Meningioma like tumour of thyroid: a rare variant of follicular adenoma

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Abstract

Spindle cell lesions of thyroid are uncommon. Meningioma like tumour of thyroid is a rare variant of follicular adenoma, which can easily be misdiagnosed. One such case is being reported here with detailed histological, histochemical and immunohistochemical findings.

Keywords: Meningioma, Follicular adenoma, Thyroid gland.

Introduction

Spindle cell lesions of the thyroid are not encountered routinely in clinical practice. They are classified as primary or secondary. Primary lesions can be derived from follicular, C-cell (parafollicular), or mesenchymal components and may be the result of reactive or neoplastic processes, including post-fine-needle aspiration spindle cell nodules,[1] Riedel thyroiditis, solitary fibrous tumour,[2] leiomyoma, peripheral nerve sheath tumour, hyalinizing trabecular tumour, spindle epithelial tumour with thymus-like differentiation, follicular dendritic cell tumour, medullary carcinoma,[3] papillary carcinoma, anaplastic carcinoma,[4] sarcoma, squamous cell carcinoma, and carcinoma showing thymus-like differentiation. Because spindle cell lesions may represent the expression of both benign and highly malignant neoplasms, distinction among these processes is crucial because of therapeutic and prognostic significance.

We came across a unique lesion of thyroid. The described lesion was a spindle cell lesion of the thyroid bearing a striking morphological resemblance to a meningioma. Extracranial Meningiomas as well as dual tumours have been discussed in the literature,[5] however only one case of Meningioma-like variant of follicular adenoma has been described.[6]

Case Report

A 57-years-old woman presented with a mass of the left side of the neck. On physical examination there was a hard 6 cm mass which was fixed and painful. Clinically there was a strong suspicion of follicular carcinoma or a medullary carcinoma. Fine needle aspiration showed a follicular neoplasm. On thyroid scan it was euthyroid.

Resected specimen, revealed an encapsulated 6 cm x 5cm x 4cm mass. The cut surface was grey white and fibrous

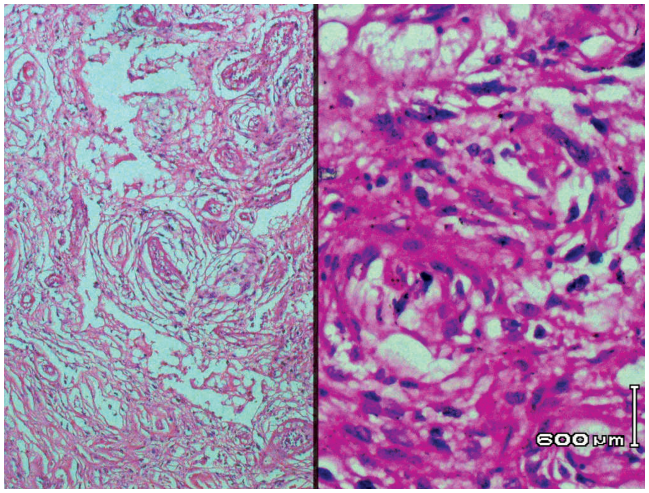

Figure-1: Areas resembling Meningioma on left side (at 100x magnification), Arrangement of cells around blood vessels on right side (at 400x magnification), Haematoxyllin and Eosin Stains.

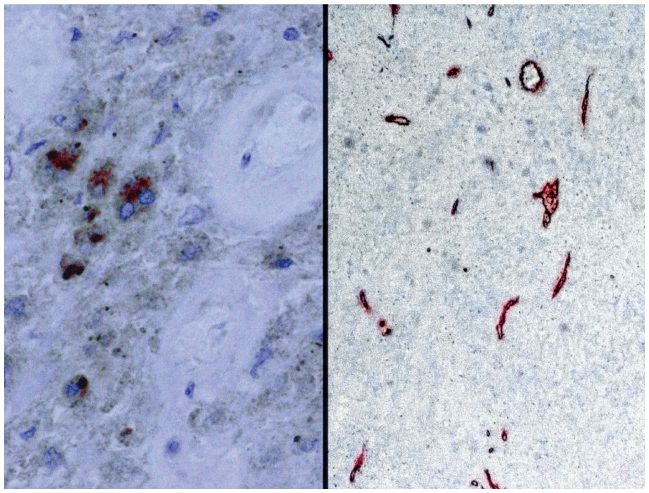

Figure-2: Immunohistochemical staining with Thyroglobuln showing positivity in the tumour cells, on left side (400x magnification); CD34 on right side highlighting the blood vessels while negative in tumour cells (100x magnification).

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with small areas of haemorrhage. The mass was surrounded by normal grey brown thyroid parenchyma. The specimen weighed 30gm.

Histological assessment revealed an encapsulated tumour with morphological appearance closely resembling transitional meningioma (Figure-1). The tumour was composed of proliferation of bland looking oval to spindle shaped cells. In areas the cells were more compact with a syncytial pattern and were lining numerous variable sized spaces or follicle like structures. The hallmark feature was the arrangement of cells in whorls, most of which were arranged around the thick walled hylanized blood vessels (Figure-1). Individual cells had pale eosinophilic cytoplasm with oval nuclei. No psammoma bodies, nuclear grooving, necrosis or increased mitosis was noted. No capsular or vascular invasion was seen. The surrounding thyroid parenchyma was compressed.

The immunohistochemical (IHC) profile showed positivity of neoplastic cells for Epithelial Membrane Antigen (EMA), Cytokeratin (CK), focal positivity for Thyroid Transcription Factor 1 (TTF-1) and Thyroglobulin (Figure-2). The cells were negative for Calcitonin, S100, CD34 (Figure-2), and Congo red. TTF1 and Thyroglobulin positivity supported the lesion to be of follicular origin. CK and EMA positivity highlighted the follicular pattern in some areas. Morphology and IHC staining suggested that the lesion was a variant of follicular adenoma.

Discussion

Follicular adenomas may occasionally exhibit a spindle cell appearance with thrombosed blood vessels having collagenized walls. It is the peculiar arrangement of ovoid cells in a whorled pattern around the blood vessels that gives this lesion a meningioma like appearance. This whorled pattern is rarely observed in usual follicular adenoma. Differential diagnosis includes meningioma of the neck, metastatic meningioma to thyroid, haemangiopericytoma, medullary carcinoma, solitary fibrous tumour and other vascular and spindle cell lesions of the thyroid.

TTF1 and thyroglobulin positivity supported the fact that the lesion was of follicular origin. CK and EMA positivity highlighted the follicular pattern in some areas, again supporting the fact that the origin of the lesion was thyroid. Negative staining for CD34 ruled out haemangiopericytoma and solitary fibrous tumour. Negative calcitonin and Congo red ruled out medullary carcinoma.

Morphology and immunohistochemical staining suggested that the lesion was a variant of follicular adenoma. Although rare but this lesion must be considered in the differential diagnosis of a solitary nodule of thyroid. The unique morphology was a clue to the lesion and immunohistochemical profile supported the diagnosis.

At 10 months follow up, the patient was free of any symptoms.

Conclusion

This is a unique variant of follicular adenoma resembling a meningioma. Diagnosing a mass of thyroid, differential diagnosis should include this rare variant of follicular adenoma.

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