An Occult Follicular Thyroid Carcinoma Discovered 10 Years after the Metastasis

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ABSTRACT

The follicular thyroid carcinoma (FTC) may present with synchronous metastases. Rarely, the metastatic lesion is the only finding at the time of presentation (as in our case) leading to a diagnostic dilemma. We report an occult metastatic FTC case of a 68-year-old man who underwent excision of a rib tumor 10 years back. The histopathology confirmed the metastatic thyroid carcinoma but clinicoradiological evaluation did not reveal any thyroid nodule. He did not undergo a total thyroidectomy at that time. Now, he presented with pulsatile scalp swelling for 6 months. On examination, he was found to have a solitary thyroid nodule also. Fine needle aspiration cytology from scalp swelling and thyroid nodule demonstrated thyroid cells and follicular neoplasm, respectively, establishing the diagnosis of metastatic follicular thyroid cancer. The radioactive iodine (RAI) is given after total thyroidectomy. Total thyroidectomy followed by RAI is indicated even in cases of occult metastatic follicular thyroid carcinoma.

Keywords: Endocrine cancer, Endocrine surgery, Thyroid cancer.

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INTRODUCTION

Thyroid cancer is the commonest endocrine malignancy. Follicular thyroid carcinoma (FTC) is the second most prevalent thyroid cancer. The incidence of FTC is higher in developing countries as compared to developed countries. In developing countries, the FTC usually present in advanced stages. The reported incidence of distant metastasis is between 11% and 25%, while the initial presentation with distant metastasis is uncommon. Very rarely, the presenting feature is metastasis and primary thyroid cancer remains occult. The FTC most commonly metastasizes to bones frequently involving the vertebrae, pelvis, sternum, long bones, and ribs. The biological behavior of these tumors is more aggressive when bone metastases are present, and the overall survival at 10 years was reported to range from 13% to 21%. Here we are reporting a case of an FTC patient who had rather an indolent course of disease despite presenting with rib metastasis with occult FTC.

CASE DESCRIPTION

A 68-year-old man presented to us with insidious onset painless, progressively enlarging scalp swelling for the preceding 6 months (Fig. 1). There was no history of trauma, headache, loss of vision, vomiting, and weight loss. He underwent excision of a rib swelling 10 years back. The histopathology revealed metastatic thyroid carcinoma. Thereafter, he had undergone ultrasonographic examination and Tc 99 pertechnate thyroid scan which did not show any thyroid lesion. He received radiotherapy to the chest wall (dose and schedule are not known). He was kept under observation until he noticed the scalp swelling. A fine needle aspiration cytology (FNAC) performed from the swelling was suggestive of metastatic FTC. He was referred to a higher center for further treatment. Examination showed a 5 x 5 cm, pulsatile bony swelling in the left parietooccipital region and a 1 x 1 cm left solitary thyroid nodule (Fig. 2). There was no cervical lymphadenopathy. The thyroid hormonal profile was normal. FNAC from the thyroid nodule was suggestive of follicular neoplasm. Magnetic resonance imaging of the head was performed and it revealed an expansile soft tissue mass arising from the junction of parietal and occipital bone near lambda suture (Fig. 3). The tables of skull overlying the mass were destroyed and it extended into epidural space, indenting sagittal sinus; however, there was no involvement of brain parenchyma or sinus. Total thyroidectomy was performed under general anesthesia. Gross examination of the specimen revealed a 1 x 1 cm pale gritty nodule in the left lobe (Fig. 4). Histopathology was consistent with FTC. The patient made an uneventful recovery and was sent for whole-body radioactive iodine (WBRAI) scan and therapy. WBRAI scan showed gross uptake in the skull, sacrum, and minimal uptake in thyroid bed and he received 150 mci i¹³¹ (Figs. 5 and 6). The patient was prescribed a suppressive dose of thyroxin.

DISCUSSION

Our case report shows that despite presenting with metastatic disease, FTC patients can have long survival with good performance status. FTC, in general, is considered more aggressive than papillary thyroid cancer and the incidence of this cancer is higher in the iodine-deficient area and developing nations. Due to early

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Metastatic Occult Follicular Thyroid Cancer

Fig. 1: Clinical photograph showing occipito-parietal scalp swelling

Fig. 2: Clinical photograph showing postoperative scar following excision of rib metastases

Fig. 3: T1 weighted axial images of MRI brain showing a soft tissue mass arising from the junction of parietal and occipital bone near lambda suture

Fig. 4: Anterior pre-therapy WBRAI scan showing gross uptake in skull, sacrum and minimal uptake in thyroid bed

Fig. 5: SPECT image showing uptake in parietooccipital region

Fig. 6: SPECT image showing uptake in sacrum
hematogenous spread, patient may present with distant metastasis. Commonly, lungs (53%) and bones (20%) are affected by metastasis, and the brain, mediastinum, skin, and liver adrenal are the other organs. Incidence of metastasis has been reported as high as 20% in patients from developing nations. Emerick et al. and Shaha et al. reported 3.6% and 4% of patients with FTC presented initially with distant metastatic disease. Rarely, the presence of distant metastasis may be the only initial manifestation of thyroid cancer without any thyroid lesion.

Skeletal metastases are usually multiple and less amenable to radioiodine therapy. However, up to a quarter of patients may have solitary metastasis which can have good outcomes following surgical resection. If the next WBRI scan reveals only solitary metastases, then we may plan surgical resection of the metastases.

The minimum recommended management of these patients consists of total thyroidectomy followed by radioactive iodine (RAI) therapy and TSH suppressive therapy. FTC is found to have a poor outcome in iodine deficient areas. Age greater than 45 years, synchronous metastases, and a tumor size larger than 4 cm have a negative impact on survival. The prognosis of FTC depends on the age of the patients, size and staging of the tumors, completeness of surgery, and the degree of invasiveness of tumor responsiveness to radioactive iodine. The ideal therapeutic approaches to patients presenting with distant metastasis include total thyroidectomy if the primary thyroid tumor is resectable, followed by RAI therapy and suppressive treatment with l-thyroxine. In this case, the patient had not received any form of definitive therapy such as total thyroidectomy or RAI therapy after his first surgery.

**Lesson Learned from this Case**

Though FTC rarely presents with an isolated swelling over the chest wall, there should be a high index of suspicion. If total thyroidectomy and WBRAI scan have been done right after confirmation of metastatic FTC on histopathology of resected rib specimen, he would have been received adjuvant RAI therapy and the prognosis of this patient would have been much better. Therefore, these types of cases must be discussed in endocrine tumor boards for proper treatment planning.

**References**