

Uniportal video-assisted thoracic surgery, and the uni-surgeon: new words for the contemporary world

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Abstract: Uniportal video-assisted thoracic surgery (U-VATS) is gaining popularity, and is currently performed by a team formed by one surgeon, one camera holder and one nurse. As expected, the new word “uni-surgeon” is becoming more and more common. In this article, using the example of thoracic surgery, I try briefly to analyze the pro and cons of the uniportal—single incision VATS and uni-surgeon in the modern world, and how uniportal surgery may bring a novel dimension to the future of surgery.

Keywords: Uniportal; single incision; video-assisted thoracic surgery (VATS); technology

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Although the definition of uniportal video-assisted thoracic surgery (U-VATS) is still open to debate (1), the introduction in 1998 of the concept of working through a small “port” using separately two surgical instruments and optics permits to perform most thoracic operations. Nowadays, sensational technology innovations such as high-frequency mechanical energy for precise hemostasis, dedicated staplers and surgical instrumentations allow to perform thoracic operations going from simple pleural biopsy to major lung resection (2-4).

Nevertheless, uniportal VATS is gaining popularity, and is currently performed by a team formed by one surgeon, one camera holder and one nurse. At this moment, the U-VATS is a technique, a good technique, but it is not the only technique to treat lung cancer, but if proven to be in a patient’s best interests it should not be avoided but adopted.

As expected, the new word “uni-surgeon” is becoming more and more common (5). If we recall the “old fashion” mediastinoscopy and transcervical thymectomy, it is evident that the uni-surgeon already existed year ago and that we are not reinventing the wheel, furthermore other authors already reported their experiences with solo-surgery (6,7). Instead, what is new is that there is enough evidence to say that most of the operations in the chest could be done by a single surgeon with the only help of a telescope and surgical

instruments inserted through a single small skin incision or port.

Table 1 (3,8-12) reports pragmatically the decrease of the length of incision in the chest to perform anatomical lung resection from 5 cm to 0 by using the uniportal approach. It is evident that the search of minimally invasiveness using smaller incisions to perform an operation should never put patients at risk, because each of us has the responsibility to give our patients the best treatment is possible with no harm. Furthermore the wide-spread use of U-VATS, the reported decrease of surgeries performed for early stage lung cancer and the introduction of innovative non-surgical therapies (i.e., immunotherapy) to treat lung cancer, could be valid reasons to re-think the global number of thoracic surgeons at the operating table (13).

In addition, the introduction of U-VATS opens several questions on how the next generation of surgeons should be trained. As the number of open surgery is decreasing worldwide, ethical concerns could arise if the surgeon performing U-VATS has no enough experience with open surgery to treat massive bleeding straight away. Besides, medico-legal issues should be open to debate as all the responsibilities are concentrated in a single surgeon, who has “less” space to train residents. As I already provocatively wrote an animal laboratory “for open surgery” should

Table 1 Evidence table: reduced length of skin incision to perform uniportal video-assisted thoracic surgery (U-VATS) anatomical lung resection

Author	Year of publication	Type of resection	Length of the skin incision	
			Chest (cm)	Other regions
Gonzalez-Rivas (3)	2003	Lobectomy	5.0	–
Wang (8)	2015	Lobectomy/segmentectomy	4.0	–
Ocakcioglu (9)	2015	Lobectomy	3.0	–
Yang (10)	2015	Lobectomy	2.5	–
Liu (11)	2014	Lobectomy	0	5 cm sub-xiphoid
Zieliński (12)	2007	Lobectomy	0	5–9 cm transcervical

probably be necessary in the future to train VATS or RATS surgeons (14).

Future risks must be weighted as hospital management might be tempted to leave a surgeon working as uni-surgeon in single handed hospital practice. Although feasible, personal experience teaches that the life of the uni-surgeon in single handed hospital practice is not easy even with the correct use of technology such as smartphones or tablets; since 7 years we have used such allied technology with great multiple benefits for patients, residents, consultants, hospital management, and family life (15,16).

The uni-surgeon is therefore a new word which describes the surgeon who operates using U-VATS or single incision approach, and he/she should not be confused with the surgeon working in single handed practice or with the “solo” surgeon working using a multiportal robot or VATS. Although nowadays the uni-surgeon could easily work in the operating room, the uni-surgeon in single handed practice should not be considered the next “standard practice” as the help of expert colleagues in the thoracic on-call surgical rota and, more important, during intraoperative emergency is compulsory for patient’s safety.

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Footnote

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