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Case report

Thyroid papillary adenocarcinoma; lipomatous-type

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Summary. We present a multifocal tumour of the thyroid gland with unusual histological features, occuring in a 49-year-old woman. Two foci were characterized by the presence of a lipomatous stroma. This is only the second case of its type reported in the literature.

Key words: Tumors of the thyroid – Papillary adenocarcinoma – Lipomatous stroma

Introduction

Papillary adenocarcinoma is the commonest malignant tumour of the thyroid gland. It has characteristic histological and cytological patterns and many variants in type (cystoadenocarcinoma, psammoma bodies, squamous, oxyphilic and clear cell metaplasias).

A new variant has recently been reported where a lipomatous stroma has been observed in the papillary cores. We describe the second case of this unusual finding.

Case report

On November 1987, a 49-year-old married woman noted enlargement of her neck. Clinical examination revealed multiple swellings in the thyroid gland. These had a parenchymatous consistency and moved with swallowing.

The patient was submitted to ultrasonography of the thyroid gland and a multinodular bilateral goiter was diagnosed. Subsequent radioactive technetium scintiscan revealed two cold areas: one in the left lobe; the other, a small one, in the right lobe. After some days the patient underwent a fine needle aspiration of these two areas (22-gauge needle and 20 ml plastic syringe). Specimens were stained with May-Grünwald-Giemsa and Haematoxylin-Eosin. Only the left aspirate contained adequate material. It was rich in oxyphilic atypical cells and was considered to be indicative of Hürthle cell carcinoma.

On February 1988, a peroperative histological examination of the nodule of the left lobe showed it to be a benign trabecular and microfollicolar adenoma of oxyphilic type with atypia and regressive change. Surgery was however completed by a subtotal thyroidectomy because of the multinodularity and the slight enlargement of the gland.

Pathological findings. The left thyroid lobe (4.5 × 2.5 × 2.5 cm) contained a nodule 2 cm in diameter with an haemorrhagic aspect and partial fibrous pseudocapsule. Microscopic examination of the entire paraffin embedded node confirmed the peroperative diagnosis: nuclear pleomorphism and rare mitoses are seen, but there is no vascular, stromal or perineural invasion.

The right lobe (5 × 3.5 × 3 cm) had three calcified nodules (1.5, 1 and 0.5 cm) and seven yellow-grayish nodules. Histologically they were: (1) a benign trabecular and microfollicular nodule of oxyphilic type (2 cm), uncapsulated; (2) a papillary carcinoma N.O.S. (0.1 cm), with monolayered epithelium and characteristic ground-glass nuclei, uncapsulated and infiltrating; (3 and 4) two papillary oxyphilic cell carcinoma (0.8 and 0.1 cm), uncapsulated; (5) a papillary oxyphilic cell carcinoma (0.4 cm), capsulated; (6 and 7) two papillary oxyphilic cell carcinoma (1.1 and 0.5 cm), uncapsulated, with focal lipomatous stroma in the papillary cores and psammoma bodies (Fig. 1).

Discussion

Though it is possible to see lipid deposits in the thyroid gland in many different conditions, this finding is extremely rare. Lipid degenerative droplets in the cytoplasm of normal thyrocytes can be observed during ageing and also in neoplastic cells. Clear cell thyroid adenomas and adenocarcinomas are the extreme degree of this process where, due to massive steatosis, follicular cells show foamy, enlarged cytoplasm (Chesky et al. 1953; Schröder et al. 1984; Schröder and Böcker 1985).

The finding of adipocytes in the thyroid gland is a quite different event and shows a broader spectrum of lesions. Small nests of adipose tissue as

