MEDULLARY THYROID CARCINOMA SPINDLE CELL VARIANT

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Introduction

Medullary thyroid carcinoma (MTC) represents approximately 4% of thyroid tumors and accounts for 13% of all thyroid cancer related death.[1] It arises from parafollicular or C-cells.[2] Majority of cases approximately 70% are sporadic with 10-20% familial cases. Hereditary MTC is an autosomal trait associated with RET proto-oncogene located on chromosome 10q11.2. It may present alone as familial medullary carcinoma thyroid or associated with multiple endocrine neoplasia (MEN) type 2A or 2B.[3] MTC is usually seen in middle age group with a female preponderance and usually presented as a painless, firm, solitary thyroid nodule. Fine needle aspiration cytology (FNAC) is used as initial investigation to select the patients who require excision of the lesions for histopathological confirmation.[2] Pre-operative diagnosis is important for treatment as well as screening family members for associated multiple endocrine neoplasia (MEN) syndrome. FNAC has been a sensitive and specific technique for pre-operative evaluation of thyroid tumours.[4]

Case Report

A 50 year old male having a nodular painless swelling on right side of neck since the last 2 years, which was gradually increasing in size got referred to FNAC from ENT outpatient department. Ultrasonography of the neck revealed hypoechoic nodule in the right lobe of thyroid. The patient complained of hoarseness of voice, dysphagia and dyspnea for last 6 months.

On physical examination swelling was 3×2×2cm in size, firm and moved on deglutition. The patient was euthyroid and there was no family history of thyroid swelling or other endocrine tumours.

FNAC smears shows high cellularity which comprises mainly dispersed cells and loosely cohesive clusters of cells. Nuclei of these cells are spindle shaped and showing moderate anisokaryosis. Clumps of hyaline material is also seen. Based on these characteristics a provisional diagnosis of spindle cell variant of MTC was given. [Figure 1,2,3,4] Which was further confirmed by histopathology. Thus a diagnosis of MTC spindle cell variant was made.

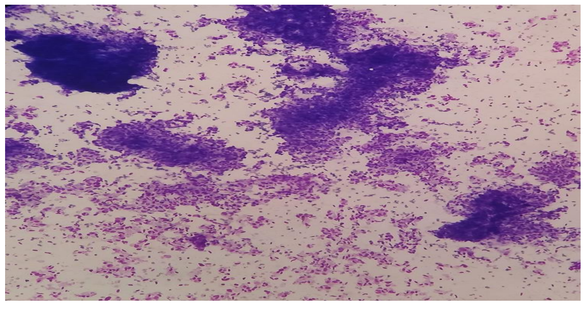

Figure1: Cytology smear showing good cellularity with many dispersed cells and clusters (100X, MGG)

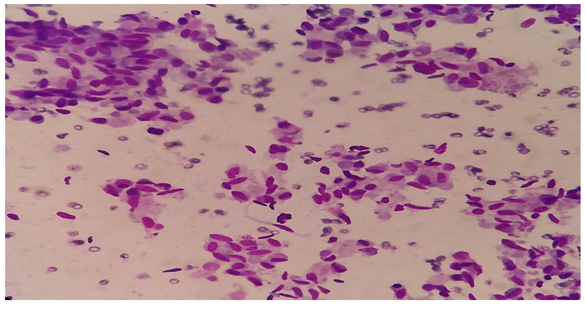

Figure2: Cytology smear showing many spindle cells and few plasmacytoid cells(400X,MGG)

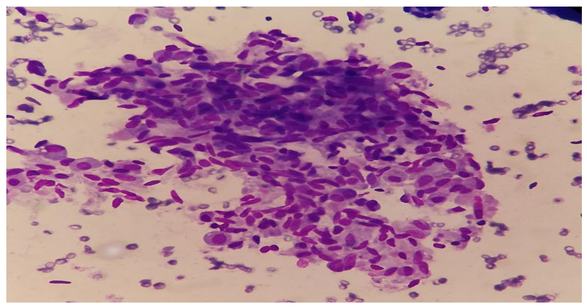

Figure3:Cytology smear shows few cells with prominent coarse cytoplasmic granularity and stains bright red (400X,MGG)

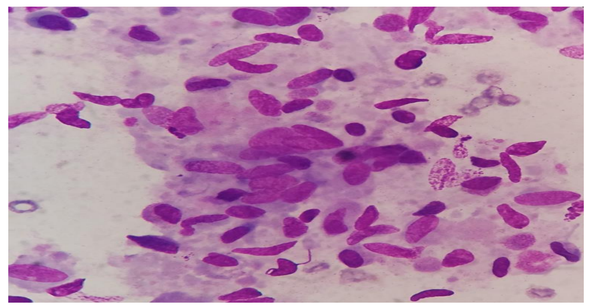

Figure4: Cytology smear show spindle cells with moderate anisocytosis, amorphous pink material is also seen. (Oil immersion, MGG)

Discussion

•The Hazard et al in (1959) gave the term “medullary thyroid carcinoma” (MTC) and described its histopathological characteristics as amyloid stroma.[5] This tumour is present in different cytological patterns like plasmacytoid, spindle cell, follicular, tubular and giant cell variants.[6] Giard et al identified amyloid in 43-81% of cases in their study.[2]

•Pure spindle cell variant of MTC is rare and usually spindle cells are mixed with other types of cells. Hyalinizing trabecular adenoma and nodular fasciitis variant of papillary carcinoma are two close differentials.[2,4,6]

- Immunohistochemistry (IHC) for calcitonin is considered as gold standard for definitive cytodiagnosis although some cases are negative. Kaushal et al studied 78 cases and made a definitive diagnosis in 54 cases i.e. 87.1% based on cytomorphology alone and in 12.9% based on IHC for calcitonin.[7]

Although correct diagnosis of majority of MTC cases can be made by FNAC but should be confirmed by histopathological examination.

References

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