

Cervical Thymic Cyst

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Cervical thymic cysts are among the uncommon causes of neck masses therefore rarely considered in the differential diagnosis. Here we report a 17-year-old female who presented with a lateral neck mass that was diagnosed preoperatively as sebaceous cyst. Clinical findings, macroscopic and histopathological features are described and reviewed with respect to the available literature.

Key words: Cervical, Thymus, Cyst

Servikal Timik Kist

Servikal timik kistler boyunda kitleye sebep olan nadir lezyonlardır. Bu bölge lezyonları arasında ayırıcı tanıda akla gelmelidir. Burada sunduğumuz 17 yaşında bayan hastanın lateral boyun kitleleri mevcuttur ve kist sebace ö n tanısı ile opere edilmiştir. Olgunun klinik bulguları, makroskobik ve histopatolojik özellikleri tanımlanmış ve servikal timik kistler literatür bilgileri eşliğinde gözden geçirilmiştir.

Anahtar kelimeler: Servikal, Timus, Kist

Cervical thymic cyst is a rare congenital abnormality that is caused by arrest of the normal embryogenic migration of the thymic primordium and its cystic degeneration.^{1,2,3}

In 1901, Pollosan and Piery made the first attempt at surgical excision of this lesion in an infant.^{2,4} Cases have occurred in children less than 20 years old, most of them being less than 1 year of age.^{1,3} Typical localization is in the anterior triangle on the neck.^{5,6} In this case because of its typical features, we will discuss the clinical and pathological differential diagnostic features and review the developmental theories.

CASE

A 17 year old female was evaluated for a mass on the left side of the neck, below arcus mandibularis. On physical examination, an asymptomatic mobile mass of 2cm was found. Preoperative diagnosis of cyst sebacea was made. The patient underwent excision of the lesion. Specimens composed of two irregular hemorrhagic masses with dimensions of 3.5x2x0.5 cm and 2x1x1cm. Cross sections showed yellowish brown solid areas and small cysts.

In routine light microscopic sections, there was a giant cell reaction and cholesterol crystals at the center (Figure 1). Small cysts were seen surrounding this area. Atrophic thymic tissue comprising lymphoid and epithelial elements were present in the wall of the cysts. The cyst walls were lined with squamous epithelium or spindle shaped cells (Figure 2). Peripherally located thymic tissue with Hassall's corpuscles and parathyroid tissue were seen (Figure 3).

Immunostaining was performed on formalin fixed paraffin embedded tissue sections using antibodies against pancytokeratin proteins by using streptavidin-biotin method. The epithelial component of the thymic tissue in the cyst wall was outlined and the thymic tissue was located peripherally. Hassall's corpuscles and scattered epithelial elements within lymphoid tissue were positively stained.

DISCUSSION

Cervical thymic cyst is a congenital lesion that comprises 80-90% of the asymptomatic neck masses. The other lesions are accompanied by complaints of dysphagia, dyspnea, cervical pain or hoarseness.^{2,5}

There is 3:2 male dominance. The masses are on the left side of the neck in 70% of the cases and on the right side in 23%. The remainders are on the midline or pharyngeal.⁵ The anatomical location of the cysts is typically in the path of descent of the thymopharyngeal tract, which is normally in the anterior cervical triangle. The majority of the lesions are multicystic.^{1,2,5} The cysts are benign and range in size from 2 to 22 cm in diameter.⁶

The exact etiology of the cyst is not clear. In 1938, Speer proposed five theories for the origin of thymic cysts, stating that they may arise from^{1,3;}

- 1-Embryonal remnants of branchial clefts, thymic tubules and thymopharyngeal clefts.
- 2-Sequestration products during the involution of the thymus
- 3-Neoplastic changes in the lymphoid cytotreticular or connective tissue
- 4-Degeneration of Hassall's corpuscles
- 5-Lymphatic, vascular or connective tissue that arrests in the various stages of thymic development, hyperplasia or involution.

It seems likely that the primary event is congenital with the persistence of the thymopharyngeal tracts, then subsequent degeneration of Hassall's corpuscles and/or the epithelial component of the aberrant thymic tissue which may lead to cyst formation.^{1,5}

Due to the fact that thyroid, parathyroid and thymic tissues have an embryologic developmental relationship, it is not surprising to see the ectopy of these tissues in thymic cysts.^{1,3}

Although the presence of thymic tissue with Hassall's corpuscles and cholesterol granulomata are diagnostic in the degenerated cases, without these distinguishing features these cysts cannot be differentiated from the branchial cleft cysts. Both lesions are also characterized by epithelium lining of the cyst in close juxtaposition to lymphoid tissue.^{1,5,7}

In the literature, it is reported that the delineation of an epithelial component within lymphoid tissue in the wall of a cervical cyst unequivocally indicates the diagnosis of thymic cyst.¹

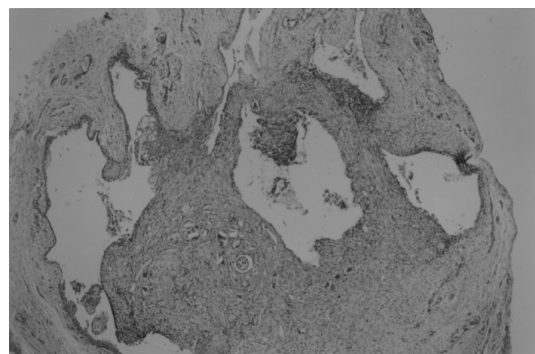


Figure 1. Giant cell reaction and cholesterol crystals at the center, surrounding small cysts HEx100.

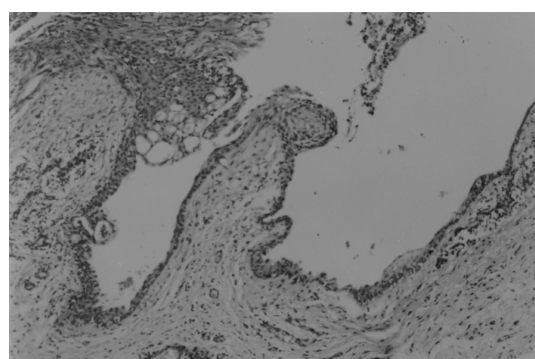


Figure 2. The cyst walls that were lined with squamous epithelium or spindle shaped cells HEx200.

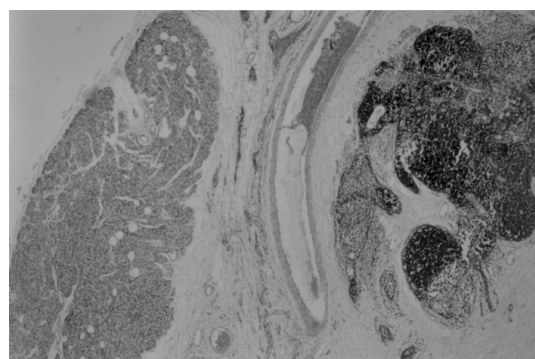


Figure 3. Peripherally located thymic tissue with Hassall's corpuscles and parathyroid tissue HEx 100.

Malignant transformations have been reported in rare cases. Due to the possibility of malignant transformation, it is mandatory to excise this lesion totally.⁴

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