

## Case Report

# Thymic cyst as a differential diagnosis of a lateral cervical mass: case report and review of literature

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## ABSTRACT

Thymic cysts are a rare cause of benign neck mass in adults and are usually diagnosed after surgery. Their prevalence is less than 1% of all cervical masses, and they are generally noted in the first decade. We report a case of a 34 year old female with a lateral cervical mass, describing ultrasound and CT features, intraoperative findings and histopathology. Thymic cysts are uncommon lesions causing neck swelling, often misdiagnosed preoperatively and should be included in the differential diagnosis of cervical cystic masses.

**Keywords:** Thymic, Cyst, Cervical, Mediastinal, Mass

## INTRODUCTION

Thymic cysts are rare, representing only 1% of cystic cervical masses.<sup>1-3</sup> Usually presenting in the 1st decade of life, this condition is even rarer in adults.<sup>2,3</sup> Approximately 50% have a thoracic extension.<sup>1,3</sup>

Clinical signs range from a slowly enlarging asymptomatic cervical mass to a combination of stridor, hoarseness and dysphagia.<sup>2,4</sup>

Thymic cysts can be congenital or acquired.<sup>4</sup> Acquired thymic cysts, unlike congenital, are multilocular and secondary to inflammation, malignancy or in association with acquired immunodeficiency syndrome.<sup>5,6</sup>

Current report is a rare case of cervical thymic cyst in a 34 year old female, describing ultrasound and CT features, intraoperative findings and histopathology.

## CASE REPORT

A 34 year old female with a lateral cervical mass was referred to our department.

The patient was followed by endocrinology for previous history of thyroiditis, vitiligo and possibly autoimmune pancreatitis. A routine cervical ultrasound in 2015 showed a homogenous thyroid gland with normal size and a nodular heterogeneous lesion posterior to the left thyroid lobe with 12.9 mm, possibly a parathyroid lesion, with no evidence of bilateral lymph nodes. She had no clinical symptoms and her laboratory tests showed no abnormal results regarding thyroid function or calcium metabolism.

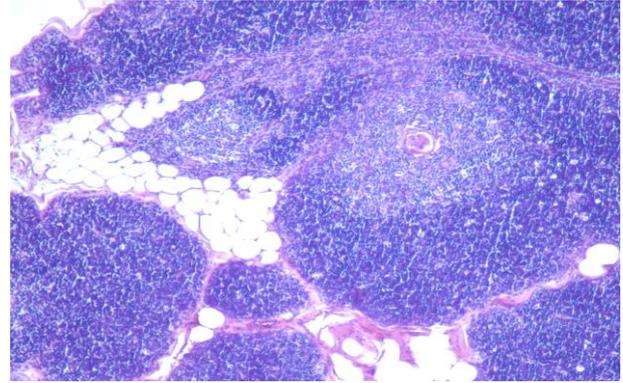
Two years later, the follow-up ultrasound mentioned an elongated lesion with 38 mm, apparently liquid, containing a solid vegetation with 17 mm with no vascularization on Doppler examination. Due to the growth of the cystic lesion, a CT-scan was performed showing a non-pure cyst inferiorly to the left thyroid

lobe, with no contrast enhancing. No adenopathies were identified.



**Figure 1: CT scan showing a cystic lesion inferiorly to the left thyroid lobe.**

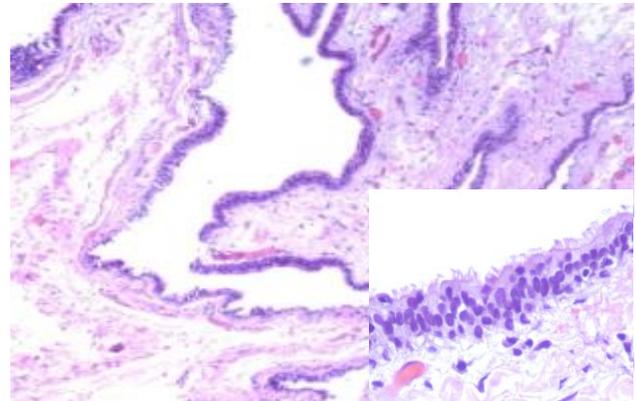
Postoperative course was uneventful and the patient was discharged on the following day.



**Figure 4: Thymic tissue with a Hassall corpuscle (H&E 100X).**



**Figure 2: Intraoperative aspect of the cyst.**



**Figure 5: Thin-walled cyst attached (H&E 100X), insert: cyst lined by ciliated columnar cells (H&E 400X).**



**Figure 3: Intraoperative aspect of the cyst (close-up).**

A surgical excision by transversal cervicotomy was performed. The tumor was well defined, encapsulated, with a thin wall and 12 cm long. The proximal extremity was adherent to the left thyroid lobe and distally it extended into the superior mediastinum. The content of the cyst was white and thick and without malignant cells detected by cytology. The histologic examination showed thymic tissue confirming the diagnose of a thymic cyst.

## DISCUSSION

Differential diagnose of a cervical mass includes adenopathies, morphologic abnormalities of the thyroid and parathyroid glands, neoplasms, vascular lesions and cysts. On the other hand, cystic masses of the neck are thyroglossal duct cysts, branchial cleft cysts, cystic hygromas, dermoid cysts, epidermoid cysts, thymic cysts, bronchogenic cysts and laryngoceles.<sup>2,7</sup>

Thymic cysts are rare embryonic remnants along the course of thymic migration in the neck or the anterior mediastinum which may result in cervical masses usually in children and often misdiagnosed. Thymus gland is the main organ of the lymphoid system during infancy and originates from the third pharyngeal pouch in the 6 week of development. Right and left portions of the thymic primordium descend along the thymopharyngeal tracts until they fuse in the midline at 8 weeks to form the gland. At 12 weeks, thymus completes its migration to the anterior mediastinum.<sup>2,7</sup>

Thymic abnormalities result either as a consequence of descending deviations or failure of involution after puberty. Persistence of thymopharyngeal tracts and the degeneration of Hassall's corpuscles within ectopic thymic remnants are the two most important etiologies of thymic cysts and can be seen at any level from the mandible to the mediastinum.<sup>2,3,7</sup> Fifty percent of these cysts have a thoracic extension and are usually left-sided. Thymic cysts are more frequently seen in males and are generally asymptomatic.<sup>2,7</sup> Rarely, carcinomas may arise in this cysts.<sup>6</sup>

Regarding the diagnosis, ultrasound is useful in distinguishing cystic versus solid structures, assessing proximity to the vascular structures and occasionally identifying thymic tissue but CT-scan is important to distinguish thymic cysts from other congenital anomalies based in anatomic location and appearance. MRI is superior to CT in reliably distinguishing cystic from solid lesions and allows detection of complex cysts by identifying septations that may be undetectable by CT.<sup>7,8</sup>

Surgery is the treatment of choice and establishes the definitive diagnosis.<sup>5,7,9</sup> A transverse cervicotomy is the most common approach and care must be taken regarding the anatomical relationships with large vessels and neck nerves.<sup>3</sup>

## CONCLUSION

Thymic cysts are uncommon lesions, rarely seen in adults and often misdiagnosed preoperatively. Surgical excision and histological examination are usually necessary for the diagnosis.

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