

## Thymolipoma Simulating Cardiomegaly : A Case Report

Nitipatana Chierakul, M.D.\*

Teeravit Phanchaipetch, M.D.\*\*

Samrerng Ratanarapee, M.D.\*\*\*

**Abstract :** A routine chest radiograph of a 27-year-old woman who presented with chronic cough for four weeks disclosed an anterior mediastinal mass simulating cardiomegaly. The computed tomography revealed a mass with diffuse fat density intermingled with soft tissue density. At thoracotomy a thymolipoma weighing 750 g was completely resected and typical histological findings were demonstrated. She made a good recovery and remained in good health at her most recent follow-up visit.

**เรื่องย่อ :** Thymolipoma เลียนแบบภาวะหัวใจโต : รายงานผู้ป่วย ๑ ราย

นิธิพัฒน์ เจียรกุล พ.บ.,\* อีระวิทย์ พันธุ์ชัยเพชร พ.บ.,\*\* สำเร้ง รัตนระพี พ.บ.\*\*\*

\*ภาควิชาอายุรศาสตร์, \*\*ภาควิชาศัลยศาสตร์, \*\*\*ภาควิชาพยาธิวิทยา, คณะแพทยศาสตร์ศิริราชพยาบาล, มหาวิทยาลัยมหิดล, กรุงเทพมหานคร ๑๐๑๐๐.

สารคดีโรค ๒๕๔๐; ๔๔: ๓๕๖-๓๕๘.

รายงานผู้ป่วยหญิง ๑ ราย อายุ ๒๗ ปี มีอาการไอเรื้อรังมานาน ๔ สัปดาห์ ผลการตรวจภาพรังสีทรวงอกพบก้อนที่ anterior mediastinum คล้ายกับหัวใจโต ภาพเอกซเรย์คอมพิวเตอร์แสดงว่าก้อนนั้นประกอบด้วย fat density ปนกับ soft tissue density ผลการผ่าตัดพบก้อนเนื้ออก thymolipoma ขนาด ๘๕๐ กรัม ซึ่งสามารถเลาะออกได้หมดโดยง่าย ผู้ป่วยฟื้นตัวจากการผ่าตัดได้ดีและยังคงไม่มีอาการผิดปกติจนถึงวันที่มาตรวจตามนัดครั้งสุดท้าย.

### INTRODUCTION

Thymolipoma is a rare benign neoplasm of the thymus, composed of normal thymic tissue, which is excessive for age, and abundant mature adult adipose tissue.<sup>1</sup> Because of its large size and pliability, the mass usually conforms to the shape of the adjacent cardiac borders, producing a radiographic shadow easily mistaken for cardiomegaly.<sup>2</sup> We report a case with typical clinical presentations, radiographic findings and pathological features.

### CASE REPORT

A 27-year-old married woman was transferred from Sawanpracharak to Siriraj Hospital because of an anterior mediastinal mass. She had noticed an episode of irritative cough starting four weeks earlier without any additional symptoms. Her past medical history was unremarkable and the physical examination on admission revealed a complete absence of abnormal findings except for an enlarged cardiac dullness. The complete

\*Department of Medicine, \*\*Department of Surgery, \*\*\*Department of Pathology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand.

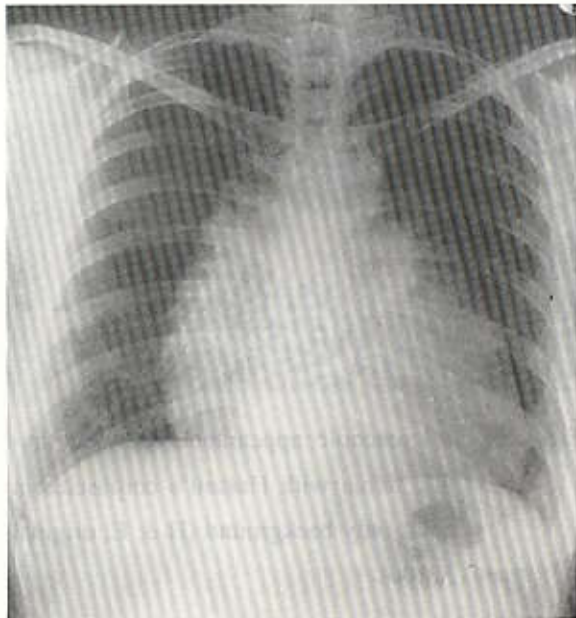


Figure 1. Postero-anterior chest radiograph showing a normal-sized heart with superimposed huge mass along the borders.



