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Thymic Cyst Simulating Aortic Aneurysm

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ABSTRACT

Non-infectious, non-neoplastic cysts of the thymus are rare. Most of them give no symptoms, are located in the anterior mediastinum and are seen in young people. This report deals with a 39-year-old man who had had attacks of precordial pain for 7 years. On admission to hospital he had intense pain in the chest which was attributed to an aortic aneurysm. Retrograde aortography was normal, however. At operation a multilocular thymic cyst was found. The cyst was mostly lined with squamous epithelium.

INTRODUCTION

The fact that syphilis, in particular, can cause cystic lesions in the thymus is well known (6). Likewise, cystic degeneration within thymic tumours is often observed (4). In contrast, non-infectious, non-neoplastic *genuine* cysts of the thymus have only occasionally been reported in the literature. Most authors consider these cysts to be congenital. It is thought that the cysts are due to a patent thymic or thymopharyngeal duct which later is distended by accumulation of fluid or haemorrhage (3, 6). The possibility of cystic degeneration within Hassall's corpuscles has also been proposed.

Genuine thymic cysts are located either in the neck (one third) or in the anterior mediastinum (two thirds) along a line from the angle of the jaw medially to the midline of the neck and down into the mediastinum (1, 6, 10). A few cervicomediastinal cysts have been reported (11). A slight male preponderance has been observed (1, 4: 1) (11). Fifty per cent of thymic cysts have been resected in children and youths (0–20 years). The rest are evenly distributed from among the ages 21 to about 70 years (9, 11). Of 20 mediastinal cysts one was found to be of thymic origin (8). In 1973, 58 such thymic cysts were reported (11).

Thymic cysts vary considerably in size, from microscopic dimensions to 15–18 cm in diameter (10). Most cysts are multilocular (11). The cysts contain a gelatinous fluid, sometimes with old or recent haemorrhages. The cyst wall is always fibrous. The cysts are lined by various epithelia: simple squamous, cuboidal, columnar, stratified squamous and/or transitiona. In most cysts several types of epithelium are found. The epithelium usually rests on a dense fibrous tissue (2, 10). Thymic tissue is regularly found in the cyst wall.

The following report concerns a case of thymic cyst which presented alarming symptoms, attributed to a dissecting aortic aneurysm. This symptomatology is unusual for thymic cysts.

CASE REPORT

Clinical data

A 39-year-old man (T. G.) had had attacks of precordial pain unrelated to effort for 7 years. Five days before admission to hospital he had a feeling of oppression in the chest and increasing dyspnoea. On the day of admission he had an intense pain in the middle of the chest, dyspnoea and cold sweating. On admission a slight ST elevation (V 2) was found on ECG. On chest X-ray a protuberance was found on the upper right contour of the heart, parallel to the descending aorta. A dissecting aortic aneurysm was suspected, located in the pericardium and with a small extension towards the upper thoracic aperture, but retrograde aortography showed normal conditions. At operation a grapefruit-sized mediastinal tumour was found. The tumour appeared solid and well encapsulated and was thus easily removed. At macroscopic examination it was found to be multicystic, many of the cysts containing blood.

Histopathological examination

The cysts were mostly lined with a squamous epithelium containing 2–4 cell layers. Sometimes a single layer of flattened epithelium was seen. No keratinization was observed. In a few places the epithelium contained single hyaline Hassall's corpuscle-like bodies. The epithelium was often heavily infiltrated with lymphocytes. The intercystic areas consisted of a loose connective tissue, containing aggregates of lymphocytes, often adjacent to the cysts. In one of the specimens a focus of well de-

