Peer Review File

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Reviewer A

Thank you for giving me the opportunity to review the manuscript.
The operation the author presented in the video was excellent.
However, it might be difficult to understand the concept of “open the side door” technique.
I recommend that the author just describe the surgical steps which is suitable for this challenging operation via uniportal approach.
Thank you. We had described our surgical procedures as detail as possible.
Traditionally, to perform combined segmentectomy, the intersegmental planes were opened after all the target segmental pulmonary artery and bronchus be dissected. The "open the side door" technique is just a concept that reverses the order of the surgical steps: when the target segmental PA or bronchus is too deep and difficult to approach, we can open one side of the intersegmental planes by dissecting intersegmental PV or inflate a part of the target segment, so that the deep target segmental PA or bronchus is exposed on the surface of the dissection plane, which is convenient for the operation to continue.

Reviewer B

Authors performed this kind of complicated procedure with excellent surgical skill and comprehensive strategy.

The paper is well written and easy to follow.
Only one concern should be addressed by the authors:
As for AHH lesion located in S4b, the margin distance seems to be close to the intersegmental plane in Figure 2. Did you evaluate the surgical margin in the resected specimen?
Yes, but the AAH lesion was invisible in gross view in the resected specimen.

Reviewer C

Comments to Authors:

Congratulations on completing the challenging surgery.

I have the following concerns.

Case presentation
#1 Please describe the patient’s smoking history.
Thank you. We added this into the article. (see Page 4, line 58)

Surgical technique

#2 Please describe the operation time and bleeding volume.

Thank you. We added these into the article. (see Page 5, line 103)

#3 Please describe more detailed surgical procedures for the dissection of the pulmonary arteries and bronchus. Did you clip to A3a? Did you ligate A4b?

For subsegmental pulmonary arteries, we usually ligated both the distal and proximal parts of dissected vessels and then transected them in scissor or harmonic scalpel. For subsegmental bronchi, mostly we transected them by using linear staplers. We added above in the article. (see Page 4, line 88-91)

On the other hand, A3a is not exposed in our operation. The clip seen in the video is for clipping a ruptured distal branch of B3b, and this clip is removed when transecting B3b.

The A3b is managed by ligating both distal and proximal part and transected with harmonic scalpel.

#4 For segmentectomies, it is important to accurately determine the anatomy during surgeries. Do you have any ideas to avoid misidentifying the anatomy during surgery? Did you use the 3DCT not only for preoperative planning but also for confirmation of lung anatomy during surgery? Did you use an intraoperative bronchoscope to identify the bronchi during surgery?

Misidentifying the pulmonary anatomy is entirely possible. To avoid such mistake, when a blood vessel or bronchial branch is dissected during the operation, we will expose its proximal or distal part as much as possible, so we can verify its identity through its diameter, number of branches, branch type, and the relative position of surrounding structures.

If it is difficult to identify vessels or bronchial branches during the operation, we will read 2D and 3DCT again immediately. Unfortunately, a virtual, dynamic 3DCT image is not available in our hospital. Also, due to lack of equipment, we currently do not use intraoperative fiber bronchoscope to identify the target bronchi.

Discussion & Abstract

#5 I think that the "open side door" technique is useful regardless of the surgical approach. Why do the authors consider it particularly useful in uniportal VATS?

From our own experience, under uniportal VATS, instruments that can participate in dissection and traction is limited, and so is the angle of engagement. Thus, the use of open side door technique will help complex surgery such as combined segmentectomy or subsegmentectomy. Not that open side door technique is more effective in uniportal VATS than multi-portal VATS. The last sentence of Abstract may be misunderstanding, we had rewritten it (see Page 2, line 38), thank you for your opinion.