Introduction authors should elucidate, more in detail, their daily use of PGA devices (with

Reply 9: Thank you for your comment. This article has introduced our daily use of PGA (lines 83-89), and some sentences were added (lines 60-61).

In Patient and Methods paragraph authors should explain if patients were consecutive or selected ones, if they have ever used the same PGA sheet in the 6 years period and why the considered COPD as complication and not as a comorbidity.

Reply 10: These cases were consecutively performed, and a statement in this regard was added to line 71. We used the same PGA sheet over the 6-year period, and another PGA sheet that was released later (Neoveil Nano) was not used in these cases. This information was added to line 99. COPD was considered a comorbidity, and the sentence in line 76 was adjusted accordingly.

Moreover, with the aim of evaluate the post-operative air leak, it could be interesting analyzing the impact of the PGA on wedge resections more than on lobectomies that could sometimes have complete fissures with a reduced air leak rate.

Reply 11: Thank you for your comment. As you mentioned, sometimes wedge resections have been experienced to lead to more fissures in interstitial pneumonia or emphysema cases; however, these cases were too few to analyze in this study period.

More attention to the lung features (radiological or intraoperative) should be reported, since in emphysematous or bullous lung is quite common this kind of post-operative complication.

Reply 12: Thank you for suggesting this important point. However, we apologize that we were not able to analyze the intraoperative emphysematous features from the operation records. Therefore, we analyzed the pulmonary function tests of COPD as a substitute for the radiological bullous features.

Since there is not a comparative study, Table 2 with its statistical analysis is not adequate to the study, moreover there is an important selection bias because patients who required a suture have been patient with an important air leak intraoperatively identified; so with a higher probability of having post-operative complications and a longer hospitality.

Reply 13: Thank you for this important suggestion. We added a sentence regarding the study limitations (lines 205-206).

Authors should explain more in details their results of Uni and Multivariate analysis.

Reply 14: Thank you for your comment. Some sentences have been added about the univariate and multivariate analyses (lines 144-147).

Discussion should be improved by the analysis of this recent study (PMID: 36910073)

Reply: Thank you for your important suggestion. In the Discussion section, some sentences have been added (lines 164-166), as well as reference 7.

Conclusion should be modified since no comparative analysis has been conducted with the fibrin glues, so not inferior is an incorrect definition.

Reply 15: Thank you for the comment. The wording has been changed accordingly (line 213).

Reviewer C

Thank you for this paper on an interesting topic. This is a well-written paper on the usage of PGA sheaths with or without fibrin glue in the prevention of postoperative bronchopleural fistula. However, in the current era of advanced staple devices, the routine use of sealants for staple line reinforcement is, in my opinion, excessive at best. I am not sure how this paper adds to current practice.

I would suggest these minor revisions:

Line 67 should be comorbidities, not complications.

Reply 16: Thank you for your comment. That sentence has been changed accordingly (line 76).