

Ptosis and Retinal Lesions as the First Manifestation of Stage 4 Metastatic Breast Cancer: A Case Report

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ABSTRACT

Introduction: Breast cancer is the most common cancer among women, with prevalence of metastatic disease as high as 30%, despite early diagnosis and aggressive treatment. Breast is the most common site of origin for ocular metastatic tumors. Common presentations of orbital tumors are exophthalmos, pain, decreased vision and diplopia.

Case Description: We present a case of a 57 year old female, with left ptosis that was worsening for 3 months, weakness and fatigue. MRI scan revealed left orbital mass and upon funduscopic examination there were bilateral multiple retinal lesions and hemorrhage. Full workup revealed the patient had stage 4 breast cancers.

Discussion: Ptosis and retinal lesions as the first sign of stage 4 breast cancer was not reported in the literature so far. Ocular metastasis of breast cancer has a high prevalence and a diverse presentation, it is therefore important to consider it in the differential diagnosis of unusual ocular findings.

Keywords: Orbital metastasis; Breast cancer; Ptosis; Retinal lesions

INTRODUCTION

Breast cancer is the most frequently diagnosed cancer among women worldwide¹, accounting for approximately 26% of all female cancers and the leading cause of cancer related death among women. Even though there are patients who live with breast cancer for many years, it is overall considered incurable, and the main effort of the treatment is to prolong survival rates and sustain good quality of life.

Despite recent advances in early diagnosis and treatment, it is estimated that up to one-third of patients diagnosed with breast cancer will develop a metastatic disease. Breast is the most common site of origin for ocular metastatic tumors with a prevalence as high as 30% in patients with known metastatic disease. In 49% of patients with ocular metastatic disease, the primary tumor was breast carcinoma. This high prevalence is attributed to the asymptomatic nature of ocular metastatic foci, in contrast to metastatic disease in other organs. The average time from the diagnosis of breast cancer to the development of ophthalmic manifestations is 4.9 years. The most common signs and symptoms produced by orbital metastasis includes exophthalmos, orbital pain, decreased vision, per orbital swelling, a visible mass, ophthalmoplegia, and diplopia. Orbital

metastasis may cause exophthalmos, from mass effect, or enophthalmos, in the scirrous type when infiltrated muscles lead to posterior pulling of the eye [1]. Overall prognosis for patients with such metastases remains poor, although the availability of novel targeted treatments and advances in radiotherapy may lead to better survival and quality of life. Most ocular breast cancer metastases are diagnosed after initial diagnosis of breast cancer. Ocular complaints as the first manifestation of breast cancer are less common. We present a case of a woman who presented with severe worsening ptosis and an unusual retinopathy which were the initial manifestations of the patient's stage 4 breast cancers [2].

CASE PRESENTATION

A 57 year old woman presented to the orbital clinic, complaining of severe ptosis, on the left side for the past 3 months (Figure 1). In addition she complained about general weakness and malaise while mentioning she was generally in good health. Her past medical history included cholecystectomy and parathyroidectomy 8 years prior to her presentation. She was recently evaluated by a neurologist due to her ptosis, and myasthenia gravis was ruled out. She was subsequently referred

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for an MRI examination [3]. MRI imaging revealed a mass in the superior part of the left orbit (Figure 2). Upon Ophthalmological examination, best corrected visual acuity on both eyes was 20/20. Ptosis was present in both eyes, more severe on the left side with Median Reflex Distance (MRD) of 0mm. There was no palpable mass, no proptosis and no enophthalmus. Minimal levator function of 4 mm was measured bilaterally, and there was no restriction in ocular movements. She had minimal anisocoria with the left pupil being 1 mm larger compared to the right one, with normal reaction to light and negative RAPD. On fundusoscopic examination there were multiple white lesions scattered in proximity to blood vessels in the posterior pole and a small single retinal haemorrhage in each eye (Figure 3). The patient was admitted to the ophthalmology department at Emek Medical Center in Afula, Israel, for a full systemic and ophthalmic workup including Fluorescein angiography, retinal OCT and visual field test. Blood tests revealed leukocytosis with left shift, normoblasts, thrombocytopenia and elevated LDH [4]. Bone marrow biopsy was performed to rule out myeloproliferative disorders and a dense infiltrate of small round cells with scant cytoplasm and hyperchromatic nuclei was observed on cytological examination of the specimen (Figure 4). Immunohistochemistry testing was positive for estrogen and progesterone receptors and negative for HER-2 receptors. These findings were consistent with the diagnosis of lobular carcinoma of breast. Breast ultrasound exam demonstrated lumps in both breasts with bilateral axillary involvement. Despite these echographic findings a careful manual examining performed by a skilled breast surgeon showed no significant findings [5]. The lumps were not palpable in either breast. A total body CT scan revealed lesions along the vertebral column and a left adrenal gland mass. According to these findings a final diagnosis of stage 4 breast carcinoma was made. Systemic hormonal treatment with Letrozole was initiated and radiation therapy to the cervical vertebral lesions was performed. On follow up examination 5 months after initiation of her treatment her retinopathy had completely disappeared (Figure 5), although there was still significant bilateral ptosis (Figures 1-5).

