

Peer Review File

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Review comments

Reviewer A

Comment 1: The standard mediastinal right- and left sided lymphadenectomy is presented. The attached videos show nice operative technique. I have no remarks according the manuscript. However, I cannot find nothing new in this article.

Reply 1: We thank the reviewer for this kind comment. We agree that there is nothing new, but this is by design since it is an article for special issue on UVATS.

Reviewer B

Comment 1: This is a nice technique presentation with high quality video of a uniportal lymph node dissection. I have 2 suggestions - though the authors comment that their practice is "lymph node dissection" the videos seem to present sampling - as most examples shown are not performed en bloc. Additionally, as there is a RCT showing equivalence between sampling as LN dissection, why is it the authors' practice to perform dissection.

Reply 1: We agree that in some parts of the videos the lymph nodes were not performed en bloc. We consider however that it is a mediastinal lymph node dissection and not a sampling, which would be the random resection of one individual lymph node. This is not reported in the videos.

Comment 2: Also, most surgeons think uniportal techniques will result in significantly increased operative times and potentially bleeding. Though this was not the main focus of the manuscript could the authors comment upon this?

Reply 2: In our practice we do not observe increased bleeding comparing UVATS or multiport VATS since we use bipolar instruments or monopolar instruments with the hook. We do agree that at the initial phase of the UVATS approach operative times were probably increased. However, as we were highly experienced in MVATS, the difference in terms of operative times ceased to be relevant after a few cases.

Reviewer C

First, we would like to congratulate the authors on their article entitled: "Uniportal VATS lymph node dissection: surgical technique". It is an interesting paper to read with clear videos and a fine explanation of how to perform lymph node dissection by uniportal VATS technique. Please find our comments below per section.

Comment 1: General

- Please check the paper for spelling errors.

Reply1: we secured a final revision by a native speaker of English

Comment 2: Abstract

- Clear and to the point, the background and aim of the manuscript are well described, nothing to comment.

Reply 2: thank you for your comment

Comment 3: Introduction

- Consider shortening the first paragraph concerning VATS vs thoracotomy since this should be generally known by the audience.

Reply 3: we shortened this section.

Comment 4: • Do you mean that UVATS was implemented in 2010 and mastered in 2017? Or was mVATS implemented in 2010? In that case, when was UVATS implemented in your center?

Reply 4: Actually we implemented MVATS in 2010 and introduced UVATS in 2017. We clarified this point in the manuscript.

Comment 5: Preoperative preparation and requirements

- Is there a rationale to perform the lymph node dissection prior to or after completion of the resection?

- Otherwise clear description, nothing to comment.

Reply 5: Traditionally, we perform the lymph node dissection after the anatomical resection. Sometimes after neo-adjuvant treatment or in case of suspicious lymph nodes during segmentectomy, we start with the lymph node dissection.

Comment 6: Step-by-step description

- Very clear step by step description for both the right and left side, clear that both sides are described separately and not combined.

- In the videos, audio fragments describing the steps or short text descriptions might be of added value.

Reply 6: We have added a commentary during the videos

Comment 7: Do you have any tips for the subcarinal lymph node dissection? Is your preferred route from postero-inferior, or do you sometimes use a direct approach (for example after upper lobectomy)? This will be the most difficult N2 station to (completely) dissect, especially for the less experienced UVATS surgeons.

Reply 7: We fully agree that station 7 is the most difficult station to dissect. On the right side we prefer to start from a point inferior to the carina. We follow the intermediate bronchus and the oesophagus to the subcarinal space. The use of a sponge is very helpful at this stage for the right or the left approach. A sentence has been added in the manuscript.

Comment 8: Postoperative considerations

- Nothing to comment.

Reply 8: thank you for this comment

Discussion

Comment 9: • The second paragraph is a repetition of the introduction, consider leaving it out of either the discussion or the introduction.

Reply 9: We thank the reviewer and shortened this paragraph

Comment 10:• Consider to add a few words on potential risks, how to avoid these and how to manage intraoperative complications?

Reply 10: A chapter in the discussion has been added

Comment 11:Conclusion

• Clear conclusion, nothing to comment.

Reply 11: thank you

Reviewer D

Comment 1:on page 6 could explain with more details how did you expose station 7 lymph nodes in order to avoid oesophageal ou tracheal injuries.

Reply 1: We thank the reviewer for this comment. The use of bipolar instrument greatly facilitates the dissection along the main bronchus and the oesophagus. We try to avoid excessive traction on lymph nodes to prevent injury of a bronchial artery whose control can be difficult. The use of a right double lumen tube improves significantly the visibility and exposure of this area by avoiding the rigidity of the main left bronchus in case of left double lumen tube. Sometimes, increasing the tidal volume of the right lung may improve the exposure of the subcarinal space. We have added a sentence to clarify this point.

Reviewer E

Comment 1: In their paper, the authors thoroughly describe the technique of lymphadenectomy during minimally invasive lung resections. Two high-quality videos show the left- and right-sided SMLND. Both the description and the videos are very accurate, they do not omit any element of SMLND and can be a very valuable help for thoracic surgeons dealing with atomic lung resections. The article refers to uniportal resections, but it will be useful for surgeons dealing with minimally invasive procedures regardless of the number of ports used.

Reply1: We thank the reviewer for this comment

Comment 2: In the discussion, the authors refer to the current literature. The discussion is written clearly and addresses the issues discussed in the article sufficiently. The authors may consider to briefly discuss the issue of resection of 4L nodes and lobe-specific MLND.

