# **Case Report**

DOI: https://dx.doi.org/10.18203/issn.2454-5929.ijohns20205080

# Cavernous haemangioma of the thyroid mimicking benign nodulea diagnostic dilemma

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**Received:** 15 October 2020 **Accepted:** 13 November 2020

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#### **ABSTRACT**

Cavernous haemangioma of the thyroid usually presents as a benign, solitary nodule mimicking colloid goitre. Depending upon the size, the symptoms may vary. Here we present a similar case report of a patient for whom we couldn't make a definite diagnosis clinically or radiologically or by cytology. The patient underwent surgery and biopsy was reported as cavernous haemangioma of thyroid. Post-operative period was uneventful.

Keywords: Haemangioma, Thyroid, Nodule

#### **INTRODUCTION**

Primary cavernous haemangioma of the thyroid is a very rare presentation. Approximately 31 cases have been reported to date. Mostly it is diagnosed postoperatively on histopathological examination. The patient usually presents with swelling in front of the neck of varied duration. It may be accompanied by local compressive symptoms depending on its size at presentation. Most often patients are asymptomatic.

#### **CASE REPORT**

A 47-year male presented with complaints of swelling in front of the neck for 1 year, which was associated with mild difficulty in breathing. There were no complaints of dysphagia or voice change or dyspnoea. There was no history of trauma or surgery or a family history of neck swelling or irradiation. Clinically on examination, swelling of size  $6\times6$  cm present in front of the neck on the right that was mobile and firm in consistency, non-

tender and skin over the swelling was normal. It was moving on deglutition but not on protrusion of the tongue. Neck nodes were not palpable. Other clinical examinations were normal.

Considering the age and gender, malignancy of thyroid was suspected and investigations were carried out. Blood parameters were normal and he was euthyroid (TSH-2.44). Ultrasound neck showed swelling of size 6×4×4 cm, well defined isoechoic lesion with hypo echoic rim with peripheral vascularity possibility of benign thyroid solitary nodule. Fine needle aspiration cytology (FNAC) from right thyroid swelling was reported as Bethesda category I-non-diagnostic (haemorrhagic aspirate). Then advised for USG guided FNAC which again showed haemorrhagic aspirate and was reported as nondiagnostic. The patient underwent FNAC twice again but the results were non-diagnostic only. Contrast-enhanced computed tomography was planned that showed 7×4×4 cm well defined peripherally enhancing and centrally non enhancing solid lesion with no calcification in the right lobe of the thyroid (Figure 1 a and b).

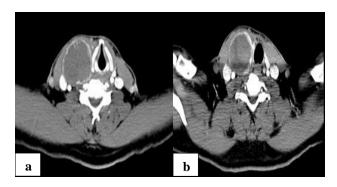


Figure 1: (a) and (b) CECT neck of well-defined heterogeneously peripheral enhancing mass with the hypo dense area in the centre over the right lobe of thyroid.

The patient was planned for right hemi thyroidectomy under general anaesthesia. Swelling of size 7x4x4.5 cm was present in the right lobe of the thyroid, which was removed along with the isthmus. The swelling did not adhere to nearby structures. Diffuse intraoperative bleed was controlled with surgicel and haemostasis achieved. The specimen was sent for histopathological examination which was reported as cavernous haemangioma of the thyroid that showed thyroid parenchyma with a well circumscribed lesion comprised of prominent dilated vascular channels lined by endothelial cells (Figure 2 a and b).

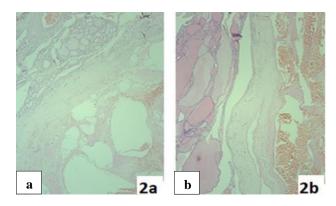


Figure 2 (a): Section of thyroid parenchyma with a well circumscribed lesion comprised of prominent dilated vascular channels lined by endothelial cells.

Haematoxylin and eosin stain×40.

(b) Section of thyroid parenchyma at a higher magnification with the lesion proper comprised of ecstatically dilated vascular channels. Haematoxylin and eosin stain×100.

## **DISCUSSION**

Haemangiomas are common benign vascular lesions characterized by capillary proliferation, which occurs mostly at the skin, oral cavity, liver, etc. It constitutes 7% of all benign tumours of infancy and childhood. Cavernous haemangioma is characterized by large cystically dilated blood vessels with thin walls that may

contain thrombus or calcifications. They are frequently deep-seated, destructive in nature with no spontaneous regression and so surgical excision may be required.

