Case report

Mixed medullary follicular carcinoma - an unusual thyroid neoplasm

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Introduction

We report a case of mixed medullary follicular thyroid carcinoma (MMFTC), a recently recognised, unusual thyroid neoplasm clinically and prognostically different from classical medullary carcinoma (CMC).

Case report

A 24-year old woman had a right-sided thyroid enlargement of one years' duration, and hoarseness of voice for one month. She had 4 siblings who did not have thyroid disease and were well.

The right-sided nodular thyroid enlargement measured 3.0 x 2.0 cm. The left lobe was barely palpable. No cervical lymph nodes were palpable.

Investigations (reference range in parentheses) revealed T3 1.93 ng/ml (0.8-2.0), T4 1.38 µg/dl (0.71-1.85), TSH 0.6 mU/ml (0.47 - 5.01). Ultrasound scan did not reveal adrenal masses.

Fine needle aspiration cytology suggested a thyroid malignancy, and a near-total thyroidectomy was performed. The right lobe showed evidence of infiltration into the surrounding tissue, including the trachea. She was referred to an oncologist who advised radioiodine treatment and teletherapy. She is well one year after surgery and teletherapy.

The larger right thyroid lobe measured 3.1 x 2.2 x 2.0 cm. Cut surface revealed an irregular yellow nodule 1.0 cm in diameter and another 0.8 cm in diameter extending into the adjacent normal thyroid tissue. The smaller left lobe measured 1.5 x 1.0 x 1.0 cm. Cut surface showed colloid only.

The tumour displayed a wide range of microscopic appearances. In areas it formed small strands of cells with neuroendocrine features. In other parts the tumour had areas of fibrosis and nodules of amyloid confirmed by Congo red staining. Much of the tumour had a follicular architecture with some follicles containing colloid. These

did not represent central degeneration in islands of tumour cells; nor did they appear to be entrapped follicles as demonstrated by the strong positive staining of thyroglobulin (TG) and calcitonin (CT) within the same cell. Tumour cells, including those in follicular areas were strongly positive by immunohistochemistry for CT, TG and chromogranin A.

Discussion

From the view of histogenesis thyroid tumours are divided into two major categories: papillary and follicular carcinoma arising from follicular epithelium, and medullary carcinoma of the parafollicular or C cells. The former produce TG while the latter produces CT. Medullary carcinoma with a follicular growth pattern and immunoreactivity for both TG and CT was first reported in 1982 (1). Since then sporadic cases have been reported under different names (2,3,4). These tumours are defined by the WHO classification as thyroid tumours showing both the morphological features of medullary carcinoma together with immunoreactivity for CT and morphological features of follicular carcinoma with immunoreactivity for TG (5).

Several hypotheses have been put forward to explain the histogenesis of this unusual type of tumour. Dual divergent differentiation in a single tumour cell type, a result of a collision tumour or neoplastic transformation of both follicular cells in response to a common oncogenic stimulus are some. The most likely is the first, as it has been reported that the ultimobranial body contributes both types of cells in the thyroid of humans (6). It has also been demonstrated that mRNA genes for both CT and TG are expressed in the same cell in these tumours (7).

MMFTC occurs in younger patients and have a less aggressive course than CMC (3,8). A male predominance of the tumour has been noted (8). Follow up data in 11/14 cases has shown that all were alive from 1.2 to 2.0 years after diagnosis, 7 with disease and 4 without (8). MMFTC has also been reported to occur in a familial form (9).

MMFTC should be considered in the differential

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diagnosis of every unusual medullary carcinoma showing follicular differentiation, since these tumors behave differently from CMC. However, definitive diagnosis will rest on immunohistochemical techniques and molecular genetic studies.

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Grow up, sports fans

Their rage stems from the misplaced belief – all too common in Asia – that defeat in the sporting arena is tantamount to a national disgrace. This explains why cricket fans in Pakistan burned effigies of their players after they lost last month's World Cup final in London. Angry mobs stoned the home of a star batsman, and the mother of team captain Wasim Akram was forced to appeal for forgiveness on behalf of her son. In India, fans have been known to rain stones and bottles onto the field when it becomes clear that the home side is heading toward defeat. Even governments can be downright mean-spirited toward fallen sporting heroes. When the Sri Lankan cricket team returned from this year's World Cup in defeat, the government ordered a probe into the income-tax records of some players. Pakistani Prime Minister Mohammed Nawaz Sharif, meanwhile, ordered his Accountability Commission – set up to root out graft in government – to investigate charges of late-night revelry by the country's team members during the competition. Had the Sri Lankans or Pakistanis won the Cup, you can be sure the players would have been forgiven any and all misdemeanors.

Ghosh A, *Time* July 26 1999, p 59.