

Surgery on the tracheobronchial tree saves life and lung function. The trachea is the main street of respiration and until now there is no technology to replace this “simple” tube system consisting of mucosa, connective and cartilage tissue, some vessels and smooth muscles. Interventional bronchoscopy is able to restore respiration in acute obstruction and may save the airway for some months, but sustainable solutions are not available. In default of an effective replacement of the windpipe system, resection and anastomosis of the remaining healthy tissue is the standard of care. Demanding are long distance resection of more than 40% of the trachea, laryngotracheal procedures and resection with reconstruction of the tracheal bifurcation. Beside the consequences of tracheotomy, the indication for tracheal surgery is not very common and cover a wide range of diseases, making personal experience important.

Distal of the tracheal bifurcation, lung cancers and carcinoids are the leading cause of surgery. Saving lung function is relevant in patients with COPD to minimize the decline of quality of life and in young patients with central airway tumors, who wish to spend an active life. Although this technique was introduced by Sir Clement Price Thomas in 1947 (1) the sleeve lobectomy is not standard of care all over the world. In certified German lung cancer centers, the rate of pneumonectomy and sleeve lobectomy is about 6% and 10% respectively of all anatomic lung resections in primary lung cancer in 2016 (2). The rate of sleeve lobectomy to pneumonectomy in the US from 1998-2012 (National Cancer Data Base) is 1 to 13 (S=1,713, P=22,251) (3). In Europe (ESTS Data Base) sleeve lobectomy is used in 2.8 and pneumonectomy in 10.8% of lung cancer patients (4). Perioperative risk for death and long-time survival favor clearly the use of sleeve resection and the consistent avoidance of pneumonectomy would have prevented a high number of deaths in lung cancer surgery. Nowadays, the modern anesthesiologic standards, the application of vascular and intrapericardial extensions and the postoperative care should allow to push sleeve resections up to 20% and decrease the rate of pneumonectomy to a nearly neglectable level of 3% in primary lung cancer resection (2,5).

In the last years, we can realize a new motion energy: Minimizing the access by VATS tracheobronchoplastic procedures and maximizing the extension of resection by cardiopulmonary replacement devices. Like in the past, the relevance and especially the benefit for the patient of some new developments must be proven.

In summary, thoracic surgery is moving forward constantly and nowadays represents a highly specified surgical entity. Thoracic surgery does not have to hide itself behind modern treatment modalities like stereotactic radiotherapy or immunotherapy. The limited application of tracheobronchoplastic procedures all over the world indicates a lack of knowledge and training. To realize the potential of our specialty for the benefit of our patients, lung cancer treatment should be centered in high experienced certified thoracic surgery units.

This book summaries the experience of thoracic surgeons who are willing and able to push the borders of thoracic surgery and define the standards of tomorrow. Therefore, we wish him a broad dissemination to increase the use of modern techniques and save our leading position in innovation and oncology.

References

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