CASE 17

Microscopy

Thyroid containing a non-encapsulated solid nodule composed of polygonal cells in nests outlined by fibrous bands. The tumour cells have granular cytoplasm and uniform nuclei with punctate chromatin. The stroma has amyloid deposits and calcification. The background thyroid shows variably sized normal follicles. The tumour appears to be within the surgical margin in this section. No intranuclear inclusions or nuclear grooves are seen.

Favoured diagnosis

The morphological appearances are consistent with
MEDULLARY CARCINOMA OF THE THYROID

Further work

Adequate sampling of the specimen to determine margins and vascular invasion is required. Confirmatory immunohistochemistry would show positivity for Calcitonin, chromogranin, synaptophysin and negativity for thyroglobulin. Congo Red special stain should highlight the amyloid within the tumour (apple-green birefringence under polarised light). Serum Calcitonin levels can also be measured and are usually high. MDT discussion regarding staging of the tumour and further treatment planning.

Comment

Medullary thyroid carcinoma is derived from the C cells and can be either sporadic (80%) or familial. The familial cases are usually bilateral, multicentric and are due to MEN IIA or IIB, von Hippel Lindau, familial medullary thyroid carcinoma syndrome or neurofibromatosis. RET gene mutations are present which are different to those in papillary thyroid carcinoma.