

# CARCINOMA BREAST PRESENTING AS ORBITAL METASTASIS

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We present the case of a 65-year-old female with periorbital swelling as the first manifestation of carcinoma breast. Orbital metastasis in patients with previously undetected carcinoma breast is a rare clinical situation, and the family physicians should always keep in mind the differential diagnosis of carcinoma breast while dealing with orbital swellings in perimenopausal and elderly females.

**Key words:** Orbital metastasis, carcinoma breast

## INTRODUCTION

Metastatic and secondary tumors are the most common malignancies to involve the eye and orbit.<sup>1</sup> The orbit is the second most common site for metastatic disease to the eye and its adenexa, with the uveal tract being involved more frequently.<sup>2</sup> Unfortunately, after the identification of a metastatic tumor in the uvea or orbit, the prognosis is uniformly bad, and few patients survive more than one year.<sup>1</sup> Hence prompt recognition of these metastasis by ophthalmologists and clinicians can lead to the detection of a previously unrecognized systemic malignancy and may allow early treatment. Rarely, metastatic orbital disease may be the presenting symptom in patients with undetected breast primaries. In the Mayo Clinic series, Henderson and Farrow<sup>3</sup> had only one patient in whom orbital disease preceded the detection of primary breast tumor. This case too presented with left periorbital swelling as the chief complaint without any histological

evidence of carcinoma elsewhere and is being reported because of the rarity of this condition.

## CASE HISTORY

A 65-year-old post-menopausal female presented with the chief complaint of left periorbital swelling for the past one year, which was gradually progressive in nature. There was history of loss of appetite for the past three months, history of abdominal distension for the last two months and history of shortness of breath for the past 10 days. Patient was a known diabetic and hypertensive and was on oral medication for the last fifteen years. Her family history was noncontributory and obstetrical history was nonsignificant.

When thoroughly examined, she was found to have diffuse, hard, partially-tender swelling in the left periorbital region along with enophthalmos, conjunctival hyperemia and decreased extraocular motility. There

was atrophy of left breast along with a 2x1.5 cm peri-areolar mass in right breast. There was a 1.5x1 cm firm mobile lymph node palpable in left supraclavicular region. Per abdominal examination revealed ascites, no definite mass was palpable. Urine examination and biochemical profile was within normal limits. USG thorax revealed minimal pleural effusion on left side, while USG abdomen confirmed ascites. There was radiological evidence of bone destruction in inferior and lateral walls of left orbit. The fundus examination was essentially normal. The ascitic fluid on cytopathology showed metastatic adenocarcinoma deposits. On histopathology, the breast mass came out to be infiltrating ductal carcinoma. FNA from periorbital lesion and supraclavicular lymph node showed metastatic deposits consistent with carcinoma breast. Receptor analysis of the breast and orbital tissue was positive for estrogen receptors.

Palliative hormonal therapy with Tab. Tamoxifen was started. There was good symptomatic response to treatment in reducing pleural and abdominal fluid collection and also in the periorbital swelling.

## DISCUSSION

Metastatic disease of orbit is being recognized with increasing frequency, perhaps reflecting the increased survival of cancer patients. Ocular metastasis are seen in 10% of all metastatic cancers.<sup>4</sup> The secondary spread to the orbit from carcinomas elsewhere ranges from 2-7%, and thus are less common as compared to ocular metastasis.<sup>4</sup> Breast carcinoma is the most common primary carcinoma metastatic to orbit or eye, accounting for 40-65% of these cases, followed by lungs (10-15% of cases)<sup>1,4</sup>. The uvea is the most common site of metastasis (80%) and the posterior segment, being highly vascular, is more commonly involved than the anterior segment.<sup>4</sup>

Orbital metastasis have been reported even after 20 years of detection of breast primary.<sup>1</sup> Nevertheless, 65-70% of patients present with known primary metastatic disease diagnosed about 3 years earlier.<sup>2</sup> Metastases reach the orbit by hematogenous spread. Over 60% of orbital metastases present with metastases at other sites. The rate of carcinoma breast with bilateral orbital involvement is 20%, whereas this rate for other adult neoplasms is much lower.<sup>5</sup> The age of the patient population in ocular and orbital metastasis follows the pattern of age incidence of primary tumor itself, and most of the cases are diagnosed between 40-65 years.<sup>4</sup>

Orbital metastases may be accompanied by any of the common signs and symptoms of orbital disease, depending on the histological features of primary tumors, the location of orbital lesion and the type of orbital tissue involved.<sup>2</sup> Patients most commonly complain of ptosis, proptosis, diplopia, lid swelling, palpable mass, pain and decreased vision. Frequently noted signs are exophthalmos, non comitant eye deviation, conjunctival infection, periorbital induration, restricted ocular motility, disc edema, retinal folds and enophthalmos.<sup>2</sup> Carcinoma breast classically induces enophthalmos due to contraction induced by the histologic scirrhous nature of the tumor.<sup>4</sup>

Carcinoma breast metastatic to orbit has often been misdiagnosed, most commonly as orbital cellulitis and pseudotumor.<sup>2</sup> If after complete history and eye examination, the clinician suspects metastatic disease, he or she should proceed with a complete physical examination, including examinations of breasts in females, prostate in males, and stool for occult blood in both sexes. Ancillary lab tests may also prove helpful. Serum tumor markers, specially Carcinoembryonic antigen and serum PSA should be done to rule out GIT or prostate malignancies. When an orbital mass lesion is suspected, imaging

with either CT or MRI is the most important initial workup.<sup>4,6</sup> Definitive diagnosis of metastatic tumors can be made only with tissue biopsy. FNA may be advocated in cases of disseminated disease, and has got accuracy rates up to 88%.<sup>7</sup> When the primary site is not known, biopsy of orbital mass is more informative. The estrogen receptor assay, performed on metastatic tissue removed from the orbit, can indicate the sensitivity of the breast cancer to hormonal therapy.<sup>8</sup>

Management of ocular and orbital metastasis largely depend on the general status of the patient, the life expectancy, primary disease status, and whether the patient has other metastatic lesion or not. The main goal of treatment is palliative in most of the cases. Radiotherapy remains the cornerstone of therapy and allows the majority of patients to maintain useful vision for the remainder of their lives. For most carcinomas, a dose between 30-40 Gy relieves the symptoms. Response rate after radiotherapy is around 80%.<sup>4</sup> Systemic chemotherapy may be added to orbital radiotherapy if the chances of disease control are good. Patients with estrogen receptor positive and unfit for aggressive medical therapy generally benefit from hormonal therapy. Saitoh et al<sup>9</sup> reported reduction in eyelid and orbital metastases with tamoxifen, as seen in this patient.

Regardless the primary tumor type, the prognosis following orbital metastasis is poor. The median survival is about 6-9 months in various reported literatures, almost the same as in ocular metastasis.<sup>4</sup> Lung carcinoma metastatic to orbit had a shorter median survival time than breast carcinoma metastasis (188 vs 666 days, respectively).<sup>10</sup> When age is considered as a continuous variable, older patients with breast metastases survive longer than did younger patients.<sup>10</sup>

Over the past few years, effective screening methods and sophistication in diagnostic tools have resulted in a decrease in the frequency of patients who had orbital disease before the detection of systemic malignancy. Still the possibility of orbital metastases should always be kept in mind while dealing with suspected systemic malignancy. Orbital metastases remain an unfavorable prognostic factor, and prompt diagnosis and treatment are crucial to prevent loss of vision and improve the patient's quality of life.

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