#### Classification

The International Society for the Study of Vascular Anomalies (ISSVA) describes cavernous haemangioma as pseudotumor anomalies.<sup>2</sup> Cavernous haemangioma of the thyroid is divided into primary and secondary. Primary cavernous haemangioma of the thyroid is a very rare entity that occurs due to the inability of angioblast mesenchyme to form canals.3 It is a type of developmental anomaly of the thyroid gland. Secondary cavernous haemangioma of the thyroid is a common entity that occurs after an insult on the thyroid gland which can be either trauma or fine-needle aspiration. Insult leads to the formation of hematoma which on organization can lead to complete resolution but sometimes it leads to vascular and fibroblastic proliferative changes which are similar to cavernous haemangioma on histology.4

## Investigation

Usually, all the patients are euthyroid with normal thyroid function tests. Primary cavernous haemangioma of the thyroid is difficult to diagnose preoperatively, as it is very rare and also it does not have specific features on cytology, ultrasonography or computed tomography scans. On FNAC, mostly blood is aspirated and report will be non-diagnostic (Bethesda 1). USG shows well defined isoechoic lesion with hypo echoic rim. <sup>5</sup> Coarse calcification is a sign of haemangioma. <sup>6</sup>

This correlates with our patient whose cytology revealed only blood aspirate multiple times and finally diagnosis was made only with histopathology.

#### Radiology

CECT neck shows well defined heterogeneously enhancing mass with the hypo dense area in the centre. MRI and Technetium-99m erythrocyte blood pool imaging are sensitive for diagnosing cavernous haemangioma. Heterogeneous signal intensity and serpentine pattern on magnetic resonance imaging (MRI) scan are indicative of cavernous haemangioma. On injecting labelled Technetium-99m in erythrocyte blood pool imaging, it shows little or no increased activity soon after the injection. This poor perfusion and slow filling of the tumour is characteristic of cavernous haemangioma. Digital subtraction angiography (DSA) and single-photon emission computed tomography (SPECT) also have a role in its diagnosis.

#### **Treatment**

However definite diagnosis can only be made postoperatively after the histopathological examination of

thyroid specimen. It shows irregular vascular areas of thin wall with a tendency towards anastomoses. The malignant vascular lesion can be ruled out with the absence of atypia, mitosis and infiltrative histological pattern.<sup>9</sup> After ruling out malignancy, surgery is the mainstay of treatment and no other treatment is required post surgically except for Thyroxine tablets if the patient becomes hypothyroid.<sup>9</sup>

We presented this case as a rare presentation whose thyroid function tests were normal; cytology reports were non-diagnostic multiple times and finally surgery followed by histopathological examination helped in final diagnosis.

#### **CONCLUSION**

For patients presenting with thyroid swelling with FNAC reported as inconclusive because of haemorrhagic aspirate, vascular pathology should be considered, in which cavernous haemangioma is the one. Although primary cavernous haemangioma is difficult to diagnose preoperatively, one should be vigilant to get MRI and Technetium-99m erythrocyte blood pool imaging to confirm the diagnosis. Intraoperatively, a large amount of blood loss can be anticipated depending on the size of the tumour, so preparedness is required. The postoperative course will be normal with normal thyroid function. A high index of suspicion is needed to avoid extensive surgery and unnecessary morbidity.

### **ACKNOWLEDGEMENTS**

The authors would like to thank Dr. Natarajan Ramalingam for his valuable contribution in the preparation of this manuscript.

Funding: No funding sources Conflict of interest: None declared Ethical approval: Not required

#### REFERENCES

- 1. Miao J, Chen S, Li Y, Fu L, Li H. A primary cavernous hemangioma of the thyroid gland: A case report and literature review. Medi. 2017;96(49).
- Enjiolras O, Mulliken JB. Vascular tumors and vascular malformations (new issues). Adv Dermatol. 1997;13:375-423.
- 3. Kumar R, Gupta R, Khullar S, Malhotra A. Thyroid hemangioma: a case report with a review of the literature. Clin nuclear Med. 2000;25(10):769-71.
- 4. Datta R, Venkatesh M, Nilakantan A, Joseph B. Primary cavernous hemangioma of thyroid gland. J Postgrad Med. 2008;54(2):147-8.
- Gupta D, Kakkar B, Gupta P, Rana V. Primary cavernous hemangioma of the thyroid gland. Int J Case Rep Images. 2013;4.
- 6. Maciel LMZ, Gomes PM, Magalhães PKR, Filho FVM, Conti-Freitas LC. A Giant Primary Hemangioma of the Thyroid Gland. J Clin Endocrinol Metab. 2011;96(6):1623-4.
- 7. Gupta B, Gupta AK, Rathi A, Bal A. Primary cavernous hemangioma of thyroid: A rare entity. Thy Res Pract. 2015;12(2):77.
- Memis A, Arkun R, Ustun EE, Kandiloglu G. Magnetic resonance imaging of intramuscular haemangiomas with emphasis on contrast enhancement patterns. Clin radiol. 1996;51(3):198-204.
- 9. Rio A, Rodriguez JM, Martinez E, Parrilla P. Cavernous hemangioma of the thyroid. Thyroid. 2001;11(3):279-280.

Cite this article as: Kumar B, Thangavel S, Raja K, Ganesh RN, Saxena SK. Cavernous haemangioma of the thyroid mimicking benign nodule-a diagnostic dilemma. Int J Otorhinolaryngol Head Neck Surg 2020:6:2310-2.