

- of Clinical Neurology, Eds Vinken GW, Bruyn PW, Elsevier, Biomedical Press, 1977, 30: pp 173-208.
5. Fitz CR. Midline anomalies of the brain and the spine. *Radiol Clin North Am* 1982, 20: 95-104.
  6. Chervenak FA, Isaacson G, Mahoney MJ, *et al.* Diagnosis and management of fetal cephalocele. *Obstet Gynecol* 1984, 64: 86-91.
  7. Lorber J. The prognosis of occipital encephalocele. *Dev Med Child Neurol (Suppl)* 1966, 75: 13.

## Thymic Hyperplasia Masquerading as Cardiomegaly: MRI Validation

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On the posteroanterior chest roentgenogram the thymus appears as a bilateral smoothly outlined superior mediastinal mass merging almost imperceptibly with the cardiac silhouette(1). However, the presence of a notch on posteroanterior(PA) projection and a sharp

inferior border on lateral projection helps delineate the thymus. Thymic hyperplasia, a benign condition in which there is massive enlargement of the normal thymus may simulate cardiac disease(2). Here, we report a case of thymic hyperplasia presenting with marked cardiomegaly on plain X-ray chest, where a suspicion of thymic enlargement was raised on two dimensional echocardiography and the diagnosis was confirmed on Magnetic Resonance Imaging (MRI). Awareness of this cause of pseudocardiomegaly will help in preventing misdiagnosis of heart disease.

### Case Report

A two-month-old child was referred to us with a diagnosis of congenital heart disease. He had a history of repeated respiratory tract infections. On clinical examination there was cardiomegaly with grade 2/6 vibratory murmur in the second left intercostal space. Plain X-ray chest (PA view) showed a cardiothoracic ratio of 0.7 (*Fig. 1*). Pulmonary vasculature and lung fields were normal. Two dimensional echocardiography revealed normal sized cardiac chambers. A moderate sized paracardiac mass was visualized in the subcostal four chamber view (*Fig. 2*) around the left ventricle and left atrium. This was thought to be either a pericardial lipoma or granuloma or an enlarged thymus. The possibility of a congenital pericardial cyst was also entertained but considered unlikely in view of the mass appearing to be of soft tissue echogenecity and not fluid echogenecity. To characterize this mass more definitively, MRI was performed. This showed a medium signal intensity of T2 weighted image of this mass which had pointed ends and was draping itself over the heart, confirming it to be thymic hyperplasia (*Fig. 3*).

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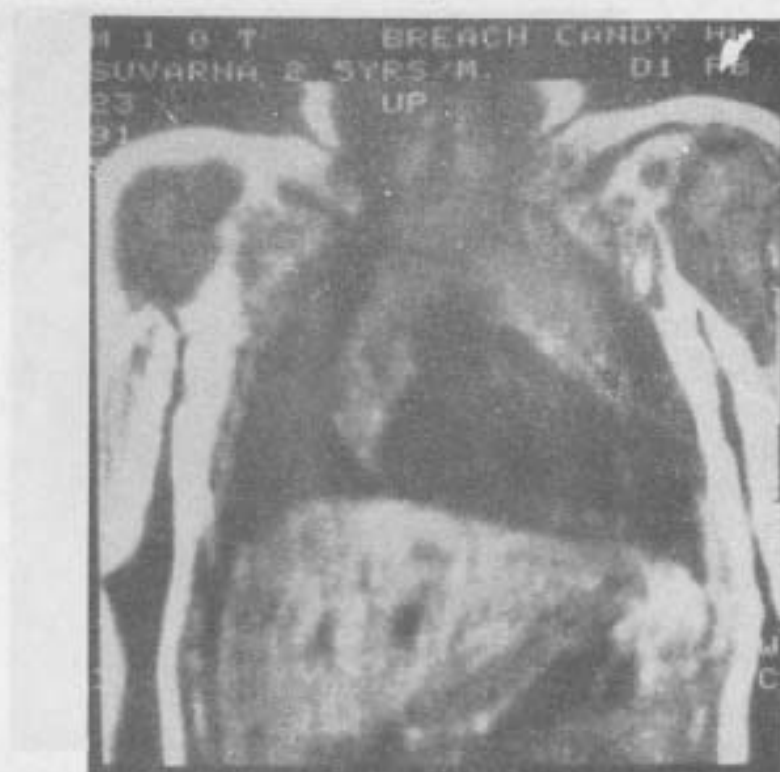
*Received for publication October 25, 1991;  
Accepted February 6, 1992*



