CASE REPORT

Orbital Metastasis as a Presenting Feature of Carcinoma Thyroid

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Abstract

Orbital metastasis of systemic cancer is rare and has fascinated the attention of both oncologist and ophthalmologists ever since the first description of a case report by Horner in 1864. The clinical characteristics of tumors metastatic to the orbit are related to primary tumor biology, and vary substantially among various primary types. The common known primary sites include breast, lung, prostate, and melanoma. Carcinoma thyroid metastasizing to the orbit has been reported mainly in isolated case reports, the histological variant in a majority of the cases being follicular carcinoma. We report a rare case of a follicular variant of papillary thyroid carcinoma (FVPTC) that presented with metastasis to the orbit with intracranial and extracranial subcutaneous tissues at the time of diagnosis.

Keywords: Orbital metastasis, Follicular variant of papillary carcinoma thyroid.

INTRODUCTION

Papillary thyroid carcinoma (PTC) is the most common neoplasm of thyroid which usually has an indolent clinical course. Distant metastases, although rare occur in less than 10% of the low-risk and in up to 33% of the high-risk cases,[1] adversely affecting the prognosis. Distant metastases of thyroid carcinomas have predominantly been to the lungs and to a lesser extent to the bone, brain and soft tissues.[2,3] Metastatic deposition in the orbit is an uncommon manifestation of malignant thyroid disease.[2,3] We report a rare case of a follicular variant of papillary thyroid carcinoma (FVPTC) that presented with metastasis to the orbit with intracranial and extracranial subcutaneous tissues at the time of diagnosis.

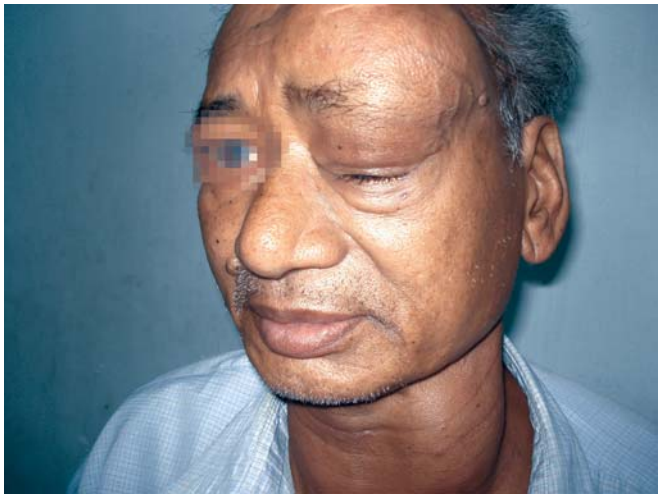

Fig. 1: The patient at initial presentation with the orbital swelling and thyroid enlargement

CASE REPORT

A 55 years old gentleman presented to us with a progressively enlarging mass around his left eye for a year (Fig. 1). An incisional biopsy of the mass was done at an outside clinic a few months prior to our consultation, the patient, however could not procure any relevant reports for our confirmation. On further examination, we noticed a long standing swelling involving both the lobes of the thyroid for about 20 years. The presence of the left orbital mass around 8 × 7 cm with a healed incision biopsy scar was noted. He complained of pain and blurring of vision, the visual acuity of his left eye was however normal. A fine needle aspiration cytology (FNAC) of both the thyroid swelling and the orbital mass was done which on clinical correlation was suggestive of a metastatic papillary carcinoma of thyroid (Fig. 2). A CT scan clearly delineated the large heterogeneous partly necrotic soft tissue mass causing bony destruction of the left frontal, parietal bones along with the roof of the orbit with intracranial extension

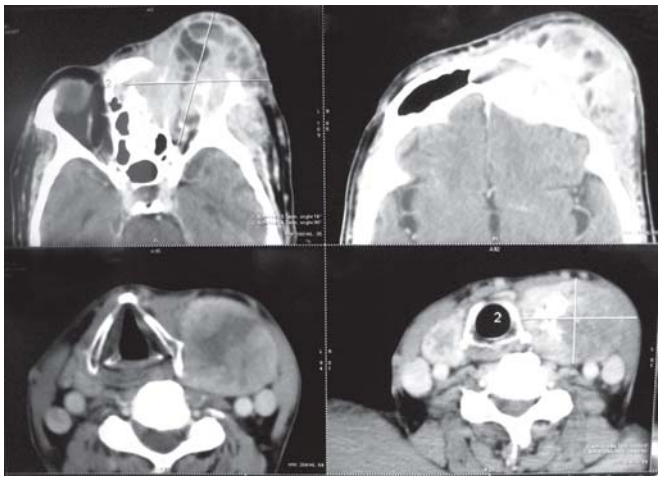

Fig. 2: The cytology aspirate from the orbital mass suggestive of metastatic papillary carcinoma thyroid

