Netherlands
The Journal of Medicine

PHOTO QUIZ

Hoarseness due to a thyroid mass

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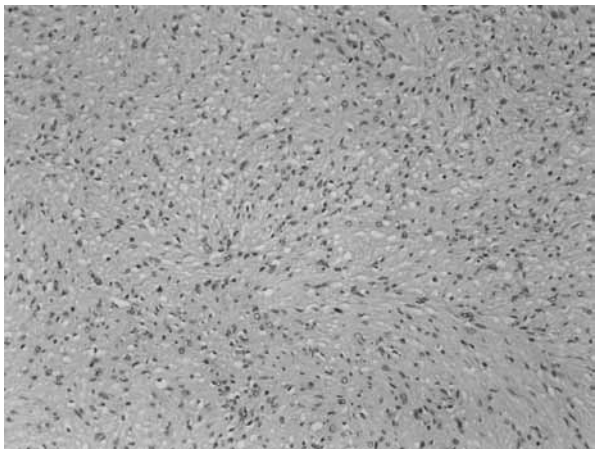
A 70-year-old African American man with a long-standing history of tobacco use presented to our clinic with hoarseness of voice, weight loss of 40 pounds in the year prior to presentation, and progressive dysphagia over a three-year period. He could only tolerate a liquid diet. CT scan revealed a left thyroid mass measuring 3.6 x 5.4 cm that replaced the entire left thyroid lobe and extended posteriorly causing oesophageal compression. Fine needle aspiration biopsy of the mass revealed absence of follicular cells in the aspirate and therefore it was non-diagnostic.

Histological examination showed typical Antoni A cells with an encapsulated mass composed of more cellular proliferation with elongated cells having elongated wavy nuclei forming fascicles; and Antoni B cells with spindle cell proliferation that is loosely textured, containing round-to-oval nuclei and some pseudoinclusions (*figure 1*). The patient underwent standard left thyroid lobectomy and his symptoms resolved postoperatively. On frozen section, the thyroid mass was noted to be a spindle cell neoplasm.

Immunohistochemistry showed that the tumour cells expressed S-100 and Vimentin but did not express desmin, muscle-specific antigen, thyroid transcription factor-1 (TTF-1), cytokeratin (AE1/AE3), thyroglobulin, chromogranin, synaptophysin, or smooth muscle actin. Additional histological examination is shown in *figure 1*.

Figure 1. *Schwannoma Antoni A pattern: Spindle cell proliferation that is loosely textured containing round to oval nuclei some pseudoinclusions representing Antoni A pattern*



WHAT IS YOUR DIAGNOSIS?

See page 40 for the answer to this photo quiz

ANSWER TO PHOTO QUIZ (PAGE 39)

HOARSENESS DUE TO A THYROID MASS

Peripheral nerve sheath tumours (PNSTs) of the thyroid gland are subdivided into malignant and benign. Benign PNSTs include neurofibromas and schwannomas.[1] PNSTs of the thyroid gland are quite rare and usually asymptomatic. Most tumours are benign. Isolated neurofibromas are exceedingly rare and usually asymptomatic.[2]

Schwannomas are the most common type of PNSTs. And they originate from neuronal sheath cells (Schwann cells). They are slowly growing tumours producing symptoms from compression of vital structures. Their highest incidence has been reported at between 40 and 60 years of age. Schwannomas are classified microscopically into two types, Antoni type A, which has pallisading, compact, and spindle-shaped nerve-sheath cells, and Antoni type B, which has a sparsely cellular pattern with either cystic degeneration or xanthomatous change.[3] In our patient, a combination was seen. The list of differential diagnoses is short, as benign nonepithelial tumours of the thyroid glands are rare and include vascular, smooth muscle, and nerve tumours.

Fine needle aspiration is generally unsuccessful for the diagnosis of schwannomas of the thyroid because follicular cells are absent and the remaining cells are difficult to identify. The immunohistochemical staining for schwannomas is usually positive for S-100 protein and neuron-specific enolase as well as actin, vimentin, cytokeratin, and smooth muscle actin, differentiating this type of tumour from other spindle cell sarcomas. The MIB1 proliferation marker is also present, which is also used for the grading and prognosis of the tumour.[4]

The only treatment for symptomatic thyroid schwannoma is surgical removal due to the difficulty of making the diagnosis before surgery. Surgical resection is mandatory for symptomatic cases.

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