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Case Reports

Cervicomediastinal Thymic Cyst: Report of a Case

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Abstract
Congenital thymic cysts are rare. Consequently, they are often misdiagnosed and not included in the preoperative differential diagnosis of neck masses. We report the case of a 7-year-old boy with a large cervicomediastinal thymic cyst to increase the awareness of this unusual entity. We discuss the clinical features, presentation, and pathogenesis of thymic cysts.

Key words Thymic cyst · Cervical tumor · Mediastinal tumor

Introduction

Thymic cysts are uncommon lesions of the neck and mediastinum, which usually present as an asymptomatic cervical mass and are often misdiagnosed as either branchial cleft cysts or cystic hygromas.[1–5] Despite their benign nature, surgical excision is essential to confirm a histological diagnosis.[6] We report the case of a large cervicomediastinal thymic cyst, which was completely excised through a median sternotomy.

Case Report

A 7-year-old boy was referred to our hospital for investigation of a left cervical mass, which had been noticed as a fluctuating cystic mass, 1 year earlier. Apart from the obvious deformity caused by the size and localization of the tumor, the patient had no other symptoms. Physical examination revealed a 6 × 8-cm cystic mass located in the lower two thirds of the neck, extending below the clavicula and becoming larger with the Valsalva maneuver. Magnetic resonance imaging (MRI) showed a cervicomediastinal cystic mass compressing the trachea, major vascular structures, and heart (Fig. 1a,b). We made a preoperative diagnosis of a cystic hygroma and excised the cyst through a sternotomy, leaving the adjacent thymic tissue intact (Fig. 2). The histopathological findings confirmed the diagnosis of a thymic cyst, composed of cholesterin crystals, giant cells, and epithelial lining, continuous with thymic tissue (Fig. 3).

Discussion

Thymic cysts are asymptomatic cervical masses, usually presenting in the first decade of life. Some patients may experience dysphagia, dyspnea, cervical pain, or hoarseness, which implies mediastinal extension.[7,8] Fluctuation in size as well as rapid enlargement after trauma or recent upper respiratory tract infection may present in the anamnesis.[4,9] Coughing, crying, or the Valsalva maneuver may induce the cervical swelling to become more evident or make it larger.[7,10] Thymic cysts tend to develop more often on the left side, as in our patient.[2]

Although their exact cause in unknown, thymic cysts probably arise from a developmental anomaly.[5,11] Normal embryonic migration of the thymic primordium from the third pharyngeal pouches and along the thymopharyngeal tracts ends with their fusion in the mediastinum. The arrest of this migration at any stage with persistence of the thymopharyngeal tracts may result in degeneration of the cellular or epithelial component of the aberrant thymic tissue, leading to cyst formation. The peak incidence in childhood may be explained by the fact that the thymus reaches its greatest size in the years before puberty.[1] Most reported thymic cysts are multicystic.[12] The cyst fluid is usually

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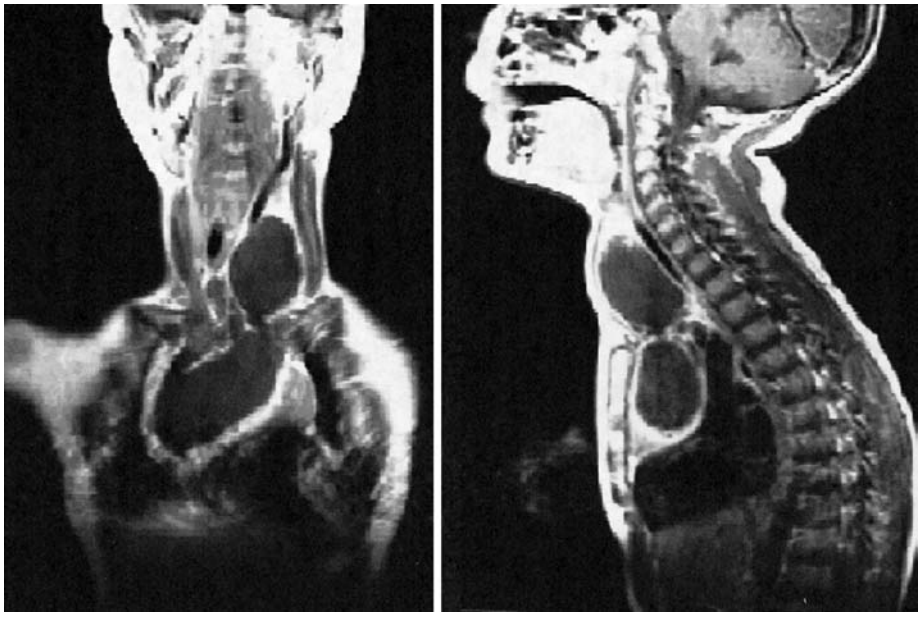

