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Thymolipoma Simulating Cardiomegaly

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ABSTRACT

A thymolipoma in an 8-year-old boy is reported. The tumour had appeared on a routine chest X-ray as a broadened heart shadow and a peculiar right heart contour. Cardiac hypertrophy was suspected primarily. At thoracotomy a thymic tumour was found.

INTRODUCTION

Thymolipomas are extremely rare benign thymic tumours. They have nothing in common with other thymic tumours, which are mainly lymphoepitheliomas and malignant tumours (8, 14). Thymolipomas comprise about 3–9% of all thymic tumours (13), and are composed of fat and thymic tissue. Only about 30 such tumours have been reported (15) since they were first described by Lange in 1916 (11). Most thymolipomas are encountered in children and young adults and may sometimes reach huge dimensions (200–12,000 g). Generally they do not give rise to symptoms, but in some cases chest pain or respiratory distress due to mechanical pressure occurs. Most of these tumours are found at routine X-ray. The tumours are always encapsulated and are easily resected.

The following is a report on a boy with a thymolipoma which, at X-ray, was interpreted as cardiac hypertrophy.

CASE REPORT

Clinical data

An 8-year-old boy was admitted to hospital for investigation of suspected cardiac hypertrophy observed at routine X-ray. The child's mother and elder brother both have a benign hereditary erythroreticulosis. No signs of this disease were found in this patient. During the first trimester of pregnancy his mother by mistake took contraceptive pills of the combination type. The boy's birth weight was 3.680 g. His mental and motoric development were slightly retarded and he was later stated to have subnormal intelligence. At a routine chest X-ray during his first year at school an abnormally broad heart shadow and a peculiar right heart contour were seen, and were interpreted as cardiac hypertrophy (Fig. 1). No symptoms were noted. On admission to hospital, physical examination revealed nothing abnormal. ECG was normal. Heart catheterization was performed, but revealed no cardiac abnormality. It was now considered that the X-ray findings must represent a pericardial tumour or cyst. Thoracotomy was performed and a considerably enlarged thymus was found. The right lobe was greater than the left. The thymus, except for the upper part of both lobes, was excised. It was well encapsulated, lobulated, and weighed 202 g (normal weight of thymus in this age group, 30 g).

Histopathological examination

Sections from the tumour showed abundant fat tissue of normal appearance intermingled with islets and bands of ordinary thymic tissue. The fat tissue contained normal fat cells and a discrete connective tissue stroma. Within the thymic parts cortico-medullary differentiation was apparent, with a normal ratio of cortex to medulla for the age group. Hassall's corpuscles were frequent, but no calcification or cystic degeneration was observed. There was no thymitis. The boundary between fat tissue and thymus was sometimes diffuse and single fat cells could be seen within the thymic cortex (Fig. 2). Silver impregnation of tissue specimens revealed no deviation from the findings in a normal thymus, i.e. an even distribution of reticulin fibres.

DISCUSSION

Sooner or later in all individuals the thymus contains fat tissue as a result of physiological involution of the gland. It is therefore not surprising to find neoplasms of fat tissue involving the thymus. Though these thymolipomas are rare, a few cases have been described in the literature. In the histopathological description of these tumours the thymic component has always been of normal appearance. In a few cases the relative weights of the two components have been estimated (1, 4, 9) and the weight of the thymic tissue has been found to exceed the weight of the normal gland. This tumour thus contains one truly neoplastic and sometimes one hyperplastic component.