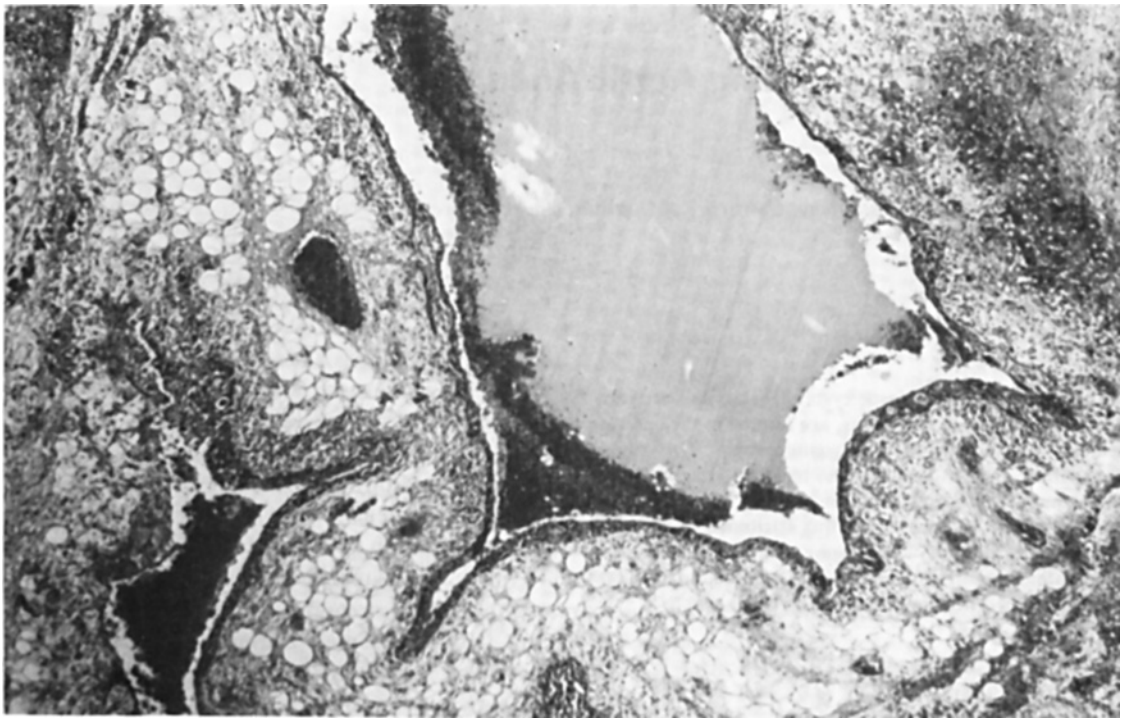


Fig. 1. Multiocular thymic cyst containing fluid and erythrocytes. The surrounding tissue contains reduced connective tissue, fat tissue and lymphocytes. (H-E, ×30.)

Fig. 2. The cysts were mostly lined by squamous epithelium with 2–4 cell layers. (H-E, ×320.)

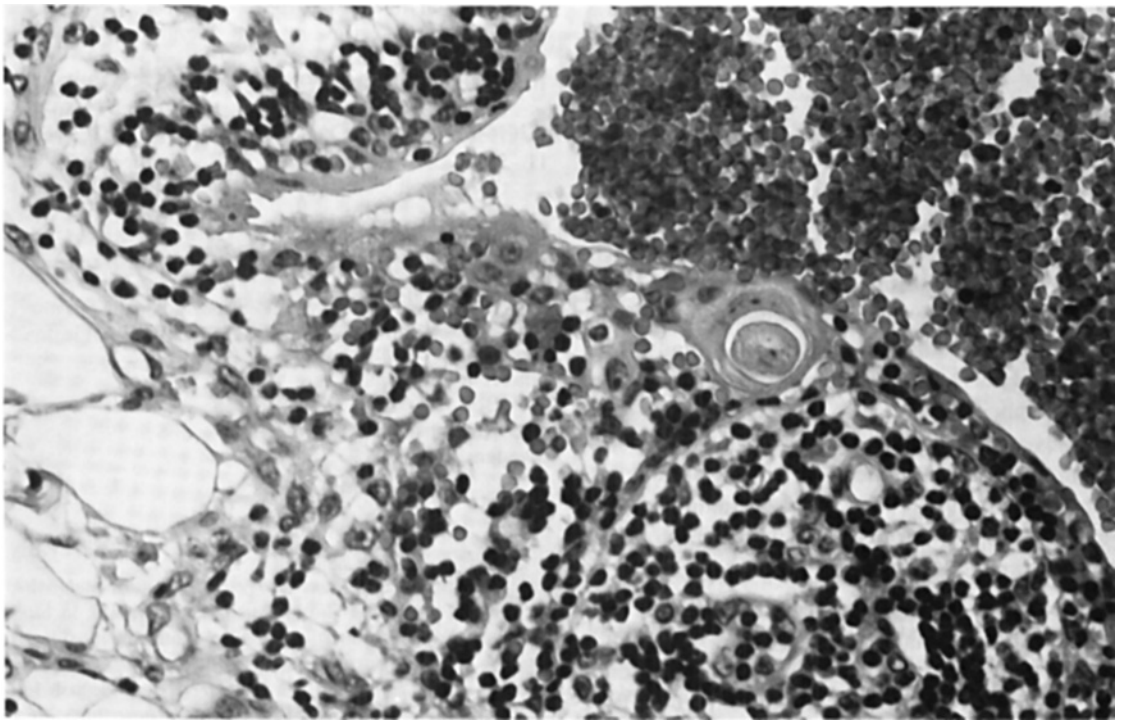
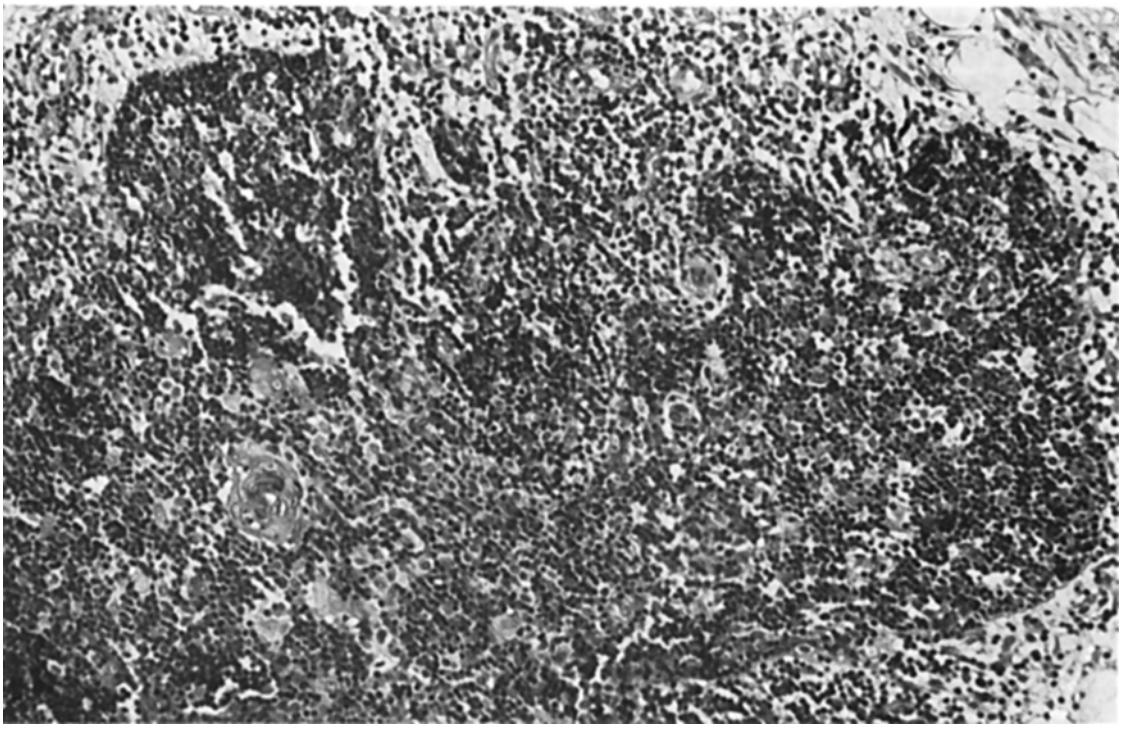


