THYMOLIPOMA: A BENIGN TUMOUR OF THE THYMUS GLAND

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An example of a thymolipoma is described and the literature reviewed.

Thymolipoma (or lipothymoma) is a benign tumour of the thymus gland consisting of fat and thymic tissue. The only symptoms it produces, if any, are the results of pressure on surrounding structures. It is not a common tumour. No example was found in the 67 thymic neoplasms studied by Thomson and Thackray (1957). Seventeen isolated reports have been found in the literature (Table I) and one more is presented here.

Case Report

The patient was an apparently healthy boy aged 7 years. He was referred to hospital because his general practitioner found persistent signs in the right lung after a mild respiratory infection. Radiographs showed an unusual rounded shadow to the right of, and continuous with, the mediastinum. Investigations were otherwise negative.

TABLE I
SUMMARY OF CASE REPORTS

Case No. and Author	Age of Patient (Years)	Sex	Weight of Tumour (g.)	Symptoms
(1) Lange (1916) ...	58	F	1,600	Dyspnoea
(2) Yamanai (1921)	42	F	Not stated	Asymptomatic
(3) Andrus and Foot (1937) ...	13	M	2,235	Dyspnoea
(4) Hall (1949) ...	47	M	1,100	Asymptomatic
(5) Schanher and Hodge (1949)	35	F	625	Dyspnoea
(6) Bariety and Coury (1950) ...	40	F	350	"
(7) Fontaine <i>et al.</i> (1951) ...	24	F	750	"
(8) Bigelow and Ehler (1952)	10	F	170	Cough
(9) Gross (1953) ...	14	M	Not stated	Asymptomatic
(10) Rubin and Mishkin (1954)	19	F	750	Dyspnoea
(11) Guilfoil and Murray (1955)	22	M	540	Cough
(12) Dunn and Frkovich (1956)	47	M	6,000	Dyspnoea
(13) Falor and Ferro (1956) ...	24	F	2,268	Asymptomatic
(14) Mackay-Dick <i>et al.</i> (1956) ...	36	M	1,142	"
(15) Ringertz and Lidholm (1956)	28	M	Not stated	"
(16) Unver (1957) ...	26	M	"	"
(17) Andritsakis and Sommers (1959)	Not stated		54	"
(18) Present case (1960) ...	7	M	154	"

After a few months' observation it was decided to explore the chest. A large fleshy mass was found attached to the right side of the pericardium extending from the diaphragm up to the superior vena cava, and appeared to be an enlarged right lobe of thymus. The thymic vein was large and drained into the vena cava. The whole gland was successfully dissected from the major vessels, phrenic nerve, and other structures, and the chest closed. Post-operative progress was good and the patient is now clinically and radiologically satisfactory.

Operation Specimen

The tissue weighed in all 154 g. The normal range of thymic weight for a child of this age is 15–55 g. (Boyd, 1932).

The material consisted of two irregularly shaped pieces, the larger $11.5 \times 9 \times 4.25$ cm., representing the right lobe of the thymus. The smaller, which constituted the left lobe, measured $6.25 \times 3 \times 2$ cm. and appeared to be normal tissue.

The larger specimen was pale pink on section. It was divided by very fine trabeculae into a few lobules and was spattered with a few petechial haemorrhages which were probably due to operative trauma. There were no cystic areas. It was slightly firmer than an ordinary lipoma.

Histology

The specimen from the left side is normal thymus.

The tumour from the right consists of intermingled lipomatous and thymic tissue. The proportions of the two vary from area to area, but otherwise sections from 10 different parts all show essentially the same picture. About three-eighths of the total specimen is fat and the remainder thymic tissue which does not show the normal cortical and medullary arrangement, although Hassall's corpuscles are quite numerous. No lymphoid follicles are present and there is no evidence of malignancy. At the border between thymic and fatty zones there is a thin condensation of fibrous tissue in some places, but in other areas the lymphocytes and epithelial cells fray out into the fat (Figs. 1 and 2). The fat is of well-differentiated adult type. A blood supply of normal vessels intersects the specimen.

FIG. 1.—Fatty and thymic tissue, the latter showing Hassall's corpuscles (haematoxylin and eosin, $\times 77$).

FIG. 2.—Intermingled fatty and thymic tissue (haematoxylin and eosin, $\times 77$).

Discussion

In pseudolipomatous hypertrophy of the pancreas (Beresford and Owen, 1957) there is a marked increase in fat, but the exocrine tissue is greatly reduced. In thymolipoma, however, the thymic tissue is increased in amount, as well as the fat. Some specimens have reached very large sizes (6,000 g. in the case of Dunn and Frkovich, 1956), and it would seem reasonable to regard them as neoplasms rather than hyperplasias, especially as the thymic tissue is not arranged in quite its normal orderly way. Hall (1949) thought that these tumours are probably best regarded as mixed tumours, and this view has been supported by others (Bigelow and Ehler, 1952; Guilfoil and Murray, 1955).

Growth appears to be very slow, and in one case (Schanher and Hodge, 1949) the tumour was known to be present for at least 10 years. It may well be that the origin always dates back to childhood. Except for the case of Andrus and Foot (1937), the biggest tumours have been in adults, and from the descriptions given one has the impression that fat is the more predominant in the older cases. Dunn and Frkovich suggest that the fat originates in an involuting hyperplastic gland, and they reject the term "thymolipoma" because they consider that if allowed to express their natural course these tumours will grow as lipomas whilst the glandular elements lose their proliferative tendency.

Rubin and Mishkin (1954) go so far as to suggest that all mediastinal lipomas originate in the thymus. This extreme view seems to us improbable, but further observations are needed to clarify the issues. It is interesting to note that five of the reported thymolipomas have occurred in one lobe only of the gland.

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