Case Report

Orbital Apex Syndrome as the Initial Presentation of Metastatic Breast Cancer

Patricia Loftus and Melin Tan

Department of Otolaryngology, Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, NY 10467, USA
Address correspondence to Patricia Loftus, ploftus@montefiore.org

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Abstract Breast cancer metastases to the paranasal sinuses are an infrequent occurrence, and diagnosis is often delayed due to misdiagnosis of headache or sinusitis. We present a case of a 49-year-old female with a history of breast cancer status post bilateral mastectomy whose metastatic breast cancer to the paranasal sinuses first manifested as orbital apex syndrome. In the clinical picture of sinusitis with orbital complications, awareness for metastatic disease in patients with a history of cancer should be maintained in the appropriate clinical setting. Physicians should be mindful of the possibility of this diagnosis as these patients are often initially evaluated for non-specific symptoms such as headache and congestion. This is an unprecedented case of metastatic breast cancer first presenting as orbital apex syndrome.

Keywords orbital apex syndrome; paranasal sinuses; metastatic breast cancer; sinonasal tumors; orbital tumors

1. Introduction

Orbital apex syndrome (OAS) is a constellation of symptoms including ophthalmoplegia, ptosis, decreased corneal sensation, orbital pain, and early visual loss [7]. The most common etiology is a middle cranial fossa tumor near the apex of the orbit. Other causes include inflammation (sarcoidosis, lupus, Wegener’s), trauma (iatrogenic, fracture), and neoplasms [7]. It can also be the result of paranasal sinus disease.

We present a case of a 49-year-old female with a history of breast cancer status post bilateral mastectomy whose metastatic breast cancer to the paranasal sinuses first manifested as orbital apex syndrome. Metastases from primary tumors to the paranasal sinuses are rare. While breast cancer has been known to metastasize to the paranasal sinuses, there are no reports in the current literature of metastatic breast cancer first manifesting as OAS.

2. Case report

A 49-year-old female with a past medical history of cocaine abuse and ductal carcinoma of the breast, free of disease for 3 years, presented to the emergency department (ED) in early 2012 with rapidly decreasing visual acuity over the prior week, severe headache, left eye ptosis, and nasal congestion.

She had been evaluated by ORL-HNS 3 weeks prior to this presentation for acute pansinusitis, which was confirmed radiographically (Figure 1). Physical exam findings at that time were significant for severe nasal crusting that appeared to be obstructing the drainage pathways of the paranasal sinuses, and a dislodged septal button, which had been placed many years earlier for a septal perforation secondary to cocaine use. She was treated with debridement and oral antibiotics with immediate symptomatic relief.

Upon return to the ED 3 weeks later with decreasing visual acuity, her significant exam findings included left eye vision loss, ptosis, upper lid swelling, afferent papillary defect, and bilateral intranasal obstructive crusting. MRI demonstrated inflammatory changes of the nasal cavity.

Figure 1: Imaging performed during initial presentation showed extensive pansinusitis, absence of septum, dehiscence of left lamina papyracia, and mild left eye proptosis.
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Figure 2: Inflammatory changes of the nasal cavity with abnormal enhancement of the dura. Enlarged muscle bellies of the extraocular muscles crowd the orbital apices.

with abnormal enhancement of the dura (Figure 2). Ophthalmologic assessment confirmed OAS. Her working diagnosis was OAS as a rare complication of paranasal sinus disease with associated cocaine abuse.

The patient was taken urgently to the operating room for endoscopic sinus debridement and biopsy of the ethmoid and maxillary sinuses revealing metastatic breast carcinoma with extensive lymphatic involvement, strongly positive for estrogen receptor and Her-2 neu and weakly positive for progesterone receptor. She was treated with outpatient chemotherapy and radiation. Her left-sided vision never returned.

3. Discussion

The hallmarks of OAS are visual loss from optic neuropathy and ophthalmoplegia involving multiple cranial nerves. MRI is the preferred imaging modality to evaluate for lesions involving the orbital apex, but CT is useful in instances of trauma or if MRI is contraindicated [9].

OAS may be caused by acute sinusitis via direct spread of infection or from inflammation of adjacent structures [7]. Paranasal sinus metastases, however, are not recognized as a common etiology of OAS.

In 2011, the incidence of breast cancer diagnosed in women in the United States was estimated to be 288,000 [8]. Patterns of breast cancer spread are known to be somewhat predictable, with regional lymphatic spread preceding the more aggressive hematological spread to lung, liver, brain, and bone [3]. However, signs and symptoms of metastatic spread to the paranasal sinuses and orbital area are not predictable, and diagnosis can be delayed due to misdiagnosis of headache or sinusitis. Confounding factors in our patient included cocaine abuse and an initial clinical picture of acute sinusitis supported by CT imaging.

4. Conclusion

In the clinical picture of sinusitis with orbital complications, awareness for metastatic disease in patients with a history of cancer should be maintained in the appropriate clinical setting. Physicians should be aware of confounding factors such as symmetrical disease on imaging or a history of drug abuse.

Breast cancer metastases to the sino-nasal-orbital area is an infrequent occurrence; with only five reported cases in the English literature [5, 1, 4, 6, 2]. This is an unprecedented case of orbital apex syndrome from metastatic breast cancer.

References