Primary cavernous hemangioma of thyroid: A rare entity

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Case Report

Primary cavernous hemangioma of thyroid: A rare entity

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ABSTRACT

Primary hemangioma of thyroid gland is a rare entity. Preoperative diagnosis of primary thyroid hemangioma is difficult. High level of suspicion is required if the preliminary investigations are inconclusive. We here present a case of 62-year-old female who presented with a left-sided thyroid swelling with a preoperative diagnosis of colloid goiter and was diagnosed as hemangioma after surgery.

Key words: Fineneedle aspiration cytology, hemangioma, thyroid gland

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INTRODUCTION

Hemangioma is a benign neoplasm of capillary proliferation and can be found in all organ system. Sixty-five percent cases of hemangioma are reported in the head and neck region. Thyroid hemangiomas are usually secondary hemangiomas caused by vascular proliferation; may be due to organization of fine needle aspiration (FNA)-induced hematoma. However, primary thyroid hemangioma is a rare entity wherein preoperative diagnosis remains difficult. We report a case of primary thyroid hemangioma where a patient underwent surgery with a preoperative diagnosis of benign thyroid mass.

CASE REPORT

A 62-year-old hypertensive female; on oral antihypertensives; presented to outpatient services of Department of Otolaryngology and Head Neck Surgery Post Graduate Institute Of Medical Education and Research Chandigarh for evaluation of a slowly growing neck swelling since 1 year. She also complained of respiratory distress on exertion for 6months with no history of dysphagia or voice change. On physical examination; 8 × 6 cm, firm globular, nonpulsatile massin left thyroid lobe was palpable. The lower limit of the swelling was not palpable and sternal percussion revealed a dull note. Pemberton sign was positive. Hematological investigations including thyroid profile and calcium levels were within normal range. Neck ultrasound revealed a large mass lesion of 10 × 8 cm in left lobe. Fine needle aspiration cytology (FNAC) showed occasional cluster of benign thyroid follicle cells in a background of blood suggestive of benign neoplasm. Contrast-enhanced computed tomography of neck from base of skull to T4 showed a well-defined enhancing hypodense lesion involving left lobe of thyroid gland [Figure 1a and b] with significant retrosternal extension [Figure 2] with tracheal shift and compression [Figure 1a]. Due to the patient's symptoms and the growing nature of the lesion, left hemithyroidectomy was planned under general anesthesia. Intraoperatively, there was 12 × 8 cm well-encapsulated reddish, soft mass occupying the left thyroid lobe with retrosternal extension of 3 × 2 cm which could be delivered en block. Postoperative histopathology showed large cystic spaces filled with hemorrhagic colloid-like material on cut section. On microscopic examination; thyroid showed multiple endothelium-lined intercommunicating vascular channels walled off by fibrin and filled with blood [Figure 3a and b]. The entire thyroid parenchyma was replaced by fibrinoid necrosis and hemorrhage. On immunohistochemistry; cells lining the cystic spaces were CD 31 positive [Figure 4]. Overall features were suggestive of cavernous hemangioma.

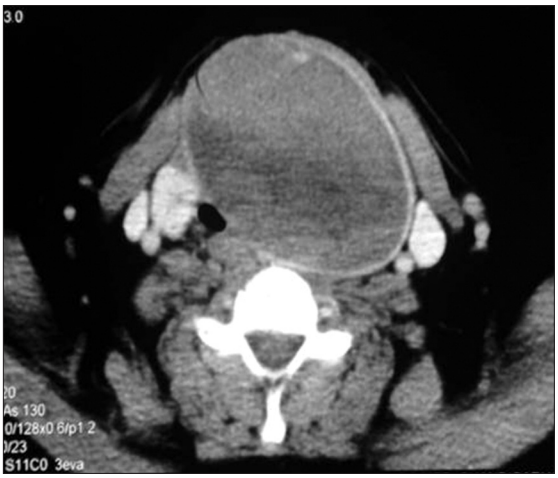

Figure 1: (a and b) CECT neck revealing well-defined heterogeneously enhancing mass involving left lobe of thyroid with hypodense area in the center. (a) is also showing tracheal compression and tracheal shift to right. CECT = Contrast-enhanced computed tomography

