Thoracotomy is one of the most painful incision and an non adequate control of post-thoracotomy pain increases the morbidity and mortality (1,2). Despite post-thoracotomy pain has different sources, reducing skin and chest wall incision with minimally invasive approaches could decrease the pain stimuli and improve the postoperative outcome. In the last two decades, video-assisted thoracoscopic surgery (VATS) has emerged as alternative strategy to standard open thoracotomy in the management of lung, chest wall, mediastinal and pleural diseases (3-10). Benefits of VATS over thoracotomy include less postoperative pain, shorter hospital stay, less morbidity and mortality, better cosmetic results and similar oncological outcome. Thus, VATS has become the treatment of choice in elderly patients with severe comorbidty and/or in young patient with poor clinical conditions that cannot tolerate the surgical trauma of thoracotomy (11-14).

In the last decade, VATS has evolved by multi-port incisions to uniportal incision. The results of the first prospective trial reporting the method to perform several thoracic procedures through a uniportal VATS technique was published in 2000, 2001 and 2003 (15-17). However, Rocco et al. in 2004 popularized the approach, utilizing a uniportal approach for minor procedures such as pneumothorax and wedge resections and reported it in several publications in the early 2000s (18,19). Following, Gonzales-Rivas et al. developed this strategy for lobectomy and increasingly complex thoracic procedures as segmentectomy, bronchial sleeve, vascular reconstructions or carinal resections (20-23). In line with this experience, an increasing number of papers have been published in the last years reporting different types of thoracic surgical procedures performed using the uniportal VATS technique (24-26). Significant reduction in postoperative pain and paresthesia, and the better cosmetic results due to the limited number of incisions are the main advantages of uniportal over traditional VATS (27-30).

In a recent metanalysis, Harris et al. (31) compared the clinical outcomes of uniportal versus multiportal VATS lobectomy for lung cancer treatment. Results demonstrated a statistically significant reduction in the overall rate of complications, length of hospital stay and duration of postoperative drainage for patients who underwent uniportal VATS lobectomy. There were no significant differences between the two treatment groups in regard to mortality, operative time, perioperative blood loss and rate of conversion to open thoracotomy.

In line with this attitude, French et al. (32) in the present paper reported their experience on transition from multiple port to single port VATS anatomic pulmonary resection. They retrospectively compared patients undergoing anatomical lung resection through standard multi-port VATS (n=50) versus uniportal VATS (n=50). The two groups were well matched regarding demographic, clinical, and pathological data. In all cases a R0 resection was obtained with an equivalent resection of lymph nodes. No significant intergroup difference in conversion rate, morbidity and mortality, length of stay, and 24-hour post-operative pain were found, demonstrating that the transition from multiple ports VATS to uniportal VATS lung resection was safety and efficiency. Interestingly, the authors found a significantly lower VAS scores at 1 hour in the uniportal VATS group compared to control group. The approach “per se” and/or the successful local anesthesia of a single interspace were suggested by the authors as possible explanation. However the results of the present paper (32), as stated by the same authors, should be confirmed by other future experience and prospective studies before drawing any conclusions. As all retrospective studies, the present
analysis is affected by patients selection bias due to non-random allocation of treatment and no propensity-matched analysis was performed to improve the matching of patients. For example, two chest tubes were routinely used in the standard VATS group while only one chest tube was used in the uniportal VATS group. This difference could affect the results considering the injury of intercostal space caused by chest drainage is one of the main factors of postoperative pain.

Despite new device and instruments are actually available to facilitate the uniportal VATS procedures (33-35), previous experience in open and in standard VATS resections, and a strong selection of patients are the paramount importance before starting a uniportal VATS program. In addition, conversion to thoracotomy at the correct time during learning curve indicated prudence not failure. Despite it is against the actual wind, I always have in mind an anecdotal equation that my chief, Prof. Vincenzo Pastore, usually said me during my training when we had to treat complex and challenging surgical situations: “big incision = big surgeon”.

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Footnote

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References


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