Peer Review File
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Reviewer A

Thank you for the opportunity to review this interesting work. I read this report with great interest. I respect the efforts of the authors in devising their modified OTVA method. I would like the authors to consider the following minor revisions, if possible.
Reply: Thank you very much for the valuable advice you provided. We have modified our text as advised.

1. Lines 20 of the abstract, I think "… made improvements …" might be revised to "… made some modifications …".
Reply 1: We have modified our text as advised (see line 21).
2. In line 27 of the abstract, I suggest that the authors revise "our modified OTVA" to "our modified 4-port 3-arm OTVA" to more clearly describe this method.".
Reply 2: We have modified our text as advised (see lines 27-28).
3. Lines 42 of text. I would like authors to add the following sentence and two reports on the OTVA method to help the reader comprehend the OTVA method.
Reply 3: We have modified our text as advised (see lines 47-49, References).

(Following "… monitor set-up (8)"), "The authors also reported their method focusing on segmentectomy procedures (9) and also described it focusing on possible emergency rollout procedures (10)."

References
(9). Sakakura N, Nakada T, Takahashi Y, Suzuki A, Shinohara S, Kuroda H. Three-Arm Robotic Lung Resection via the Open-Thoracotomy-View Approach Using Vertical Port Placement and Confronting Monitor Setting: Focusing on Segmentectomy. J. Pers. Med. 2022, 12, 1771.

(10). Sakakura N, Nakada T, Shirai S, Takahara H, Suzuki A, Takahashi Y, Kuroda H. Emergency rollout and conversion procedures dur-ing the three-arm robotic open-thoracotomy-view approach. Interact. Cardiovasc. Thorac. Surg. 2022, 34, 1045–1051.
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4. Lines 54 of text. I think it is better to avoid definitive expressions in this report because the number of cases is still small. Therefore, I recommend that the authors revise this sentence to "Based on our own experience, this could pose difficulties using the robotic stapler effectively."
Reply 4: We have modified our text as advised (see lines 59-60).

5. I think it would be helpful to add here in line 76 of the text, "The system and monitor settings are basically the same as those reported by Sakakura et al. (8,9)."
Reply 5: We have modified our text as advised (see line 92).

6. Lines 144 of the text, I would like the following sentence added here: “Main different points from the method of Sakakura et al. is that the left assistant is placed between arms 3 and 4 and that CO2 insufflation is not used.”
Reply 6: We have modified our text as advised (see lines 159-160).

7. After lines 171 or 182 of the text, I would like authors to add the following sentences: “Basically, compared to the conventional look-up method, the robotic ports and target structures can be close in this horizontal thoracotomy-view type approach, the surgeons may occasionally feel it difficult to view the lungs from a full distance, particularly when cutting the lung parenchyma. Thus, the use of CO2 insufflation may be an option in some cases, such as segmentectomy case or smaller body size patients.
Reply 7: We have modified our text as advised (see lines 182-186, 189-194).

Reviewer B

If I understood correctly, the description of the modification is simply to move the robotic arm 4 one intercostal space lower (from the seventh to the eight intercostal space), so as to improve the operability of the assistant at the operating table which has more space. Moreover, being positioned the assistant port between the robotic arms, the assistant is closer to the hilum, resulting in an improved performance. You also use the assistant port as an open type with a protector to allow for easy insertion of multiple instruments. However, your use of operating ports, reduces the space within the thoracic cavity compared with closer-type port and use of CO2 injection as described in standard OTVA described by Sakakura. The modifications made by you to the OTVA technique therefore seem to me of little relevance, with also some disadvantages. Can you demonstrate that the modifications you made give better results than the standard technique?
Reply: Certainly, as we have not compared it with Sakakura's conventional method, we cannot demonstrate whether it is a superior approach or not. However, we believe that by alleviating the stress on the assistant, the reduction in workspace can be compensated by the improved perspective afforded by the assistant's active participation. Additionally, the avoidance of CO2 usage can contribute to cost savings. We are confident in proposing this approach as one of the methods for lung resection of RATS.

