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Case Report

Parathyroid cyst-An unusual presentation

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ABSTRACT

Parathyroid cyst is one of the least common causes of neck and mediastinal mass and often mistaken be thyroid cyst. Despite advancement in radiological and cytological investigations diagnosing a parathyroid cyst had always been a clinical challenge and mistaken for thyroid pathology and it is only diagnosed during histopathological examination post-surgical resection. The pathogenesis of parathyroid cyst includes the embryological remnant of the 3rd or 4th branchial arch with accumulation of colloid material within it. These are classified into functioning and non -functioning depending on whether they are secreting parathyroid hormone and resulting in hypercalcemia. Surgery is indicated in all functioning Parathyroid cysts to alleviate the symptoms of hypercalcemia, larger Parathyroid cysts, and recommended in Parathyroid cysts that recur following more conservative approaches.

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1. Introduction

Parathyroid cyst is one of the least common causes of neck and mediastinal mass and often mistaken be thyroid cyst. The very first case of a parathyroid cyst was reported as early as in 1880 and since then approximately 350 cases has been reported in the world literature. Despite advancement in radiological and cytological investigations diagnosing a parathyroid cyst had always been a clinical challenge and mistaken for thyroid pathology and it's only diagnosed during histopathological examination post surgical resection. These parathyroid cysts are classified as functioning and non-functioning based upon the presence or absence of hyperparathyroidism.

2. Case Report

A 30-year old female patient presented to the hospital with the chief complaints of swelling on the left side of

the neck since 2 years which was insidious in onset and gradually progressive not associated with pain.^{1–3} She had no compressive symptoms such as change in quality of voice or difficulty in swallowing or difficulty in breathing or noisy breathing. On local examination the patient had a swelling of size 3*3 cm cystic swelling on the anterior aspect of neck on to the left side of the midline extending from the anterior border of the sternocleidomastoid muscle till the posterior border of the sternocleidomastoid muscle near its sternal end which had no localized rise in temperature, non-tender and moves with deglutination. There was no other significant palpable swelling present in neck. Following which ultrasound neck (Figure 1) was done which was suggestive of an anechoic cystic lesion of size 4.4*3.7 cm present in the left lobe of the thyroid gland with displacement of the trachea on to the right side.(Figure 2)

Fine needle aspiration cytology was subsequently done which was suggestive of colloid cyst. Patients rest of the blood work up including thyroid function test were within normal limits following which patient was planned for

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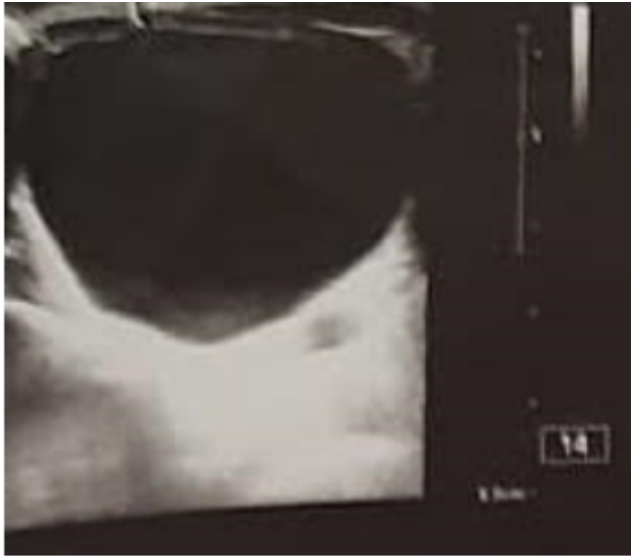


