



Case Report:

Cervical Thymic Cysts Masquerading as Thyroid Cysts

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Abstract:

Two interesting cases of cervical thymic cyst are reported highlighting the importance of this entity which can be missed preoperatively. Thymic cysts are of two types-unilocular and multilocular. They differ in both macroscopic as well as microscopic findings. Histopathology helps to identify these cysts.

Key Words: Cervical thymic cyst; Unilocular; Multilocular

Introduction:

Cystic swellings in the neck have varied etiology and can be a diagnostic dilemma. Thymic cysts are among the rarest cysts found in the neck.¹ A spectrum of abnormalities of the thymus is attributed to the embryonic cervical descent of the thymic primordium. Sequestered cystic cervical thymus is found along a normal path of descent, with or without parathyroid glands.² Due to the rarity of this cyst a preoperative diagnosis is seldom achieved. The purpose of this article is to report 2 distinct types of cervical thymic cyst masquerading as thyroid lesions.

Case Report:

Our first case was a 55 years old lady presented to the surgical OPD with swelling in left lower neck for 1and 1/2 months duration. The swelling was insidious in onset, gradually increasing in size without any obstructive symptoms. There was no history of change in voice or difficulty in swallowing. On examination a 6X5 cm soft cystic mass with diffuse margins was seen in lower anterior part of neck. The swelling was noncompressible, not translucent but moved with deglutition. Lower border was not felt. USG revealed mild thyromegaly of left lobe with a cyst attached to it. FNAC revealed cyst macrophages, lymphocytes and few thyroid follicular cells. Pre-operative diagnosis was MNG with cyst arising from thyroid. Per operatively, a translucent cyst closely adhered to the left lobe of the thyroid but well demarcated from the gland was mobilized and removed along with the left lobe of the thyroid. Left hemithyroidectomy along with cyst was sent for histopathological examination. Gross examination of the specimen revealed left lobe of the thyroid with an attached unilocular cyst with thin translucent wall measuring 5X5 cm (Fig 1). Cyst was filled with clear fluid. External surface and luminal surface of the cyst wall was smooth. Histopathology showed flattened epithelial lining with presence of

islands of thymic tissue composed of Hassall's corpuscles and lymphocytes (Fig 2).



Figure 1: Thin walled unilocular cyst with a part of left thyroid lobe

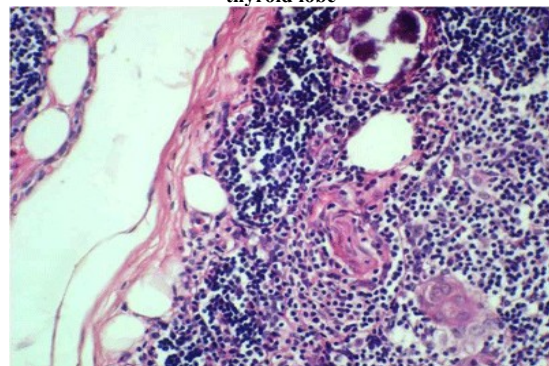


Figure 2: Cyst wall lined by bland squamoid epithelium with the wall showing hassall's corpuscles and lymphocytes (H&E,X400)

Second case was a 55 years old male who presented to the surgical OPD with a swelling in the neck for one month duration. On examination the swelling moved with deglutition. It was solitary and cystic measuring 2X3 cm over right side of the neck. The patient was euthyroid and serum calcium levels were 8.9mg/dl. FNAC revealed cyst macrophages, cholesterol clefts, lymphocytes and occasional thyroid follicular cells. So a preoperative diagnosis of cystic nodule of the thyroid was made. Per operatively, both the lobes of thyroid appeared normal. The nodule was mobilized from the posterior surface and was excised from the gland. Part of the right lobe was also excised with the nodule. On gross examination a part of the right hemithyroid and an attached cyst measuring 3X3cm was identified. Cyst was multiloculated with intervening septa and was filled with brownish turbid fluid. Attached part of the thyroid was unremarkable. Histopathology showed multilocular cyst lined by low cuboidal to squamous epithelium. The lumen contained pink eosinophilic material, many cyst macrophages and cholesterol crystals. Intervening septae were of variable thickness and composed of aggregates of lymphocytic infiltrate beneath the lining epithelium of cyst along with areas of haemorrhage (Fig 3). Also seen within the septae were cholesterol granuloma, multinucleated giant cells and aggregates of lymphocytes (Fig 4).

