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Case Report

Thyroid Hemangioma: A Vascular Rarity in the Endocrine Landscape

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Abstract

Hemangioma of the thyroid gland is a relatively rare entity. Case reports concerning thyroid gland hemangioma are limited and to date, no recurrences have been recorded in patients who have undergone either lobectomy or hemithyroidectomy. Clinically differentiating between thyroid gland hemangioma and other thyroid swellings is quite challenging. Here we report the case of a 48-year-old male who underwent right hemithyroidectomy 5 years ago and presented to out patient department with complaints of recurrent swelling in the anterior aspect of the neck for the past year. On examination, a cystic swelling of size 5cm x 3cm was palpable over the anterior part of the neck.USG Neck was done and it showed a cystic lesion with internal septation. The patient underwent completion thyroidectomy and histopathology revealed a cavernous hemangioma of the thyroid gland.

Keywords: ***Thyroid gland, Hemangioma, Neck swelling, Vascular tumor, Hemithyroidectomy***

Background

Primary hemangioma of the thyroid gland is relatively uncommon, with only a handful of case reports published to date. It is due to a developmental anomaly that is associated with the inability to form a canal by angioblastic mesenchyme [1]. Most cases of thyroid gland hemangioma are secondary hemangiomas due to trauma or FNAC-induced hematoma causing vascular proliferation [3]. No prominent clinical manifestations were seen but only a neck mass was found in patients with thyroid gland hemangioma [1,2]. Pre-operative diagnosis is challenging since there are no definitive features suggesting hemangioma of the thyroid gland.

Case Presentation

A 48-year-old male came to general surgery OPD- Outpatient department with complaints of swelling in the anterior part of the neck (**Figure 1**) for the past year which gradually progressed in size. The patient denied a history suggestive of compressive symptoms. Patient had no previous history of radiation exposure. He gave a history of similar swelling in the neck five years before and for which he underwent right hemithyroidectomy and histopathological examination revealed thyroid gland cavernous hemangioma. On inspection, a goitre was noted and a previous surgical scar was identified. On palpation, a firm mobile swelling of size 5cm x 3cm was palpable over the anterior part of the neck which moved with deglutition and the trachea was found to be deviated to the right side. He had no signs of hypothyroidism or hyperthyroidism and palpable lymphadenopathy.

Figure 1: Showing diffuse swelling in anterior part of the neck

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Investigation

Haematological and biochemical parameters were within normal limits. Thyroid profile showed an euthyroid state. USG (Ultrasound) of the neck revealed and heterogeneous solid cystic lesion with few macrocalcifications in the upper part of the left thyroid with TIRADS (Thyroid imaging reporting and data system) score of 4. CECT (Contrast enhanced computed tomography) neck revealed a large well circumscribed cystic lesions measuring 5.7x4.7x8.9cm with few thin internal septations and peripheral wall calcification in the left lobe of the thyroid gland. On contrast administration, lesion showed intense peripheral wall enhancement and multiple enhancing internal septations. All these features were suggestive of benign etiology. The pre-operative diagnosis was difficult since there were no distinctive signs of hemangioma radiologically. Suspecting to be recurrent hemangioma of thyroid FNAC (Fine needle aspiration cytology) was not done.

Treatment

The patient underwent a completion thyroidectomy under general anaesthesia. The specimen was sent for histopathological examination.

Outcome and Follow-Up

Post post-operative period was uneventful and the patient was discharged on post-operative day 4. Macroscopically specimen weighed 190gm with an externally grey-brown smooth surface. On cutting open the specimen serosanguinous fluid was observed. The cut surface was cystic; the cut surface of the isthmus was brown, and unremarkable (**Figure 2**).

Microscopically (**Figure 3**) multiple blood-filled spaces of varying sizes focally lined by endothelial cells were observed. All these features were in favour of the thyroid gland cavernous hemangioma. Some of the spaces are filled with proteinaceous material. Isthmus showed an adenomatoid nodule with no evidence of malignancy.

