Cystic Metastases of Papillary Thyroid Carcinoma Mimicking a Primary Mediastinal Cyst

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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

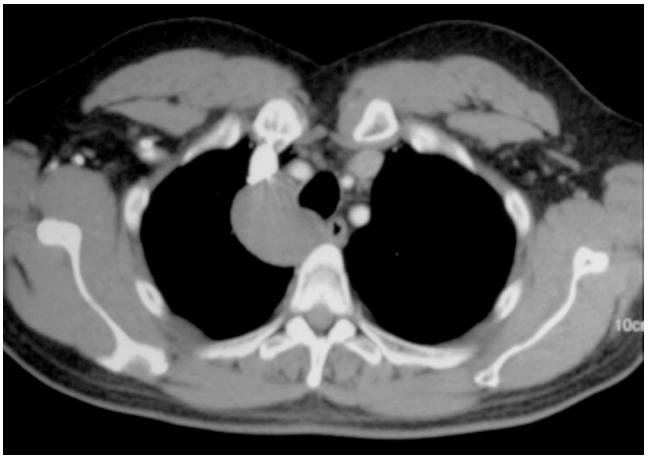

FIGURE 1. Chest computed tomogram (CT) showing the paratracheal (mediastinal) mass displacing the esophagus.

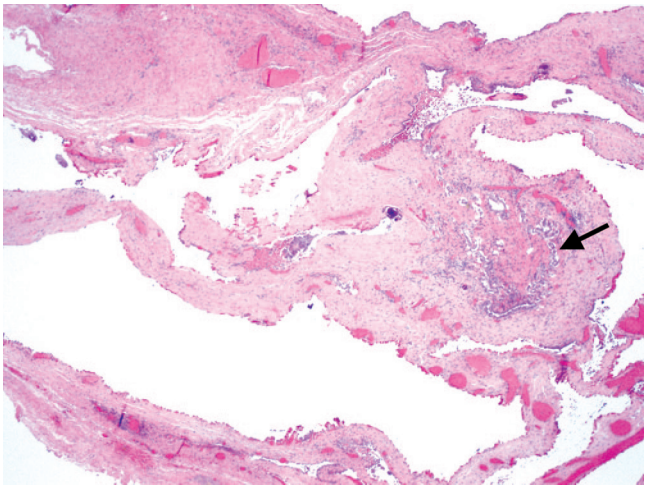

FIGURE 2. Low magnification view of the resected mass, showing a portion of the cyst with a tumor nodule (arrow) in the cyst wall (hematoxylin-eosin, 20×).

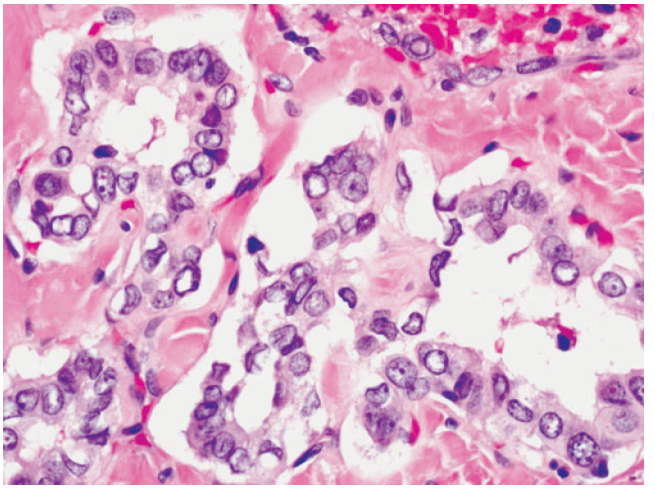

FIGURE 3. High magnification of the tumor showing nuclear clearing, grooves, overlapping and an intranuclear pseudoinclusion characteristic of papillary thyroid carcinoma (hematoxylin-eosin, 40×).

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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. Histologic 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 staining with thyroid transcription factor-1 was positive, consistent with thyroid origin. The patient was diagnosed with metastatic papillary thyroid carcinoma. The thyroid was subsequently 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 metastasizes 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, especially 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 papillary 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

1. Wunderbaldinger P, Harisinghani M, Hahn P, et al. Cystic lymph node 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 mediastinal cyst. *Nihon Kyōbu Geka Gakkai Zasshi* 1990;38:2307–2313.
3. Muller N, Cooperberg P, Suen K, et al. Needle aspiration biopsy in cystic papillary carcinoma of the thyroid. *Am J Roentgenol* 1985;144: 251–253.