

Peer review file

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Reviewer A

Comment 1: I would include your incidence of AGF (0.4%) in the manuscript, as this is useful information.

Reply 1: Thanks for this good suggestion. We added the incidence of AGF (0.4%) in the manuscript.

Changes in the text: we have modified our text as advised (see Page 2, line 25 and Page 8, line 159)

Comment 2: Can you please clarify the reasoning for the classification scheme? Type 1 and 2 are anatomic descriptions, and type 3 is a clinical description. Wouldn't there be crossover, since anyone in type 1 or 2 could end up in the mechanical ventilation (type 3) group? In my mind, it makes more sense to classify those needing mechanical ventilation as either 1b or 2b (anatomical description of fistula + need for vent)

Reply 2: Yes, we agreed with you that it's more reasonable to classify into two types, mechanical ventilation is just a treatment option, which decided by the doctors and patient's family, it should not considered as a classification factor. According to the anatomical classification, we classified AGF into type 1 and type 2. There are obvious differences in the

treatment and prognosis between type 1 and type 2. After conservative treatment, 1 case (1 / 12) needed mechanical ventilation, with a mortality rate of 2 / 12 in type 1 AGF; and 4 cases (4 / 14) needed mechanical ventilation, with a mortality rate of 9 / 14 in type 2AGF. This classification method may provide potential basis for clinical treatment decision-making.

Changes in the text: we have modified our text as advised (see Page 1, line18-19 and page 9, line 171-179)

Comment 3: In your abstract, your conclusion is basically just a repeat of the methods. You do not need to redescribe the classification here.

Reply 3: Thanks for your suggestions, we revised in the revision manuscript.

Changes in the text: we have modified our text as advised (see Page 2, line30-36)

Comment 4: The first line of your introduction describing the "substantial morbidity and mortality" should have references.

Reply 4: We added a reference as you suggested.

Changes in the text: we have modified our text as advised (see Page 3, line43).

Comment 5: I think that Video 1 showing a successful robotic esophagectomy is unnecessary. Unless it shows an intraoperative injury leading to an AGF, it is not relevant to this paper. (I don't have access to it to review). A video of one of your surgical repairs would be better.

Reply 5: Yes, agreed, we deleted the Video as you recommended.

Changes in the text: we have modified our text as advised (see Page 5, line86-87)

Comment 6: I think it is useful to include in table 1 the presenting symptoms prior to diagnosis of AGF for each patient. Further, on lines 87-89, I would specifically note the number of patients who had failure of NGT to create negative pressure.

Reply 6: We added the initial symptoms of each patients in table 1 and 6 patients had failure of NGT to create negative pressure. Although this is a very useful diagnostic sign, it can only be observed in patients with NGT and some patients occurred AGF after extubation of NGT.

Changes in the text: we have modified our text as advised (see table 1 and Page 5, line 102, Page 6, line 103).

Comment 7: The second paragraph of the results section is a little confusing the way it is written - it comes off as you're describing two different types of fistula. I'd recommend rewording Line 151-152 as "Of those 5 patients that survived, three were treated with....".

Reply 7: Thank you for your advice. We have revised it according to your suggestion.

Changes in the text: we have modified our text as advised (see Page 9, line 168-170).

Comment 8: Was there any difference in type of fistula and risk of mortality based on when the patient was diagnosed based on date of esophagectomy?

Reply 8: We started VATS esophagectomy in 2009. Before 2009, 10 cases of AGF occurred(8 cases of type I , 2 cases of type II) and 4 patents died; after 2009, 16 cases of AGF occurred(9 cases of type II , 7 cases of type II) and 6 cases died. There was no significant difference in mortality (Fisher's exact test, $P = 1.000$). The incidence of type II increased (20% vs 43.8%), but there was no significant difference (Fisher's exact test, $P = 0.399$).This may be due to the application of energy instruments, but we don't have the evidence.

Changes in the text: The main purpose of this study was to classify the AGF and provide reasonable choice in therapy strategy according to classification, so we don't involve these contents in the manuscript.

Comment 9: Line 48 - "literatures" should be "literature." Line 81 - "Elven" should be "Eleven" Line 117 - "cervix" relates to gynecologic anatomy. This should be "cervical neck". Line 158 needs a period/space between "repairThere". Line 189 - "2was" should be "2 were".

