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Visual Vignette

Pyramidal Lobe Nodule or Thyroglossal Duct Lesion? Approach to Diagnosis and Treatment



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Case Presentation

A 63-year-old woman presented with a 12-year history of an enlarging high anterior midline neck mass. Surgical history

was notable for left hemithyroidectomy 17 years prior for multinodular hyperplasia. She reported intermittent globus sensation but was otherwise asymptomatic. Her examination demonstrated a midline neck mass overlying the thyrohyoid membrane that elevated with tongue protrusion (**Fig. 1**). Ultrasound showed a solid mass, isoechoic to the thyroid, with cyst components. Computed tomography imaging showed a 1.5 × 2.0 × 1.7-cm heterogeneous enhancing lesion with multiple nodules high in the midline (**Fig. 2A**). The patient underwent fine-needle biopsy and excision of the mass for definitive diagnosis.

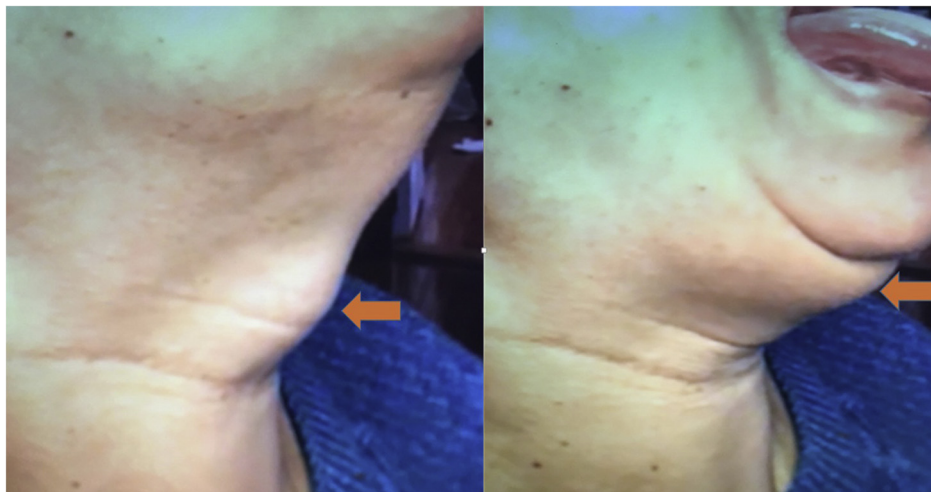


Fig. 1.

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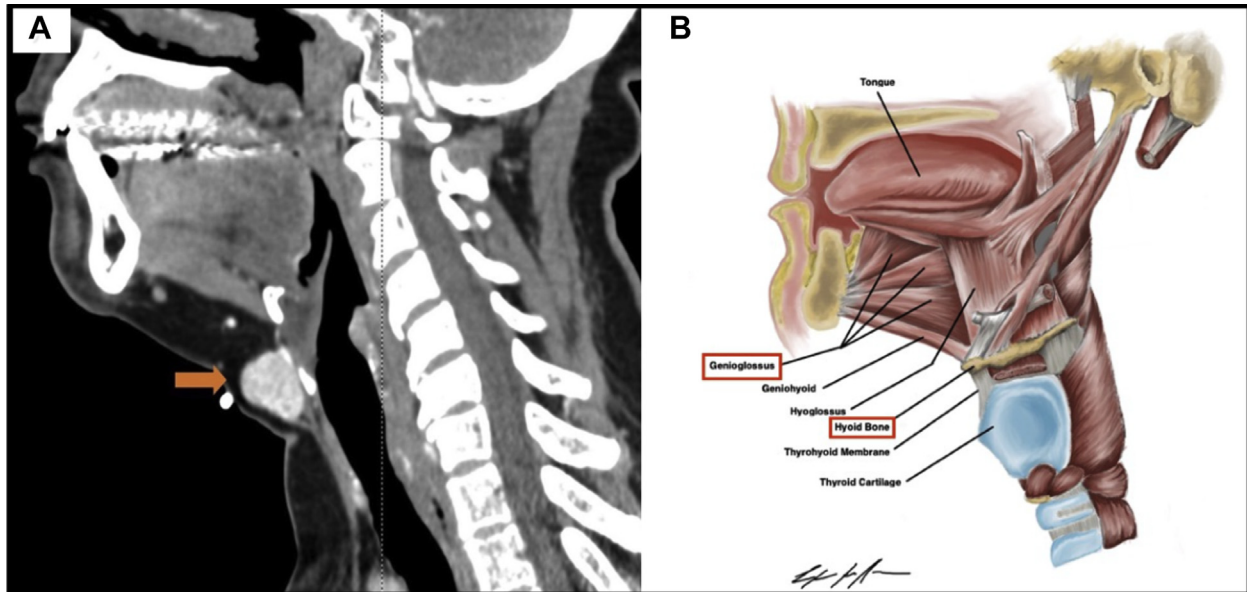


