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(CASE REPORT)

Orbital Cellulitis or Orbital metastasis? A case report

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Abstract

Orbital cellulitis is an infectious condition however, noninfectious diseases such as malignancies may present with similar clinical findings. We present the case of a 67-year-old male with a prior history of mammary carcinoma who presented with right-sided palpebral edema, painful ocular movements, visual impairment, and proptosis, initially suggestive of orbital cellulitis. Despite intravenous antibiotic therapy, no clinical improvement was observed. MRI revealed an infiltrative orbital mass and later biopsy confirmed orbital metastasis from mammary carcinoma. This case highlights the importance of considering orbital metastasis in the differential diagnosis of orbital cellulitis, particularly in patients with a prior history of malignancy and atypical clinical evolution.

Keywords: Orbital cellulitis; Metastasis; Mammary carcinoma

1. Introduction

Orbital cellulitis is a life-threatening condition usually with infectious origin, often secondary to sinusitis. Its presentation can be mimiced by non-infectious causes like malignancies or autoimmune conditions. [1,2]

An orbital metastasis secondary to mammary carcinoma is a cancerous tumor in the eye spread from primary breast cancer. Breast cancer is the most common cancer to spread to the eye area in adults.[3] The avarage interval from diagnosis of primary breast carcinoma to detection of orbital metastasis ranges from 4.5 to 6.5 years.[4] Some of the most common symptoms are vision loss, diplopia, red eye, pain, photophobia, external ophthalmoplegia, proptosis, ptosis are common presentations of orbital metastasis.[5] Their diagnosis and management can be complex due to the varied presentation and delayed onset following the primary tumor. Orbital biopsy is essential for definitive diagnoses and treatment planning, as it can confirm the histopathological subtype.[6]

2. Case Report

A 67-year-old male presented to the Department of Otorhinolaryngology with right-sided palpebral edema, painful ocular movements, progressive visual impairment, and proptosis of the right eye. The patient denied fever, nasal obstruction, or nasal secretions. His past medical history was significant for mammary carcinoma diagnosed four years earlier, for which he had undergone surgical treatment followed by radiotherapy and chemotherapy.

Given the clinical suspicion of orbital cellulitis, the patient was hospitalized and empirically started on intravenous antibiotic therapy. Laboratory investigations revealed neutropenia. Ophthalmologic evaluation demonstrated paralysis of the right medial rectus muscle.

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Figure 1 Patient presenting right palpebral edema and proptosis

Despite appropriate antibiotic treatment, no clinical improvement was observed, raising suspicion for a noninfectious etiology. Consequently, further radiologic assessment was performed. Magnetic resonance imaging (MRI) demonstrated the presence of an infiltrative orbital mass with involvement of the extraocular musculature.

In view of these findings, a surgical biopsy of the lesion was performed. Histopathological and immunohistochemical (IHC) examination revealed infiltration by a poorly differentiated carcinoma, consistent with orbital metastasis originating from mammary carcinoma. Following confirmation of the diagnosis, the patient was referred to the Oncology Department for further evaluation and oncologic management.

3. Discussion

Orbital metastasis is an uncommon condition that may closely mimic orbital cellulitis, leading to diagnostic delay and inappropriate initial management. In the reported case, the patient presented with classic signs suggestive of orbital cellulitis, like: palpebral edema, proptosis, painful ocular movements and visual impairment. However, the absence of fever, nasal symptoms, and the lack of response to broad-spectrum intravenous antibiotics raised suspicion for a noninfectious etiology. These atypical clinical features, together with the patient's history of mammary carcinoma, were essential clues for further investigation. Breast carcinoma is recognized as the most frequent primary malignancy metastasizing to the orbit. This usually happens several years after the initial diagnosis. Orbital metastases commonly involve the extraocular muscles and orbital fat, producing symptoms such as those mentioned above, all of which were observed in our patient. Imaging studies (MRI), play a crucial role in differentiating inflammatory from neoplastic orbital processes. Nevertheless, definitive diagnosis relies on histopathological and immunohistochemical evaluation obtained through orbital biopsy. Early recognition of orbital metastasis is essential to ensure timely oncologic management and to avoid unnecessary prolonged antibiotic treatment.

4. Conclusion

This case emphasizes the importance of maintaining a broad differential diagnosis in patients presenting with presumed orbital cellulitis, especially in those with a previous history of malignancy or atypical clinical progression. Early radiologic evaluation and biopsy are essential for accurate diagnosis and appropriate management.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

"Informed consent was obtained from all individual participants included in the study."

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