Peer Review File

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Reviewer comments

Reviewer A

Comment: excellent case report and very good quality video.

Reply: Thank you for your encouraging review.

Changes in text: no changes were done.

Reviewer B

Comment 1: However, is it necessary to pass beyond the stenosis? I suppose they could place a tube on the near side of stenosis and manage an intraoperative care.

Reply 1: There was no necessity to pass the endotracheal tube beyond the stenosis. What was described in the text was a comprehensive plan for the surgery. Surgery was done in a totally non-intubated manner.

Changes in text: no changes were made.

Comment 2: What I could not understand was that how they could manage the effective ventilation during the reconstruction of trachea. During the reconstruction, ventilation seemed to be not effective because the continuity of the trachea has been lost. Generally, ECMO or intubation from the stump of the distal trachea should be applied for such surgery. Authors just described "NiVATS" but they did not describe the detail how to maintain the intraoperative airway management.

Reply 2: It is imperative to understand the whole concept of ‘non-intubated’ thoracic surgery before embarking on it. Many papers have been published on non-intubated VATS and how spontaneous respiration is achieved to maintain effective ventilation. ECMO is a useful adjunct but is not required in non-intubated surgery. Moreover, NiVATS negates the complication that can follow the use of ECMO. And not many facilities have access to ECMO.

Changes in text: no changes made.

Reviewer C

Comment 1- Line4: The author described the outcome of tracheal reconstruction has been improved due to the introduction of VATS. I think VATS is a less invasive approach compared with conventional thoracotomy but the approach itself has not improved the outcome. Why do you think VATS has improved the outcome of the tracheal reconstruction?

Reply 1: Though there is no RCT that compares between thoracotomy and VATS, many papers on VATS tracheal reconstruction have been published, and comparison has been made with previous papers which have described conventional thoracotomy. Data in these papers have suggested a better outcome (please refer to reference). We did not elaborate this in our discussion as it'll be too long.

Changes in text: no changes made.

Comment 2: Line24-33: A supraglottic airway was introduced after the induction of anesthesia. While keeping spontaneous respiration, the anesthesia had to reduce uncomfortable feeling of supraglottic airway tube. How did you monitor the patient consciousness? Did the patient use the target controlled infusion by himself? If the patient desaturated after skin incision, could you place tracheal intubation tube in lateral position? (Did you experience any case where intubation in lateral position was required?)

Reply 2: The whole anaesthesia process has been explained in page 3, line 24-33. Depth of anaesthesia was monitored with EEG Bispectral Index. The target-controlled infusion was controlled by the anaesthetists. In all of our NiVATS cases, we did not have the need to intubate the patient.

Changes in text: none.

Comment 3: The surgery was performed through a single port. Why did you place the incision on 5th intercostal space at anterior axillary line? I think surgical procedure became easier if you placed the incision more cranially and posteriorly.

Reply 3: based on our 3-year experience of performing uniportal VATS, we find that the incision at the 5^{th} intercostal space anterior axillary line is the best site for this approach. Moreover, with a posterior approach, surgery is more difficult to be

performed in a uniportal manner, due to a smaller rib space.
Changes in text: none.

Comment 4: To control vagal nerve activity (suppress coughing) is important to continue surgical procedures. Although the author performed vagal block using local anesthesia, I guess all of coughing could not be suppressed without induction of muscle relaxants. Was it sufficient to keep the patient stay still only by local anesthesia? Have you ever experienced non-intubated VATS? Was this a first case of non-intubated VATS? Did you do any additional plan when you didn't control the patient's cough?
Reply 4: Muscle relaxants are not required in NiVATS, and the use of relaxants defeats the purpose of non-intubated surgery. Tips and tricks to reduce the cough has been explained in the text (page 6, line 22-24). Surgery needs to be done in a delicate manner. It is imperative for the surgeon to have reasonable experience in open tracheal reconstruction, Uniportal VATS surgery before embarking in NiVATS. We have done more than 50 cases of NiVATS before embarking on this surgery.
Changes in text: none.

Comment 5: If it was an adhesion case, did you continue non-intubated VATS?
Reply 5: Case was done fully non-intubated. We were able to perform the adhesiolysis.
Changes in text: none.

Comment 6: The author didn't cover the tracheal anastomosis. Did you close mediastinal pleura?
Reply 6: In our practice, we do not close the mediastinal pleura. We adhere to strictly to principles of tracheal resection and reconstruction.
Changes in text: none.

Reviewer D
Comment 1: What length of the trachea was resected; how many rings?
Reply 1: 1 cm of trachea was resected (it was stated in the video).
Changes in text: none.

Comment 2: Any mobilization maneuver was done to bring the tracheal ends together?
Reply 2: No major mobilization was required as the resected segment was only 1 cm. We performed the standard paratracheal dissection and inferior pulmonary ligament release.
Changes in text: none.

Comment 3: How was the trachea entered, cold versus electrocautery?
Reply 3: We used a scalpel and VATS Mayo's scissors (the images are included in the video).
Changes in text: none.

Comment 4: Was the patient preoxygenated with 100% Fio2 before tracheal transection?
Reply 4: We preoxygenated all our patients with Fio2 100% prior to tracheal resection.
Changes in text: none.

Comment 5: What was the total tracheal reconstruction time?
Reply 5: Tracheal reconstruction time was 60 min.
Changes in text: this change has been added to the text (page 4, line 14).

Comment 6: How was the knotting done after the running suture anastomosis?
Reply 6: Extracorporeal knotting was done, guided with a knot pusher.
Changes in text: none.

Comment 7: The port placement is not clear including where the camera was inserted etc.
Reply 7: Our surgery was done in a uniportal approach, incision was made at the 5th intercostal space, anterior axillary line (described in the text in Page 3 line 37). Camera remains at the superior aspect of the wound.
Changes in text: none.

Comment 8: How was the lung retracted?
Reply 8: We used a combination of suction device, Duval forceps, and tonsil swab –

depending on the maneuver that was employed.

Changes in text: none.

Comment 9: What was the saturation during the non-ventilatory phase and Pco2?

Reply 9: surgery was totally non-intubated (spontaneous respiration). Spo2 maintained between 96%- 98%. We monitored ETCO2, the highest being 53mmHg (Described in text, page 4, line 14-15).

Changes in text: none.

Reviewer E

Comment 1: How do you relieve tension during tracheal anastomosis?

Reply 1: Adequate paratracheal dissection and inferior pulmonary ligament release in this patient, and neck needs to be in a slightly flexed position.

Changes in text: none.

Comment 2: When do you perform Grillo's stitch? What points should we pay attention to?

Reply 2: We perform Grillo's stitch in all our cases of tracheal resection and reconstruction. It is important to keep the patient's neck in a neutral position for this. Over flexion of the neck can lead to vertebral artery compression.

Changes in text: none.

Comment 3: In figure 4 Jan 2020 → Jan 2021.

Reply 3: Thank you, changes have been made.

Changes in text: changes made in Figure 4 Page 10.