Case report

Metachronous bronchial carcinoid tumor

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Abstract

We report a rare case of bilateral metachronous bronchial typical carcinoid tumor surgically treated. At the age of 33 years, the patient underwent, in another hospital, a left upper lobectomy for a typical carcinoid tumor. After 4 years, the patient manifested the symptoms of a new central typical carcinoid tumor located at the origin of the middle lobe bronchus and infiltrating the intermedius one. This tumor was first treated by laser therapy, but long-term follow-up evaluation with bronchoscopy revealed a local recurrence of disease. So we performed a middle sleeve lobectomy with radical node dissection.

Keywords: Bronchial carcinoid; Sleeve lobectomy; Laser therapy

1. Introduction

Bronchial carcinoids are well-differentiated neuroendocrine malignant tumors, classified in two distinctive forms, typical (TC) and atypical (AC), with different histologic features, clinical course, and prognosis. Carcinoid tumors are rare and account for 2—5% of all lung neoplasms. Surgery represents the treatment of choice, in particular parenchyma-sparing procedures should be preferred for central TC because they rarely metastasize and show an excellent prognosis [1]. Metachronous typical carcinoid tumor is extremely rare [2], and rarer is to find a metachronous central tumor treated bilaterally by surgery.

2. Case report

A nonsmoking 33-year-old man with a history of recurrent pneumonia, in another hospital, was diagnosed to have a TC located in the left upper lobar bronchus (Fig. 1a). A radical left upper lobectomy with systematic hilar-mediastinal lymphadenectomy was performed and the histologic examination confirmed the diagnosis of TC tumor T2 N0.

At the age of 37 years, the patient manifested new episodes of pneumonia. A chest computed tomography showed an atelectasis of the middle lobe (Fig. 1b) and at bronchoscopic examination an endobronchial lesion obliterating the lumen of the middle lobe and infiltrating the intermedius was found. Biopsy was easily taken and histology revealed a new central TC tumor. Pneumologists, in another hospital, made an accurate functional pulmonary assessment in order to understand the possibility to perform a lower bilobectomy. Even if the operation could be tolerated, the reduced postoperative respiratory function would have subsequently compromised the quality of life in this young patient. Therefore, because of the previous left upper lobectomy, a laser therapy with coagulation of the tumor implant with radical intent was made. Endoscopic removal of the tumor was helpful in relieving obstructive symptoms, in controlling infection and provided a long-term asymptomatic period (Fig. 1c). The patient had a follow-up with bronchoscopy every 6 months. Unfortunately, 3 years later there was a recurrence in the site of the laser treatment: the middle bronchus was partially obstructed by tumor and also a biopsy made on intermediate bronchus was positive.

Therefore, the patient arrived at our attention: the functional evaluation showed a moderate airway’s obstruction and an increase of residual volume; the lung scan revealed a perfusion of 70% in the right side and 30% in the left one. The chest computed tomography confirmed the lesion of 15 mm in diameter in the known site, with no evidence of lymph node involvement (Fig. 1d). In posterolateral right thoracotomy we made the scissural isolation that permitted to see the neoplasm interesting middle lobe bronchus extending to the distal part of intermedius bronchus and to the origin of the inferior one. So we performed a middle sleeve lobectomy with the anastomosis between intermedius and lower lobar bronchus extending to the Anastomosis between intermedius and lower lobar bronchus and a systematic lymphadenectomy. This procedure allowed to avoid the bilobectomy. Pathologic diagnosis
confirmed a TC tumor T2 N0 (T2 due to the previous complete atelectasis of the middle lobe) and the resection margins were tumor free. The bronchoscopic examinations after surgery showed an open, well-calibrated anastomosis. The functional respiratory test made 1 year after surgery, showed a negligible reduction of main parameters, confirming the limited functional impact of our parenchyma-sparing procedure (preoperative and postoperative functional parameters: FEV1 2.52 l (67%) and 2.25 l (59%), FVC 3.84 l (84%) and 3.61 l (79%)).

3. Discussion

Bronchial carcinoid tumors are rare malignant neoplasms with an incidence of approximately 2.3—2.8 cases per 1 million population [3]. The description of multicentric carcinoid of the lung is unusual in literature and is referred mainly to the synchronous carcinoids [4,5]. The evidence of a bilateral metachronous central TC is rare [2] and nobody reported the second tumor treated surgically. Our case was treated twice radically by surgery thanks to the parenchyma-sparing procedure.

Moreover, this case report is interesting because it opens the discussion about three points still debated in the treatment of TC:

1. the possibility/necessity of parenchyma-sparing surgery;
2. the role of laser therapy;
3. the necessity of long-term follow-up.

Many surgeons, and our experience agrees with theirs, consider in case of central TC the parenchyma-sparing operation, as bronchoplastic or sleeve resection, the standard surgical treatment [6]. In the case described above, the middle sleeve resection permitted a radical treatment, in a young patient already submitted to a parenchymal resection (left upper lobectomy), with a satisfactory residual respiratory function and a good quality of life too.

Some authors [7,8] proposed the laser therapy as a definitive treatment for central TC. Unfortunately, laser treatment rarely allows to obtain a radical resection: locally the base implant is often large and deep and the visible part in the bronchial tree can be the tip of an iceberg. In our case, the laser treatment, performed in a symptomatic patient who already undergone to a lung resection, was useful to obtain a rapid resolution of infection symptoms but did not permit the radical treatment, in fact, the recurrence was inevitable. Moreover, because laser therapy does not consent an evaluation of involvement of lymph nodes (10—20% in TC), the surgical resection with systematic lymphadenectomy represents the treatment of choice. Instead the preoperative laser treatment appears important to accurately plan the operation, allowing the careful identification of the base implant. A definitive laser therapy, therefore, is recommended only when the thoracotomy is contraindicated for other reasons.

The actual knowledge of the existence of a metachronous TC feature, even if unusual, confirms the necessity of long-term follow-up in these patients.

References


