

CASE REPORT

An Unusal Presentation of Follicular Carcinoma of Thyroid*Seema R. Balasubramaniam^{1*}, Vishrabdha R. Pawar¹**¹Department of Pathology, Bharati Vidyapeeth (Deemed to be) University, Medical College and Hospital, Sangli-416414(Maharashtra) India***Abstract:**

Although the incidence of thyroid carcinoma has increased in recent years, metastatic spread to the skull is rare. Here we report a case of an occult follicular thyroid carcinoma. A 65 year old female patient presented with a large swelling of 20 × 20 cm over the frontal and parietal regions for 2 years. Magnetic Resonance Imaging (MRI) showed well defined lobulated mass in bilateral frontal and parietal regions with cystic and solid components. Incisional biopsy of the mass was done and was reported as metastatic follicular carcinoma with transformation to anaplastic variant. In view of this report the patient underwent total thyroidectomy, the biopsy report confirmed the diagnosis of follicular carcinoma. Surgery is the main treatment for resectable metastatic differentiated thyroid carcinoma, followed by I¹³¹ ablation and thyroid stimulating hormone suppression with levothyroxine.

Keywords: Thyroid Neoplasm, Follicular Carcinoma, Skull Metastasis

Introduction:

Follicular carcinoma is the second most common thyroid malignancy after papillary carcinoma and comprises of 5-10% of all primary thyroid cancers [1]. Follicular carcinoma is most often seen in patients over 40 years of age. The tumour usually presents as an asymptomatic solitary thyroid nodule. These neoplasms tend to metastasize hematogenously, with lung and bones most commonly affected, while distant metastasis at the

time of diagnosis are reported in 11-20% of patients [2]. Manifestation of secondary thyroid deposits from a silent thyroid cancer is one presentation of the condition defined as occult thyroid carcinoma, the presence of distant metastasis is reported to decrease 10 year survival rate by 50% [3]. Bone metastasis is most likely to occur in the scapula, sternum and ilium. Skull metastases are uncommon, being found in only 2.5% to 5.8% of cases of thyroid carcinoma [4]. In most reported cases, skull metastases were found in the base of the skull and occiput area [1]. The metastatic deposits from follicular carcinoma are morphologically similar to the primary tumour, but they can be deceptively bland as to mimic normal thyroid tissue [1]. The initial presentation of differentiated thyroid malignancy is an increase in the size of the thyroid gland or otherwise neck swelling, however, in very rare cases, the patients present with atypical complaints, and after an evaluation, thyroid malignancy with distant metastasis is revealed [5].

Case Report:

Here we report a case of an occult follicular thyroid cancer, whose initial presentation was a bosselated mass in the frontoparietal region with intracranial and extracranial extension of the mass. A 65 year old female patient presented with

a large swelling of 20 × 20 cm over the frontoparietal region for 2 years. The swelling was soft in consistency with increased local temperature and dilated veins over the swelling with occasional discharge of blood clots from it. The patient was then investigated with clinical suspicion of haemangioma, dermoid cyst and eosinophilic granuloma.

Magnetic Resonance Imaging (MRI) showed well defined lobulated mass in bilateral frontoparietal region with cystic and solid components. Lesion

was iso and hypo intense and showed destruction of frontal and parietal bones with intracranial extension of mass. Incisional biopsy of the mass was done and was reported as metastatic follicular carcinoma with transformation to anaplastic variant. In view of this report the patient underwent total thyroidectomy; the biopsy report confirmed the diagnosis of follicular carcinoma. The follow up with the patient was lost as she was sent to the higher center for radioactive iodine treatment.



