# Peer Review File

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**Reviewer Comments**

*The authors summarized the transition of esophagectomy for esophageal cancer and discussed a novel mediastinoscopic esophagectomy as the radical treatment for esophageal cancer. Finally, they concluded that this procedure is still under development, but it has potential to be the ultimate procedure for esophagectomy. I hope novel surgical procedures will be developed and that surgical outcomes will improve. However, in the present study, there are some issues unclear as the review article about mediastinoscopic esophagectomy. Therefore, this manuscript should be carefully revised to be suitable for publication in DMR.*

*Major Comments*

*1. The authors demonstrated the transition of esophagectomy. However, the contents are partially unclear and difficult to be compared. Can you summarize the contents in Table, particularly about the target lesion, approach, lymphadenectomy, invasiveness, radicality, safety, risks, and so on ?*

**Response:** As suggested, we have now summarized the procedures for esophagectomy in Table 1 concerning the target lesion, approach, lymphadenectomy, invasiveness, radicality, safety, and specific risks.

*2. In the present study, the authors concluded that mediastinoscopic esophagectomy has potential to be the ultimate procedure of the treatment of esophageal cancer. However, do the authors suppose esophagectomy should be done by mediastinoscopic procedure instead of right thoracic approach, or this approach should be done particularly for some patients with severe risks for surgery or difficulty to the thoracotomy? These points should be shown clearly.*
*Furthermore, in Table 1, the authors mentioned the characteristics of each approach for esophagectomy. However, how were they evaluated? Thoracotomy is invasive, but it is radical and safe procedure compared to other approach. I think it is good approach. The difference between + and ++ is unclear. And why trans-hiatal approach is not safe but less invasive? Is it only due to thoracotomy or not?*

**Response:** In the future, esophagectomy should be performed via a mediastinoscopic procedure in as many cases as possible, avoiding the transthoracic approach. However, this procedure is performed in only a few institutes at present, for several reasons. First, this procedure requires a high degree of understanding of the mediastinal anatomical structures. Second, it requires a high level of surgical technique, as the working space is narrower than that used for thoracoscopic esophagectomy.

While the reviewer mentioned that the difference between "++" and "+" was unclear, thoracotomy is considered the most invasive type of esophagectomy. Thoracoscopic procedures are considered to include transthoracic procedures with some invasiveness, thus

enforcing the use of one-lung ventilation, which results in some destruction of the thoracic wall, or prone positioning. With a transhiatal approach and mediastinoscopic esophagectomy, such efforts are unnecessary, causing them to be considered less invasive. In addition, since the expression "less invasive" is difficult to understand, we revised the term to "Invasiveness" and altered the parameters accordingly.

Concerning radicality, thoracotomy and thoracoscopic esophagectomy are considered radical (++), as the surgical field of view is widely maintained in these procedures. Mediastinoscopic esophagectomy depends on the skill of the operator due to the narrow surgical field of view. We previously reported a feasibility study of mediastinoscopic radical esophagectomy (Tokairin Y, et al. A feasibility study of mediastinoscopic radical esophagectomy for thoracic esophageal cancer from the viewpoint of the dissected mediastinal lymph nodes validated with thoracoscopic procedure: a prospective clinical trial. Esophagus 2019;16:214-9). In that article, lymphadenectomy was performed completely via mediastinoscopic esophagectomy, suggesting that this procedure has potential to be applied as radical esophagectomy. Based on the above, the radicality of mediastinoscopic esophagectomy is described as "+ or ++" in Table 2.

Concerning safety, thoracotomy is the safest procedure and thus described as "++". Thoracoscopic and mediastinoscopic esophagectomy are described as "+" because these procedures are endoscopic surgical procedures. In transhiatal esophagectomy, thoracotomy is not needed, and the esophagus is dissected blindly with a poor surgical field of view. The safety of transhiatal esophagectomy is thus described as "–".

*3. Do you have any results that NIM monitoring reduce the RLNP in mediastinoscopic esophagectomy? It will be important to judge if NIM monitoring can solve the problem.*

**Response:** Some articles have indicated that NIM monitoring reduces the RLNP in thoracoscopic esophagectomy. We have mentioned this in the text. A preliminary report on mediastinoscopic esophagectomy noted that performing intraoperative nerve monitoring (IONM) reduces recurrent laryngeal nerve palsy, but no official report on this point has yet been published. These points are also described in the text.

*4. The authors mentioned bulky tumor in the upper thoracic region was excluded. However, are there any other exclusion criteria? Is the mediastinoscopic approach possible for the bulky tumor in middle or lower esophagus, or locally invasive tumor?*

**Response:** Cases of bulky esophageal cancer in the upper thoracic region, which has the narrowest operating space, were excluded from the indication of mediastinoscopic esophagectomy. However, the further improvement of devices may expand the indications of this procedure in the future. If esophageal advanced cancer has no infiltration to other organs, mediastinoscopic esophagectomy can be performed in the middle to lower thoracic regions.

*5. In page 14 line 293, (our procedure) should be changed to appropriate title. Furthermore, the subclavian artery should be shown in Figure 2, and the pulmonary artery*

*should be shown in Figure 4. These will be good landmarks for the lymphadenectomy of this procedure.*

**Response:** "Our procedure" has now been changed to "The mediastinoscopic procedure performed at ourinstitute", and Figures 2 and 4 were revised as suggested.

*6. The contents in page 11 line 231 and in page 12 line 245 are similar. These should be revised.*

**Response:** As mentioned above, the latter sentences were deleted.