Cystic Metastases of Papillary Thyroid Carcinoma Mimicking a Primary Mediastinal Cyst

Castigliano M. Bhamidipati, DO,* Sanjay Mukhopadhyay, MD,† Christine Feliu, NP-C,* Byron Patton, BS,‡ and Elisabeth Dexter, MD, FACS*


A 54-year-old man presented with shortness of breath, odynophagia, dysphagia, and gastroesophageal reflux. A computed tomogram of the chest revealed a 6-cm right paratracheal (mediastinal) mass displacing the trachea and esophagus (Figure 1). There was no connection between the mass and the thyroid gland. A small low-attenuation nodule was noted in the left lobe of the thyroid. The rest of the mediastinum and the lungs were unremarkable. Endoscopic ultrasound showed extrinsic compression of the thoracic

FIGURE 1. Chest computed tomogram (CT) showing the paratracheal (mediastinal) mass displacing the esophagus.

FIGURE 2. Low magnification view of the resected mass, showing a portion of the cyst with a tumor nodule (arrow) in the cyst wall (hematoxylin-eosin, 20×).

FIGURE 3. High magnification of the tumor showing nuclear clearing, grooves, overlapping and an intranuclear pseudoinclusion characteristic of papillary thyroid carcinoma (hematoxylin-eosin, 40×).
esophagus by the mass and demonstrated that the mass was
cystic. Fine needle aspiration showed findings consistent with
a cyst but no malignant cells were identified. Video-assisted
thoracoscopic excision of the lesion was performed. Histo-
logic examination revealed a cystic lesion (Figure 2) with
tumor in the cyst wall, showing nuclear features characteristic
of papillary thyroid carcinoma (Figure 3). Residual lymph
node tissue was present around the lesion. No respiratory-
type epithelium was identified. Immunohistochemical stain-
ing with thyroid transcription factor-1 was positive, consist-
tent with thyroid origin. The patient was diagnosed with
metastatic papillary thyroid carcinoma. The thyroid was sub-
sequently resected and showed 3 foci of papillary carcinoma
(1.1 cm and 0.3 cm in the right lobe, 1.2 cm in the left lobe).

Papillary carcinoma of the thyroid commonly metastas-
sizes to lymph nodes, and these metastases are cystic in
approximately 40% of cases.1 Although solid metastases in
patients with a known primary are not difficult to diagnose,
cystic metastases may be mistaken for a benign cyst, espe-
cially if the metastasis is solitary and the primary tumor is
occult.2 Our case illustrates the fact that fine needle aspiration
may be negative in cystic lesions due to sampling error. The
false negative rate of fine needle aspiration for cystic papil-
lary thyroid carcinoma has been previously shown to be as
high as 45%.3 In clinically suspicious lesions, therefore,
excision with histologic examination remains the standard
procedure.

REFERENCES
metastases in papillary thyroid carcinoma. Am J Roentgenol 2002;178:
693–697.
2. Okumura M, Yasumitsu T, Kotake Y, et al. Three cases of occult thyroid
cancer with mediastinal lymph node metastasis manifesting as a medi-
cystic papillary carcinoma of the thyroid. Am J Roentgenol 1985;144:
251–253.