

Peer Review File

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Reviewer A

Uniportal VATS has been performed in the recent years during the study period, resulting in favorable outcomes because of improvements in perioperative management. In this sense, results of this study need to be considered carefully.

Comment 1: P10 line 150, I recommend that the authors describe the details of propensity score matching. It is too simple.

Reply: We added detail explanation to the text as you recommended (Page 9-10, line 151-155).

Changes in the text: We performed a one- to-one matching analysis between U-VATS and H/M VATS groups on the basis of estimated propensity scores of each patient. Application of propensity score matching involves estimation of the propensity score followed by matching of patients according to their estimated propensity score and comparison of outcomes in matched patients. (Page 9-10, line 151-155)

Comment 2: I recommend that the authors to state the conversion rate from segmentectomy to lobectomy.

Reply: There were no conversion cases from segmentectomy to lobectomy.

Comment 3. I recommend that the authors should show the number of cases included in this study in Figure 1. Currently Figure 1 is unrelated to patients included in the current study (n=180).

Reply: Figure 1 shows the transition from M-VATS to U-VATS at our institution. We added the data about segmentectomy in Figure 1.

Reviewer B

Comment 1: This paper is a retrospective comparative study of uniportal VATS and multiportal / hybrid VATS segmentectomy. The problem with this paper lies in study design. As the authors have stated, the time when uniportal VATS was performed and the time when multiportal VATS was performed are different. The content of the procedure is also different. The use of electrocautery in multiportal VATS increases the frequency of p o verify the benefits of the uniportal VATS procedure, you need to unify the content of the procedure, even at different times.

It is understandable that the major advantage of uniportal VATS is that it reduces the incidence of pain and post-thoracotomy pain syndrome because it has only one intercostal disorder. However, there is no dispute that uniportal VATS is more difficult to operate than multiportal VATS, and there is no clear reason why universal VATS has shorter surgery time, drainage period, and hospital stay. Learning curves and recent changes in postoperative management have nothing to do with uniportal VATS. Additional consideration is needed to convince the reader by demonstrating the major

consequences of this paper: surgery time, drainage period, and why hospital stays are shortened by the introduction of uniportal VATS.

Reply 1: As you pointed out, the operation time was significantly shorter in U-VATS group. A number of factors contribute to the reduced operating time of U-VATS. These include speedy dissection procedures using energy devices and surgical procedures unique to U-VATS that do not require surgical entry by the assistant. However, the most important contributing factor is the accumulation of significant experience in M-VATS, moving on to U-VATS only after having improved skills in segmentectomy. This suggests that an experienced operator can make a smooth transition to U-VATS, performing even complex procedures such as complicated segmentectomy with the same facility as in M-VATS. Moreover, as mentioned in the manuscript, postoperative management has been more aggressive in recent years, and the enhanced recovery after surgery program (a multidisciplinary clinical care bundle that optimizes pre-, intra-, and postoperative care) was adopted by this institution in 2015, and it may have also contributed to early postoperative recovery and shorter hospitalization.

Comment 2: There is no description of the number of cases in Abstract.

Reply 2: We added the number of cases in Abstract as you pointed out (Page 3, line 38-39).

Changes in the text: A total of 180 patients underwent pulmonary segmentectomy during the study period at this institution, comprising 57 cases in the U-VATS group and 123 cases in the H/M-VATS group. (Page 3, line 38-39).

Comment 3: Is Hybrid VATS a generally accepted term in the world? Please state the definition of Hybrid VATS.

Reply 3: We believe that hybrid VATS is a generally accepted expression. Compared to complete VATS, hybrid VATS contains a slightly larger incision and the surgeon is positioned directly from the wound.

Reviewer C

The reviewer congratulates the authors on their hard work in studying the uniportal vs multiportal VATS. They showed the superiority of uniportal VATS to multiportal VATS in many aspects. However, there are several important issues to be concerned as follows:

Comment 1: In this study, uniportal VATS were significantly better than multiportal VATS in many aspects. As the authors stated in the discussion section, it is apparent that uniportal VATS has been performed in more recent years in this team as shown in Figure 1. This is the most important and the weakest point of this paper. They tried to match the cohorts, but they could not match the cohorts in this point.

Reply 1: This was a retrospective, non-randomized, single-institution study. As you pointed out, the difference in time of each procedure is the most important and the weakest point. However, this result suggests that an experienced surgeon can make a smooth transition to U-VATS.

Comment 2: The authors did not mention about who was the primary operator for uniportal and multiportal VATS. This is also one of the important parameters for this study, Uniportal VATS is said

to be more solo-surgery than multiportal VATS. Please provide this information and include this information in the statistical analysis of this study.

Reply 2: H/M-VATS was performed mainly by three senior surgeons (H.I., M.K., and N.M.), two of whom also perform U- VATS (H.I. and N.M.). However, we performed surgeries as one team containing two or three residents.

Comment 3: This paper focused on segmentectomy. Figure 1 shows the information about VATS anatomical pulmonary resections over time. The authors should provide the same kind of information about the segmentectomy for better understanding by the potential readers.

Reply 3: As you pointed out, we added the data about segmentectomy in Figure 1.

Comment 4: Please conform to the author information. Especially strictly check how to write the references again.

Reply 4: We corrected as pointed out.