

Thymoma as a Rare Mediastinal Tumor of Childhood (Case Report)

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ABSTRACT: Pediatric mediastinal tumors and cysts are rare disorders that share similarities with adults. Although thymic disorders are rare in infants and children, thymic hyperplasia is the most common process which involves the thymus gland in this population. Thymic enlargement is generally asymptomatic. We report a case of thymic follicular hyperplasia in an infant seven months of age without association with any other disease.

Key words: Mediastinal Tumor, Thymoma

INTRODUCTIN

Thymic disorders are rare in infants and children. (Ghosh et al., 2009). Thymic follicular hyperplasia is defined as the presence of lymphoid follicles in the thymus regardless of the gland size. The gland is of normal size in most cases. (Wekerle et al., 1986) Thymic follicular hyperplasia may be present in other conditions include: myasthenia gravis, hyperthyroidism, Addison's disease, early stage of HIV infection and other immune-related diseases. (Ghosh et al., 2009).

Case report

A 7-months old boy, presented with a history of cough and low grade fever since a week prior to admission, there was no positive finding in his past medical history. On physical examination, there was fine crackle and wheeze in the base of both lungs and slightly decreased breath sounds on the left side of the chest. The CBC showed an elevated WBC count of 11200 with 20% neutrophils and associated anemia. CRP was positive and other laboratory evaluation was unremarkable. A chest X-ray revealed a homogeneous opacity in the left hemithorax

and mild infiltration in the left lung. On admission to the hospital, the patient initially diagnosed with lobar pneumonia. After a course of nebulizer β -agonist bronchodilator treatment and intravenous antibiotics, the patient signs and symptoms improved but still there was complaint of fever. A repeated chest X-ray and subsequent spiral CT scan of chest, were obtained and showed a large solid mediastinal mass (7×4×5 cm in diameter) located in the superior mediastinum, extending from anterior to the posterior parts in the left side with extension to the apex of the left lung. There was not invasion to other organ or evidence of metastasis also any calcification or cystic component inside this lesion. A total gross resection was performed and the mass (9.5×5.5×1.5 cm, 42 gr) was encapsulated well defined enlarged thymus tissue. Histologic evaluation showed reactive lymphoid follicles and increased number of Hassall's corpuscles. An immunohistochemical analysis confirmed the diagnosis of thymic follicular hyperplasia.

Follow-up for the child, one year after surgery revealed normal patient development with no problem.



DISCUSSION

Mediastinal masses are asymptomatic in nearly half the patient who are discovered to have them, and are diagnosed incidentally during imaging studies of the chest (Silverman et al., 1980; Oldham 1971; Hammon et al., 1979). The most common symptoms produced by mediastinal masses are secondary to compression or displacement of adjacent mediastinal structures, inducing cough, wheeze, stridor, recurrent respiratory infections, chest pain, hoarseness and superior vena cava syndrome. Other conditions where thymic follicular hyperplasia may be seen include: Myasthenia gravis, hyperthyroidism, lupus, Addison's disease, early stage of HIV infection and other immune-related diseases (Hammon et al., 1979; Nasser et al., 2010).

In children, 63% of mediastinal masses occur in the posterior mediastinum; 26% occur in the anterior mediastinum and 11% occur in the middle compartment (Grosfeld et al., 1971). Thymic tumors and cysts are distributed in the superior and anterior mediastinal compartments (Rosenberg 1989). Although thymic disorders are rare in infants and children, thymic hyperplasia is the most common process to involve the thymus gland in this population, and may be divided into true thymic hyperplasia and lymphoid hyperplasia. True thymic hyperplasia is defined as increase in both size and weight of the gland while maintaining normal architecture and microscopically similar to normal thymic tissue (Nasser et al., 2010; Franco et al., 2005). Thymic follicular hyperplasia is defined as the presence of lymphoid follicles in the thymus regardless of the gland size. In fact, in most of the cases the gland is of normal size. It is present in about two-third of patients with myasthenia gravis (Nasser et al., 2010). The lymphoid follicles are of secondary type, with germinal center formation and are largely composed of B lymphocytes, most of which contain immunoglobulins of the IgM and IgD classes (Kornstein et al., 1984; Wekerle et al., 1986)

According to some authors, their presence is accompanied by a disorderly arrangement and hypertrophy of medullary epithelial cells (Bofill et al., 1985; Löning et al., 1981). Clinically, thymic hyperplasia must be considered in a child with an anterior mediastinal mass, along with other anterosuperior mediastinal lesions including teratoma, lymphosarcoma, lymphangioma, haemangioma, substernal thyroid and thymic tumor (Bower et al., 1977). Thymoma which is a rare tumor in children, only comprising approximately 4% of pediatric thymic neoplasms, is distinguishable from true thymic hyperplasia mainly on the basis of architectural differences and flow cytometric analysis (Liang et al., 2010). It is not possible to differentiate whether it is benign or malignant according to the shape, size and density of the mass on the chest X-ray. Suspected mediastinal masses or those that are ill-defined can be best delineated and localized by

computed tomography (CT). Ultimately, many mediastinal masses require surgery (Rosenberg, 1989).

Since Thymoma is uncommon, the purpose of this case report was to remind its important as differential diagnosis for mediastinal mass in this age.

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