Peer Review File
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Reviewer A

This paper is well written.
The concept of this paper is also very interesting.
The number of cases in each group should be increased, especially in MA group.
Anyway, this paper is worth being published in JTD.
Reply: Thank you for your comment. The reasons why we stopped using the active robotic endoscopic holder were described in the discussion (Page 6, lines 206-209). When considering adopting new technological surgical auxiliary equipment, patient safety is the first and foremost consideration. Therefore, we have provided feedback to the manufacturer of the active robotic endoscope and hope that they will use our feedback to redesign the endoscope buckle in the next generation of robotic endoscope holders. Regarding the passive robotic-assisted endoscopic holder, it has been continuously used in daily practices after clinical evaluation, and further follow-up is warranted.
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Reviewer B

This retrospective cohort study evaluates the efficacy of different surgical endoscope holder assistants in uniportal thoracoscopic surgery, based on data from 228 patients over a two-year period.

While the study is interesting and provides valuable insights into the use of endoscope holders, there are some limitations to consider. Firstly, the study was conducted in only two centers and by the same surgical team, which may limit the generalizability of the findings to other institutions. Additionally, the study was carried out with a relatively small number of patients in the group of “active robotic endoscope holders”, which could affect the statistical power of the analysis.

Despite these limitations, the abstract is well-written and the paper has a coherent structure, with an appropriate number of tables and figures to convey the key findings.

Nevertheless, this study underscores the importance of having a good assistant in uniportal thoracoscopic surgery. This type of studies can improve surgical outcomes and help facilitate surgery by providing a stable visual field, particularly in complex cases. This study is relevant in the context of the increasing interest in robotic surgery, and it provides important information that can help surgeons improve their thoracic surgical approach.

Overall, I find this paper to be of sufficient quality to be published in this journal, and I appreciate the authors' contribution to the field.

Reply: Thank you for your in-depth comments. Initially, we anticipated that the active endoscope holder would bring more convenience and space to the surgeon in single-port surgery. However, in the practical application of segmentectomy, the buckle design of the active endoscope holder severely restricted the surgeon's working space and hindered the smooth progress of the operation. The safety of the surgery is the primary concern in the development of all new technologies. This is the main reason for the relatively small number of patients in the active form robotic endoscopy holder group (Discussion page 6, lines 206-209; page 7, lines 264-265). Additionally, we have provided feedback to the manufacturer of the active robotic endoscope and hope that they will use our feedback to redesign the endoscope buckle in the next generation of active robotic endoscope holders. Although this new technology has not yet been widely adopted by surgical teams (page 7, lines 264-265), our goal for the future is to integrate robotic endoscopes into everyday thoracic surgeries, which will help optimize human resources in the operating room. As you mentioned, the importance of a good assistant cannot be overemphasized. However, there may not always be good assistants available to assist with surgeries, especially during holidays or off-peak periods when there is a shortage of manpower (page 7, lines 230-232). At such times, the use of robotic arms operated by experienced surgeons can ensure consistent surgical quality, which is the biggest advantage.

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Reviewer C

This is an interesting article comparing passive endoscopic arm, active robotic endoscopic arm, and human operator.

Questions I have are:

Comment 1. I would think that the holder will be placed above the ISIS line for upper lobe surgery, and above the ISIS line for lower lobe surgery, but this is suggested otherwise (line 100). That seems counterintuitive Can you elaborate?

Comment 2. There is some discussion in your manuscript about the unidirectional placement of the scope and parallel line with other instruments. In Figure 2B, the passive scope was placed on the other side of the wound, whereas the active holder was placed on the same side of the wound. How does this affect the range of visualization and the degrees of freedom of movement? What about mirror image to the operator if the scope is on the opposite side?

Comment 3. You eluded to how active platform requires hand, feet and eye coordination, and that is considered why that platform did not perform as well. Is it possible that it is just a matter of practice and becoming more familiar with its use? Did you notice a learning curve in improvement over time?

Reply 1: Thank you for your question. Passive robotic arms are designed with a long

and upright structure that lacks the ability to adjust angles, which can be problematic when performing upper lobe surgery by crossing over the patient's body from behind. Fixing the arm on the ASIS landmark may limit the range of arm adjustment and reduce the area visible through the endoscope, which can hinder the progress of the surgery. Therefore, while fixing the arm at the lower edge of the ASIS line is a general rule for setting up this type of robotic arm, in actual surgery, moderate adjustments may still be made based on the height and size of the patient.
Change in the text
Page 3 Line 108-109 but this is a general rule for setting up this type of robotic arm. In actual surgery, moderate adjustments may still be made according to the height and size of the patient

Reply 2: Thank you for your comment. I think there may have been a flaw in my graphic design, so I have corrected the relevant schematic graph. Additionally, we use the robotic endoscope holder to ensure that the endoscope is held in the same visual direction as the surgeon, thereby avoiding any issues with the mirror image during the surgery. Please see the updated Figure 2.
Change in the text
Please see new Figure 2

Reply 3: Thank you for your comment. Based on user experience, we have found that the active robotic arm, especially the pedal control robotic endoscope holder used in the text, is limited by the design of the buckle and the stepper motor technology used at the end. This can make it difficult to reduce the number of human assistants during anatomic resection in single-port thoracoscopic surgery. We believe that changing the structure of the end body of this type of robotic arm could make it suitable for lobectomy or segmentectomy in single-port thoracoscopy surgery. Regarding passive robotic arm platforms, while it is true that with experience, unnecessary adjustments can be reduced, we cannot provide a more detailed analysis due to the limited number of cases included in this paper. We will continue to accumulate more relevant experience and integrate the learning curve and surgical results.
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