PHILIPPINE JOURNAL OF OTOLARYNGOLOGY-HEAD AND NECK SURGERY VOL. 40 NO. 2 JULY – DECEMBER 2025

Nicole Dominique C. Santos, MD
Ann Margaret V. Chang, MD

Institute of Pathology
St. Luke's Medical Center

Cavernous Hemangioma of the Thyroid

A total thyroidectomy specimen from a female of unspecified age, clinically diagnosed with colloid goiter from a provincial surgical mission was submitted to our institution. No past medical history or previous imaging was provided. Grossly, the specimen consisted of the right lobe (8x6x5.5 cm), left lobe (4x2.3x1.6 cm), and isthmus (2.2x0.5x0.5 cm), altogether weighing 126.9 grams. *(Figure 1)* Serial sectioning of the right lobe then revealed an encapsulated mass measuring 7.3x5x4.6 cm. Cut sections of said mass showed heterogeneous surfaces composed of cream tan, to golden yellow, to dark brown, gelatinous and patchy fibrous solid areas. *(Figure 2)* The mass encompassed the superior to inferior poles.

Microsections of the right lobe mass disclosed haphazardly arranged, large, dilated, thin-walled vessels lined by a single layer of flattened, cytologically bland endothelial cells and engorged with blood without lymphatic fluid. Intervening fibrous solid areas did not have

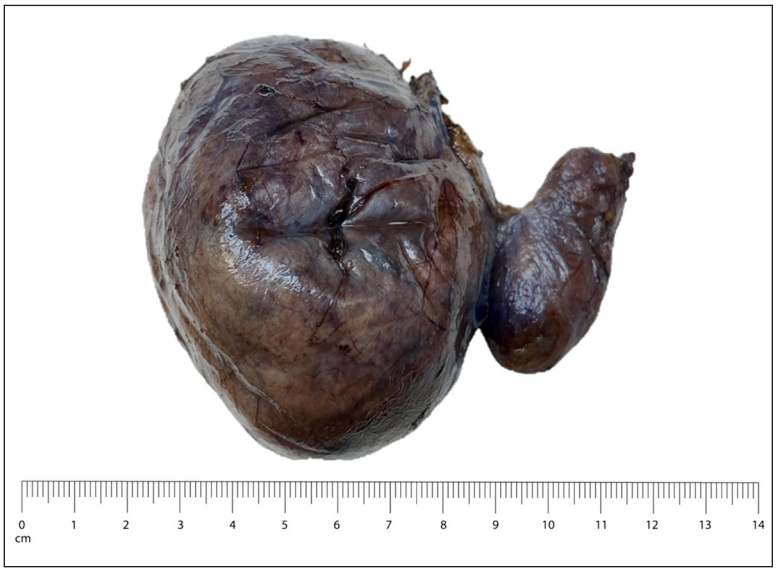

Figure 1. Total thyroidectomy specimen. The right lobe is grossly enlarged, measuring 8x6x5.5 cm. (Ruler for scale)

Keywords: *thyroid mass; hemangioma; vascular lesions*

Correspondence: Dr. Ann Margaret V. Chang
Institute of Pathology
St. Luke's Medical Center
32nd St., Taguig City 1634
Philippines
Phone: +63 998 977 1928
Email: amvchang@stlukes.com.ph

The authors declared that this represents original material that is not being considered for publication or has not been published or accepted for publication elsewhere in full or in part, in print or electronic media; that the requirements for authorship have been met by all the authors, and that each author believes that the manuscript represents honest work.

Disclosures: The authors signed a disclosure that there are no financial or other (including personal) relationships, intellectual passion, political or religious beliefs, and institutional affiliations that might lead to a conflict of interest.

