

Case Report
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Double Vision as the Presenting Symptom of Metastatic Breast Cancer in an 83-Year-Old Lady

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ABSTRACT

Breast cancer is the most common type of malignant tumor that occurs in women. Despite this, physicians report that they screen elderly patients for breast cancer less than young patients, regardless of cancer history. This case report describes an elderly patient who presented with diplopia, eyelid swelling, and restricted eye movement, leading to the discovery of a diffuse orbital tumor and Stage IV left breast carcinoma with metastases to bone, liver, and peritoneum. The patient had been told to stop mammograms years prior to her diagnosis despite her past history of uterine cancer. The case underscores the possibility of orbital metastasis from breast cancer and highlights the necessity of diligent cancer screening in elderly women.

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Introduction

Breast cancer is the most common type of cancer found in women, with an increased risk of occurrence and mortality for elderly patients [1]. Predictions estimate that 1 in 5 people in the United States will be 65 years or older by 2030 [2]. Despite these facts, there is uncertainty about the necessity for mammograms in elderly patients, with some researchers arguing that breast cancer screening after age 70 is less beneficial and less cost-effective [3]. This report discusses an elderly patient with a history of uterine cancer who developed diplopia due to breast cancer metastasis after discontinuing mammograms. This case underscores the importance of continued mammographic screening in elderly patients, challenging the practice of ceasing such screenings after age 70.

Case Summary

The patient, an 84-year-old woman, presented with diplopia, swelling, and severely limited motility in the right eye. The patient had slowly worsening diplopia for 2 years, alongside redness and swelling of the right upper eyelid (Figure 1). She had a history of uterine cancer from 12 years prior. Due to this, she had a hysterectomy and was unaware of any metastases following the surgery. With correction, central visual acuity (VA) was measured at 20/60 in both eyes; the pinhole eye test showed no improvement in the right eye while increasing the left to 20/30. The patient's

Intra Ocular Pressure (IOP) was measured at 15mm Hg in both eyes. On the sensorimotor exam, the patient had limited motility in all right eye muscles and diplopia in both side gazes. On slit lamp examination, there was no inflammation in the anterior or posterior segment of the eye, with poor visibility to the back of the eye. The patient denied tenderness and ocular pain, but the right orbit had resistance to retropulsion. Despite swelling in the right eye, there was no proptosis present. A Computed tomography scan (CT scan) revealed a diffuse infiltrative process in the right orbit, extending from the lateral to the medial aspect of the preorbital soft tissue (Figure 2). After further screening, a 2 x 3.5 cm carcinoma of the left breast

was also detected by a CT scan and confirmed by a biopsy. The patient was diagnosed with Stage IV carcinoma of the left breast with metastases found in the peritoneum, bone, and liver. The biopsy found the carcinoma was ER(+) and HER2(-). Flow cytometry analysis found no evidence of a lymphoproliferative disorder or nearby lymph nodal involvement. The patient was initially placed on Verzenio tablets, which were taken twice daily, and Anastrozole, once daily. Magnetic Resonance Imaging (MRI) of the brain and orbit was completed three months following the initial visit and showed a reduction in the size of the orbital tumor and no new growths. Despite improvement in tumor size, the patient's central VA had worsened to 20/150 in the right eye with correction, and IOP had increased to 23mm Hg. Two weeks later, the patient began a 3-month radiation treatment that resulted in around 80% shrinkage of the tumor.



Figure 1: Frontal Photo of the Patient Demonstrating Redness and Swelling of the Right Upper Eyelid

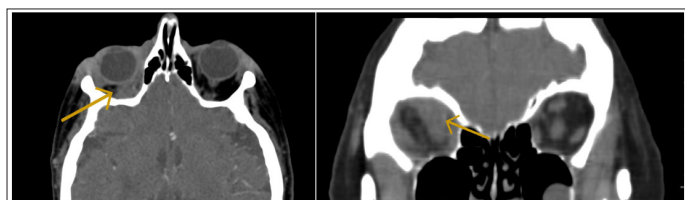


Figure 2: An Axial (Left) and Coronal (Right) Cut of a CT Scan Demonstrating a Diffuse Tumor in the Right Orbit

In a clinical visit 8 months later, the patient denied any instances of diplopia with motility, only showing an elevation deficit. The orbital tumor resulted in atrophy of the right optic nerve that did not worsen according to a slit lamp examination in the most recent clinical visit. She was placed on Cyclosporine suspension eye drops twice a day and Refresh eye drops as needed for ocular inflammation from radiation.

