

Intraorbital tumor as the first and sole manifestation of breast cancer

Abstract

Orbital metastasis is an unusual occurrence and it is rarely the leading manifestation of systemic malignancy. Breast carcinoma accounts for the majority of metastatic lesions to the eye. We report the case of a 56-year-old woman presenting with ophthalmic symptoms and no history of pre-existing malignancy. A left intraorbital mass was observed on magnetic resonance imaging examination and further investigations revealed a left breast carcinoma as the primary tumor. When confronted with similar findings, ophthalmologists should include orbital metastasis in the differential diagnosis. A thorough clinical assessment is also mandatory.

Keywords: breast cancer, intraorbital metastases, ophthalmic symptoms

Introduction

Breast cancer affects approximately one in eight women during their lifetime, being the second most diagnosed cancer worldwide⁽¹⁾. The incidence increases with age and peaks in the 50-60 y.o. age group. Breast carcinoma can have an unusually long latency and it's capable of metastasizing to an array of various sites, most commonly the brain, lungs, and bones.

The prognosis is generally poor, with the chances of survival being less than 5% in the case of metastatic disease⁽²⁾. Orbital manifestations of the disease are very rare, with one study showing an overall rate of 0.2%⁽³⁾. In addition, orbital metastasis are usually discovered after the diagnosis of the main tumor with a median delay of three to six years⁽⁴⁾.

The particularity of our case consists in the fact that the orbital symptoms were the initial and sole manifestation of the disease. Subsequently, no other metastases were discovered during systemic evaluation.

Case Report

A 56-year old Caucasian female presented with diplopia, decreased visual acuity and limited eye movement in her left eye. The symptoms have been presented for 3 months. The patient had a history of essential hypertension and type 2 diabetes mellitus. There were no clinical signs suggestive of neurological disorders or neuromuscular dysfunction of the eye.

A head magnetic resonance imaging (Figure 1) revealed the presence of an intraorbital mass occupying the intraconal compartment of the left orbit and invading the adjacent muscles. Subsequently, an excisional biopsy was performed. Histological and immunohistochemical examination of the resected specimen was consistent with metastatic estrogen ER+ invasive ductal carcinoma of the breast (Figure 2).

Both mammography and breast ultrasound confirmed the diagnosis of primary breast carcinoma. A 23/22 mm, poorly delimited and infiltrating tumor of the left breast, along with possible metastatic axillary lymph node involvement were detected. The tumor was attributed a BIRADS 5 staging. Patient underwent surgery with complete excision of the tumor and suspicious lymph nodes. Further imagistic investigations were performed, including computed tomography scan examination of the abdomen, thorax and pelvis. No other metastatic sites were noted. Postoperative period was unremarkable with the patient being discharged 5 days later.

Discussion

We report a rare case of breast cancer with a unspecific clinical onset. Orbital metastatic lesions are usually identified in patients with a confirmed diagnosis of disseminated malignancy. The average time interval for such a discovery is 4.5-6.5 years from the diagnosis of the primary breast tumor. Nevertheless, orbital metastasis can be the initial manifestation in up to 25% of cases of a previously undiscovered primary tumor⁽⁵⁾. Considering this, the most remarkable aspect of the case is that our patient did not have a history of past or present malignancy.

The most common sites of primary cancer leading to orbital involvement are breast, lung and kidney⁽⁶⁾. The lateral and superior intraorbital quadrants are the anatomical regions predominantly affected by the disease, the usual presentation being unilateral⁽⁵⁾.

The affected patient usually has a rather abrupt onset of blurred vision, diplopia, and pain and may have a visible lump beneath the eyelid. Clinical check-up may disclose proptosis, displacement of the globe, blepharoptosis, and a visible or palpable

