

Video-assisted thoracic surgery double sleeve resections: the next step

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Therapy of non-small cell lung cancer (NSCLC) is undergoing a revolution: in early stage NSCLC surgical treatment possibilities have been enhanced by the introduction of video-assisted thoracic surgery (VATS) offering patients relevant benefits including less pain and a better quality of life (1). For advanced stages the implementation of targeted and immune-therapies have just begun to emerge and are about to replace classical chemotherapy as first line treatment option in selected cases (2,3). These developments will significantly change established treatment algorithms.

In this environment of significant changes in medical therapies for NSCLC surgeons are well advised to also do a step forward by routinely implementing and further developing minimally invasive techniques. Especially in advanced stage NSCLC with centrally located tumors it is even more important to minimize surgical trauma as the patients' immune system is compromised by the disease itself and/or by induction treatment (4). Although VATS lobectomy has been widely applied (5), tumor infiltration of the pulmonary artery or airways indicating sleeve or double sleeve resections with vascular and bronchial reconstruction are still considered as a contraindication to VATS in most medical centers (6). Oncologic concerns as well as the technical challenge are the main reasons for the low adoption of VATS in these advanced procedures. For double sleeve resections it is especially important to safely dissect pulmonary vessels and to be skilled in a standardized and easy to handle technique for reconstruction of vascular and

bronchial structures.

So far, published data on VATS double sleeve procedures is very limited and restricted to some case reports/series from few high volume centers showing technical feasibility and suggesting benefits with regard to procedural morbidity and mortality; however, profound scientific proof based on randomized controlled trials comparing the outcomes to the current gold-standard open approach is still lacking. The work by Prof. L. Liu and his team is an excellent contribution to this topic as it proves an outstanding expertise in advanced VATS procedures (7). Especially their focus on the so called "hollow out" process enables a safe management of the central bronchial and vascular structures and is thus an important contribution for the patients' safety; the "two-needle-holder suturing technique" impressively facilitates bronchial and arterial reconstructions. We congratulate the authors and hope but also are very positive that their surgical techniques are being generally adopted and thus help to further evolve the VATS approach in more complex procedures—for our patients' benefit!

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Footnote

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