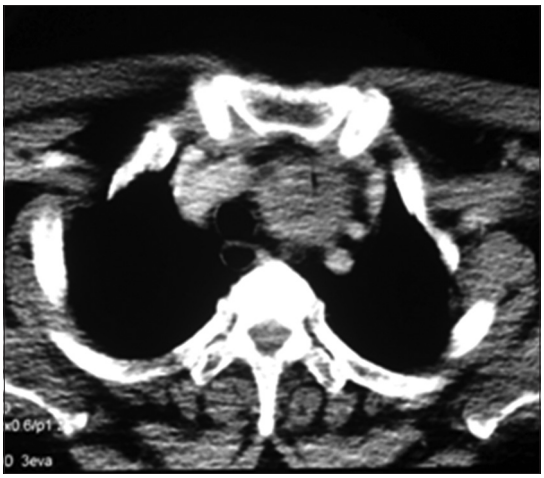

Figure 2: CECT showing retrosternal extension of lesion

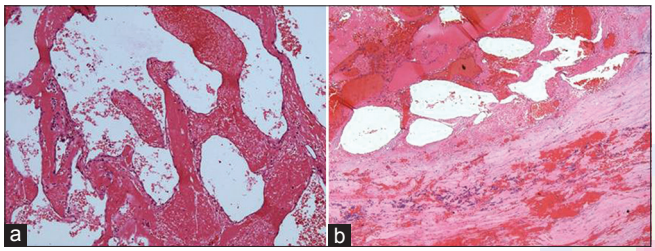

Figure 3: (a) Photomicrograph showing cavernous vascular spaces and compressed normal thyroid at periphery (hematoxylin and eosin (H and E), × 100).(b) Photomicrograph showing cavernous vascular spaces lined by flattened endothelial cells (H and E, × 400)

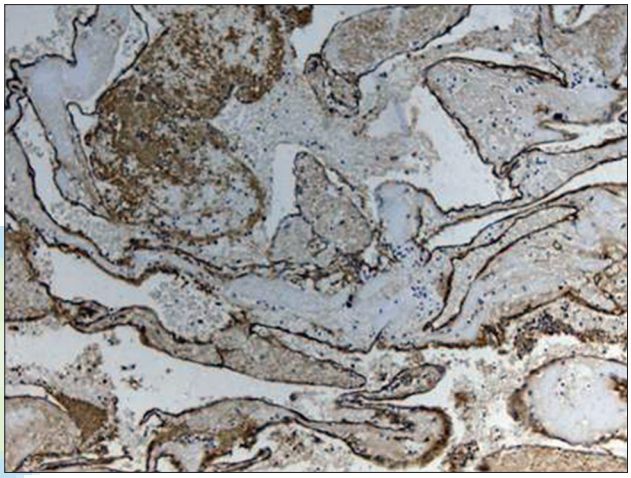

Figure 4: Photomicrograph showing cavernous vascular spaces lined by CD31 positive endothelial cells (CD31 immunostain, × 200)

DISCUSSION

Hemangioma is a benign tumor derived from vascular endothelial cells. Vascular malformationscan be categorized as either high-flow (arteriovenous malformations) or low-flow malformations. Hemangioma of the thyroid gland is an extremely rare diagnosis and only a few cases have been reported.[1-6]

Preoperative diagnosis of thyroid hemangioma is difficult as none of the investigations provide definitive diagnosis. Ultrasonography (USG) is thought to be highly sensitive in thyroid; however, it also does not provide much information in thyroid hemangioma even in the experienced hands. Hemangiomas may be associated with phleboliths, but definitive diagnosis is still elusive because goiter and papillary carcinoma can also have calcifications. Pathognomonic findings on computed tomography (CT) scan do not exist as well. More specific examinations such as magnetic resonance imaging (MRI), single photon emission computed tomography (SPECT), digital subtraction angiography (DSA), and red blood cell (RBC) scans are therefore necessary to obtain the diagnosis.[1]

Akihiro *et al*.,[7] reported a case of 71-year-old female who was operated for a left lobe thyroid mass with a preoperative diagnosis of goiter and was reported as hemangioma in postoperative histopathology.

Hemangiomas contain thrombotic occlusions of the vessels with often severe reactive atypia, therefore making it difficult to distinguish this lesion cytologically from an anaplastic carcinoma. Andreas Gutzeit *et al*.,[8] reported a case of 84-year-old female with a nodule demonstrated in the thyroid, on sonography, for which US-guided fineneedle aspiration could not rule out an anaplastic carcinoma, and which was confirmed after surgery as hemangioma.

Datta *et al*.,[1] also reported a case of 25-year-old man with a solitary nodule of thyroid found to be hemangioma in postoperative histopathology.

We incidentally found a similar case which was showing blood components on FNA and was not conclusive on USG. Patient was planned for surgery with preoperative diagnosis of benign thyroid neoplasm. Further on histopathological examination (HPE) postoperatively, it proved to be hemangioma. Moreover; in our case there was significant retrosternal extension responsible for the patient's symptoms, which has not been reported in literature before.

The preoperative diagnosis of primary thyroid hemangioma is difficult. However, a differential diagnosis of primary hemangioma should be kept, if FNAC and radiology findings are not conclusive.

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