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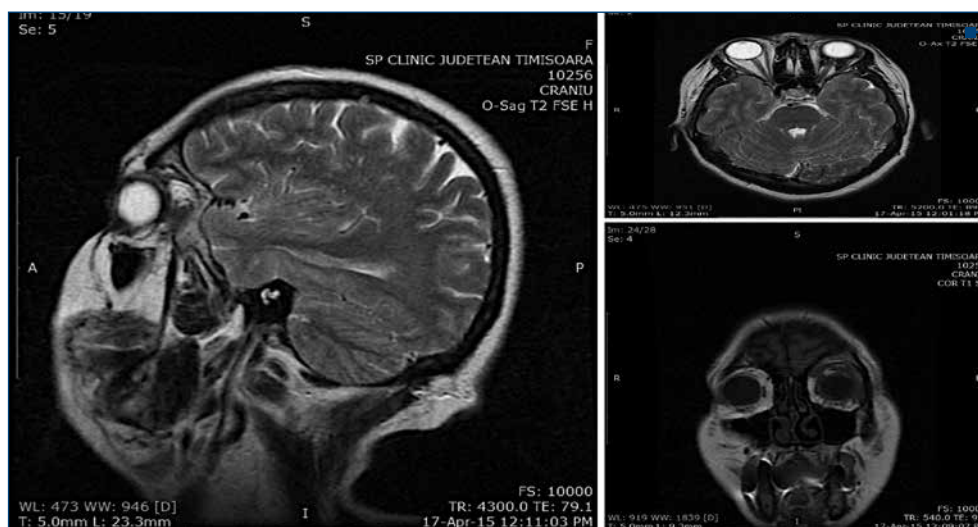


Figure 1. T2-MRI: Sagittal Left: intraorbital retroocular mass invading the eye muscles in ¾ quadrants, no infiltration of the optic nerve, no ischemic or other associated lesions

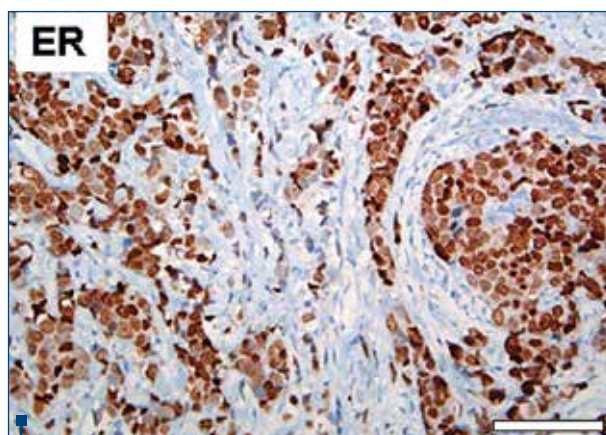


Figure 2. Immunohistochemistry: CEA, synaptophysin, CK20: -CK7, CK19, ER: ++

mass⁽⁷⁾. Ophthalmological examination revealed similar symptoms in our patient, with progressive deterioration of left eye function during a period of 3 months. The particular features of metastatic involvement of the orbit are rapid onset, gradual worsening of symptoms, no response to antibiotic or steroid therapy and continuous loss of motor and sensory functions.

Apart from metastasis, differential diagnosis should include the multiple inflammatory and infiltrative ophthalmic conditions that can mimic a malignant process, such as thyroid-associated orbitopathy, idiopathic orbital inflammation, Wegener's granulomatosis,

sarcoidosis etc⁽⁸⁾. The positive diagnosis of an orbital lesion demands an orbital biopsy (e.g. either fine needle aspiration or an open biopsy) that should be performed only in patients without history of cancer and in cases where the orbit is the single site of suspected secondary metastasis⁽⁵⁾.

Following the confirmation of the diagnosis, the management and treatment of patients with orbital metastasis are multidisciplinary.

The treatment intends to improve patient's quality of life, while preserving and restoring visual function. Routinely, the treatment of ocular or orbital metastases is palliative and may involve a combination of surgery (i.e. in specific patients), radiotherapy along with systemic chemotherapy and hormonal therapy⁽⁹⁾.

The prognosis is poor, as emphasized in a study conducted by Char and contributors⁽¹⁰⁾. The median survival is 1.3 years; the 2-year survival rate is 27%, with no notable differences between patients with or without a known primary tumor at the time the orbital metastases were diagnosed⁽¹⁰⁾.

Conclusions

When presented with similar findings in female patients, ophthalmologists should consider the possibility of a malignant process involving the orbit as being secondary to a breast carcinoma. A thorough physical examination and referral to further investigations should be conducted in order to eliminate the risk of failing to diagnose a dormant primary tumor. ■

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