Figure 2. On lateral projection, the mass occupies the whole anterior mediastinum.

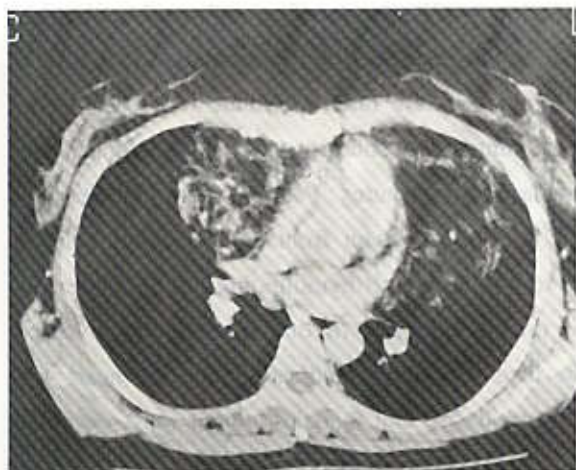


Figure 3. CT-scan of the chest (mediastinal window) demonstrates fat intermixed with soft tissue attenuation.

blood count, liver and renal function tests were apparently normal.

Careful study of a postero-anterior chest film revealed a heart of normal size superimposed by a huge additional mass conforming to its

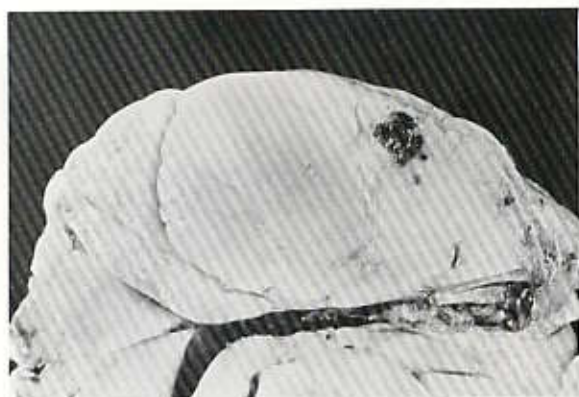
borders, which simulated the "cardiomegaly" (figure 1). On lateral projection (figure 2), the mass was located in an anterior mediastinum obliterating the retrosternal air space. Fat attenuation was demonstrated with computed tomography (CT) imaging intermixed with linear whorls of soft tissue (figure 3).

On operation, a large multilobulated fatty mass was found lying over the anterior part of the pericardium just above both phrenic nerves. The mass was encapsulated and did not penetrate any adjacent organs and a complete resection was performed. The patient made an uneventful recovery and was discharged from hospital nine days later.

#### **PATHOLOGY (S39-9426)**

The specimen was a well-encapsulated, coarsely lobulated soft fatty mass, resembling somewhat a huge lipoma, weighing 750 g and



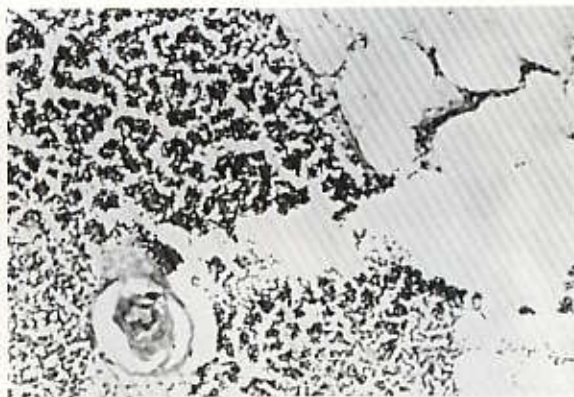


**Figure 4.** Gross appearance of the tumour showing the well-circumscribed and lobulated mass, the cut surface showing fine greyish spots among homogeneous fatty tissue.

measuring 18 x 12 x 7 cm. The cut surface was mainly yellow with focal fine greyish spots of varying sizes (figure 4). Histologically, the main component of the mass was mature fatty tissue, while closely interrelated with the fat were islands of thymic tissue with commonly seen Hassall's corpuscles (figure 5). Focal calcification was also demonstrated.

