

Nodal Recurrence of Pulmonary Carcinoid 30 Years After Primary Resection

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Abstract: We present a case of nodal recurrence of carcinoid tumor in a 48-year-old male patient, 30 years after resection of primary tumor. Octreoscan was used for diagnosis and localization of the mass. Surgical resection was successful and histopathologic examination revealed lymph node infiltrated with atypical carcinoid.

Key Words: Lung cancer, Carcinoid, Lymph node recurrence.

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Bronchial carcinoids (typical and atypical) are a part of the spectrum of neuroendocrine tumors of the lung; despite being low-grade malignant tumors, they may spread to mediastinal lymph nodes or distantly even many years after surgical resection.

CASE SUMMARY

In January 2007, a 48-year-old man came to our attention because of a mediastinal mass discovered incidentally on chest x-ray performed during cardiac check up for infrequent dropped beats (Figure 1A). The patient is nonsmoker and, he denied any chest related complaint or dysphagia. In 1977, he had undergone a right lower lobectomy for a carcinoid tumor. Diagnostic work up included chest computed tomography scan that revealed a large mass measuring $11 \times 9 \times 6$ cm with small area of calcification, occupying the subcarinal area with flaring of both bronchi and compression of the esophagus (Figure 1B). Esophagoscopy was performed to exclude primary esophageal tumor and the findings were only external compression with normal intact mucosa. The serum was positive for Neurone Specific Enolase $18.4 \mu\text{g/liter}$ (normal values $0.0\text{--}17.0 \mu\text{g/liter}$) and the level of 5-hydroxyindolacetic acid in 24-hour urine was elevated to $290 \mu\text{mol}$ (normal values $10\text{--}31 \mu\text{mol}$); a picture suggestive of carcinoid tumor, however, there was no clinical evidence of carcinoid syn-

drome. OctreoScan (using octreotide radiolabeled with Indium 111) revealed high uptake by the mass and no abnormal uptake elsewhere (Figure 2). Through right rethoracotomy, the lung was retracted anteriorly and mediastinal pleura over the mass was opened; at first the mass was dissected from the esophagus and then from both bronchi and posterior pericardium, feeding vessels were clipped and divided. During the procedure, attention was paid to avoid further compression of the heart. Mediastinal lymph node dissection was performed followed by hemostasis and closure of thoracotomy (Figure 3). Histopathological examination of the mass revealed solitary lymph node infiltrated with atypical carcinoid tumor. Apart from right paraesophageal lymph node that showed micrometastasis, all other lymph nodes were free. Revision of the histopathology of the primary tumor resected 30 years previously was consistent with atypical carcinoid. In the last follow-up 10 months after surgery, the patient is doing well with unremarkable chest x ray.

COMMENT

Recurrence of carcinoid tumors after surgical resection varies between 2–9% and 5–30% for typical and atypical varieties, respectively. In a study of 139 patients with resected pulmonary carcinoids, recurrence developed in 8 patients at postoperative intervals of 43 ± 25 months.¹ Few case reports described recurrence more than 20 years after initial resection. Atypical variety and presence of positive lymph nodes at the time of primary resection are predictors for regional or systemic recurrence.²

Somatostatin receptor scintigraphy, with Radiolabeled somatostatin analogue ^{111}In -octreotide is used to localize carcinoid tumor and has demonstrated reliable results both in diagnosis of primary carcinoids and detection of early recurrences and metastases even in asymptomatic patients. It has a sensitivity of more than 90% and can be used as the initial diagnostic imaging modality.³ In our patient, due to the increased Neurone Specific Enolase and 5-hydroxyindolacetic acid serum levels, recurrent carcinoid was the leading diagnosis and the octreotide scan helped to support this diagnosis and excluded spread elsewhere that would have precluded surgery. Bronchoscopic needle aspiration would have given a tissue diagnosis, but would not have defined extent of disease and was not needed before surgery.

