

Ocular Metastasis from Breast Cancer: Case Report

S Daoudi, S.H Touimi, I Adrif, S Naciri, S Boutayeb, N Benjaafar, H Errihani

Abstract— Breast cancer can metastasize to many sites, but the eye is an uncommon location. A long interval typically occurs between diagnosis of primary breast carcinoma and detection of orbital and ocular metastasis. It is generally a feature of widespread disseminated disease.

The symptoms of ocular metastasis can be very variable. Diagnosis is based on a thorough medical history and clinical evaluation.

The treatment is multidisciplinary in order to define the optimal management of each patient but often with palliative intention and have no effect on survival rates.

We report a case of a 46 year old woman with a triple negative invasive ductal carcinoma of the right breast, diagnosed and treated 5 years before, who developed an ocular metastasis.

Index Terms— Breast, Chemotherapy, Ductal carcinoma, Ocular metastasis

I. INTRODUCTION

Breast cancer is the most common malignancy diagnosed in women [1]. Despite recent advances in early diagnosis and effective treatment, it can metastasize to many sites, among others the eye. Metastasis can be found in almost any part of the eye and orbit [2]. A long interval typically occurs between diagnosis of primary breast carcinoma and detection of orbital and ocular metastasis. It is generally a feature of widespread disseminated disease [3]. The incidence of ocular metastasis presents variations with rates between 5 and 30% [4].

The most common presentations are blurred vision, visual field defects and floaters [5]. Diagnosis is based on a thorough medical history and clinical evaluation. Thus, patients with a history of breast cancer presenting with any eye symptom should be evaluated with consideration of ocular metastasis.

We present a case of a 46 year old woman with a triple negative breast cancer diagnosed and treated 6 years before, who developed an ocular metastasis.

II. CASE REPORT

A 46 year old woman presented with pain, redness and decreased visual acuity in her left eye (Figure 1). Regarding her medical history, the patient was diagnosed

with grade 3, triple negative invasive ductal carcinoma of the right breast and was treated 5 years ago with radical mastectomy and axillary lymph node dissection, adjuvant chemotherapy and radiotherapy.



Figure 1: 46 year old patient with ophthalmologic symptoms

An ophthalmological assessment was performed. The fundus examination and optical coherence tomography (OCT) found a serous retinal detachment. Ocular ultrasound revealed a retinal mass. Orbital MRI showed a split appearance in the posterior wall of the left eye, in a V open in front, with retinal detachment in favor of metastasis (Figure 2).

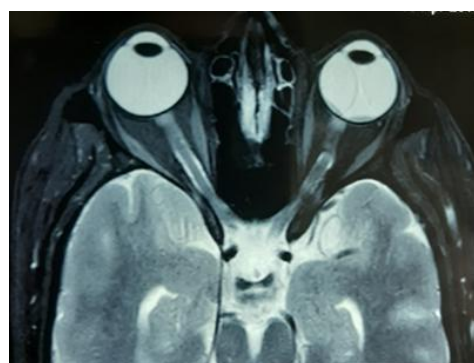


Figure 2: appearance of the patient's ocular MRI

Moreover, the patient presented dyspnea. General restaging, which was then performed, showed pulmonary metastases confirmed by biopsy. The immunohistochemical study demonstrated triple negative profile of invasive ductal carcinoma of the breast.

Given its general health, the patient received systemic palliative chemotherapy by weekly paclitaxel. Unfortunately,

DAOUDI Sara, Department Of Medical Oncology, National Institute Of Oncology, Rabat, Morocco.

TOUIMI Samia Hajar, Department Of Radiotherapy, National Institute Of Oncology, Rabat, Morocco.

ADRIF Imane, Department Of Medical Oncology, National Institute Of Oncology, Rabat, Morocco.

the evolution was unfavorable; the patient died after 2 cures of chemotherapy.

III. DISCUSSION

Ocular metastasis usually presents in patients with breast cancer 20 to 40 months after initial diagnosis. At the time of diagnosis of ocular metastasis, 85% of patients already had lung metastasis [6]. The uveal tissue, especially the choroid, is the primary ocular site of breast cancer metastases accounting for 81% of total ocular metastasis, probably due to its high vascularity [7].

The diagnosis is mainly clinical. Slit lamp biomicroscopy is the hallmark for identifying metastatic sites, alongside history of breast cancer. When in doubt, investigative modalities such as optical coherence tomography (OCT), fundus fluorescein angiography (FFA), B-scan, and MRI can be useful [8]. Definite diagnosis of an orbital lesion requires an orbital biopsy (either FNA or open biopsy). Nevertheless, in patients with known metastatic cancer, the biopsy may be avoided if there is a strong clinical and imaging suspicion for metastatic disease [9].

Treatment of ocular metastasis is almost always palliative and aims at improving patient's quality of life and preserve visual function. It can include radiotherapy, chemotherapy, hormonal therapy, surgery, or a combination of these modalities.

The main treatment option is radiotherapy which appears to be safe and effective with objective response rates up to 80% [10]. External-beam irradiation is the most common and accessible modality and may control tumor growth and improve local symptoms with a total dose of 20–40 Gy delivered in fractions over 1–2 weeks [11]. Regression of the metastatic tumor has been reported in 63–83% of cases [12; 13].

However, chemotherapy has been reported by some authors to be as effective as radiotherapy for choroidal metastases, albeit with greater systemic side effects [14;15]. There is also case reports of choroidal metastases that have regressed on hormonal therapy [16;17] and combination chemotherapy with targeted therapy by monoclonal antibodies (trastuzumab) [18;19,20].

Extensive orbital surgery to remove the metastasis is not recommended as this is not curative and can be associated with significant ocular morbidity [21]. Enucleation or rather radical measures should only be used in cases of intractable ocular pain or unmanageable local hygiene due to rapid tumor growth [22].

Despite recent advances in diagnosis and treatment modalities, the prognosis of patients with metastatic ocular tumor is rather poor with survival that can range from 0 to 64 months, with an average of five months [23]. Survival rates depend also on general health, early diagnosis and advances in therapy [20].

IV. CONCLUSION

Although rare, breast cancer patients can develop metastasis to the ocular region. The patients with a previous history of breast cancer who present ophthalmological complaints should be evaluated for ocular metastatic disease. Once diagnosis is established, the treatment for these patients is almost always palliative although it is multidisciplinary in order to define the optimal management with the less possible side effects.

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