Philipp J Otolaryngol Head Neck Surg 2025; 40 (2): 53-55

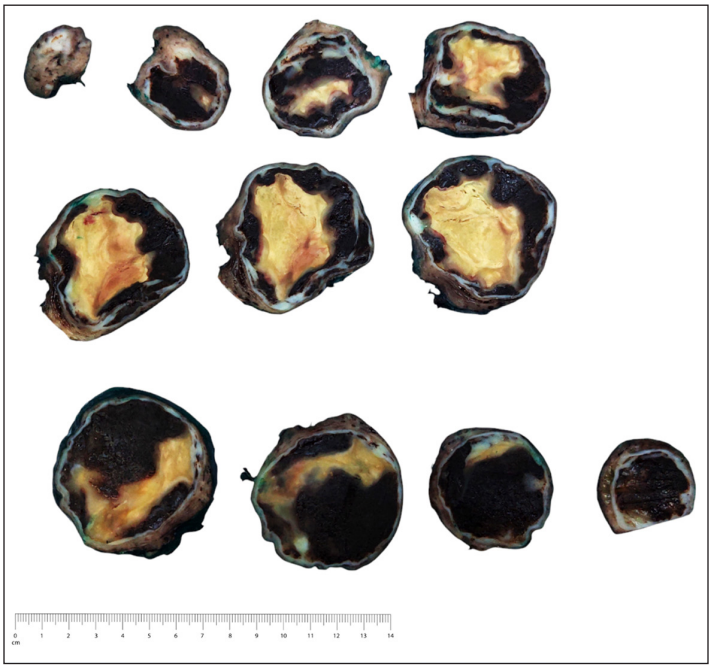

Figure 2. Serial sections of the right thyroid lobe. Sectioning revealed an encapsulated mass measuring 7.3x5x4.6 cm. Cut sections of said mass showed heterogenous surfaces composed of cream tan, to golden yellow, to dark brown, gelatinous and focal fibrous solid areas. The mass encompassed the superior to inferior poles. (Ruler for scale).

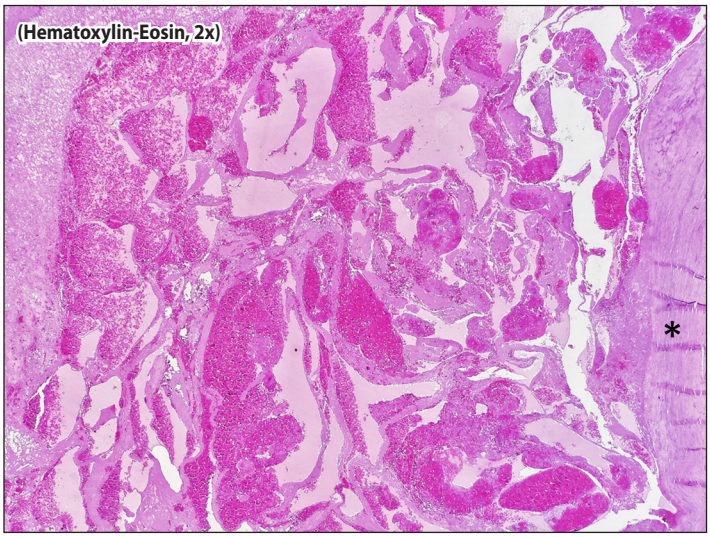

Figure 3. The right lobe mass showing haphazardly arranged, varisized, dilated vessels engorged with blood and areas of fibrosis (asterisk). (Hematoxylin-Eosin, 2x Magnification)

increased cellularity. Necrosis and increased mitotic activity were likewise not appreciated. These findings were consistent with a cavernous hemangioma *(Figures 3 and 4)* with concurrence by a bone and soft tissue pathologist.

Benign vascular tumors of the thyroid cover a variety of entities that include hemangiomas, arteriovenous malformations, lymphangiomas

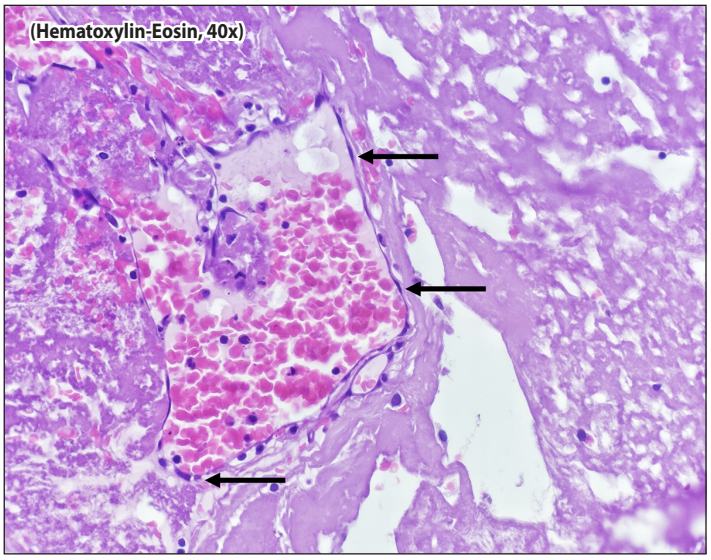

Figure 4. A thin-walled vessel from the mass lined with flattened, cytologically bland endothelial cells (arrows). (Hematoxylin-Eosin, 40x Magnification)

and intravascular papillary endothelial hyperplasia. The lack of papillary fronds lined by a single layer of plump, mild to moderately atypical endothelial cells and presence of red blood cells in vascular spaces rather than lymphatic fluid was deemed sufficient to rule out these latter two diagnoses on morphologic grounds.[1]

