

Uniportal video-assisted thoracoscopic right upper sleeve lobectomy

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Background: The development of minimally invasive thoracic surgery in recent years is undeniable, VATS has evolved from the conventional three-port technique to an uniportal approach, without compromising the type of cases that can be operated successfully.

Methods: Thanks to the continuous progress of uniportal video-assisted thoracoscopic surgery (VATS) the complexity of cases performed by this approach has improved remarkably since the first procedures were made, recent advances in surgical thoracoscopic technology had made feasible to achieve vascular and bronchial sleeve lobectomies. Anatomic variants in patients can increase the technical difficulty of the procedure making the process more challenging.

Results: In this case the sleeve right upper lobectomy was performed by uniportal VATS despite the obstruction of the right pulmonary artery (PA) for the bronchial anastomosis.

Conclusions: In the hands of experienced surgeons in uniportal VATS with background in thoracoscopic suturing, sleeve lobectomies are feasible and safe to perform even when anatomic variants increase the complexity of the case.

Keywords: Sleeve lobectomy; bronchoplasty; uniportal video-assisted thoracoscopic surgery (VATS); bronchial resection; lobectomy

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Minimally invasive surgery for cancer patients has proven to offer many benefits over traditional surgery, including less pain, faster recovery and better cosmesis, without compromising oncologic results (1,2).

Video-assisted thoracoscopic surgery (VATS) is the representation of this concept in thoracic surgery and it has evolved from the conventional three port technique to the uniportal approach (2).

Uniportal VATS follows the same principles of coordination

as in open surgery, since the camera is usually placed at the posterior part of the incision and the instruments performing the procedure are always bellow, mimicking the eye-hand position and coordination of open surgery (3).

This technique has improved substantially since the first reports of major lung resections were reported in 2011 (4,5) to advances cases (6) and more complex resections such a sleeve and double sleeve lobectomies in recent days (7,8). With the development of high definition cameras,

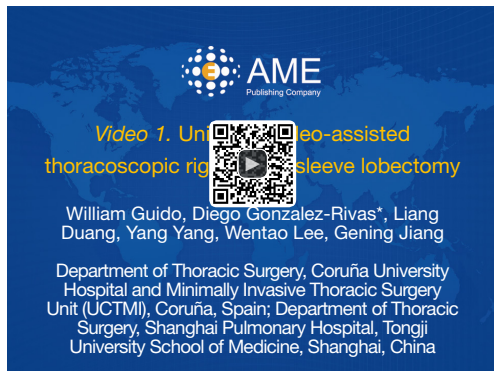


Figure 1 Uniportal video-assisted thoracoscopic right upper sleeve lobectomy (12). This video shows a complex case of a sleeve right upper lobectomy performed by uniportal VATS. VATS, video-assisted thoracoscopic surgery.

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energy devices, articulating instruments and the growing experience of surgeons performing this technique almost any major lung resection and reconstruction procedure can be done with this technique.

Sleeve lobectomies are among the most complex cases in thoracic surgery, even in open surgery these cases are usually challenging for thoracic surgeons (9,10).

Thanks to the rapid progress of uniportal VATS, complex procedures such as bronchial and vascular reconstruction can be performed safely in the hands of expert surgeons.

Although there are several reports of thoracoscopic sleeve lobectomies, only a few of them are performed by using only one incision (11).

This video shows a complex case of a sleeve right upper lobectomy performed by uniportal VATS (*Figure 1*). This surgery was specially difficult because the right pulmonary artery (PA) was almost over the location in which the bronchial anastomosis was performed, making the procedure particularly challenging. The PA was initially retracted and taped, allowing a better visualization of the divided bronchus. The anastomosis was performed using a 3/0 polydioxanone suture (PDS), with continuous suture in the membranous portion and also for the cartilaginous part.

The direct view that uniportal VATS provides makes feasible and safe to perform complex maneuvers such as bronchial suturing even when there are anatomic conditions that blocks the working field, such as the PA in this case.

Only VATS surgeons with experience in thoracoscopic

suturing should attempt this kind of cases in order to perform a safe anastomosis and minimize the risk of complications during surgery and in the postoperative setting.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Informed Consent: Written informed consent was obtained from the patient. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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