Primary thyroid cavernous haemangioma: Report of a case with review 3 years after operation

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A 51-year-old man presented with progressive symptomatic anterior neck swelling. Thyroid scintigraphy showed a multinodular goitre predominantly on the left side, and left thyroid lobectomy was performed. Histological examination of the specimen showed cavernous haemangioma. Cavernous haemangiomas of the thyroid are seldom suspected preoperatively, as they are very rare. Only a few cases have been reported in the literature. Three years after the operation, the patient was reviewed and found to be clinically well with no thyroid-related symptoms. The prognosis after surgery is good. In this case report, we share our experience of primary thyroid cavernous haemangioma and provide a literature review.

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Primary thyroid cavernous haemangiomas are very rare and have seldom been reported in the literature.[1] Haemangiomas are benign, non-reactive vascular tumours caused by an increase in normal- or abnormal-appearing blood vessels or poorly formed vessels.[2] Based on the main vessel type, haemangiomas have been further subclassified pathologically. A multidisciplinary consensus has emerged on the division of benign vascular lesions into two biological categories, tumours and malformations, as a result of advances in the understanding of the pathophysiology of this heterogeneous group of lesions.[2]

In general, lesions formerly referred to as venous haemangiomas and cavernous haemangiomas, as well as some intramuscular haemangiomas, are included in the category of venous malformations. The majority of cases are sporadic, although a small proportion are syndromic or associated with specific genetic alterations.[3] Lesions comprising more vessels with thick, unevenly attenuated muscle walls were historically referred to as venous haemangiomas, whereas those comprising more vessels with massive, thin walls were typically identified as cavernous haemangiomas.[4]

The main objective of this case report is to share our experience of primary thyroid cavernous haemangioma, with a literature review. The patient gave written informed consent to publish.

Case report

A 51-year-old man with no known comorbidities presented to Mankweng Hospital in Polokwane, Limpopo Province, South Africa, with progressive anterior neck swelling of 5 years' duration. He was symptomatic, with neck pain, a sore throat, a hoarse voice, dysphagia, a decreased range of neck movement, anxiety, weight loss and palpitations. There was no history of trauma. Thyroid scintigraphy demonstrated that both lobes were grossly enlarged, with the left lobe being more enlarged than the right. There was inhomogeneous uptake of tracer, with the impression of cold nodules occupying both lobes, as well as the upper and mid poles. No prominent hot nodules were visualised. There was also extension of the thyroid towards the sternal notch, but not beyond. The findings were consistent with a multinodular goitre. Neither fine-needle aspiration nor computed tomography (CT) were performed. The results of thyroid function tests were within normal limits.

The patient underwent left thyroid lobectomy, and the resected specimen was sent for histological examination. The thyroid lobe measured 80 × 50 × 50 mm and weighed 180 g. On section, a solitary haemorrhagic mass measuring 75 × 45 × 45 mm with a central necrotic area was identified. This was found to be a benign vascular proliferation compatible with cavernous haemangioma. The patient was followed up, and on review 3 years after the operation he did not have any thyroid-related symptoms, although he reported dryness in the throat and nostrils, fatigue and weight gain. The findings on physical examination of the neck and the results of thyroid function tests were normal.

Discussion

Haemangiomas are common benign soft-tissue tumours that usually occur on the skin, liver and other organs.[5] However, thyroid haemangiomas are rare, with only a few cases reported. Primary thyroid haemangiomas are associated with abnormal development resulting from failure of the angioblastic mesenchyma to form canals.[6] Secondary thyroid haemangiomas are typically associated with trauma, fine-needle aspiration and other neck procedures.[6] In our case, no history of trauma or procedures that might have caused the haemangioma was identified; the patient presented with a gradually progressive anterior neck mass that had developed over a 5-year period. Other symptoms were neck pain, a sore throat, a hoarse voice, dysphagia, a decreased range of neck movement, anxiety, weight loss and palpitations. The most common presenting symptoms reported in previous studies are progressive neck swelling resulting in discomfort, dysphagia and hoarseness. Additional symptoms such as dysphagia, dyspnoea, tracheal deviation and unilateral vocal cord paralysis have also been described.[7,8] Most case studies report an average size of 3 - 7 cm.[7] Our patient had a thyroid haemangioma with a size of 7.5 × 4.5 × 4.5 cm. It has proved difficult to diagnose thyroid haemangioma before operation because there are no typical pathognomonic findings on fine-needle aspiration cytology, ultrasound scans, radiographs or CT scans.[9]