There are other weak points of the study that should be addressed prior publication. First, although the article is of a surgical technique type it seems to me that it is a little lacking in results like the description of the underlying pathology and possibly the staging of the tumors. Please add these data.
Reply: We added Material and Methods and some data (Table) ....(see lines 70-80).
Moreover, this is a series of only 20 cases, with a median postoperative hospital stay of 6 days, exactly double that reported in Sakakura's work. Do you have an explanation for this longer length of stay?
Reply: Certainly, the postoperative hospital stay does indeed appear to be longer than reported by Sakakura et al. However, it is noteworthy that drains are typically removed

on the day following the surgery, and significant complications have not occurred. Similar to Sakakura's findings, an early discharge seems feasible. Nevertheless, the longer hospital stay might be influenced by the preferences of the patient or their family, rather than being a medical necessity.

Reviewer C

The paper by Keisei Tachibana et al evaluates robotic-assisted thoracoscopic surgery (RATS) with a focus on the open thoracotomy view approach (OTVA) during lung resection. While OTVA proves to be a beneficial surgical approach by providing a similar field of view as open thoracotomy and enabling active assistant participation, the article underscores its limitations, such as challenges in placing a robotic arm in the lower intercostal space, a distant positioning of the assistant port from the hilum, and the requirement for CO2 insufflation. The authors propose improvements by situating one of the robotic arms in the lower intercostal space, enhancing surgeon operability without the need for CO2 insufflation. Additionally, positioning the assistant port between the robotic arms brings the assistant closer to the hilum, eliminating the need for a closed port due to the absence of CO2 insufflation, thereby improving assistant performance. Although the modified OTVA has not been extensively used, no critical issues have been observed to date.

The article is not a comparative study; however, it is descriptive and details a technique that has been previously employed but with notable improvements, as well articulated in the text.
Therefore, it would be interesting to add and describe patients and methods related to the study. Also, the article explores a new robotic surgery approach without using CO2, a traditional advantage. The discussion should assess if this modification presents challenges, particularly in visibility and maneuverability. Evaluating how the absence of CO2 impacts safety and efficacy is crucial for determining the feasibility and clinical relevance of this innovative technique.
Reply: Thank you very much for the valuable advice you provided. We have added a discussion on CO2 insufflation to our analysis.

Despite the relatively small number of cases performed, the technique has been well-documented with favorable outcomes.

Abstract
It is adequate and contains the essential information of the study. However, would be interested to add a brief overview encompassing the number of surgical cases and their outcomes.
Reply: We have modified our text as advised (see lines 27-28).
Introduction
It is short and clearly explains the rationale and background information necessary for the reader to understand the topic and the objectives of the study.

Material and Methods

It would be valuable to include a section on materials and methods in the article, providing a more detailed description of how patients were selected, the inclusion criteria, the number of cases, as well as the study duration and location. Additionally, specifying whether there was a consent form, and if not, elucidating the reasons, would enhance the comprehensiveness of the study. It would also be beneficial to describe the expected complications in this section and, if applicable, to provide a classification system such as Clavien-Dindo, outlining any complications that occurred.

Reply: We added Material and Methods and some data (Table) ....(see lines 70-80).

Results

The results are well-detailed in the postoperative considerations and tasks section.

Discussion

One of the major advantages of robotic surgery is the use of CO2 to assist in the dissection of the surgical procedure. It would be interesting to develop a discussion paragraph on the new approach that does not utilize CO2 and whether this introduced any challenges during surgery. In the discussion, it would be relevant to address whether the absence of CO2 posed any significant difficulties. Highlighting how this modification impacted visibility, maneuverability, and other key aspects of the surgical intervention would provide a more comprehensive understanding of the challenges and benefits of this innovative approach. Furthermore, assessing whether the CO2-free technique affected the safety and efficacy of the procedure can contribute to the overall evaluation of its feasibility and clinical applicability.

Reply: We felt that your advice was valuable.

We have modified our text as advised (see lines 182-186, 189-194).

Bibliography

The section is in accordance with the JTD’s requirements.