

7th December. Further details available at www.tobaccofreepartfolios.org

Keywords: Cross sector collaboration, tobacco, Tobacco Control, advocacy

ED04.01

Surgery in Bronchopulmonary Typical and Atypical Carcinoids



Pier Luigi Filosso,¹ Alberto Sandri,² Francesco Guerrera² ¹*Thoracic Surgery, University of Torino, Torino/Italy,* ²*University of Torino, Torino/Italy*

Complete surgical resection of the tumor is the treatment of choice for Bronchopulmonary Carcinoids (BCs). The goal is to resect the lesion, saving as much lung parenchyma as possible. The type of surgical approach and resection are strictly depends on: a) tumor's location, b) tumor's histology and c) presence of lymphnodal metastases. In case of peripheral small BC (Figure 1), the type of surgical resection (wide wedge resection vs segmentectomy or lobectomy) is still matter of debate. Few scientific evidences^{1,2} report that a wedge resection could be safely proposed since, in multivariate analysis, long-term survival is not compromised when this approach is used. However, those studies are retrospective, sometimes with limited data on the patients' follow-up and the number of wedge resections is limited: therefore it is very difficult to draw definitive conclusions with those potential biases. The statement that a wedge resection should be reserved to a small peripheral N0 Typical Carcinoid (TC) seems to be more prudent. An anatomical resection (segmentectomy/lobectomy) should be proposed in case of an Atypical Carcinoid (AC), or whenever the tumor cannot be resected in a less invasive manner (e.g: centroparenchymal lesion or when the lobe is totally occupied by the tumor – Figure 2). The aim to preserve as much lung tissue as possible is the cause of the development of tissue-sparing surgical techniques (the so called “bronchial sleeve resections” and the “sleeve lobectomies”). The first contemplates a bronchial resection with the tumor, without any lung parenchyma exeresis; in the latter, a formal lobectomy with bronchoplastic procedure, is performed to avoid major pulmonary resections (e.g.: bilobectomy or pneumonectomy). An intraoperative frozen section of the bronchial margin has to be performed in all bronchoplastic procedures to confirm that no neoplastic cells are present in the anastomosis.³ Contrariwise, a pneumonectomy should be reserved to patients with a “destroyed lung”, usually caused by long-term

obstructive pneumonia, a phenomena caused by an endobronchial tumor growth which completely obstructs the bronchial lumen, or when a tissue sparing resection cannot be safely performed. The type of surgical approach (thoracotomy vs. minimally invasive one) must be decided based on tumor's size and location, as well as the type of surgical resection planned. In general, VATS approach is currently indicated for small and peripheral BCs, while a posterolateral thoracotomy is generally used when a bronchoplastic procedure must be performed. Lymphadenectomy, and in particular, systematic hilar and mediastinal lymphadenectomy, must be always performed, in accordance with the European Society of Thoracic Surgeons (ESTS) recommendations for intraoperative lymph node assessment.⁴ A minimum of six nodal stations, three of which mediastinal, have to be harvested, including the subcarinal ones. Lymph nodal metastases, in fact, may be present in up to 25% of TCs and in less than 50% of ACs.^{5,6} In case of N positive (N+) BCs, and whenever feasible, upfront surgery may be proposed: a complete resection (R0) must be performed, whilst debulking interventions are not recommended. A satisfactory overall survival for BCs with lymph nodal metastases has been reported in several papers^{7,8}: those patients, in fact, survive longer than those with N+ NSCLC. An endobronchial resection (usually through rigid bronchoscopy) has been sometimes advocated for purely endobronchial tumors³: it is mandatory to determine whether the tumor may present with an extrabronchial growth, in which case a local treatment alone is not sufficient, and should be followed by surgery (with or without bronchoplastic techniques). A palliative endobronchial treatment may be offered to those patients unfit for surgery, in which severe obstructive phenomena caused by the endoluminal tumor growth cause infective and respiratory consequences. Post-resectional tumor relapses may occur approximately in 20% of ACs and in 5% TCs^{3,8}: the risk of recurrence is strictly dependent from the histologic tumor subtype, the presence of lymph nodal metastases and the completeness of resection.^{9,10} Most recurrences are distant (liver, adrenal gland, bone), but sometimes, local relapses (lung and/or mediastinum) have also been reported. Surgery, with the same aim of the elective one, may be offered to those patients, improving their survival.

References: 1. Yendamuri S, Gold D, Jayaprakash V, Dexter E, Nwogu C, Demmy T: Is sublobar resection sufficient for carcinoid tumors? *Ann Thorac Surg.* 2011;92:1774-1778 2. Ferguson MK, Landreneau RJ, Hazelrigg SR, Altorki NK, Naunheim KS, Zwischenberger JB, Kent M, Yim AP: Long-term outcome after resection

