A 34-year-old woman with a 4-year history of a slowly enlarging thyroid gland underwent a total thyroidectomy. Histologic sections showed multinodular colloid goiter. In addition, a 1.2 centimeter diameter discrete mass with a solid white cut surface was noted within the left lobe.

Sections from the left lobe mass show a well-demarcated tumor whose cells are arranged in trabecular and nested growth patterns. (Figure 1) The cells are polygonal to spindly and have ample eosinophilic, slightly granular cytoplasm and oval to angular nuclei that are often grooved. (Figure 2) Hyaline material and a delicate fibrovascular stroma surround the nests and trabeculae, and occasional psammoma bodies are seen. (Figure 3) These features led us to a diagnosis of hyalinizing trabecular tumor.

Hyalinizing trabecular tumor (HTT) is a rare thyroid neoplasm of follicular cell derivation. The tumor occurs in adults with a wide age range (4th – 7th decades) and a mean age of 47 years. It is more common in females. The classic histologic findings are of a solid circumscribed epithelial neoplasm with or without a thin capsule composed of medium to large-sized polygonal to fusiform cells that are arranged in alveolar, trabecular and nested groups. The cells have finely

Figure 1. Hematoxylin and Eosin (40x)/Well-circumscribed tumor with a nested and trabecular growth pattern and adjacent residual normal thyroid tissue (star)
granular, acidophilic, amphophilic or clear cytoplasm. Nuclei often have prominent grooves and small nucleoli. Calciospherites (psammoma bodies) may be present. Colloid is scant or absent.

Because of overlapping nuclear features, a follicular variant of papillary thyroid carcinoma is a differential diagnosis. Histologic features are usually sufficient to distinguish the entities as a nested-alveolar architecture is rarely a prominent feature of a papillary carcinoma. Immunohistochemistry may be of aid in this distinction especially in difficult cases with limited material. Cytokeratin 19 and HBME1 are negative in HTT and are usually positive in papillary thyroid carcinomas. Neuroendocrine markers are also negative in HTT and are positive in medullary thyroid carcinomas and paragangliomas.

HTT is of uncertain malignant potential and a 2008 review of 119 HTTs has shown only one case progressing to malignancy. The majority of cases have behaved in a benign fashion and thus may be treated conservatively.

Figure 2. Hematoxylin and Eosin (100x) Nested growth pattern with hyaline material surrounding the nests; (400x Inset) Polygonal to spindly cells with eosinophilic cytoplasm and oval nuclei arranged in nests with hyaline material around the nests.

Figure 3. Hematoxylin and Eosin (400x) Polygonal to spindly cells with eosinophilic cytoplasm and oval nuclei that are often grooved. A psammoma body (long arrow) and a pseudoinclusion (short arrow) are also seen.

REFERENCES