## DISCUSSION

First mentioned by Lange in 1916, the term thymolipoma was introduced in 1949 by Hall.<sup>3</sup> It is rare, slow-growing, benign neoplasm of the thymus thought to represent 2-9 percent of all thymic tumours.<sup>4</sup> In the largest series of 27 cases of thymolipoma,<sup>5</sup> there was no sexual preponderance, with the ages ranged from 2 to 66 years. Previous reports have stated that most thymolipoma were entirely asymptomatic and being incidentally discovered as in our case report, in which routine chest radiograph for chronic cough disclosed the presence of the tumour. There appears to be no relationship between weight and



**Figure 5.** Microscopic appearance showing thymic tissue with Hassall's corpuscles in adult fatty background (H & E, original X 100).

symptoms, as some smaller tumours have produced symptoms while the larger ones have not.<sup>6</sup>

Most thymolipoma are located in antero-inferior mediastinum. The soft and malleable nature and the semi-solid consistency of fat at body temperature may contribute to the ability of these tumours to conform to the shape of adjacent mediastinal structures. Pseudocardiac enlargement has been reported on frontal chest radiographs in up to 44 percent of thymolipoma.<sup>5</sup> A closer review of the radiographs in our case report revealed the double shadows, indicating that the heart was of normal size and that the tumour mass occupied the whole anterior mediastinum. The findings of unique appearance, fat intermixed with soft tissue on CT-scan, as in our case have been reported to an accurate preoperative diagnosis.<sup>7</sup> Histologically, thymolipoma is composed of adult fat, sometimes with scattered areas of young adipose tissue, intermingled with islands of thymic tissue.<sup>8</sup> The pathogenesis of thymolipoma has been the subject of much speculation, with the two most plausible explanations being the representation of lipomas

of the thymus,<sup>8</sup> or involution with compensatory fatty infiltration or previously unrecognized massive thymic hyperplasia.<sup>1</sup> The prognosis after removal of the tumours was excellent and postoperative recurrence has never been reported. After careful evaluation, no known diseases associated with thymolipoma such as myasthenia gravis, hyperthyroidism and pure red cell aplasia<sup>1</sup> were detected in

our patient.

## SUMMARY

A thymolipoma with typical gross and microscopic features was detected in a young woman with chronic cough. The physician should be aware of this entity as a cause of abnormal chest film which may be simulating cardiomegaly.

## REFERENCES

1. Griffith RC. Thymus gland. In : Kissane JM, ed. Anderson's pathology, 9th ed, St. Louis : Mosby, 1990: 1511-12.
2. Roseff I, Levine B, Gilbert L. Lipothymoma simulating cardiomegaly ; cases report. Am Heart J 1958; 56: 119-25.
3. Hall GFM. A case of thymolipoma with observations on a possible relationship to thoracic lipomata. Br J Surg 1949; 36: 321-4.
4. Fraser RG, Pare JAP, Pare PD, Fraser RS, Genereux GP. In : Fraser RG, Pare JAP, Pare PD, Fraser RS, Genereux GP, eds. Diagnosis of diseases of the chest, 3rd ed, Philadelphia : Saunders, 1991: 2818-20.
5. Rosado-de-Christenson ML, Pugatch RD, Moran CA, Galobardes J. Thymolipoma : Analysis of 27 cases. Radiology 1994; 193: 121-26.
6. Levine S, Labiche H, Chandor S. Thymolipoma. Am Rev Res Dis 1968; 98: 875-8.
7. Yeh HC, Gordon A, Kirschner PA, Cohen BA. Computed tomography and sonography of thymolipoma. AJR 1983; 140: 1131-3.
8. Almog CH, Weissberg D, Herczeg E, Pajewski M. Thymolipoma simulating cardiomegaly : a clinicopathological rarity. Thorax 1977; 32: 116-20.