Ectopic left cervical thymic tissue in pediatric age group

Abstract

Objective: We report a case of ectopic cervical thymic tissue in a healthy 5-years-11 months old girl.

Method: Case report and review of the English-language literature (using PubMed, Ovid, and Proquest databases).

Results: Case of ectopic cervical thymic tissue occurred in a preschool-aged girl to be reported in the English-language literature.

Conclusion: This case raises the alerts of ectopic cervical thymic tissue to be considered in the differential diagnosis of children younger than 10 years of age with a painless neck mass. When previously healthy child manifests with a sudden onset of the asymptomatic neck mass, keep in your mind that there is a great likelihood of ectopic thymus tissue in the neck.

Keywords: thymus gland, ectopic tissue, pediatric neck mass, fibrocollagenous tissue, ectopic thymus cyst

Summary

Ectopic thymus tissue in the neck remains infrequently described in medical literature. This paper presents the case of a young girl, who presented with a soft, fluctuating bulk mass on the left side of her neck. The patient underwent complete excision of the lesion and histological inspection showed an ectopic thymic tissue cyst. Ectopic thymic soft tissue may remain an uncommon finding, but it must be involved in the differential diagnosis of neck masses, particularly in children. This case report is complemented by a short review of the relative literature.

Background

The thymus is a major lymphoid tissue in the embryonic stage and early childhood. It mainly appears early in fetal life as well as plays a critical role in the development of cell-mediated immunity. Ectopic cervical thymus is not often reported, for the reason that thymic remnants frequently persist as a symptomatic and unrecognized by clinicians. Most of these lesions arise as a result of migration defects throughout thymic embryogenesis. Since 1901, about 90 cases of aberrant cervical solid and cystic thymic lesions have been reported in the literature and were recognized at either surgery or autopsy.1-3 Approximately two-thirds of all reported cases were identified in children younger than 10 years.4 Ectopic thymic tissue in the neck is unusual in patients older than 20 years.

Case presentation

A 5-year and 11 months old girl, previously healthy, presented in our emergency (ER) department with a left cervical swelling since 4 months. It has gradually increased in size and was not associated with fever or weight loss, as the mother mentioned. On examination, the child looked well, with an average body weight, neither pale nor jaundiced. Local examination revealed a left anterior fixed, non-mobile, soft cervical neck mass. No tenderness on palpation. No discharge was coming out and no redness or hotness. After that the patient was admitted in our hospital and investigations were done for her, she underwent surgical excisional biopsy and stayed 4 days in the Hospital. The histopathology report came to be “a thymic cyst with multiple foci of ectopic thymus gland tissue” (Figures 1-9).
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Figure 3 Ectopic thymic tissue. H&E x200.

Figure 4 Thymic tissue: CD3 positive T lymphocytes.

Figure 5 CD20 negative in thymic tissue. Tissue APAAP, red chromogenx200 Peroxidase, DAB chromogen x200.

Figure 6 Thymus cyst cholesterol crystal clefts. H&E x400.

Figure 7 Chest and neck X-ray figure out and confirm that “there is no mediastinal extension of the mass”.

Figures 8 Ultrasound of the neck shows large heterogeneous lesion.

Figures 9 Ultrasound of the neck shows large heterogeneous lesion which is seen in the anterior triangle of a left cervical region, between the internal jugular vein and the carotid artery, displacing the carotid anteromedially and the jugular posteriorly; it measured about 3x1.5x1.5cm, it shows heterogeneous hypervascular texture with focal calcification. For clinical correlation and further investigation considering Carotid Space masses (paraganglioma, chwannoma, others).

Surgical pathology specimen - profile

Gross description

One piece of an irregular nodular, firm soft tissue bit measuring 4x2x1cm. Cut section showed multiple small grayish-white nodules largest measurements. 1x0.5cm and smallest 0.3x0.3cm, multiple bits, 5blocks, all embedded.

Microscopic picture

In multiple bits of the tissue received, multiple cystic spaces are seen, some are rounded others are irregular. Cysts lining ranged from the cubical stratified epithelium. Other cysts form a fibrous capsule. Cysts are filled with huge numbers of multinucleated gains cells and large numbers of cholesterol crystals. Outskirts show multiple foci of thymus gland tissue with a well-formed cortex of packed, monotonous lymphoid T-cells, with tangible body macrophages. Medulla show less packed lymphoid cells. Epithelial whorls of Hassall’s corpuscles are evident. Fibrocollagenous tissue surrounding the cysts show congested capillaries. No evidence of Malignancy.

Differential diagnosis

The differential diagnosis of cervical thymic cyst is broad and includes thyroglossal duct cyst lymphovascular malformations, branchial cleft cyst, and laryngoele, as well as benign tumors (dermoid.
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Learning points

i. Ectopic Thymus cyst must be considered in differential diagnosis of a young child with a cervical mass.

ii. Once diagnosed, surgery is the definitive treatment. The utility of fine needle aspiration is gaining wider acceptance in the diagnostic evaluation of neck masses.

iii. The prognosis after removal of ectopic cervical thymus is excellent and no cases of recurrence have been reported.

iv. Such anomalies are rarely diagnosed pre-operatively and can be easily confused with other neck lesions.

v. Mediastinal thymus should be confirmed to prevent the risk of a total thymectomy.

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Conflict of interest

The author declares no conflict of interest.

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