Hemangiomas are common, benign vascular lesions during childhood and infancy. While most often sporadic, a few subsets can be syndromic or linked to specific genetic mutations.[2] Usually, these vascular anomalies are found in the skin, oral cavity, gastrointestinal tract, and head and neck region. However, very rarely are they found in the thyroid.[3] Primary thyroid hemangiomas are often considered a developmental anomaly due to the lack of canal formation by angioblastic mesenchyma.[4] As such there is a growing body of evidence that points to the fact that many entities called "primary hemangiomas" most likely represent nonneoplastic vascular malformations.[5] Small thyroid hemangiomas may also occur iatrogenically after a fine needle aspiration biopsy (FNAB) or as a consequence of neck trauma.[6] The rather substantial size of this mass together with the lack of needle tract changes in the surrounding thyroid parenchyma dissuades from an iatrogenic origin. The first reported case of this entity was in 1975 and as of 2024, the total number of published cases was 53.[1] To the best of our knowledge, this is the first documented case locally based on a search of HERDIN Plus, the Western Pacific Region Index Medicus (WPRIM), the Directory of Open Access Journals (DOAJ), MEDLINE (PubMed and PubMed Central) and Google Scholar, using the search terms "thyroid," "hemangioma," "vascular lesion," and "Philippines."

Clinically, thyroid hemangiomas most commonly present as an enlarging cervical mass. Preoperative diagnosis of this lesion is an arduous task, as it often presents without any distinct signs on computed tomography (CT) or ultrasonography.[7]

Aside from imaging, preoperative management of the lesion can include a FNAB. But results would often show mostly blood with scantly cellular or acellular smears. Thus, the standard of care both diagnostically and management-wise for this neoplasm is surgical resection by either lobectomy or total thyroidectomy.[1] However, utmost caution must prevail while performing invasive pre-operative procedures as well as the surgery itself due to the vascular nature of this lesion and consequent risk of bleeding.[3]

Though a common benign neoplasm, this case demonstrates that hemangiomas can occur in unusual sites such as in the thyroid. Considering the non-specific imaging features and limited diagnostic accuracy of FNAB for these lesions, surgical intervention is necessary for the definitive diagnosis and appropriate concomitant management of intrathyroidal hemangiomas.

REFERENCES

1. MacDonald WW, Wakely PE, Argyris PP. On vascular lesions of the thyroid gland with emphasis on intrathyroidal hemangioma: clinicopathologic characterization of two cases and review of the literature. *Head Neck Pathol*. 2024 Oct 18;18(1):108. DOI: 10.1007/s12105-024-01722-6; PubMed PMID: 39422760; PubMed Central PMCID: PMC11489361.
2. Weiss SW (author), Goldblum JR, Folpe A, (editors). Enzinger and Weiss's woft tissue tumors 7th ed. Philadelphia, PA: Elsevier, 2020.
3. DeHart A, Richter G. Hemangioma: recent advances. *F1000Res*. 2019 Nov 18;8:F1000 Faculty Rev-1926. DOI: 10.12688/f1000research.20152.1; PubMed PMID: 31807282; PubMed Central PMCID: PMC6871355.
4. Park SH, Kim SJ, Jung HK. Thyroid hemangiomas diagnosed on sonography. *J Ultrasound Med*. 2014 Apr;33(4):729-33. DOI: 10.7863/ultra.33.4.729; PubMed PMID: 24658955.
5. Hyrcza MD, Calonje JE. Chapter 9: Mesenchymal and stromal tumours: Benign vascular tumours. Talini G, Lazar AJ (editors). In: WHO classification of tumours editorial board. Endocrine and neuroendocrine tumours 5th ed. WHO Classification of Tumours, Volume 10. Lyon (France): International Agency for Research on Cancer; 2022. (WHO classification of tumours series, 5th ed.; vol. 10).
6. Tsang K, Duggan MA. Vascular proliferation of the thyroid. A complication of fine-needle aspiration. *Arch Pathol Lab Med*. 1992 Oct;116(10):1040-2. PubMed PMID: 1417444.
7. Yang D-B, Lan H-F, Shi P-D, Wang Y-C, Lu M. Evaluation of thyroid hemangioma by conventional ultrasound combined with contrast-enhanced ultrasound: a case report and review of the literature. *J Int Med Res*. 2020 Sep;48(9):300060520954718. DOI: 10.1177/0300060520954718; PubMed PMID: 32972281; PubMed Central PMCID: PMC7780567.