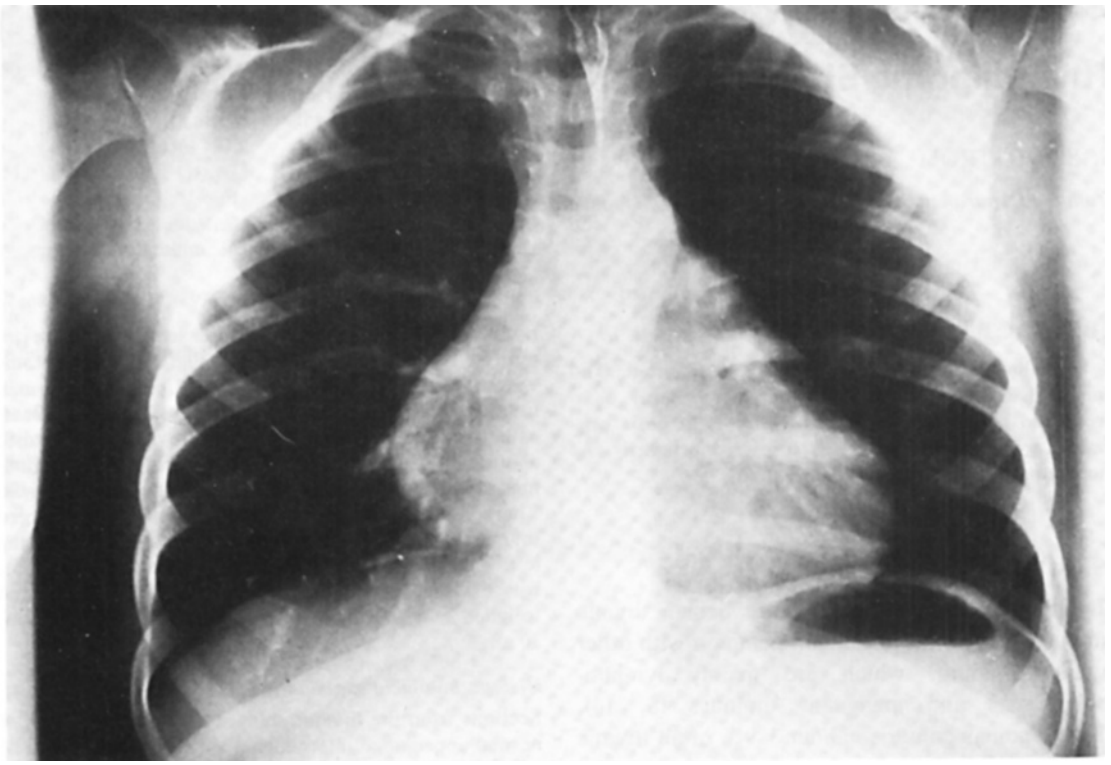

Fig. 1. Chest X-ray showing mediastinal mass giving rise to a peculiar right cardiac contour.

The pathogenesis of this tumour has not been discussed greatly in the literature. Some authors have considered the tumour to be congenital or hamartomatous (16). Another suggestion is that the neoplasm may at first have been a simple thymic tumour, most of which has degenerated and been replaced by fat (9). Another possibility is a mediastinal lipoma overgrowing the thymus (5, 9, 12). All these alternatives seem far-fetched and do not explain the histopathological picture of these tumours. The most plausible alternative seems to be that of a neoplastic proliferation of fat tissue within the thymus gland (6). This would explain the intimate relation between fat tissue and thymus. The hyperplasia of thymic tissue seen in these tumours may result either from some stimulating agent produced by the fat tissue, or from a protective effect, for example against corticosteroids, which the fat tissue may have on the thymic tissue. What initiates the neoplastic growth of fat tissue is not understood. In the case presented here the mother had been taking contraceptive pills during the first trimester of pregnancy. Whether this has any bearing on the occurrence of a thymolipoma in her offspring cannot be determined.

The thymolipomas are benign tumours (7). In one case, however, local recurrency demanding repetitive resections has been observed (13). Unlike other thymic tumours, associated diseases of a neuromuscular, immunological or endocrinological nature are rarely found in conjunction with thymolipomas. One case of aplastic anaemia (2) and one of thyrotoxicosis (3), however, have been observed together with a thymolipoma. Trites (15) reported a case of multiple lipomata in the thymus, thyroid and pharynx. No such associated disease or multiple lipomata were observed in the case presented here.

