

Bronchoscopic resection of a central typical carcinoid tumour

Jason C Weatherald MD, Naushad Hirani MD, Eve-Lea Beaudoin MD, Alex Chee MD

A 53-year-old man with recently diagnosed, very severe chronic obstructive pulmonary disease (forced expiratory volume in 1 s [FEV₁] 1.02 L, 28% of predicted, forced vital capacity [FVC] 3.24 L, 72% of predicted, FEV₁/FVC ratio 0.32) had an incidental endobronchial lesion discovered on computed tomography (CT) of the chest (Figure 1). There were no enlarged hilar or mediastinal lymph nodes on CT. Bronchoscopy identified a smooth, vascularized, pedunculated tumour at the right upper lobe carina (Figure 2A). Dynamic obliteration of the bronchus intermedius was present on



Figure 1 Axial (A) and coronal (B) images from chest computed tomography of a 53-year-old man with a noncalcified soft-tissue mass in the bronchus intermedius (arrow). Mediastinal algorithm without enlargement of mediastinal (C) or hilar lymph nodes (D)

expiration. Initial biopsy specimens were consistent with a typical bronchial carcinoid tumour. The patient declined referral to a thoracic surgeon and underwent flexible bronchoscopy with moderate sedation. Endobronchial resection of the tumour was successfully achieved using snare electroresection, followed by cryotherapy to the base of the tumour (Figures 2B and 2C). Pathology review confirmed a typical bronchial carcinoid tumour with involvement of the tumour base. At the six-month follow-up, there was no evidence of recurrence on surveillance bronchoscopy (Figure 2D).

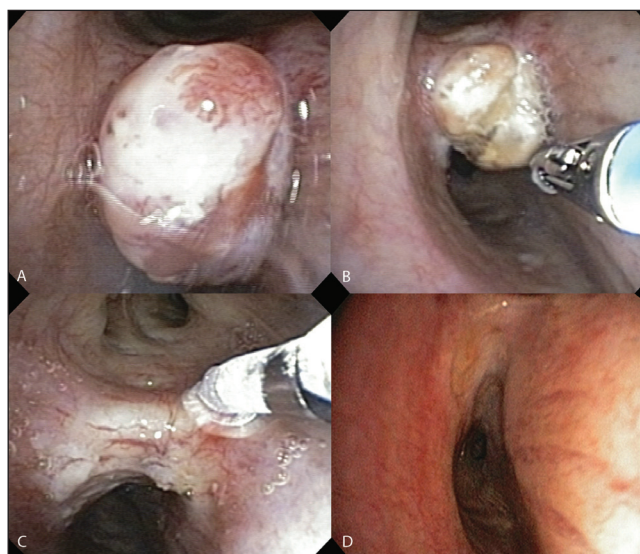


Figure 2 Bronchoscopic appearance of an endobronchial typical carcinoid tumour at the right secondary carina (A). Tumour base after snare electroresection (B) followed by cryotherapy (C). Healed secondary carina with no evidence of recurrence at six-month follow-up (D)

KEY LEARNING POINTS

- Carcinoid tumours are low-grade malignant neuroendocrine tumours comprising 1% to 2% of all lung neoplasms (1).
- Typical carcinoid tumours are well differentiated, with <2 mitoses per 2 mm² of viable tumour, tend to arise in proximal airways, and infrequently metastasize to local lymph nodes (1). Atypical carcinoid tumours have two to 10 mitoses per 2 mm², and have regional lymph node involvement in up to 50% of patients and distant metastases in up to 20% of patients (1).
- CT features are nonspecific but include endobronchial or parenchymal nodules, and postobstructive pneumonia; up to 30% may contain calcification (1).
- Bronchoscopic resection can be achieved in patients who decline or are medically unfit for surgery, with cure rates of 46% to 64% (2) and long-term survival similar to surgically resected typical carcinoid tumours (3). Central atypical carcinoid tumours may also be successfully resected via therapeutic bronchoscopy but frequently have lymph node involvement and require completion surgery to achieve cure (2).

REFERENCES

1. Gridelli C, Rossi A, Airoma G, et al. Treatment of pulmonary neuroendocrine tumours: State of the art and future developments. *Cancer Treat Rev* 2013;39:466-72.
2. Brokx HAP, Risse EK, Paul MA, et al. Initial bronchoscopic treatment for patients with intraluminal bronchial carcinoids. *J Thorac Cardiovasc Surg* 2007;133:973-8.
3. Neyman K, Sundset A, Naalsund A, et al. Endoscopic treatment of bronchial carcinoids in comparison to surgical resection: A retrospective study. *J Bronchology Interv Pulmonol* 2012;19:29-34.

The 'Images in Respiratory Medicine' section of the *Canadian Respiratory Journal* aims to highlight the importance of visual interpretation, whether physiological, radiological, bronchoscopic, surgical/thoroscopic or histological, in the diagnosis of chest diseases. Submissions should exemplify a classic, particularly dramatic or intriguing presentation of a disease while offering an important educational message to the reader (insightful diagnostic pearls or differential diagnosis, etc). This section is not intended to be a vehicle for publication of case reports (see the Clinical-Pathologic-Conferences for case-based learning series).

Division of Respiriology, Department of Medicine, University of Calgary, Calgary, Alberta

Correspondence: Dr Alex Chee, South Health Campus, 480030-4448 Front Street Southeast, Calgary, Alberta T3M 1M4.

Telephone 403-956-2435, fax 403-956-2991, e-mail alexchee@gmail.com