Fig.1: Showing Skull Wall Metastasis of Tumour

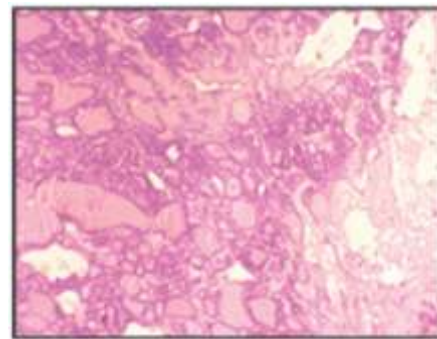


Fig.3: Metastatic Follicular Thyroid Cancer with Areas of Necrosis (10X H&E)

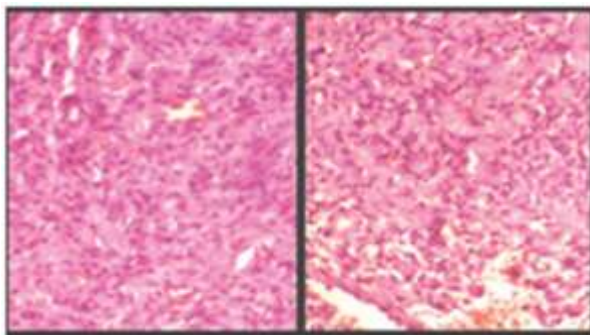


Fig.2: Foci of Transformation of the Tumour to Anaplastic Component (40X H&E)

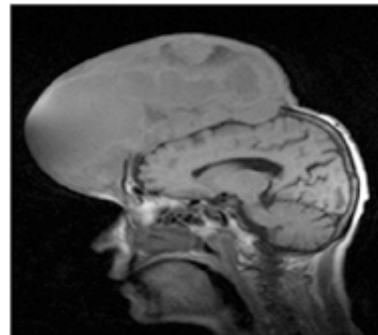


Fig.4: Lateral View on MRI showing Extra Cranial as well as Intracranial Extension of Tumour Involving Dura

Discussion:

Differentiated Thyroid Cancer (DTC) is the commonest endocrine malignancy, wherein follicular carcinoma comprises of 10% [3]. Accurate diagnosis has major implications for tumour management, as different tumour types respond differently [4]. Fine Needle Aspiration Cytology (FNAC) examination is important to differentiate follicular or papillary carcinoma. Many a times, patient remains asymptomatic and may present as nodal or bony metastasis [6]. Blood borne metastases are common with spread to lung, bone and other solid organs. In less than 10% of cases of follicular carcinoma, there is evidence of lymphatic involvement [2]. The overall survival from localized thyroid carcinoma is 85-90% at 10 years but reduces by 50% in metastatic disease. Approximately 25% of metastatic spread from DTC is to bone [3]. Even though well differentiated thyroid cancers have an indolent nature, they may behave aggressively. The survival rate varies for patients who present with distant metastasis synchronously with the primary tumour, with the latter enjoying a better survival rate [5]. The prognosis of well-differentiated thyroid cancer has also been shown to be affected by histopathology. Age, gender and involvement of multiple organs are independent factors associated with mortality in thyroid cancer patients. Various models such as Mitogen-Activated Protein Kinase (MAPK) and the phosphatidylinositol 3-kinase pathways have been developed, and they explain the spread of thyroid cancer to extra cervical sites but they fail to predict

the phenomenon of rare organ metastases [5]. The mean age of presentation is 60 years and incidence is higher in females [7]. In our case the swelling was soft with signs of inflammation with occasional discharge of blood clots from it which was probably due to intracranial hemorrhage.

A very significant complication that may occur in patients with follicular carcinoma is transformation into anaplastic carcinoma. This may occur *de novo* in untreated follicular carcinoma of thyroid or in metastatic foci [8]. In our case, it was observed in primary as well as metastatic tumour. Surgery is the main treatment for resectable metastatic differentiated thyroid carcinoma, followed by I¹³¹ ablation [3-4] and Thyroid Stimulating Hormone (TSH) suppression with levothyroxine. Thyroxine withdrawal causes prolonged TSH stimulation and may accelerate metastatic progression, with important clinical consequences, especially for patients with skull metastases. In our case, after confirmation of the diagnosis of follicular carcinoma on thyroidectomy tumour debulking was performed to decrease the amount of radioactive iodine needed. In addition to thyroidectomy and radioactive iodine treatment, the use of external beam radiation therapy for both loco-regional control and control of inoperable metastases is suggested [8]. Bisphosphonates are effective inhibitors of osteoclastic activity. They have been shown to reduce complications and pain, and represent an alternative approach for managing bone metastases [4].

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