Fig. 1a,b. Magnetic resonance images showing a large cervicomediastinal cystic tumor and its mass effect

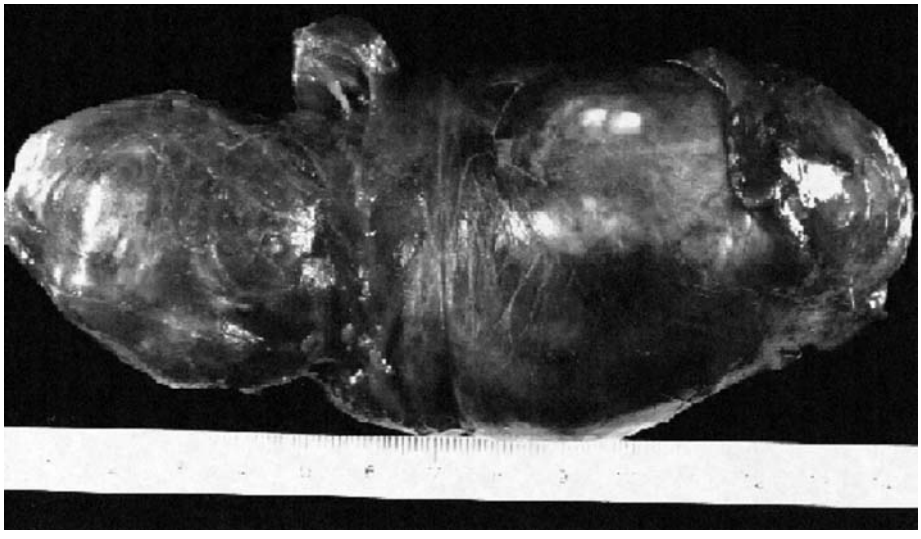

Fig. 2. The excised thymic cyst

clear but may be yellow-brown or red, caused by cholesterol crystals or bleeding into the cyst. The cyst from our patient was unilocular, with a thin, almost transluscent wall, filled with yellow-brown fluid (Fig. 2). The cyst may adhere to the vagus nerve, carotid artery, jugular vein, phrenic nerve, or recurrent laryngeal nerve.[9]

A mass located in the neck and mediastinum can be examined using ultrasonography, computed tomography, or magnetic resonance imaging (MRI). Although these imaging modalities cannot differentiate benign from malignant tumors, knowledge of the extent of the lesion is helpful in planning the best surgical approach. Evidence of tracheal compression may be an indication for early postoperative respiratory support. The postoperative course of our patient was uneventful, even though MRI showed tracheal compression.

Histologically, the lining of the thymic cyst is usually made up of flattened, cuboidal, columnar, ciliated columnar, or stratified squamous epithelium, and may be composed of, or continuous with, thymic tissue.[13] The presence of Hassall's corpuscles, giant cell reaction, and cholesterin crystals in the fluid or cyst wall is pathognomonic of a thymic cyst.

Congenital cervical and mediastinal cystic masses include lymphangioma, teratoma, neurenteric cyst, thyroglossal duct cyst, branchial cleft cyst, vascular malformation, and lung hernia.[14–17] However, thymic cysts should also be considered in the differential diagnosis.

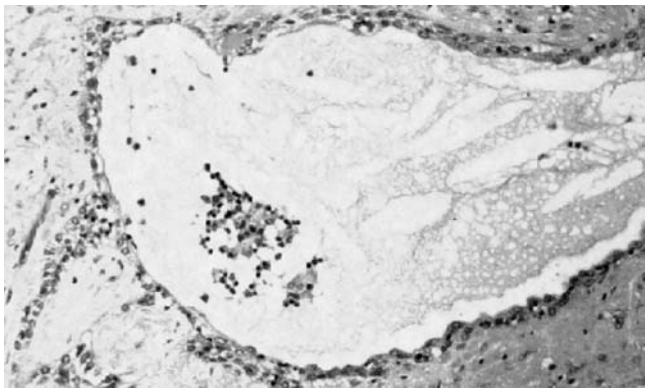

Fig. 3. Microscopic examination of the cyst revealed cholesterin crystals, giant cells, and epithelial lining, continuous with thymic tissue (H&E, ×310)

Surgical excision is the curative treatment of choice and essential for the histopathological confirmation of its benignity.

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