

Peer Review File

Article information: <http://dx.doi.org/10.21037/apm-20-1401>

Reviewer A

Initially, I appreciate you for the chance to review this manuscript entitled “The effect of a novel slow-flow irrigation drainage tube on anastomotic leakage and empyema after the resection of esophageal or gastroesophageal junction cancer”.

Anastomotic leakage is still the important problem to overcome after esophagectomy for surgeons. Therefore, this manuscript seems to include some beneficial information for the treatment the leakage.

My comments are described below.

1. I am sure that the chest drainage tube with double lumen to irrigation has been commercially available. What is the differences between the tube you devised and the commercial available tube?

Reply 1: Thank you for your question. The commercial available double lumen tube is relatively fixed. The novel slow-flow irrigation drainage tube we devised is flexible in several aspects. Firstly, the postoperative patients are regularly drained with the traditional tube. Once anastomotic leakage occurs and patients condition could withstand irrigation, the new-designed slow-flow irrigation drainage tube could be installed from the end of traditional tube. This procedure avoids the removal of the primary traditional tube and inserting thick tube once again. It is a safe and easy way to fulfill the assemble and avoid bringing pain to patients. Secondly, the novel irrigation tube could directly reach the pus cavity along the primary traditional tube, without the guidance of CT or ultrasound, which offered precise irrigation at low cost. Thirdly, the novel irrigation drainage tube is also disassembled easily, without destroying the structure and position of primary traditional tube, which is helpful in adjusting the treatment whenever patients’ condition change. Thus, the novel slow-flow irrigation drainage tube is quite more convenient than the commercial available tube.

2. In the results, you mentioned the difference of the hospitalization cost but there was no significant difference in Table 3. It should not be described when the statistical difference could not be certified.

Reply 2: Thank you very much your advice. We revised the description in the results. Changes in the text: We replace the sentence “Meanwhile, the hospitalization cost was much higher in (I-) group than that in (I+) group.” with “Meanwhile, the application of the novel slow-flow irrigation drainage tube caused no more economic losses at

hospitalization cost.” in line 232-234.

3. As the author described in the limitation of this study, the patients background including diabetes mellitus, steroid use, nutritional status, liver disease etc. should be described in the manuscript. This is very important for healing.

Reply 3: Thank you for your advice. We added the related description in the manuscript.

Changes in the text: We added the sentence “No patient suffered diabetes, chronic liver diseases, using of steroid or malnutrition.” In line 200-201. Also, “All the patients received the nutritional support with nasal feeding” in line 123.

With best regards.

Reviewer B

This is an interesting retrospective study to assess safety and efficacy of a system of irrigation/aspiration for postoperative empyema after esophageal resection. The study design is retrospective, proof-of-concept type, with a small sample-size. Therefore, the results may not be generalizable. I have the following comments/questions:

1)line 112-113, you state that the system was inserted along the path of the primary chest drain, please give some more technical details of this procedure (use of tube exchanger, etc);

Reply 1: Thank you for your suggestion. We added the detailed description in Material.

Changes in the text: We added the sentences “A little pinhole is made in the double perfusion cannula joint, through which the epidural catheter is placed into the empyema cavity directly along with the primary pleural drainage tube and saline solution is irrigated through the epidural catheter into the empyema cavity at bedside.” in line 152-155 and “The special joint design could adjust the irrigation tube depth in the empyema cavity and prevent fluid leakage with a silica gel spacer at the pinhole for inner irrigation tube to insert in.” in line 165-168.

2)please indicate the flow-rate of infusion and describe the type of flow-meter you used;

Reply 2: Thank you for your question. We added the detailed description in Material.

Changes in the text: We added the sentences “We used traditional infusion pump to control the speed and volume. At early stage, the pus was relatively thick and hard to be drained. Then, we kept the irrigation at the largest speed and maintained the irrigation throughout the day. Once the drainage fluids become relative clean, we adjust the irrigation speed to 120-150ml/h and reduce the irrigation volume to 1000 ml/day.” in line 172-177.

3) In the results section, you should first report your overall surgical experience and the leakage rate that occurred during the study period;

Reply 3: Thank you for your question. We added the detailed description in Result. Changes in the text: We added the sentences “In our centre, we operated about 500 esophagectomies each year. The incidence of intrathoracic anastomotic leakage after esophagectomy is 3%-4% during last decade.” in line 192-194.

4)Table 1 is unnecessary;

Reply 4: Thank you for your advice. We remove this table.

5)Please revise extensively the english language;

Reply 5: Thank you for your suggestion. We read the manuscript carefully and made some revision.

Changes in the text:

- 1)We added “for postoperative anastomotic leakage” in line 244.
- 2)We replace the sentence “we herein report our simple method and examine its efficacy and safety in a retrospective study.” with “ we report the application procedure and detect its efficacy and safety in a retrospective study.” in line 97-98.
- 3)We replace the sentence “This study enrolled 42 patients, who underwent radical resection for esophageal or gastroesophageal junction cancer from January 2012 and June 2018, and suffered postoperative anastomotic leakage.” with “This study enrolled 42 patients, who underwent radical resection for esophageal or gastroesophageal junction cancer and suffered postoperative anastomotic leakage, from January 2012 and June 2018.” in line 108-111.
- 4)We replace the sentence “The diagnosis of anastomotic leakage was verified with endoscopy, oral methylene blue being drained through the pleural tube, or oral contrast agent flowing outside the digestive tract detected with CT.” with “The diagnosis of anastomotic leakage was confirmed with at least one of the following three ways: endoscopy, oral methylene blue being drained through the pleural drainage tube, or oral contrast agent flowing out of the digestive tract detected with CT.” in line 119-122.
- 5)We replace the sentence “Reoperation for repairing the fistula was not applied for the reason that the persistent local infection was prone to destroy the recovery of fistula.” with “Reoperation for repairing the fistula was not conducted for the reason that the local chronic inflammatory was prone to interfere the recovery of fistula.” in line 135-136.

6)Consort checklist is usually required for RCT.

Reply 6: Thank you very much for the requirement. We fulfilled the the Consort checklist this time.