Fig. 1: USG showing cyst

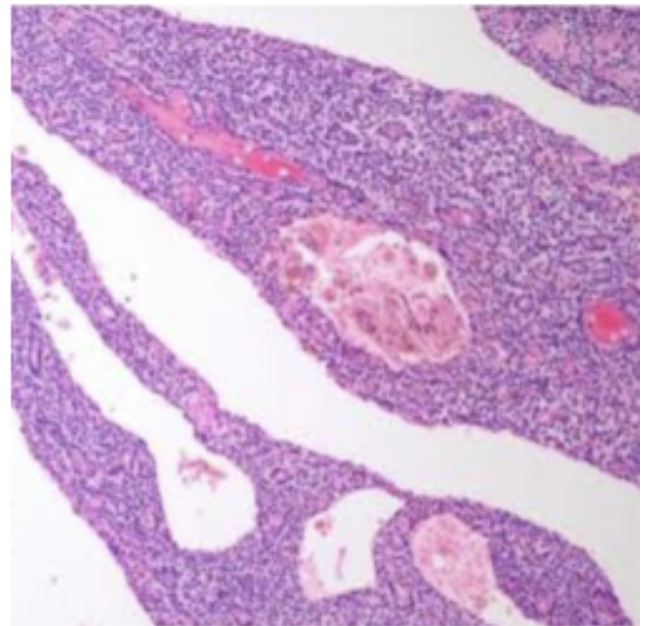


Fig. 3: HPE of parathyroid cyst

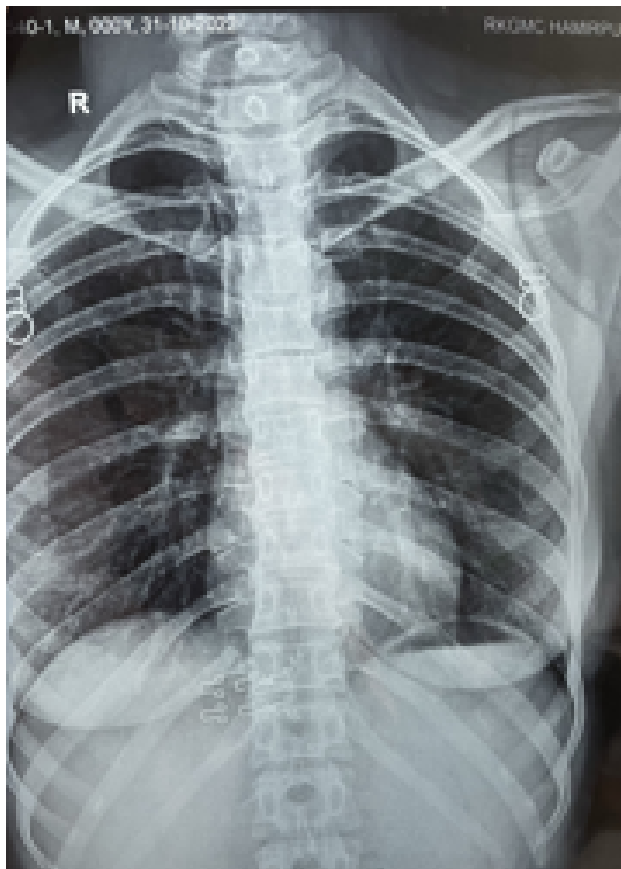


Fig. 2: Xray showing deviation of Trachea



Fig. 4: Post OP day 7 picture of the patient

surgical resection of the lesion. Per operatively a cystic swelling of size 4*3 cm was found arising from the inferior pole of the left lobe of the thyroid which was removed and sent for histopathological examination. Rest of the left lobe of thyroid was found to be normal and left insitu and the drain was kept and wound sutured in layers and skin was sutured using subcuticular technique after leaving behind a negative pressure romovac drain. Intra operative and post operative period was normal and the drain was removed on post operative day 2 and patient was discharged on post operative day 7. Histopathological examination of the specimen was suggestive of parathyroid cyst. Post operative patients biochemical markers were normal.^{4,5}

3. Discussion

The very first case of parathyroid cyst was reported as early as 1880 by Sandstrom but it is a very rare clinical entity that so far only 350 cases has been reported in the literature.¹ They have slightly female predominance and are usually found in 4th to 5th decade² and these parathyroid cysts are frequently found in association with the left inferior parathyroid gland. They are classified into functioning and non -functioning depending on whether they are secreting parathyroid hormone and resulting in hypercalcemia. Functional cysts are false cysts as they arise from a pre-existing adenoma or hyperplastic gland. Majority of the parathyroid cysts are non-functional and their symptoms depends upon the compression of the neighboring structures. It may be associated with dysphagia, odynophagia or paralysis of the recurrent laryngeal nerve. Very rarely these cysts occur in the mediastinum and the patient may present with respiratory distress. Our patient didn't have any symptoms other than a swelling which she noticed in her neck since 2 yrs. Initial radiological investigation includes an ultrasonography of neck to identify the site of origin and nature of the lesion. Classically the usg shows a non-specific cystic structure deep to the lower pole of the thyroid gland, and an echogenic border with the thyroid gland and are usually observed to be largest in cranio-caudal plane. 3 Fine needle aspiration cytology can be used as a diagnostic as well as occasionally therapeutic intervention. The fluid analysis may show epithelial cells or fibroblasts which may raise suspicion for malignancy. 2 CT or MRI may be indicated for mediastinal parathyroid cyst or if the above mentioned investigation fails to diagnose the solitary neck mass.1 Despite thorough investigations parathyroid cysts are usually misdiagnosed for thyroid cysts until formal HPE analysis are back.3 Giant cysts causing compressive symptoms have been excised enbloc with the thyroid lobe in order to alleviate symptoms and to decrease the risk of the cyst rupture and subsequent parathyromatosis.⁴

The pathogenesis of parathyroid cyst include the embryological remnant of the 3rd or 4th branchial arch with accumulation of colloid material within it. Another hypothesis suggest that it is the cystic degeneration of the parathyroid adenoma or coalescence and enlargement of pre-existing multiple parathyroid cysts.

A number of treatment options are available which includes surgical excision of the cyst which carries the risk of intra-operative injury to the recurrent laryngeal nerve, persistent post-operative hypocalcemia. Nonsurgical management includes fine needle aspiration⁵ and injection of sclerosing agent.⁶ These are appropriate in nonfunctioning parathyroid cyst and do carry the risk of cyst recurrence. Rates of recurrence are difficult to calculate as reporting of PCs is limited to case reports

and small series. However, it does appear that recurrence following aspiration is more likely in larger PCs and that recurrence almost never occurs following surgical resection. Surgery is therefore indicated in all functioning PCs to alleviate the symptoms of hypercalcemia, larger PCs, and also recommended in PCs that recur following more conservative approaches.

4. Conclusion

Parathyroid cysts are very uncommon. Despite advancement in radiological and cytological investigations, these are only diagnosed during histopathological examination post-surgical resection. They have slightly female predominance and are usually found in 4th to 5th decade of life. If managed conservatively, these are prone to recur. Surgical removal is the definite treatment.

5. Source of Funding

None.

6. Conflict of Interest

None

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