for bronchial carcinoid tumors. *Eur J Cardiothorac Surg.* 2000;18:156-61

3. Detterbeck FC: Management of carcinoid tumors. *Ann Thorac Surg* 2010;89:998-1005
4. Lardinois D, De Leyn P, Van Schil P, Porta RR, Waller D, Passlick B, Zielinski M, Lerut T, Weder W: ESTS guidelines for intraoperative lymph node staging in non-small cell lung cancer. *Eur J Cardiothorac Surg.* 2006;30:787-792
5. Lim E, Yap YK, De Stavola BL, Nicholson AG, Goldstraw P: The impact of stage and cell type on the prognosis of pulmonary neuroendocrine tumors. *J Thorac Cardiovasc Surg.* 2005;130:969-972
6. Daddi N, Ferolla P, Urbani M, Semeraro A, Avenia N, Ribacchi R, Puma F, Daddi G: Surgical treatment of neuroendocrine tumors of the lung. *Eur J Cardiothorac Surg.* 2004;26:813-817
7. Filosso PL, Ferolla P, Guerrera F, Ruffini E, Travis WD, Rossi G, Lausi PO, Oliaro A; European Society of Thoracic Surgeons Lung Neuroendocrine Tumors Working-Group Steering Committee: Multidisciplinary management of advanced lung neuroendocrine tumors. *J Thorac Dis.* 2015;7(Suppl 2):S163-S171
8. Filosso PL, Oliaro A, Ruffini E, Bora G, Lyberis P, Asioli S, Delsedime L, Sandri A, Guerrera F: Outcome and prognostic factors in bronchial carcinoids: a single-center experience. *J Thorac Oncol.* 2013;8:1282-1288
9. Caplin ME, Baudin E, Ferolla P, Filosso P, Garcia-Yuste M, Lim E, Oberg K, Pelosi G, Perren A, Rossi RE, Travis WD; ENETS consensus conference participants: Pulmonary neuroendocrine (carcinoid) tumors: European Neuroendocrine Tumor Society expert consensus and recommendations for best practice for typical and atypical pulmonary carcinoids. *Ann Oncol.* 2015;26:1604-1620
10. Öberg K, Hellman P, Ferolla P, Papotti M; ESMO Guidelines Working Group: Neuroendocrine bronchial and thymic tumors: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. *Ann Oncol.* 2012;23 Suppl 7:vii120-vii123

Figure 1: Small and peripheral T1aNO Typical Carcinoid

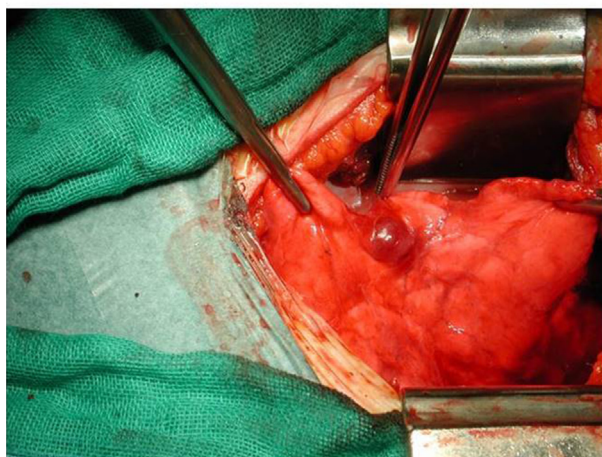


Figure 2: Centrally-located AC: lobectomy has been performed

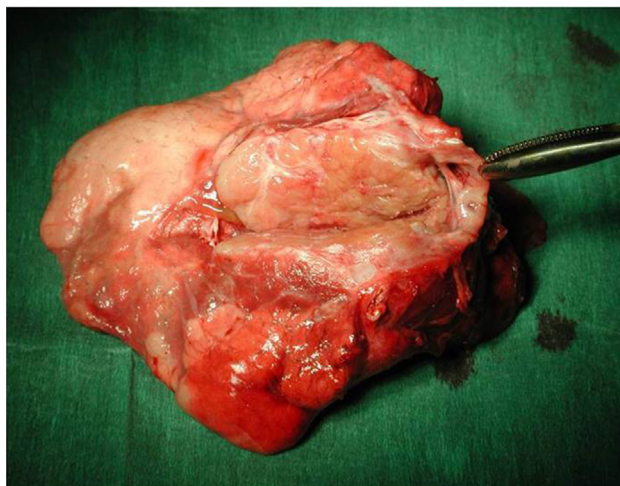
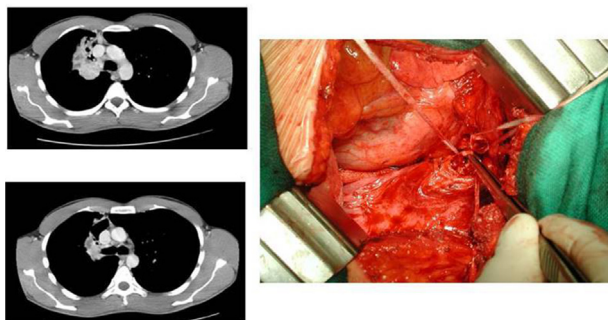


Figure 3: Right-sided centrally located TC: right upper sleeve lobectomy has been performed



Keywords: Lung, Neuroendocrine Tumors, Surgery, Outcome

ED05.01

What's New in Lung Cancer Staging?

Hisao Asamura *Division of Thoracic Surgery, Keio University School of Medicine, Tokyo/Japan*



The tumor, node and metastasis (TNM) classification for malignant tumors has been periodically revised in the International Union for Cancer Control (UICC) and American Joint Committee on Cancer (AJCC). As for lung cancer, the process of revision is quite unique compared with malignancies of other organs in that the corresponding professional society, the International Association for the Study of Lung Cancer (IASLC), has been playing a principal role in database construction, making revision agenda, simulation, and validation as a proposal to UICC and AJCC. The agenda articles have been already published for T, N, M, and stage grouping in the official journal of IASLC. In brief, the IASLC database included 77,156 evaluable