Carcinoma of the tongue presenting as orbital metastasis

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Orbital metastasis from carcinoma of the tongue is an extremely rare event. Till date, only one case has been reported in the literature (1). In this case report a 56-year-old male, who presented with orbital metastasis and on investigations was found to have his asymptomatic primary disease at the posterior part (base) of the tongue is described. His ophthalmologic and computed tomographic (CT) findings are mentioned. The patient was treated with a course of palliative radiotherapy followed by combination chemotherapy with good symptomatic relief and objective response. The incidence and pattern of orbital metastasis in carcinomas are discussed briefly. [Turk J Cancer 2002;32(4):172-176]

Key words: Orbital metastasis, tongue

Orbital metastases from various head and neck sites other than those arising from direct extension to the orbit e.g. paranasal sinus and nasopharynx is an extremely rare occurrence. On extensive review of the literature, we could found only a single case of tonsil and a case of tongue cancer metastatic to the eye (1). We herein report a 56-year-old male with 4-months history of ocular symptoms and a mass, which was diagnosed as metastatic carcinoma. On investigations, a clinically silent primary lesion was found at the posterior part (base) of the tongue. Palliative treatment comprising of radiotherapy and chemotherapy resulted in good symptomatic relief and regression of the lesions both at the primary and metastatic sites.

Case Report

A 56-year-old male reported to the Institute of Ophthalmology, at Civil Hospital Ahmedabad, India, with 4-months history of swelling, pain, diminished vision, proptosis and restricted movements of his left eye. On examination, he was found to have upward and lateral proptosis of the left eye, restricted eye movements, conjunctival congestion, edema of eye lids, and an irregular hard mass extending over the whole of lower lid on left side (Figure 1). The visual
Visual acuity in the right eye was 6/24 without glasses (uncorrected) and 6/6 with pinhole. The visual acuity in the affected left eye was 6/60 (uncorrected).

There was 12 mm proptosis of the left eye on exophthalmometry. Tonometry & slit lamp examinations were normal in both eyes. Cornea was clear on either side. The fundus on the affected side showed signs of compression and revealed disc edema (++), retinal edema (+) and macula showed dull foveal reflex. Retinal arteries were normal, while veins were congested, but there were no hemorrhages or exudates. He also had a 2.0 x 2.5 cm sized hard, mobile, non-tender upper deep cervical lymph-node enlargement on left side.

Skull X-Ray showed a soft tissue opacity in the left orbit, without erosion or destruction of it's bony walls. Axial and coronal contrast enhanced CT scan of orbits revealed a soft tissue mass in the infero-medial part of left orbit, displacing the eye ball antero-laterally (Figures 2A & B).
The mass was immediately adjacent to the eye ball and appeared to involve both extra- and intraconal spaces. The margins were lobulated but well defined. Optic nerve could not be identified on CT scan. No evidence of bone erosion or involvement of paranasal sinuses and intracranial extension was seen. Contra-lateral eye & orbit were normal. Biopsy of the orbital lesion was reported as metastatic poorly differentiated squamous cell carcinoma (Figures 3A & B).

Fig 3. Microphotographs of orbital lesion. (A & B) showing metastatic poorly differentiated carcinoma; (A): Low power view (H&E stain, x10), (B): High power view (H&E stain, x40). Microphotographs of primary lesion at tongue (C & D) showing poorly differentiated squamous cell carcinoma; (C): Low power view (H&E stain, x10), (D): High power view (H&E stain, x40)

The patient was referred to the Cancer Hospital for further management. A search for the primary site revealed a small (1.0 x 1.0 cm) nodule with irregular margins over the left half of posterior part (base) of tongue. Rest of the physical examination was normal. Biopsy of the lesion at tongue demonstrated non-keratinizing, poorly differentiated, squamous cell carcinoma (Figures 3C & D) consistent with his metastatic lesion in the orbit. Based on the above mentioned findings his primary site was established at posterior part of the tongue. Pulmonary metastases were absent on chest X-ray and CT scan of the thorax. Clinically and radiologically, there were no metastases anywhere else in the body. His disease was labelled as T1 N1 M1 (STAGE IV). A course of palliative radiotherapy on tele-Cobalt machine using parallel opposing lateral beams, encompassing primary and involved nodal area and separate portals for the orbital lesion was started. A total dose of 45 Gy/ 15 Fractions/ 3 Weeks was delivered to each treatment site. Following radiotherapy, relief from distressing ocular symptoms was noted. There was objective regression at primary and both the metastatic sites. In view of his metastatic disease and good response
to radiotherapy, the patient was subjected to combination chemotherapy (i.v. 5-fluorouracil and methotrexate weekly x 8 weeks). The patient did not come for follow-up after thirteen months of completion of the treatment. At the last visit, he had no disease clinically and radiologically.

Discussion

The case described herein is the second reported case in the literature of a squamous cell carcinoma of the tongue presenting as orbital metastasis. A patient of tongue cancer with bilateral orbital metastases was mentioned by Brady et al. (1) in their report of 30 cases with eye metastases from various primary sites. Other details were not given.

The eye is a relatively uncommon site for metastases from malignant neoplasms. The reported incidence of hematogenous spread to the eye varies in different series from 0.5 to 12.0% cases (2-4). The commonest primary sources of orbital metastases are breast (38-40%) and lung (20-29%) cancers followed by the gastrointestinal tract (12%) and genito-urinary tract (12%) (5,6). Malignant lesions from other organs rarely metastasize to eye. Isolated cases of thyroid cancer, malignant melanoma, hepatoma etc. metastatic to the eye have been reported (5,7). Orbital metastases from the head & neck malignancies other than those arising from direct extension to the orbit e.g. paranasal sinuses and nasopharynx etc. are extremely rare events. Extensive review of the literature could reveal a single case of carcinoma of the tonsil and a case of tongue cancer metastatic to the eye (1).

The ocular involvement is much more common than the involvement of the orbit. The ratio of ocular to orbital involvement was reported to be 7:1 by Ferry and Font (5) whereas, Hart reported (8) 10:1 ratio for ocular to orbital involvement. Unilateral involvement is much higher compared to bilateral involvement. Only 6.6% (15 of 227) patients had bilateral involvement in the series reported by Ferry and Font (5).

Metastatic orbital tumors usually present in patients with disseminated disease. The route of hematogenous spread is most often via the lungs, accounting for the presence of associated lung metastases in 80-85% of cases (4,9). Pulmonary metastases were absent in the present case. As emphasized by Ferry (12), orbital metastases may be the first manifestation of a metastatic carcinoma. It is not uncommon for orbital metastases to present clinically before the discovery of primary malignancy (10-12). Orbital metastases from carcinoma of kidney, prostate, testis, pancreas, stomach and thyroid tend to present clinically before the discovery of primary tumor (5). Occasionally lung may also harbour a silent primary tumor (6,11). Our patient presented with ocular symptoms and subsequently, a clinically silent lesion at the posterior part of the tongue was detected.

In conclusion, though the eye is occasionally the site for distant metastatic involvement from a known primary malignant neoplasm, ocular symptoms may be the initial presentation of a silent primary cancer as noted in our patient. Orbital lesion in presence of a silent primary could be misdiagnosed as primary orbital malignancy. Thorough clinical and radiological evaluation and biopsy is necessary to establish the diagnosis. A course of radiotherapy and
chemotherapy can provide excellent palliation in such metastatic presentation. It is difficult to comment on long-term survival as the patient did not come for follow-up after thirteen months.

References