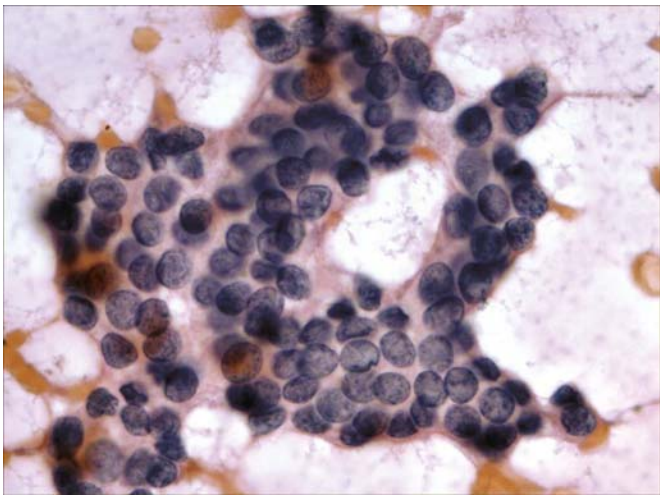

Fig. 3: Axial view of CT scan showing the thyroid mass along with the orbital mass and its intracranial extension

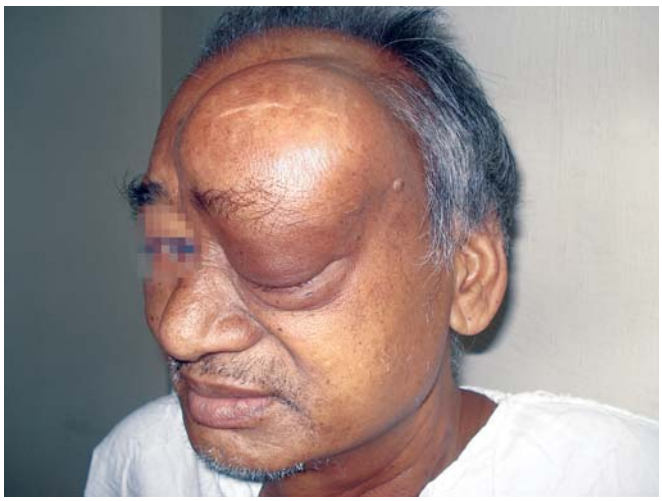

Fig. 4: The clinical presentation of the patient post-thyroidectomy showing an increase in the dimensions of the orbital mass

in the frontal region (Fig. 3). A bone scan showed the increased uptake in the left frontal region along with faint uptake in the L3 vertebrae and left ilium.

He initially underwent an uneventful total thyroidectomy and a central compartment dissection. The final histopathology was suggestive of a multicentric FVPTC with extrathyroidal extention and reactive adenopathy. He then went to receive palliative external beam radiation therapy to a dose of 40 Grey in view of the enlarging orbital tumor (Fig. 4) with intracranial extension and subsequently a single Iodine-131ablation therapy. There was a partial response of the orbital mass. The patient declined any further therapy and is a regular follow-up on suppressive dose of eltroxin for over a year.

DISCUSSION

Orbital metastasis of systemic cancer is rare and has fascinated the attention of both oncologist and ophthalmologists ever since the first description of a case report by Horner in 1864. The reported incidence of ocular involvement by metastatic disease in clinical surveys ranged from 0.7 to 4.7%.[4] Bloch and Gartner[5] found a 12% prevalence of metastatic ocular and orbital disease in a careful histological survey of autopsy eyes suggesting that occult cases would obviously have been missed in the clinical surveys.

Orbital metastases are a heterogeneous group of neoplasms. The clinical characteristics of tumors metastatic to the orbit are related to primary tumor biology, and vary substantially among various primary types. The common known primary sites include breast, lung, prostate, and melanoma.[2,4-6] The incidence of thyroid as a primary site ranged from 0.4 to 3%.[4]

Tumor presentations can be classified into four generalized syndromes of mass, infiltrative, inflammatory, and functional effects.[6] Despite the diverse clinical presentations of metastatic tumors, some general trends help differentiating them from primary orbital tumors. A history of cancer may be obtainable, at times requiring considerable diligence, in many other cases the orbital symptoms are the first manifestation of systemic cancer. The onset of symptoms in a metastatic setting is typically rapid progressive over a few weeks or months—the average duration of symptoms until presentation was 3.6 months, with lung, pancreas, and melanoma whereas for thyroid it was much longer in 16 months.[6]

PTC has been pathologically subclassified into about 15 sub-types, one among them is follicular variant of papillary thyroid carcinoma (FVPTC). FVPTC behaves like PTC with multicentricity, lymphatic invasion and rare hematogenous spread, even the survival rates are reported to be similar.[7] Although true follicular thyroid carcinomas are commonly known to metastasize via the bloodstream, there have been a few reports of aggressive FVPTC wherein the follicular patterned tumors with nuclear features of papillary carcinoma have metastasized hematogenously.[8]

Apart from a few case series on orbital tumors, only isolated cases of orbital metastases from thyroid carcinoma are reported in literature. The majority of the reported patients were in their fifth and sixth decades, the mean age being 57.5 years.[2] The diagnosis in many cases was revealed by the metastasis and in some on iodine scans post-thyroidectomy. The diagnosis in our patient was suspected and confirmed prior to the intended management. Among the well-documented reported cases, the most common histology was follicular carcinoma; however a single case of papillary carcinoma and another of FVPTC have been reported.[9]

The treatment of thyroid cancers involves predominantly surgery and radioiodine therapy followed by eltroxin suppression. Radiotherapy is occasionally used as a palliation for metastasis in critical sites of the skeletal and the central nervous systems. The prognosis of such cases is expected to be poor.[3,4-6,10]

CONCLUSION

Orbital metastasis as primary manifestation of thyroid carcinoma is a rare event. Upper eye swelling and unilateral proptosis in an elderly patient should alert the oncologist of a possible aggressive metastatic process of the orbit.

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