Once again, I would like to congratulate the authors on a great article.

Reply 2: We rarely performed the dissection of 4L stations since the exposure requires the division of the ligamentum arteriosum with risk of laryngeal nerve palsy.

Reviewer F

Comment 1: Unfortunately, it is merely a description of dissection procedures. Not only is there a lack of useful information for the reader regarding the handling and important points of dissection, but the description is also inadequate in explaining what should be done in the case of uniportal VATS versus multi-port techniques and the technical differences between them.

Reply 1: We thank this reviewer. However, it was a commissioned article on technical aspect of lymph node dissection by UVATS and not a comparison article or a review article. We decided to focus on UVATS and not make a comparison.

Comment 2: Additionally, the videos are incomplete node dissection and cannot be considered exemplary for the reader. For example, in Video 1, #7 dissection, the exposure of the tracheal bifurcation and the contralateral vagus nerve is insufficient, raising suspicions of residual lymph nodes. In Video 2, #2-4R dissection, the vagus nerve is not confirmed, and the posterior aspect of the superior vena cava is inadequately cleared. In a complete superior mediastinal dissection, the cephalad dissection should extend up to the level of the brachiocephalic artery.

Reply 2: We do not agree with your comment. Most reviewers found the videos accurate and valuable. Of course, there are some differences between centers in terms of resection “completeness”, but we must accept that these kinds of videos cannot achieve unanimity among surgeons.

The following points could be beneficial for future reference:

Comment 3: . In the left side #7 dissection, there are different methods for dissection, including an anterior approach and performing dissection before left lower lobe resection. Please provide information on techniques for elevating the bronchus and handling the broncho-esophageal membrane.

Reply 3: we agree that several approach can be performed to reach station 7. However, this approach is rarely performed, and we prefer not to comment a technique that we are not performing.

Comment 4. Details on #4L dissection are needed.

Reply 4: we added relevant information (see above)

Comment 5. In right upper mediastinal dissection, there are styles involving taping the azygos vein and anteriorly displacing the superior vena cava during dissection.

. Right side #7 dissection: Handling of the right vagus nerve, bronchial artery, and esophageal artery.

Reply 5: As shown in the video, we do not tape the azygos vein or the vagus nerve. We try to stay away from these structures. For small arteries, we use electrocautery. However, in some cases we can apply clips particularly below the carina on station 7. We added a commentary in the manuscript.

Comment 6. Provide information on differences and precautions related to energy devices and potential complications associated with their use.

Reply 6: we added a chapter in the discussion to explain complications.

Comment 7: The videos occasionally appear to tear the lymph node capsule without proper sealing.

Detail the handling of lymph node capsules.

That’s all.

Reply 7: We try to apply the no touch technique to avoid tearing the lymph nodes. However, sometimes the use of a grasper for lymph nodes is mandatory to expose deep area around vascular structure. We added a commentary in the manuscript.

Reviewer G

Comment 1: I'd like to congratulate authors because they have provided a concise summary of evidence regarding lymph node dissection by means of VATS and uVATS. They have also clearly described their technique for lymph node dissection.

Reply 1: thank you for your positive comment

Comment 2: Otherwise, I'd like to ask some questions in order to provide a little bit more information and improve manuscripts quality for better reader's understanding: As this special issue regarding Advanced Uniportal VATS focuses on technical details, may authors provide some more specific technical details for lymph node dissection during uVATS, especially when dealing with challenging stations like left 7, 5. A more comprehensive description of how to position instruments within uniportal incision, or how to avoid continue crushing between instruments while grasping the lung in the right direction could be therefore really useful. Are there technical details different from conventional biportal VATS for lymph node dissection? Do they consider it provides advantages for this purpose?

Reply 2: we thank the reviewer for this comment. We added technical details in the manuscript about exposure and use of energy device. It is difficult for us to compare with biportal since we have no experience on this approach.

Comment 3: Authors have provided 2 videos, but they illustrate mediastinal lymph node dissection. Could they provide some video including stations 10 (hilar) on both sides, and 11 (interlobar, fissural) on both sides, that are usually included in the lymph node dissection separated from the specimen lymph nodes?

Reply 3: We did not show the hilar or interscissural lymph nodes dissection since they were removed en bloc with the lobe during the anatomical pulmonary resection. It was difficult to insert this procedure in these videos. But, of course we agree that it is an important part of the procedure.

Comment 4: Someone could argue that a more aggressive systematic lymph node dissection could have been done and that the video procedures could be named as sampling instead of dissection, especially in stations 5 and 6, where some lymph nodes remain unremoved.

Reply 4: We partially agree with your comment. Actually, we can see that a small 4L lymph node is visible. However, as mentioned above we do not routinely remove the station 4L in early stage NSCLC because the risk of recurrent laryngeal nerve palsy and the necessity of division of ligamentum arteriosum.

Comment 5: Do authors perform systematic lymph node dissection with en-bloc removal of all lymphatic and fatty tissue? Can authors provide some separated surgical pictures of the main stations (4-10R, 7R, 5-6L, 7L) with the most important anatomical landmarks for better author's understanding? This could greatly increase author's learning especially for residents and junior surgeons.

Reply 5: we thank the reviewer for this comment, we added pictures (Figures 2-4) to illustrate the anatomical landmarks.

Comment 6: I consider this a valuable paper for teaching technical details, and I encourage authors to add some changes for better illustrating their paper and their technique, as well as answering some of the reviewers and editor's questions.

Reply 6: thank you for the comment