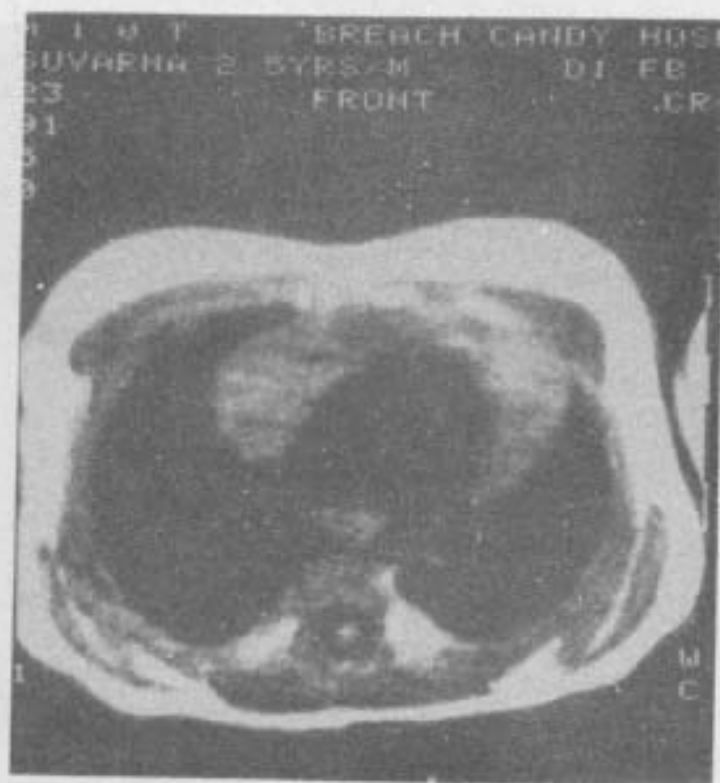
*Fig. 1. X-ray chest showing marked cardiomegaly.*



*Fig. 2. Echocardiogram showing an extracardiac mass (\*\*) around the left ventricle (LV) and left atrium (LA).*



(3A)



(3B)

Fig.3. MRI images in coronal (A) and transverse (B) reconstructions showing marked thymic enlargement with the typical thymic configuration.

## Discussion

An enlarged mediastinal image on roentgenographic examination, despite optimal technique and views, may be difficult to interpret when it is not possible to define clearly its thymic, cardiac and vascular components. Griffith and associates(2) have presented three broad possibilities of errors in diagnosis of cardiac disease in patients with massive enlargement of thymic gland. Firstly, it may mask cardiac disease, e.g., dextrocardia; secondly, cardiac disease could be suggested because of apparent cardiomegaly, when no such disease exists; and finally, cardiac disease could be misdiagnosed if the thymic shadow is interpreted as a malposed great vessel. Two dimensional echocardiography helps in identifying the presence and nature of cardiac disease; however, it cannot differentiate thymic enlargement from a mediastinal mass. MRI can differentiate the various mediastinal masses because of its ability to characterize various tissues depending on the T1 and T2 weighted images. Moreover, the three dimensional perspective that it provides helps to clearly define the borders of various structures. Especially in paracardiac masses, MRI is superior to Computerized Tomography (CT) since epicardial fat and mediastinal structures are difficult to differentiate by the latter modality but are clearly distinguished by MRI(3).

In our case, plain X-ray chest (PA and lateral) could not delineate the thymic image from the cardiac silhouette. Echocardiography helped us to rule out cardiac disease but could not identify the nature of mediastinal mass. MRI confirmed it to be thymic enlargement in view of its homogenous consistency, tendency to lie around rather than compress neighbouring structures and the signal characteristics, MRI,

unlike CT, does not expose young children to radiation. Although routine MRI examinations are not necessary for thymic hyperplasia, our case highlights rare occasions wherein the thymus enlarges into the inferior mediastinum and mimics heart disease.

## Acknowledgements

The authors wish to thank Dr. P.M. Pai, Dean, KEM Hospital and Dr. Viral Shah, Chief of MRI Department, Breach Candy Hospital for their guidance and help.

## REFERENCES

1. Swischuck LE. Imaging of the Newborn, Infant and Young Child, 3rd edn. Baltimore, Williams and Wilkins, 1989 p 19.
2. Griffith SP, Levine OR, Baker DH, Blumenthal S. Evaluation of an enlarged cardiothymic image in infancy. *Am J Cardiol* 1961, 8: 311-318.
3. Gamser G, Sostman D. Magnetic resonance imaging of thorax. *Am Rev Resp Dis* 1989, 139: 254-274.

## Can Health Workers be Trained in Case Detection of Pneumonia ?

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*Received for publication April 4, 1991;  
Accepted April 24, 1991*