Discussion

According to the American Cancer Society, the occurrence of orbital tumors is less than 1 for every 100,000 persons [4]. Diagnosing an orbital tumor is a complex process due to the fact that the orbit contains various tissues of different origins, leading to a wide range of potential tumors and conditions [4]. Orbital tumors can be primary, arising from the tissues within the orbit, or secondary, spreading from adjacent areas or distant metastases [5]. A study of 1264 patients with orbital tumors and tumor-like lesions found that 64% of tumors were benign, and the remaining 36% were malignant. The most common diagnoses were lymphoid tumors, specifically non-Hodgkin's lymphoma, comprising 11%, and idiopathic orbital inflammation, or orbital pseudotumor, comprising 11% as well. Of the 1264 patients, 7% had cancer that metastasized to the orbit, with 4% originating from breast carcinomas [6]. Breast cancer is the most common type of malignant tumor that occurs in women. In Western cultures, almost 35% of women with invasive breast cancer will be older than 70 years old when diagnosed, while 50% of women with invasive breast cancer will be older than 50 when diagnosed [1]. As of 2003, the median age of women with breast cancer is 62. Despite this, physicians report that regardless of the history of breast cancer, they screened elderly women for breast cancer less often compared to younger women [7]. It has been found that breast cancer incidence increases with age, and annual mammography, alongside clinical examinations, can detect early stages of breast cancer [7]. Additionally, it has been shown that elderly women are able to tolerate and undergo treatments for breast cancer. In fact, a study with women older than 69 years old found that 79% of patients survived the past 7 years after standard surgical therapy [8]. The utilization of mammography in elderly patients

would, therefore, lead to a greater life expectancy and a better quality of life. In cases of metastasis, breast cancer has been known to migrate to almost any organ or tissue, giving rise to numerous different symptom manifestations. In patients with untreated breast cancer, it has been reported that the involvement of the visual tracts can be as high as 30% [8]. In studies, it has been found that metastases are distributed predominantly to the choroid, followed by the iris and the retina. Metastases to these regions present both asymptotically or with common ocular issues of pain and blurred vision [9]. In the case described above, the patient presented with several but rare symptoms of cancer. The patient presented with blurred vision that showed no improvement, vitreous floaters in the right eye, and hemorrhaging in the right conjunctiva, which are possible symptoms of ocular cancer. Additionally, certain treatments, like Tamoxifen, which is typically administered to patients, may also lead to ocular issues. Tamoxifen in high doses would lead to ocular toxicity in patients, leading to retinopathy and keratopathy. Although a lower dose was prescribed today, the toxic properties of tamoxifen still pose a risk to patients [9]. However, early detection of breast cancer in women through the increased application of mammograms would lead to a better quality of life since the disease can be found before metastasis, which may lead to ocular issues such as vision loss.

Conclusion

Breast cancer metastasis to ocular regions is a relatively uncommon and unknown occurrence, yet due to the aging population, it is seen to be on the rise. As physicians continue to maintain the belief that screening for breast cancer at an older age does not retain any beneficial outcome, more women remain undiagnosed. This leads to a lack of treatment that provides time for the cancer to spread to ocular regions. In our elderly patient, although she had uterus cancer in the past, she stopped being advised to undergo mammograms years ago. It was only after she had come into our office with ocular issues such as vision loss and diplopia that a malignant neoplasm of the right orbit was found, which led the radiologist to find a tumor in the left breast in a CT scan. When radiation and regular chemotherapy were performed, diplopia was eliminated, and atrophy remained stable. This demonstrates that physicians should continue to screen women well into their age for breast cancer and provide treatment options.

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