At the present time, surgical resection of the primary tumor and local lymph nodes is the only curative treatment available, other treatment modalities with chemotherapeutic

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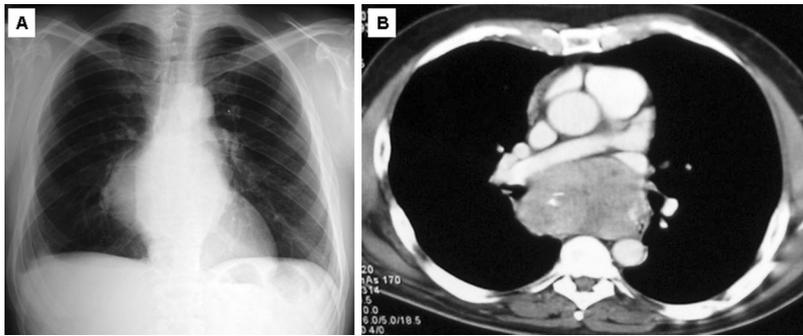


FIGURE 1. A, x-ray chest showing large central mediastinal mass. B, Chest CT scan showing the size of the mass and its anatomic relations.

IMAGES AT 4 HOURS

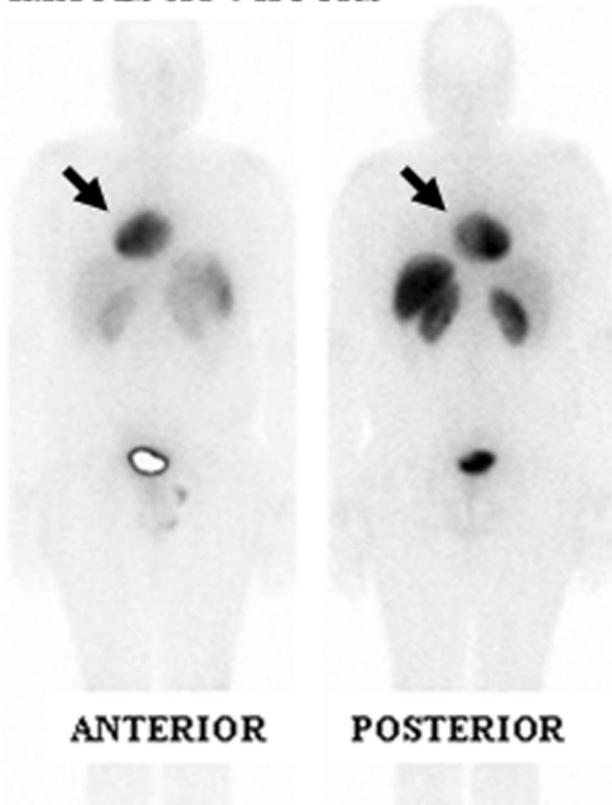


FIGURE 2. ¹¹¹In-octreotide scintigraphy (OctreoScan) whole body images obtained 4 hours after injection showing abnormal high uptake by the mass (black arrow) and normal uptake by the liver, kidneys, and bladder.

agents, biotherapy with somatostatin analogues or interferons, and radiolabeled peptides have only modest effect in controlling tumor progression. Our previous⁴ results and this

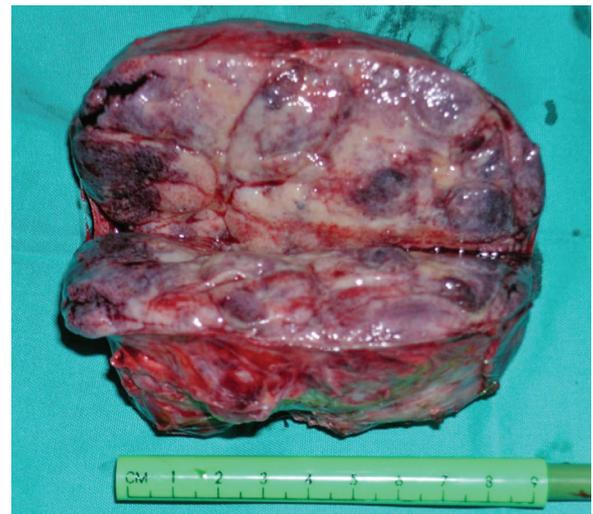


FIGURE 3. The resected mass opened longitudinally showing anatomic features of lymph node with tumor infiltration.

case emphasize the importance of mediastinal lymphadenectomy in cases of carcinoid tumors at the time of the original resection and life-long follow up of resected carcinoid patients, especially if local lymph node involvement was present.

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