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Pathology

MEDULLARY CARCINOMA OF THYROID- RARE CASE REPORT

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ABSTRACT Medullary carcinoma accounts for about 5-10% of all the thyroid neoplasms. They arise from Parafollicular cells or C cells of thyroid. 70% of the cases arise sporadically while remaining 30% occurs in the setting of MEN syndrome 2A or 2B. Here we present a case report of a 40 year old male who presented with anterior neck swelling measuring about 2x2 cm in dimension.

KEYWORDS :

INTRODUCTION

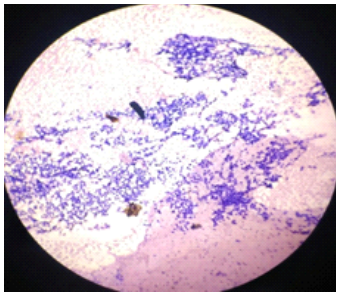
Medullary carcinoma constitutes 5-10% of thyroid cancers [1]. They are neuroendocrine neoplasms derived from parafollicular cells or C cells of thyroid [2]. 70% of the tumours arise sporadically while remaining 30% occurs in the setting of MEN syndrome 2A or 2B or familial tumours without an associated MEN syndrome [2,3,4]. The most common presentation of sporadic medullary thyroid carcinoma is a solitary thyroid nodule and multifocality and bilaterality are features of hereditary forms[5].

CASE REPORT

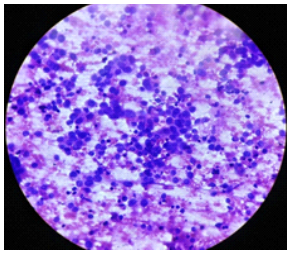
A 40 year old male presented with anterior neck swelling since 1 year. His swelling was progressively increasing in size since 1 month. There was change of voice since 5 months. He also complained of grosss weight loss and apetite loss. On examination, 3x3 cm swelling was seen on the anterior side of the neck which moved on deglutition. Family history was negative. Serum calcitonin level was raised(78pg/ml). Other biochemical parameters were within normal limits. Ultrasound findings revealed a solid internal hypoechoiec round shaped lesion with specification of microcalcification. CT of the neck showed heterogenous enhancement of thyroid. Fine Needle Aspiration was performed using 24g needle and smears were prepared and fixed in ethanol and then stained with Hematoxylin and eosin stain.

MICROSCOPIC FINDINGS

Fine Needle Aspiration Cytology revealed scattered as well as clusters of plasmacytoid cells. Few spindle shaped cells were also seen. These cells showed moderate degree of nuclear pleomorphism with eccentric nuclei, stippled nuclear chromatin and moderate amount of eosinophilic cytoplasm. Few cells also showed clearing of cytoplasm. Background showed haemorrhage with few areas showing pink amorphous material.



Low power 10x showing plasmacytoid appearance cells



High power 40x showing plasmacytoid cells with abundant cytoplasm and eccentric nuclei

DISCUSSION

Thyroid carcinoma is the most common endocrine malignancy[6]. Medullary thyroid carcinoma (MTC) is a neuroendocrine tumor of the parafollicular C cells of the thyroid gland and accounts for approximately 4% of thyroid carcinoma[7]. There may be slight female preponderance with typical age of presentation being in the 5th-6th decades. Sporadic medullary thyroid carcinoma (MTC) accounts for about 75-80% and rest of them may occur in hereditary syndromes such as Familial MTC, MEN2A and MEN2B[8]. MEN syndrome is caused by activating germline mutations of the RET proto-oncogene where this tumor is isolated (Familial MTC-FMTC) or is associatewith to other tumors MEN2A (parathyroid adenoma, pheochromocytoma and cutaneous lichen amyloidosis) and MEN2B (pheochromocytoma, mucosal and intestinal ganglioneuromatosis, marfanoid habitus).

Fine cytological aspiration smears in MTC are cellular in background of blood. They are solid, firm non-encapsulated tumors that show calcitonin positivity, round, polygonal and/or spindle cells in solid nest like and organoid pattern in vascular stroma containing amyloid[9]. Plasmacytoid cells with eccentric nuclei are common and show moderate amount of cytoplasm with well defined margin, fine, stippled or coarsely clumped chromatin along with binucleated and multinucleated forms [9,10].

Calcitonin is the most sensitive and specific tumor marker at the pre-operative diagnosis and the post surgery follow up[11].

Medullary carcinoma invades locally and gives rise to metastasis in cervical and mediastinal lymph node and also in distant organs, particularly lung, liver and skeletal system. Primary treatment is surgical (total thyroidectomy and cervical lymphadenectomy). Local recurrence is in 35% of the patients and 5 years survival rat varies between 70-80%[12].

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