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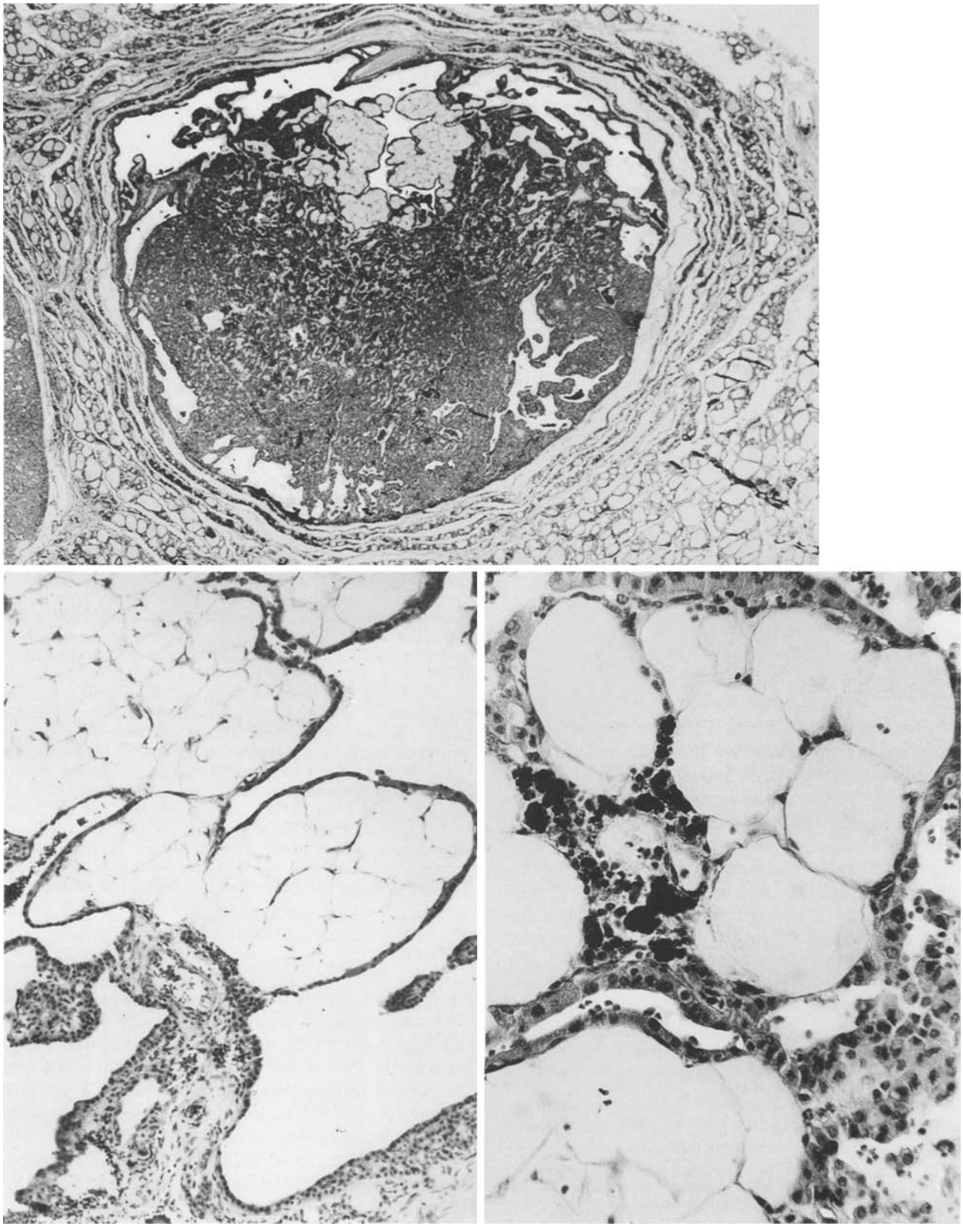

Fig. 1. *Top:* Papillary oxyphilic cell carcinoma with focal lipomatous stroma. HE, ×25. *Bottom:* Two aspects of the lipomatous stroma: details. HE, ×400

incidental finding are called heterotopic adiposity (choristy), and it is thought that they derive from inclusion of adipocytes in the thyroid gland before a capsule circumscribes it during embryonic life, as happens sometimes for striated muscle (Meissner and Warren 1969).

It is also possible that these adipose islands develop growth capabilities giving with time origin to "choristomatous adiposities" characterized by slow congenital enlargement of the thyroid gland, a clinical picture which may be misinterpreted as diffuse congenital goiter or unilateral adenoma. The diffuse goiter corresponds to the histological picture of diffuse lipomatosis (5 cases reported in the literature), while monolateral nodularities are well circumscribed adenolipomas (also called thyrolipomas), a variable admixture of adipocytes and thyrocytes (5 further cases have been reported).

Fat cells in amyloid thyroid glands are common and well known from the first years of this century. They originate from local fibroblasts which undergo lipid change after chronic stromal hypoxia due to the deposit of amyloid in the tissue.

Two years ago a papillary carcinoma of the thyroid gland with lipomatous stroma was described as "papillary thyroid carcinoma, lipomatous-type" (Vestfrid 1986). We add the second case to this previously unrecognized histopathological variety. The case we describe, however, has some peculiarities which we wish to point out: first, the multifocality of the lesion (six different small papillary carcinomas in the right thyroid lobe); second, the co-existing oxyphilic metaplasia of neoplastic thyrocytes; third, the presence of two syncronous papillary carcinomas with lipomatous stroma in the same thyroid gland. In agreement with the opinion of the author who first described this histological variety, we believe that adipose tissue in the papillary axes can be explained only on the basis of entrapment of fat cells during the embryological development of the thyroid gland. If this is so, it would be better to consider this morphological variety as a collision between a choristoma and an adenocarcinoma and not as a lipomatous carcinoma. For nomenclature purposes, however, we suggest the use of the expression "papillary carcinoma, lipomatous-type".

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