experience and further refinements are necessary in order to perform more bronchoplastic surgical resections with versatile surgical techniques.

References


Editorial comment

Bronchoplastic lobectomies are a viable alternative to pneumonectomy in patients with primary lung cancer

Keywords: Lung cancer; Pneumonectomy; Sleeve lobectomy; Bronchoplasty

I am most grateful to the editor for the opportunity to comment on the nice experience with bronchoplastic lobectomies published by Dr Konstantinou and his colleagues [1]. The authors work, as they state, in one of the busiest centres of Greece, which performs about 300 resections for lung cancer a year. As such, sleeve lobectomies account for about 4% in their experience. I commend the authors on their excellent results, which are highlighted with a 100% rate of R0 resections and a 0% rate of bronchial complications.

The aim of this study has been to evaluate a modified technique for bronchial anastomosis, using two running sutures. This concept is not new. The use of a single running suture in this indication has been previously published by the Brompton group 10 years ago [2]. While, formerly, surgeons were afraid of bronchial necrosis and preferred to place interrupted sutures, it is likely that most colleagues nowadays construct their bronchial anastomoses with running sutures. A milestone with this concern has been the paper by the Vienna lung transplant group, demonstrating that in the situation of maximal bronchial ischaemia, which is namely lung transplantation, use of running sutures has dramatically decreased the incidence of bronchial anastomotic complications [3]. Therefore, to my opinion, the debate is closed; this article is another nice demonstration of the feasibility, and further demonstrates that this operation can be safely performed at least in part by surgical trainees.
I have some minor comments regarding the surgical technique. First of all, we should be aware that bronchial anatomy is different on the right and left sides. While right-sided lobar bronchi have the same architecture as main bronchi, which means identifiable cartilaginous and membranous parts, left-sided lobar bronchi have an architecture of ‘intra-pulmonary’ bronchi with circumferential cartilage; hence, stay sutures at the edges of the cartilage to orientate the segments are difficult to imagine on the left side. A single running suture, starting at the medial edge of the cartilaginous part of either segment on the right side, and at the most medial point of the segments on the left side, is both simple and reliable. My preference goes to monofilament sutures, regardless of being absorbable or not, because of the lower risk for granuloma formation; the size of the suture should be adapted to the quality of tissues; most often, 3/0 on the right side and 4/0 on the left side are well suited. Placement of additional sutures should not be necessary, and may favour focal necrosis. In opposition to Dr Konstantinou and colleagues, I believe that most often there is a discrepancy of bronchial calibre. As a routine, I expect telescoping of the bronchial segments; this is easily obtained by placing sutures ‘out-in’ on the smaller calibre, and ‘in-out’ on the larger. Bronchial necrosis is anticipated on the initial segment of the distal bronchus, which is telescoping; therefore, wrapping procedures do not seem necessary in standard cases. Careful and gentle handling of the tissues is mandatory to avoid bronchial ischaemia; a fine petechial bleeding on the bronchial section lines heralds a favourable healing of the bronchial suture. Tension release is of uppermost importance, and we routinely perform intrapericardial release. Most care should be addressed to patients with previous radiation therapy however. In this category, a protective wrap is recommended by most authors; to my opinion, the easiest to harvest is the thymic and pericardial fat flap.

It is a wise strategy to start oncologic operations with lymph node dissection, which is easier to perform while the bronchial tree is in place; it exposes the hilar anatomy adequately and favours an expeditious and safe resection; it may influence surgical decision when unexpected node metastases are discovered.

We follow a more aggressive schedule regarding the use of bronchoscopy; we routinely do at least one bronchoscopy before discharge, and another one at 2–3 months; this allows being somehow more critical with respect to bronchial complications.

Use of intra-operative frozen section is recommended, but does not offer an absolute guarantee against R1 resection, because it may be tricky to set the difference between severe dysplasia and carcinoma in situ. In fact, most authors relate a R1 rate varying between 4% and 12% [4,5]. Besides, it is also well known that carcinoma in situ at the bronchial resection margin is a relatively benign situation, and that most cases spontaneously resolve [5].

It is important for surgeons to discuss how to do things, but it may also be important for our patients to elaborate on the reasons why we should do it. Bronchoplastic resections have become increasingly popular among surgeons and chest physicians because of the dramatically lower mortality rate when compared to pneumonectomy. One of the major achievements in contemporary thoracic surgery over the past decade is simply the fact that our community has become aware of the tremendous operative risk of pneumonectomy. Hence, resection of a whole lung should be restricted exclusively to those patients for whom no lesser resection is applicable. I just wish to moderate some extreme positions. In our hands, left pneumonectomy is no less dangerous than right sided. We therefore argue in favour of bronchoplastic procedures on the left side as well [6]. In our experience, induction therapy does not increase operative risk of pneumonectomy, and there is no reason not to perform it when it is required [6]. Finally, there is no reason to refuse resection in patients who are still N2 after induction, at the least we prefer to continue a chemotherapy, which has proven to be ineffective! [7].

Bronchoplastic lobectomies offer an alternative with a reduced mortality rate, within the 2% range of a standard lobectomy, while offering a radicality comparable with pneumonectomy on the edge of the bronchial tree; therefore, it should be used not only in patients with limited respiratory function, but should also be recommended as an elective procedure every time it may guarantee a complete resection [4]. When considering morbidity, it is unfair to expect no complications at all; however, bronchial complications will be less detrimental and easier to handle than following a pneumonectomy.

As we previously have published, the main risk factor is the diagnosis of lung cancer; the complication rate is dramatically decreased in patients with carcinoid tumours, who are younger, in better general health, with less comorbidity and, more often, non-smokers [8].

Who should do sleeve resections? I do not agree with the qualification of ‘challenging’ surgery; it is no more but a lobectomy with a circumferential bronchial suture! As such, it should be alternatively offered to each eligible patient. I am convinced that all dedicated thoracic units are able to safely perform such operations, and that virtually all training programmes offer exposure to such cases to their trainees [9]. It is therefore more of a political issue. Whom the authors politely name the ‘unfamiliar’ thoracic surgeon is probably a general surgeon with inadequate training and routine, performing less than 20 resections a year. These colleagues can certainly feed their families without these few thoracic cases and should themselves have the honesty to stop doing so. I do not expect enough courage from politicians or health administrations to set it in order!

I commend the authors on a nice experience, which highlights again the place of bronchoplastic operations among the treatment options in patients with lung cancer. In the hands of well-trained thoracic surgeons, these operations are easy to perform, safe in the early postoperative period and oncologically valid in the long term.

References


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