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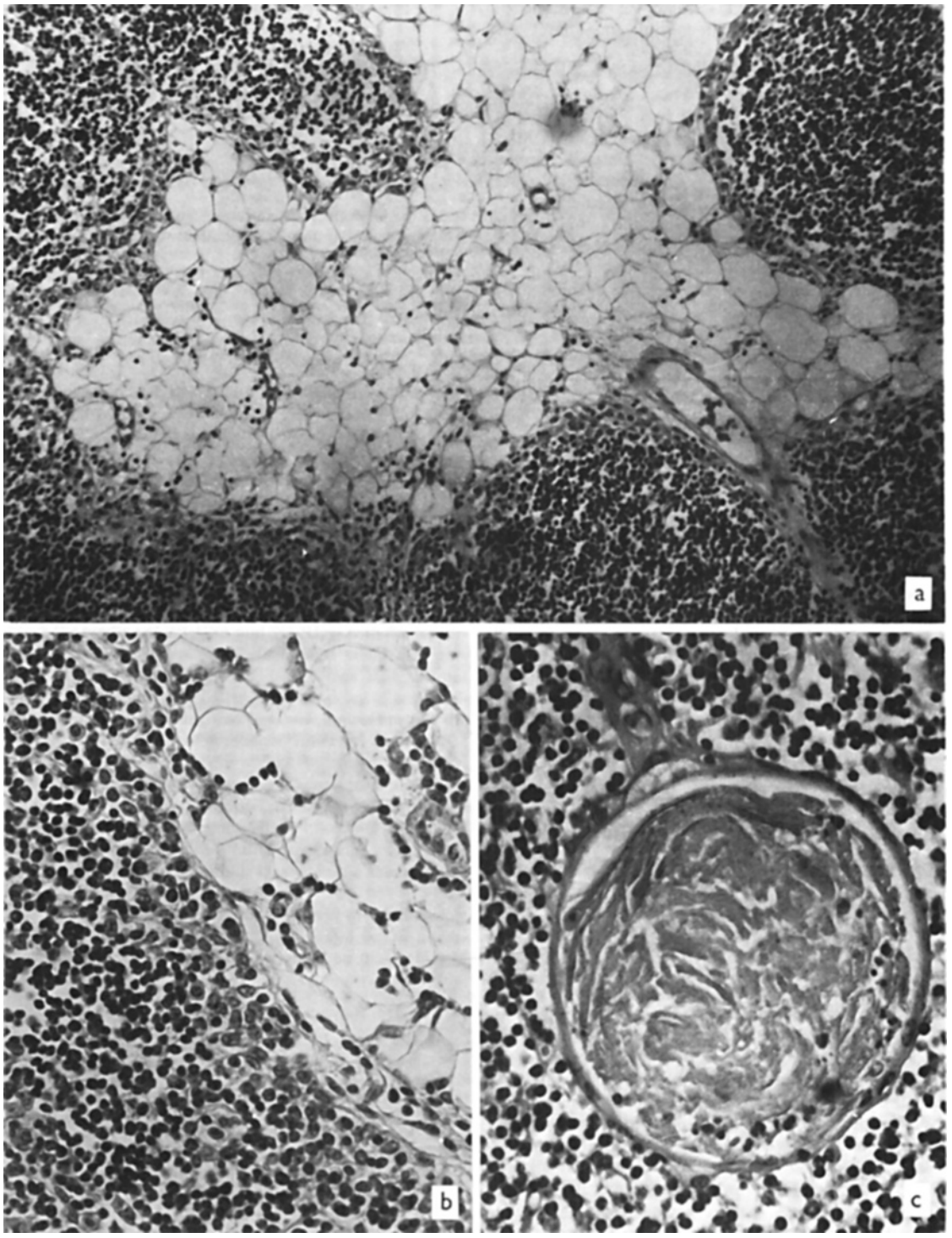

Fig. 2. Microphotographs of mediastinal mass which at thoracotomy was found to be a thymic tumour. (*a*) Low-power view showing both components of the tumour, fat tissue and thymic tissue. (H.-E., ×15). (*b*) Detail showing intimate relationship between fat tissue and thymic tissue. (H.-E., ×150). (*c*) Detail showing normal appearance of Hassall's corpuscles in the thymic tissue. (H.-E., ×150).

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