Reply 9: We are ashamed for these errors, thanks very much.

Changes in the text: We have modified our text (see Page 3, line 58; see Page 5, line 93; see Page 9, line 179; see Page 11, line 210).

Comment 10: Please include a legend of your figures (especially figure 2 which is hard to follow without jumping back and forth to the manuscript).

Reply 10: The legend was added in the revised manuscript

Changes in the text: The legend was added in the Figure legend part.

Comment 11: Table 1 includes cause of death for some patients, but not all.

My assumption would be that it was due to aspiration pneumonia in most cases. It should still be listed however (either here or in a separate table).

Reply 11: Yes, you're right, we listed the cause of death for all cases.

Changes in the text: we have modified table as advised.

Reviewer B

Comment 1: The classification stated is not entirely "anatomical" as type III is clearly treatment strategy related regardless of its anatomical relationship. It is obvious that those patients that required mechanical ventilation are having poorer prognosis than those who do not.

Reply 1: Yes, we agreed with you and Reviewer A also asked the same question. It's more reasonable to classify into two types, mechanical

ventilation is just a treatment option, which decided by the doctors and patient's family, it should not be considered as a classification factor.

Changes in the text: we have modified our text as advised (see Page 1, line18-19 and page 9, line 171-179).

Comment 2: Can you specify the pathophysiological reasoning for differentiating Type I & II fistula and why would they have different treatments?

Reply 2: According to the anatomical classification, we classified AGF into type 1 and type 2. Pathophysiologically, in type I AGF patients, we hypothesized that gastrointestinal fistula occurs first, and gastric juice corrodes the airway down the mediastinum, corrode the airway and lead to airway fistula. The diameter of the fistulas in type I is less than 5mm in most cases, so the drainage tube can occupy the fistulas to prevent the gastric juice from entering the airway and also can timely drainage the digestive fluid out of the airway. In type I AGF patients, the fistula of digestive tract directly corrodes the airway and the size of the fistula is usually larger (with a diameter of more than 0.5cm or even 3cm). Transnasal fistula drainage is usually ineffective for these cases.

Changes in the text: we have modified our text as advised (see Page 5, line89-93).

Comment 3: Apart from the location of the fistula, would the size of the fistula matter?

Reply 3: Yes, of course, size really matters. The cases with larger size of fistula rarely healed simply by transnasal fistula drainage.

Changes in the text: we have discussed the meaningful of the size in our text (see Page 12, line236).

Comment 4: Was there any case that operation was attempted but failed to proceed due to adhesion/technical difficulty?

Reply 4: Most of these operations are challenged because of adhesion. The fistula orifices may have been enlarged when the surgeons attempted to free the gastric conduit. In this situation, since a gastric fistula can be healed with a gastrostomy and mediastinum drainage, gastrostomy through the fistula orifices is recommended for most gastric fistulas in the thoracic and all gastric fistulas in the neck.

Changes in the text: we have discussed the surgical techniques in our text (see Page 11, line222 to 228).

Comment 5: It would be easier to understand by showing a flowchart of the number of patients in each type and their treatment received as well as their final outcome.

Reply 5: Thanks for this good suggestion. We added a flowchart as Figure

3 in the revision.

Changes in the text: We added Figure 3 as advised.

Comment 6: Although risk factors for AGF could not be analyzed as mentioned in the discussion section, could factors be identified affecting the outcome of treatment in AGF?

Reply 6: Yes, we identified that the degree of airway contamination, which leads to the degree of aspiration pneumonia, is the key to affect the outcome of treatment in AGF.

Changes in the text: we discussed the risk factor of treatment in AGF (see Page 12, line233-234)

Comment 7: Line 65-66, the outcome of the analysis/patient number should be put in the "results" section.

Reply 7: Thanks for your advice, we modified that in the revised version.

Changes in the text: (see Page 4, line77-78)

Comment 8: Please proofread for spelling mistakes Line 34, 81, etc.

Reply 8: Thank you for reminding me of this. We really sorry for that. we have made the corresponding correction.

Changes in the text: We have modified our text (see Page 3, line 43,58; see Page 5, line 93; see Page 9, line 179; see Page 11, line 210).