Fig. 2.

What is the diagnosis?

Answer

Hyperplastic thyroid nodule within the remnant pyramidal lobe. Painless midline neck masses that elevate with tongue protrusion are, more commonly, thyroglossal duct cysts. These result from the embryologic descent of the primordial thyroid through the foramen cecum of the tongue and through the thyroglossal duct near the hyoid bone to its final position in the midline pretracheal inferior neck.¹ These cysts elevate with tongue protrusion due to the extrinsic action of the genioglossus muscle, which inserts muscle fibers onto the hyoid bone (Fig. 2B).^{1,2} The surgical excision of thyroglossal duct cysts requires the removal of a portion of the hyoid bone with the cyst via a Sistrunk procedure. Unlike the relatively predictable location of thyroglossal duct cysts, thyroid pyramidal lobes have variable shape, position, appearance, and size and can have

fibrous tissue attachments to the thyroid cartilage.³ This patient's pyramidal lobe was not removed during her previous hemithyroidectomy, and she subsequently developed nodules within the remnant pyramidal lobe, with adherent scarring to the thyrohyoid membrane. Consequently, her clinical examination mimicked a thyroglossal duct cyst. However, cytology demonstrated a solid nodule composed of predominant microfollicles with papillary architecture and adjacent fibrous tissue lacking lymphocytes, a cyst lining, and a cystic space (Fig. 3). This strongly argues against a thyroglossal duct cyst and supports the diagnosis of a hyperplastic nodule associated with nodular thyroid disease and a so-called parasitic hyperplastic nodule. Although thyroglossal duct cysts more commonly elevate with tongue protrusion, differential diagnosis for a high midline neck mass and a history of previous thyroid surgery should include adherent pyramidal lobe nodule. Fine-needle biopsy, computed tomography imaging, and radionuclide scan

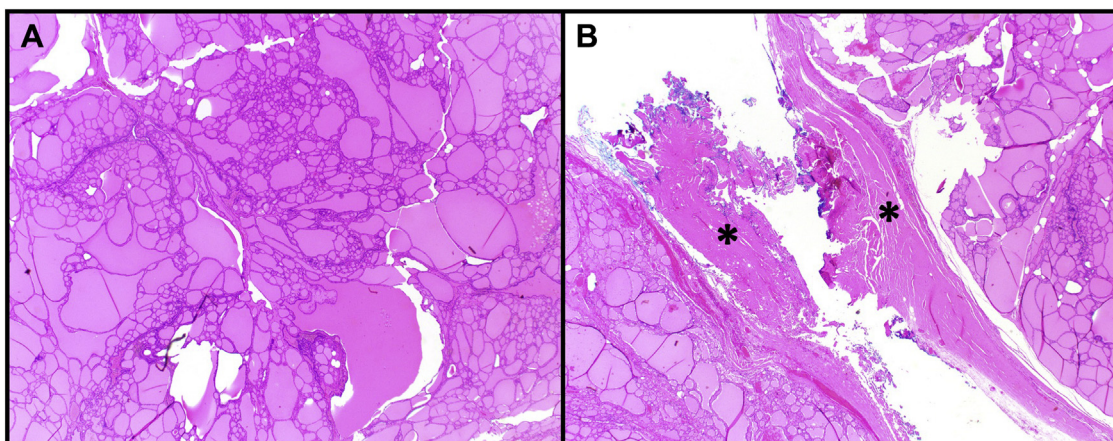


Fig. 3.

can help distinguish a thyroglossal duct cyst from a pyramidal thyroid lobe nodule, allowing for improved guidance in clinical decision-making and surgical approach.

Disclosure

The authors have no multiplicity of interest to disclose.

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