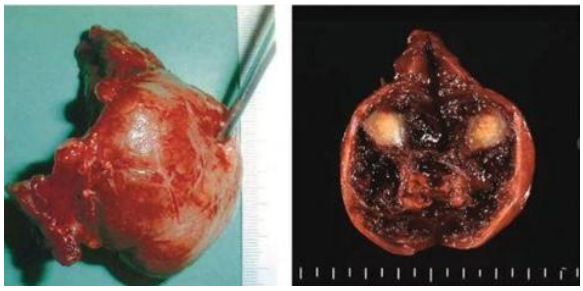

Figure 2: Showing External grey smooth surface, Cut surface showing cystic areas

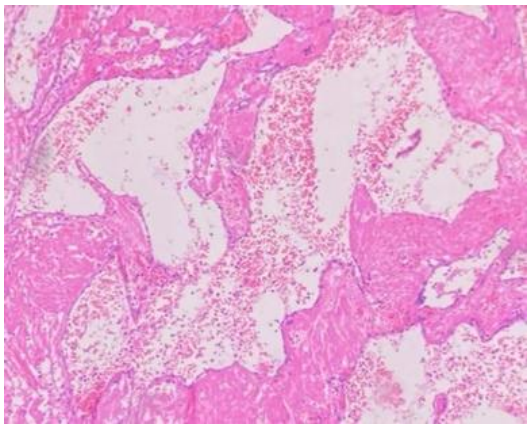

Figure 3: Showing multiple blood filled spaces

Discussion

Hemangiomas are common benign vascular tumours which are seen in childhood. The majority of cases (65%) are seen in the head and neck region. Thyroid gland hemangioma is a developmental anomaly which results from the inability of angioblastic mesenchyme to form canals [3,9]. They are common after trauma and FNAC and arise from the formed hematoma. They clinically present as asymptomatic and are fast-growing [4] swelling. Hemangioma could also result from vascular changes during the development of nodular goitre. Primary thyroid gland hemangioma is very rare and a review of literature as of 2021, shows only 33 cases of thyroid gland hemangioma to be reported [10] out of which 4 are diagnosed in children and no recurrence has been recorded in these patients who underwent either lobectomy or hemithyroidectomy. A review of the literature shows most often it occurs in the left lobe of the thyroid, histopathologically cavernous hemangioma is more common and most commonly seen in males [8]. Quite a few imaging modalities have been explored for pre-operative diagnosis like

USG, CEUS (Contrast enhanced ultrasound), CT, MRI (Magnetic resonance imaging), Tc-99m erythrocyte-labeled nuclear medicine scans. Plain radiography and computed tomography detect phleboliths, thus facilitating the diagnosis, but definitive diagnosis is still inconclusive because adenomatoid goitre is a close differential diagnosis of hemangioma also contains grossly calcified regions, and microcalcification may also be seen [1]. On USG, hemangioma shows hypo-echoic areas with calcification within the thyroid gland without specific, distinct characters. Shpitzer et al and Kumar et al used MRI based on heterogenous signal intensity and serpentine patterns [3,6]. Blood pool appearance in Tc 99 m erythrocyte may be an indication of hemangioma and it is characterized by poor perfusion and delayed filling [3]. Pickle et al diagnosed hemangiomas before surgery by performing angiography and identified the feeding vessel [7]. Yang et al successfully demonstrated the use of CEUS in diagnosing thyroid gland hemangioma pre-operatively which showed progressive contrast enhancement similar to hemangiomas elsewhere [12]. However, the ultimate diagnosis relies on histopathological examination done on the specimen postoperatively. It is a multilobulated lesion surrounded by monolayer endothelium and different amounts of fibrous stroma. Some hereditary syndromes such as Rendu-weber Osler, Parke-Weber Klippel, Hippel-Lindau, and Struge-Weber are associated with hemangiomas in different locations [8]. So, in conclusion we highly recommend keeping close follow-up of these patients. Since hemangiomas are highly vascular, haemorrhage should not be overlooked.

List of abbreviations

OPD: Out-patient department

FNAC: Fine needle aspiration cytology

CEUS: Contrast enhanced ultrasound

MRI: Magnetic resonance imaging

CT: Computed tomography

CECT: Contrast enhanced computed tomography

TIRADS: Thyroid imaging reporting and data system

USG: Ultrasound

Ethics approval

Not applicable

Consent to participate

Informed and written consent obtained from patient

Data Availability

Not applicable

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Authors' contributions

All authors were involved in patient management, KA was a major contributor in writing the manuscript. All authors read and approved the final manuscript.

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Nil

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