Scholars Journal of Medical Case Reports **ISSN 2347-6559 (Online)**
Sch J Med Case Rep 2016; 4(5):299-301 **ISSN 2347-9507 (Print)**

(An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjmcr.2016.v04i05.005

Thyroid Malignancy presenting as Skull Metastases –A Rare Presentation

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Abstract: Thyroid carcinoma comprises 1% of all malignancies. Follicular thyroid carcinoma 9 (FTC) is the second most common malignancy of the thyroid. Vascular invasion and hematogenous metastases to bone ,lungs , brain, skin and adrenal glands have a reported incidence of 11 to 25%. The initial presentation of the patient with distant metastases is rare. We report a case of an asymptomatic female patient who presented to us with a large soft tissue mass in the scalp. Fine needle aspiration (FNAC) of the lesion was inconclusive and hence an incisional biopsy was contemplated . Biopsy showed metastatic follicular carcinoma of the thyroid. The thyroid gland was re assessed by Ultrasonography and FNAC and a diagnosis of follicular carcinoma in the thyroid was detected. Total thyroidectomy was done and the patient was referred to higher centre for radioactive iodine treatment.

Keywords: Skull metastases, Thyroid malignancy.

INTRODUCTION

Follicular thyroid carcinoma (FTC) is the second most common thyroid malignancy after papillary carcinoma, but compared to papillary carcinoma, it has a greater tendency for distant metastasis to organs such as lung and bone. The lung is the most common metastatic site for thyroid carcinoma followed by bone[1, 2]. However metastases in skull associated with thyroid carcinoma are rare and accounting for only 2.5-5.8% of cases[3]. In most of the reported cases of follicular thyroid carcinoma metastasizing to the skull, metastases occurred long after the diagnosis and institution of treatment for primary cancer. Very few cases have been reported with occult follicular thyroid carcinoma presenting as skull metastasis.

CASE REPORT

A 65 year old female presented with a fronto- parietal swelling since two years. The swelling was painless , gradually increasing in size, soft in consistency with increase in local temperature and dilated veins over the swelling. Swelling was about 15x6x5 cm in size. (Fig 1).

With clinical suspicion of haemangioma dermoid cyst the patient was investigated. Magnetic resonance Imaging(MRI) showed a well defined lobulated mass in bilateral fronto parietal region with cystic and solid component with destruction of parts of frontal and parietal bones with intracranial and extra dural extension. A Fine needle aspiration cytology (FNAC) was done which was inconclusive an hence an incisional biopsy was done. During biopsy there was massive leakage of pultaceous semisolid material.

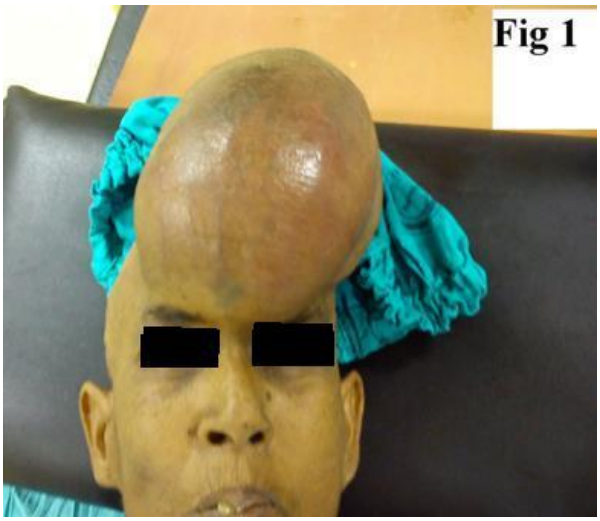

Fig 1: preoperative photograph of skull tumour

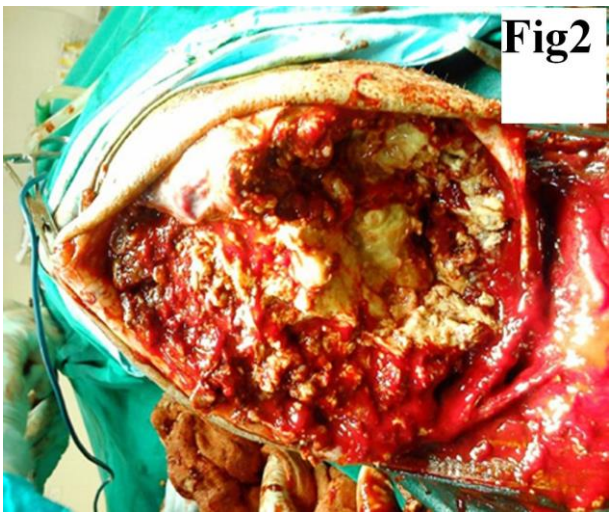

Fig 2: Intraoperative view of pultaceous tumour material

Gross examination showed oval greyish white soft to firm semi solid mass. Histopathological examination revealed tumour composed of thyroid follicles of varying sizes lined by follicular cells with minimal atypia . In areas, transformation (de – differentiation) into anaplastic carcinoma in forms of sheets of large tumour cells with abundant cytoplasm and large pleomorphic vesicular nuclei were noted . Impression given was metastatic follicular carcinoma of thyroid origin with transformation to anaplastic variant .

The patient was asked for history of any thyroid problem. She did not mention any history of thyroid enlargement, pain, or other symptoms of thyroid disease. Thyroid examination was normal. Thyroid function test showed normal hormone levels. Thyroid ultrasonography was done which revealed a < 0.5 cm size lesion on the left side of isthmus which was well defined showing peripheral calcification and small cystic areas and mild increase in vascularity in left lobe . The right lobe was normal. FNAC was done which revealed follicular neoplasm. Hence a total thyroidectomy was done.

Gross examination showed dark brown solitary firm to cystic nodule measuring 1x1 cm with areas of haemorrhage and calcification. The histopathology was reported as follicular carcinoma of the thyroid with capsular invasion. Hence the patient was referred to higher centre for radioactive iodine treatment.

DISCUSSION

Follicular carcinoma of the thyroid is a subtype of thyroid cancer, which is slow growing and is associated with a good prognosis [4]. However, in the presence of distant metastasis the prognosis is often poor [5] and the 10-year survival with bone metastases from differentiated thyroid cancers is reported to be 27%. Various analysis have revealed that only 4 variables had an independent prognostic significance for survival. They were extensive metastases, older age, absence of radioiodine uptake by the metastases, and moderately differentiated follicular cell type[6]. Lung and bone are the two most common sites of metastases. FNAC is a first-line investigation in the evaluation of neck nodules. 1% to 3% of all well-differentiated thyroid carcinomas (papillary and follicular) metastasize to bone [7,8,9].

Bone metastasis from FTC is often to ribs, vertebra and sternum. Skull is a rare site for metastasis of FTC. In most reported cases, metastasis of FTC were located in the skull base and occipital area , but in our case, it was seen at the front parietal region. There have been less than 30 cases reported of cutaneous metastases from FTC in the literature, and majority of them affecting the scalp.

The treatment of choice of follicular carcinoma is total thyroidectomy with radioiodine administration and TSH suppressive therapy . In spite of the dismal prognosis reported with delayed presentation of metastatic FTC, total thyroidectomies have been reported to prevent thyroid bed recurrence in surviving patients. Lung metastases usually respond to radioactive iodine treatment. However bony metastases respond to radioactive iodine therapy but with a poor prognosis.

CONCLUSION:

In conclusion a patient presenting with skull lesion should be investigated for commonly occuring primary sites such as the thyroid.

CONFLICT OF INTEREST: None

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