Metachronous Bilateral Bronchial Carcinoid Tumor

To the Editor: Bronchial carcinoids are well-differentiated neuroendocrine tumors classified as typical or atypical according to histological characteristics, clinical course, and prognosis. A bilateral metachronous bronchial carcinoid tumor is extremely rare, even more so when an atypical carcinoid tumor appears 10 years after treatment of a typical carcinoid tumor in the contralateral hemithorax, as occurred in the case described below.

A 43-year-old woman with no relevant history was found by chance to have a lung nodule in the left lower lobe on chest x-ray. A thoracic computed tomography (CT) scan revealed a 1-cm nodule in the left segment 6, without significant mediastinal lymph node enlargement (Figure 1a). Fiberoptic bronchoscopy findings were normal. Video-assisted thoracoscopy was performed, with atypical resection of the nodule. Intraoperative evaluation indicated a bronchial carcinoid tumor and, therefore, posterolateral thoracotomy and typical segmentectomy of the left segment 6 was carried out. The definitive pathologic diagnosis was of a typical bronchial carcinoid tumor classified as T1N0M0.

After 10 years with no clinical or radiologic changes, a chest x-ray revealed a 1-cm nodule in the right upper lobe (RUL) that had not been seen previously. A thoracic CT scan showed a 1.2-cm nodule in this lobe (Figure 1b) with significant mediastinal lymph node enlargement. Fiberoptic bronchoscopy findings were normal. Positron-emission tomography showed an area of weak metabolic activity in the RUL, along with another focal point of moderate metabolic activity in the subcarinal region. ^{111}In-pentetreotide scintigraphy revealed no areas of abnormal uptake. Lateral thoracotomy showed a nodule in the apical segment of the RUL and a focus of subcarinal lymph node involvement. Atypical resection of the nodule was performed, and intraoperative pathology revealed a probable carcinoid neuroendocrine tumor considered by the pathologist to be "particularly aggressive" in view of its histopathologic features. As a result, the surgery was extended to include upper right lobectomy and mediastinal lymphadenectomy. The definitive pathologic diagnosis described a 1.5-cm atypical carcinoid tumor with extracapsular involvement at lymph-node stations 2, 4, and 7.

Bronchial carcinoid tumors are of neuroendocrine origin and are believed to form part of a spectrum of tumors ranging from typical carcinoids (low malignancy) to large-cell and small-cell carcinomas (high malignancy) according to structural and functional characteristics, and also including atypical carcinoids (intermediate malignancy).[1,2] The best diagnostic imaging technique is thoracic CT, although octreotide scintigraphy can also provide information.

The treatment of a carcinoid tumor consists of complete resection of the primary lesion, preserving as much healthy parenchyma as possible. Complete lymphadenectomy is indicated when diseased lymph nodes are observed or the lesion is an atypical carcinoid tumor. In the case we report, a typical segmentectomy had been performed in the initial procedure, whereas the second consisted of right upper lobectomy and lymphadenectomy, because of the aggressiveness of the second tumor.

This case is interesting because a second carcinoid tumor was found 10 years after treatment for a typical carcinoid tumor. The second tumor was observed in the contralateral hemithorax, was highly aggressive and atypical, with extracapsular involvement of several lymph-node stations. Another carcinoid tumor was suspected preoperatively. The histopathologic diagnosis of atypical carcinoid tumor confirmed the hypothesis that this was a second primary, or metachronous, lung tumor.

The majority of articles published on multiple carcinoid tumors refer to synchronous lesions,[3] and few cases of metachronous pulmonary carcinoid tumors have been published.[4,5] No articles were found on the condition described above, that is, the presence of metachronous, histologically distinct, pulmonary carcinoid tumors. A review of the diagnostic criteria for carcinoid tumor indicates that certain tumors previously classified as typical would now be considered atypical. In our opinion, however, this is not applicable to the case we report, in our view, because the second tumor was more aggressive than the first, which had shown no clinical or radiological changes over the 10 years of follow-up.

Roberto Mongil Poce,
Enrique Bermejo Casero,
and Ricardo Arrabal Sánchez

Servicio de Cirugía Torácica,
Hospital Regional Universitario Carlos Haya,
Málaga, Spain

1. Flieder DB. Neuroendocrine tumors of the lung: recent developments in histopathology. Curr Opin Pulm Med. 2002;8:275-80.
2. World Health Organization. World Health Organization histological typing of lung tumors. 3rd ed. Geneva: World Health Organization; 1999.
3. Beshay M, Roth T, Stein R, Schmid RA. Synchronous bilateral typical pulmonary carcinoid tumors. Eur J Cardiothorac Surg. 2003;23: 251-3.
4. Cardillo G, Sera F, Di Martino M, Graziano P, Giunti R, Carbone L, et al. Bronchial carcinoid tumors: nodal status and long-term survival after resection. Ann Thorac Surg. 2004;77:1781-5.
5. Rea F, Rizzardi G, Marulli G, Bortolotti L. Metachronous bronchial carcinoid tumor. Eur J Cardiothorac Surg. 2006;30:394-6.

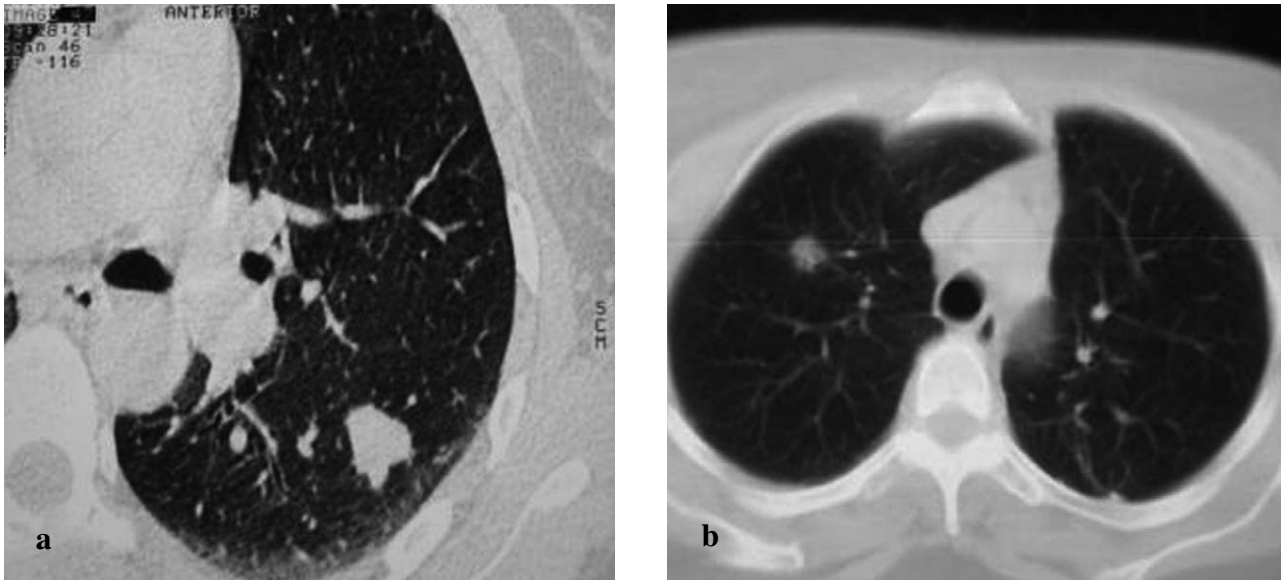

Figure. Computed tomography scans of the thorax: *a)* a peripheral lung nodule can be seen in the left lower lobe; *b)* an intraparenchymal pulmonary nodule can be seen in the right upper lobe.