Thyroid haemangiomas are most often located in the left lobe of the thyroid, with the incidence slightly higher in males than females.[10] Our case, in a male with the left side of the thyroid affected, is consistent with previously reported findings. On ultrasound scans, cavernous haemangiomas have a similar pattern to a number of other thyroid diseases, making it difficult to differentiate between them. Magnetic resonance imaging, which shows a serpentine pattern with heterogeneous signal intensity, can be used to help with the diagnosis.[5] Other investigations include a technetium-99 erythrocyte-labelled scan, which can show poor perfusion and delayed filling of the haemangioma.[6,11] When surgically removing the thyroid nodule, it is important to avoid rupture of the haemangioma, to prevent accumulation of blood during the procedure.[12] Surgery is indicated only when the lesion is symptomatic. We reviewed our patient 3 years after the operation, at which time he was clinically well, euthyroid, and without any thyroid-related symptoms. The prognosis of thyroid haemangiomas is good.

Conclusion

Primary thyroid cavernous haemangioma is a very rare tumour. It usually affects the left lobe and most commonly affects males. Surgery is only indicated when the lesion is symptomatic, and the prognosis after surgery is good.

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1. Karanis MI, Atay A, Kucukosmanoglu I, Duran C, Sahin A. Primary cavernous hemangioma of the thyroid. Int J Case Rep Images 2015;6(6):352-355. https://doi.org/10.5348/ijcri-201560-CR-10521
2. North PE. Pediatric vascular tumors and malformations. Surg Pathol Clin 2010;3(3):455-494. https://doi.org/10.1016/j.path.2010.07.002
3. Seront E, Vikkula M, Boon LM. Venous malformations of the head and neck. Otolaryngol Clin North Am 2018;51(1):173-184. https://doi.org/10.1016/j.otc.2017.09.003
4. Folpe AL, Bishop JA. Soft-tissue tumors of the head and neck. Gnepp's Diagnostic Surgical Pathology of the Head and Neck. 3rd ed. Amsterdam: Elsevier, 2021:743-826. https://doi.org/10.1016/b978-0-323-53114-6.00009-2
5. Miao J, Chen S, Li Y, Fu L, Li H. A primary cavernous haemangioma of the thyroid gland: A case report and literature review. Medicine (Baltimore) 2017;96(49):e8651. https://doi.org/10.1097/MD.0000000000008651
6. Kumar R, Gupta R, Khullar S, Dasan B, Malhotra A. Thyroid hemangioma: A case report with a review of the literature. Clin Nucl Med 2000;25(10):769-771. https://doi.org/10.1097/00003072-200010000-00003
7. Lee J, Yun JS, Nam KH, Chung WY, Park CS. Huge cavernous hemangioma of the thyroid gland. Thyroid 2007;17(4):375-376. https://doi.org/10.1089/thy.2006.0146
8. Pickleman JR, Lee JF, Straus FH II, Paloyan E. Thyroid hemangioma. Am J Surg 1975;129(3):331-333. https://doi.org/10.1016/0002-9610(75)90252-4
9. Datta R, Venkatesh MD, Nilakantan A, Joseph B. Primary cavernous hemangioma of thyroid gland. J Postgrad Med 2008;54(2):147-148. https://doi.org/10.4103/0022-3859.40784
10. Dasgupta A, Teerthanat S, Jayakumar M, Kiran HS, Raju M. Primary cavernous haemangioma of the thyroid – a case report. J Clin Diagn Res 2014;8(2):151-152. https://doi.org/10.7860/JCDR/2014/6854.4038
11. Miao J, Chen S, Li Y, Fu L, Li H. A primary cavernous hemangioma of the thyroid gland: A case report and literature review. Medicine (Baltimore) 2017;96(49):e8651. https://doi.org/10.1097/MD.0000000000008651
12. Michalopoulos NV, Markogiannakis H, Kekis PB, Papadima A, Lagoudianakis E, Manouras A. Primary cavernous hemangioma of the thyroid gland. South Med J 2010;103(7):674-675. https://doi.org/201007000-00016

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