



## ORBITAL METASTASIS IN CARCINOMA BREAST

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<p><b>Article Info</b> Received 15/06/2015 Revised 27/06/2015 Accepted 20/07/2015</p> <p><b>Key words:</b> Breast, Carcinoma, Metastasis, Orbit.</p>	<p><b>ABSTRACT</b> Orbital metastasis is a rare clinical entity constituting 2% to 3% of patients with malignancy. Most of the orbital metastasis is due to primary carcinoma breast. Here is a case report of a 50 years old female, who presented with orbital metastasis, 3 years after completion of treatment for carcinoma of right breast. She was on regular follow up with clinically no evidence of disease for three years. Subsequently she presented with metastasis of the contralateral orbit. She was treated with palliative radiotherapy to left eye and was symptomatically improved. The clinical presentation, diagnosis and treatment of carcinoma breast with ophthalmic metastasis are discussed here with the review of literature due to its rarity and for future documentation.</p>
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### INTRODUCTION

Ophthalmic metastasis from an extra ocular primary malignancy is a rare event. Orbital metastasis is defined as one that occurs within the space between the eyeball and bony orbit. Similarly ocular metastasis mostly choroid metastasis occurs due to primary in carcinoma of lung and breast [1]. This case presented with orbital metastasis 3 years after completion of treatment for carcinoma of right breast is reported due to its rarity and for documentation.

### CASE REPORT

A 50 years old female, diagnosed as carcinoma of right breast in January 2012, had undergone modified radical mastectomy of right breast in January 2012. Post-operative histopathology revealed infiltrating ductal carcinoma, stage IIIA pT3N2M0 with 5 out of 13 nodes positive. On immunohistochemistry ER, PR was positive, HER-2 was negative. She received six cycle of adjuvant chemotherapy with cyclophosphamide, epirubicin, and fluorouracil based protocol at three weekly intervals which was completed in June, 2012. Subsequently she received external beam radiotherapy with tangential pair portal of

50 Gy in 25 fractions to right chest wall by cobalt-60 over 5 weeks.

Since the patient was ER, PR positive and HER -2 neu negative she was put on tamoxifen. Patient was on regular follow up with clinicoradiologically no evidence of disease for three years. Subsequently she presented with left level II cervical lymphadenopathy along with a complaints of diplopia, mild blurring of vision and periorbital swelling of left eye. Computed tomography evaluation of face and neck (Figure-1) revealed bilateral cervical adenopathy and homogenously enhancing soft tissue density lesion at the posterior aspect of left orbit with invasion of left medial rectus muscle associated with adjacent bony erosion and left basal temporal lobe extension through inferior orbital fissure. Right eye and orbit was normal. Chest x-ray and ultrasound of abdomen and pelvis was normal. She received radiotherapy to affected orbit with palliative intent after which her symptoms improved. She was then planned for taxane based chemotherapy followed by hormonal therapy. At the time of writing she had received three cycle of taxane based chemotherapy.



## DISCUSSION

Orbital metastasis is an uncommon entity occurring in 2% to 3% of patients with malignancy. Breast (38-40%) is the commonest organ to metastasize to orbit followed by lung (20-29%), gastrointestinal tract (12%), melanoma, and thyroid [2]. Up to 25% of cases, orbital metastasis is the initial finding of a previously undetected primary cancer [3].

Unilateral disease is the usual presentation while intra-orbital anatomical distribution involves predominantly the lateral and superior quadrants[4]. Previous studies have found that left orbit is more commonly involved, as the left common carotid ascends directly off the aorta tumor cells from the systemic circulation could have a more direct path to left orbit. In the present case patient had unilateral i. e left orbital metastasis which correlates with the literature. The average age of the patient with orbital metastasis at the time of the diagnosis is 61 years. In the present study patient was in 5<sup>th</sup> decade. Most of the ophthalmic metastasis is of adenomatous type which was also observed in our case [5].

To diagnose, fine needle aspiration and biopsy is usually done and necessary in case of primary presentation. Otherwise in already diagnosed metastatic breast cancer, high degree of suspicion and clinicopathological correlation can avoid fine needle aspiration and biopsy [6]. In our case patient had primary breast carcinoma with orbital metastasis and intracranial extension thus fine needle aspiration and biopsy was not done.

Metastatic lesions to the orbit usually present as irregularly shaped masses on noncontrast CT which are isodense to muscle. With contrast injection, they show slight enhancement. Orbital bony wall involvement is also a common finding. On MRI, metastatic disease is usually

hypointense to fat on T1-weighted images (T1WI) and hyper intense to fat on T2WI, whereas pseudotumor is isointense in T2W1. Hyperintense lesions are seen on T1WI, in vascular metastasis (e.g. Thyroid, renal) or melanoma metastasis [7].

Treatment is essentially palliative. The goal of the treatment is to improve the patient's quality of life and restore or preserve visual function. Radiotherapy is the mainstay of treatment for orbital and ocular metastases and appears to be safe and effective with objective response rates up to 79% [8]. EBRT is given in palliative intent with 30 gy /10 fractions. Not infrequently, patients will have silent brain lesions when they present with orbital disease. In our case patient had intracranial extension. Orbital surgery to remove the tumor mass is not recommended as this is not curative ,offers no benefit in terms of prognosis or survival, and may be associated with significant ocular morbidity. It should be done only in cases of intractable ocular pain or unmanageable local hygiene due to rapid tumor growth [9].

In the present case patient was treated with EBRT with palliative intent for which she was symptoms free. Chemotherapy for systemic treatment can help control orbital metastasis especially from chemo sensitive tumor, but the mainstay of treatment is orbital irradiation. Patient's general health, life expectancy and side effect of treatment must be taken into consideration. Hormone therapy plays an important role in treatment of metastasis from hormone sensitive tumors such as breast cancer and prostate cancer. Our patient is planned for systemic chemotherapy followed by hormone therapy.

Orbital metastasis is considered a bad prognostic factor with a median survival ranging from 22 to 31 months for breast cancer [10].

**Figure 1. CECT scan of face and neck showing soft tissue density lesion in the posterior aspect of left orbit with invasion of left medial rectus muscle.**



## CONCLUSION

Although ophthalmic metastasis is rare, any patient with ocular symptoms with history of malignancy should be evaluated for this metastasis. A thorough metastatic work up should be done as most patients with

orbital metastasis may have other non-orbital metastasis. Metastasis to orbit remains a poor prognostic factor, and prompt diagnosis and treatment is essential to preserve the visual function and improve the quality of life.



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