Fig. 3. The cyst epithelium in some places contained small corpuscles, possibly keratin plugs or abortive Hassall's corpuscles. (H-E, ×640.)

Fig. 4. In the cyst wall thymic tissue was found. Corticomedullary differentiation was poor but Hassall's corpuscles were seen. (H-E, ×320.)



veloped thymic tissue containing Hassall's corpuscles was found in the vicinity of a cyst (Figs. 1–4).

DISCUSSION

Most thymic tumours are symptomless. Malignant tumours of the thymus, can though give rise to symptoms (pain, inferior vena cava syndrome, respiratory distress, etc.). Among the thymic cysts that have been reported some have been asymptomatic. Only a few cases of thymic cysts have been described with symptoms which initially were interpreted as cardiovascular catastrophe (chest pain, dyspnoea) (5, 7, 10). These symptoms are generally considered to be the result of acute enlargement and distension of the cyst due to haemorrhage or infection. The patient reported here represents a further case with symptoms of cardiovascular catastrophe. The haemorrhagic content of the multilocular cyst were probably due to bleeding into the cyst, causing acute distensions of the cyst and alarming symptomatology.

The possibility of a thymic cyst in cases with symptoms of cardiovascular catastrophe should be considered. Likewise, the possibility of a thymic cyst in cases with mediastinal masses causing symptoms should be kept in mind, as well as the other possibility, a malignant thymic tumour.

REFERENCES

1. Behring, C. & Bergman, F.: Thymic cyst of the neck. Report of a case. Acta Pathol Microbiol Scand *59:* 45–50, 1963.
2. Bieger, R. C. & McAdams, A. J.: Thymic cysts. Arch Pathol *82:* 535–541, 1966.
3. Crellin, J. A., Pugh, T. F. & Janton, O. H.: Benign thymic cyst: a case report. Dis Chest *18:* 154–161, 1950.
4. Dyer, N. H.: Cystic thymomas and thymic cysts. A review. Thorax *22:* 408–421, 1967.
5. Greipp, P. R., Gau, G. T., Dockerty, M. B., Westbrook, P. & Pluth, J. R.: Thymic cyst presenting as an acute mediastinal mass. Chest *64:* 125–128, 1973.
6. Krech, W. G., Storey, C. F. & Umiker, W. C.: Thymic cysts. J Thor Surg *27:* 477–493, 1954.
7. Oldham, H. N. & Sabiston, D. C.: Primary tumors and cysts of the mediastinum. Lesions presenting as cardiovascular abnormalities. Arch Surg *96:* 71–75, 1968.
8. Pachter, M. R. & Lattes, R.: Mediastinal cysts: a clinicopathologic study of twenty cases. Dis Chest *44:* 416–422, 1963.
9. Podolsky, S., Ehrlich, E. W. & Howard, J. M.: Congenital thymic cyst attached to the pericardium. Case report and review of the literature. Dis Chest *42:* 642–644, 1962.
10. Seltzer, R. A., Mills, D. S., Baddock, S. S. & Felson, B.: Mediastinal thymic cyst. Dis Chest *53:* 186–196, 1968.
11. Shin, C.-S. & Levowitz, B. S.: Cervicomediastinal thymic cyst. NY State J Med *73:* 2695–2698, 1973.

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