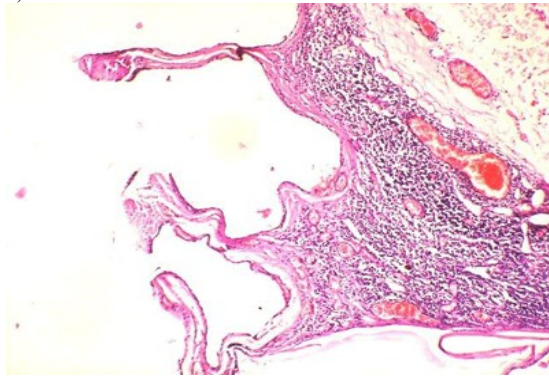


Figure 3: Cyst wall shows papillary outpouchings and is lined by flattened to low cuboidal epithelium. Aggregates of lymphocyte are seen beneath the epithelium (H&E, x100)

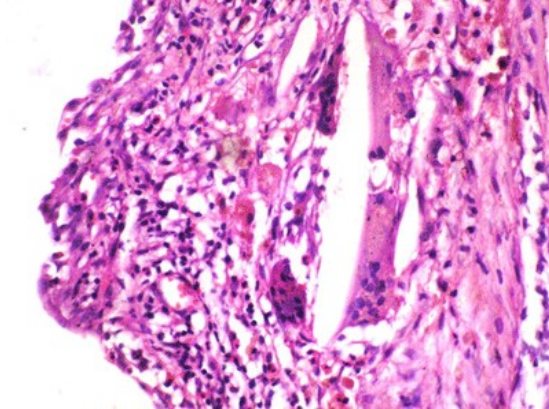


Figure 4: Cholesterol clefts, multinucleated giant cells and lymphocytes in the cyst wall (H&E, X400)

Discussion:

Embryologically, the thymus along with inferior parathyroids develops as paired structures from the third branchial pouch around the sixth fetal week.³ The inferior parathyroids separate from the thymic tissue and remain close to lower pole of the thyroid, while the thymus descends into the mediastinum.⁴ Thymic cysts are rare and may be found in the neck or mediastinum. Males are affected more commonly than females.

Thymic cysts manifest themselves clinically, predominantly between the ages of 20 and 50 yrs and typically in asymptomatic patients. Two main groups of thymic cysts occur- congenital unilocular and acquired multilocular thymic cysts.⁵ Macroscopically, unilocular cyst has a thin wall and multilocular type of cyst has a thick wall with pericyclic fibrous adhesions. Cyst contents have a variable consistency – unilocular typically contain only serous fluid, whereas multilocular lesions are filled with turbid, cheesy or haemorrhagic material.⁵ Microscopically- in unilocular thymic cysts, the epithelial surface of the cyst cavity is lined by bland squamoid cells and the fibrous wall lacks inflammation, haemorrhage and granulomas. On the other hand, the epithelial component of multilocular thymic cyst is often simple cuboidal and may show papillary excrescences. Abundant lymphocytes, granulation tissue, haemorrhage and cholesterol granulomas are constant constituents in the fibrous walls and cyst cavities of multilocular thymic cysts.⁵

Speer⁶ while considering cyst formation within thymic tissue postulated many etiologies. These included embryonal epithelial remnants, degenerating Hassall's corpuscles, infectious and inflammatory pathology and neoplastic, hyperplastic and involutional changes of the epithelial, lymphoid or connective tissue and vascular elements of the thymus. Two dominant hypotheses have emerged. One relates the pathogenesis of cystic cervical thymus to acquired progressive cystic degeneration of unknown etiology in Hassall's corpuscles and the epithelial reticulum of the thymus.⁷ A second body of opinion favours cystic change in persistent unincorporated remnants of the thymopharyngeal duct. The latter hypothesis is well accepted and most consistent with the developmental anatomy of the thymus while the multiloculated cyst may reflect the first hypothesis, which is progressive cystic degeneration of the thymus.

Neck masses moving upwards on deglutition could be thyroid or thyroglossal cyst in origin. It is difficult to differentiate between thyroid, parathyroid or thymic swellings clinically. Third pharyngeal pouch cysts may be asymptomatic, minimally symptomatic or reach a size that causes obstruction to the larynx and hypopharynx.⁸ It can be a diagnostic dilemma and frequently confused with thyroid or parathyroid swellings, as in our case.

In both the cases that we have studied, close association of the thyroid yielded few follicular cells in the FNAC and hence the diagnosis of throid cysts was made pre-operatively. Finding of cholesterol clefts and large number of lymphocytes- one should keep thymic cyst in mind. However histopathology revealed the morphology of thymic cyst- unilocular type in the first case and multilocular in second case. Well defined Hassall's corpuscles are seen in unilocular cyst but may or may not be seen in multilocular cyst as in our cases. The salient differences between unilocular and multilocular cysts are mentioned in Table 1.

Unilocular	Multilocular
Developmental	Acquired- Inflammatory/neoplastic
More common in neck	More in mediastinum
Cyst is thin walled and lumen contain clear fluid	Cyst wall is thickened and contain turbid, brownish fluid
Thymic tissue always present	Thymic tissue may or may not be present
From remnants of thymopharyngeal ducts	Progressive cystic degeneration of the thymus due to acquired conditions

The frequent atrophic condition of the thymic remnants may require sampling from various portions of specimen before a diagnosis of thymic cyst could be made.⁹ Clinically, in most cases, cervical thymic lesions present as a unilateral asymptomatic neck mass. Differential diagnosis includes branchial cyst, thyroglossal cyst, cystic hygroma, lymphadenopathy, thyroid

and parathyroid gland lesions, lymphoma or other tumours of the area. It is interesting that the diagnosis of ectopic thymus and thymic cysts have rarely been made preoperatively.¹⁰

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