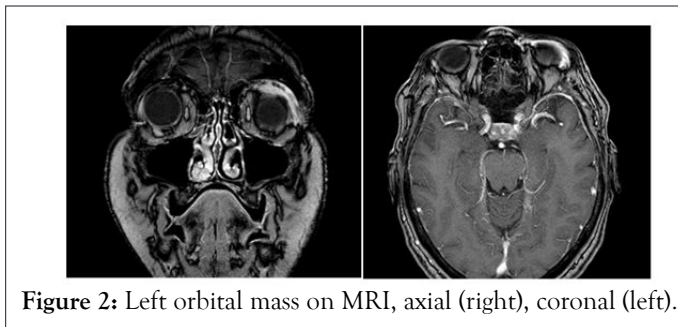


Figure 2: Left orbital mass on MRI, axial (right), coronal (left).

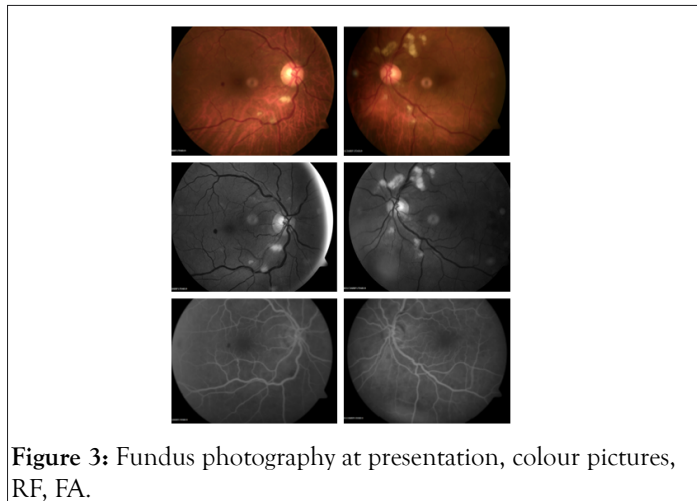


Figure 3: Fundus photography at presentation, colour pictures, RF, FA.

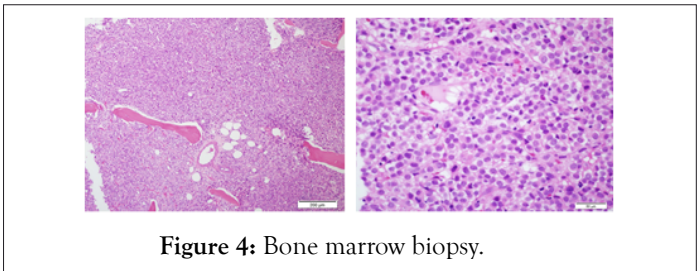


Figure 4: Bone marrow biopsy.

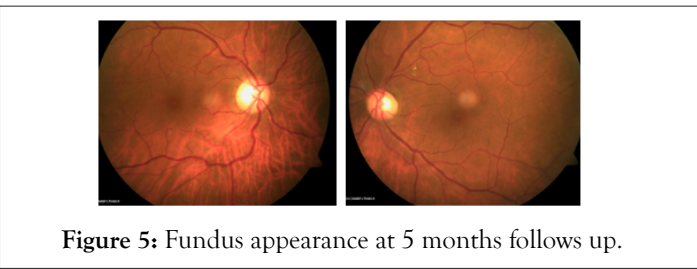


Figure 5: Fundus appearance at 5 months follows up.



Figure 1: Photograph of patients face demonstrating bilateral ptosis, more severe on the left side.

DISCUSSION

Metastases of breast cancer accounts for the majority of ocular and orbital metastases and in rare cases could be the first manifestation of the disease. Our patient was diagnosed with stage 4 breast cancer after she began having ocular complaints despite undergoing an annual breast examination and a routine mammography screening, last performed almost a year before presentation. The presentation of orbital symptoms, together with retinal lesions was not previously reported in the literature. The ptosis was caused by the orbital mass, although the retinal lesions are thought to be caused by the systemic disease, therefore the improvement after initiation of systemic treatment [6]. Ocular metastases of breast cancer have a high prevalence and a diverse presentation, and may masquerade as other

diseases. It is therefore of high importance to consider it in the differential diagnosis of unusual ocular findings.

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