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IMAGES IN CLINICAL PRACTICE

OPACITY ON LEFT SIDE OF CHEST: PANDORA OF DIFFERENTIALS FOR A PEDIATRICIAN

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A six-month old male infant presented with first episode of cough for one day without fever. He was active, feeding well and playful. On examination, he had tachypnea (respiratory rate was 66/min), subcostal retractions and bilateral diffuse wheeze. Clinical diagnosis of acute bronchiolitis was made, and child was treated symptomatically with oxygen and nebulization with hypertonic saline for 2 days. Complete blood count, C-reactive protein were normal, while chest X-ray showed diffuse opacity on left side (Figure 1). A possibility of congenital lung malformation or enlarged thymus or cyst was kept. CT chest showed a well-defined, soft tissue density, homogenous mass in anterior mediastinum (Figure 2) measuring 3.6x5.3x5.1 cm and was not causing any compression of bronchovascular structures.

Figure 1. Chest radiograph of child showing large homogenous opacity on left side

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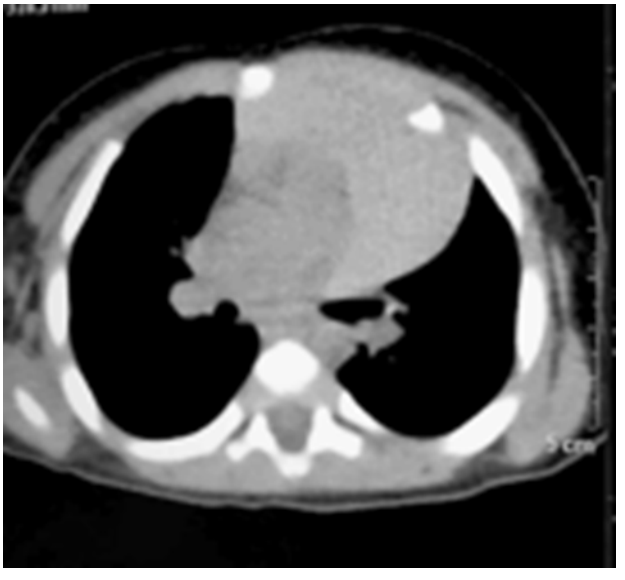
Figure 2. CT chest showing homogenous mass in anterior mediastinum



What is the diagnosis?

The CT findings were suggestive of thymic hyperplasia. The child improved in 2 days with symptomatic treatment. Thymus shows a dynamic physiology, variable size and shape throughout life. It grows during infancy, gains maximum weight at puberty and involutes after that.[1] Thymus shadow is generally seen on frontal chest x-ray of young infants. Normal thymus findings like notch sign, sail sign and wave sign have been defined by radiologists previously.[2] But sometimes thymus if enlarged, is mistaken for other conditions like pneumonia, collapse, consolidation, mediastinal mass (tumor or metastasis) or congenital malformations.[3] To avoid unnecessary invasive procedures like biopsy and thymectomy, it is important to know the normal and abnormal radiological variation of thymus. Thymus can be enlarged due to thymus hyperplasia (true hyperplasia or lymphoid), thymus cysts or tumors.[1,2] True thymic hyperplasia leads to increase in size of thymus which can occur spontaneously or due to rebound phenomenon (after recovering from pneumonia, or chemotherapy), or in association with systemic disease (thyrotoxicosis). While lymphoid hyperplasia occurs in association with immunological disorders and gland size may or may not increase.[4]

Although, it is not possible to distinguish between these conditions on conventional radiograph, CT does reveal good differentiating features. On CT scan, thymic hyperplasia is seen as diffusely enlarged homogenous mass with same attenuation as of normal gland, while the malignant disease (neoplasm) is seen as focal, heterogenous mass with decreased density and attenuation.[4,5] Thymic cysts are homogenous fluid attenuating lesion with smooth walls, without any solid component. Patients in whom CT findings are suggestive of cysts, tumor or neoplastic lesions, requires further investigations and intervention accordingly. But asymptomatic children with thymic hyperplasia without any systemic disease can be expectantly followed up conservatively.

Compliance with ethical standards

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Conflict of Interest: None

References:

1. Pearse G. Normal structure, function and histology of the thymus. Toxicol Pathol 2006;34:504-514.
2. Day DL, Gedgaudas E. The thymus. Radiol Clin North Am. 1984;22:519-538.
3. Jacobs MT, Frush DP, Donnelly LF. The right place at the wrong time: historical perspective of the relation of the thymus and pediatric radiology. Radiology 1999; 210:11-16.
4. Restrepo CS, Pandit M, Rojas IC, Villamil MA, Gordillo H, Lemos D, et al. Imaging findings of the expansile lesions of the thymus. Curr Probl Diagn Radiol. 2005;34:22-34.
5. Manchanda S, Bhalla AS, Jana M, Gupta AK. Imaging of the pediatric thymus: Clinicoradiologic approach. World J Clin Pediatr. 2017;6:10-23.