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Thymic cyst in the neck: A case report and review of thymic cysts in children

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Summary

Remnants of thymic tissue in the upper neck seem to be very rare. A poorly defined mass bulging with Valsalva maneuver in the neck of a 9-year-old boy was shown to be thymic cyst on histology. As aberrant thymic tissue often does change into cysts or neoplasms, removal is the treatment of choice. To date there have been 71 reports of ectopic thymus and thymic cysts localized in the neck in children.

Key words: *Ectopic thymus, thymic cysts, neck mass*

Introduction

The thymus derives from the third and possibly the fourth pharyngeal pouch. Maldescent of the thymus at any point along the normal thymic pathway results in an ectopic thymus. A cervical thymus or thymic cyst is more commonly seen in children and can be found at any level along line of thymic descent. A brief review of the English literature revealed a total of 71 ectopic cervical thymus (solid) and cervical thymic cysts in children [1-24]. Approximately 50 of these cases were reported to be cervical thymic cysts. Previous reviews were made by Lewis (1962), Barrick (1969), Hinds (1970) and Tovi (1978)[2,9,13,23]. The most comprehensive and more recent review of the literature revealed 59 cases of cervical thymic cysts in childhood [16]. We add 13 further cases including our case [2,11,17,21,24].

Case Report

A 9-year-old boy presented with a sewelling in the right side of his neck. The mother had first observed this tumor after 3 years of age and reported that the size of the mass was growing larger during crying or coughing.

The healthy looking boy showed an asymmetry of his neck with a soft, non-tender mass behind the right angle of the mandible. Mass was bulging up in the right upper neck during Valsalva maneuver. It had poorly defined margins. His chest x-ray was normal. A cervical hygroma seemed very likely. Surgical exploration was considered necessary and was performed under general anaesthesia. A cystic grayish tumor was found to lie against the carotid sheath beneath the right sternocleidomastoid muscle. The upper pole of the cystic tumor was extending towards the mastoid bone while the lower pole was extending downward into mediastinum (Figure 1). Gross examination revealed a gray lobulated, solitary cystic tumor measuring 15x5x4 cm (Figure 2). The cyst wall ranged from having a discrete epithelial lining.

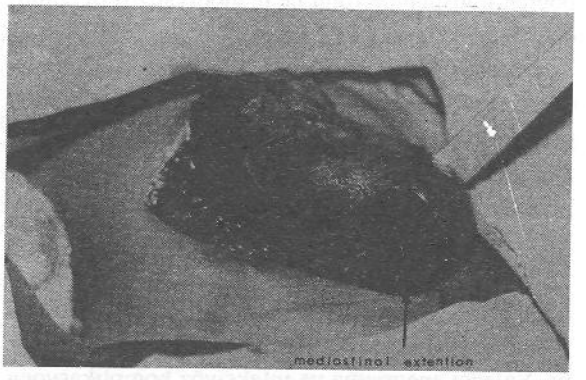

Fig 1: Extension of the thymic cyst into the mediastinum.

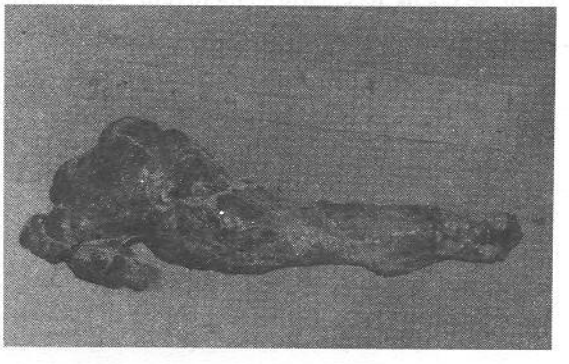

Fig 2: Gross appearance of the 15x5x4 cm lobulated thymic cyst.

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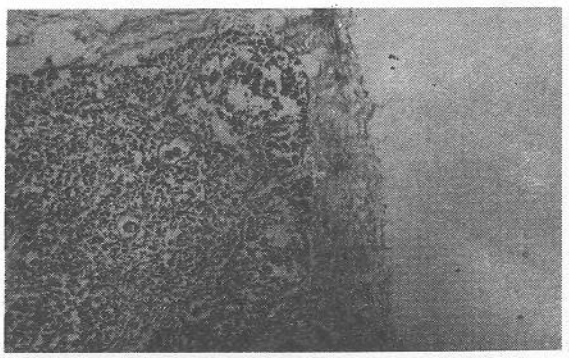

Fig 3: Photomicrograph of the cyst wall demonstrating fibrosis, lymphocytic infiltrate, and Hassall's corpuscles (Hematoxylin-Eosin;x25).

of cuboidal and nonkeratinized squamous cells to being dense and fibrous with lymphoid infiltrates and degenerative changes such as cholesterol clefts (Figure 3). The postoperative course was uneventful and follow-up revealed no immunological impairment.

Discussion

There are two basic types of cervical thymus: cystic and solid. The pathogenesis of the solid thymus is better understood. It can result from either a complete or partial failure of the gland's descent from the neck or from sequestration and failure of involution along its pathway into the mediastinum [16]. Two major hypothesis is present to explain the cervical cyst formation: cystic degeneration of Hassall's corpuscles and cystic degeneration of the glandular duct epithelium itself [16]. Males have been affected twice as often as females [10,17]. Seventy per cent of the patients were affeted on the left side of the neck, % 23 on the right and the remainder had midline or pharyngeal masses [8,10]. There have been only one patient with bilateral involvement of the upper anterior mediastinum and both anterior cervical triangles [24]. Fifty per cent of the cervical thymic cysts seem to spread into the mediastinum [8,10]. Thymic cysts should be included in the preoperative diagnosis of masses located in either side of the neck which come and go with Valsalva maneuver. The differential diagnosis may also include branchial cysts, thyroglossal cysts, haemangioma, cervical hygroma, lipoma and lymphoma. To our knowledge, all of the thymic cysts removed have been benign growths and non has shown any evidence for malignant changes. However, because of the high incidence of such changes in solid ectopic thymus, surgical removal seems to be the treatment of choice.

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