Unusual presentation of more common disease/injury

Unilateral orbital pain and eyelid swelling in a 46-year-old woman: orbital metastasis of occult invasive lobular carcinoma of breast masquerading orbital pseudotumour

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Summary

Orbital metastasis is very infrequent in breast cancer; more so as an initial and sole presenting feature. The authors report a case of orbital metastasis of occult breast carcinoma in a 46-year-old woman, who presented with unilateral orbital pain and eyelid swelling. This was initially diagnosed as orbital pseudotumour and treated with steroids. The development of breast symptoms and finding of breast nodule, 3 months later, led to the diagnosis of invasive lobular carcinoma of the breast with orbital metastases, confirmed on biopsy.

BACKGROUND

Orbital metastasis is very infrequent in breast cancer with one study showing an overall rate of 0.2%.¹ Furthermore, it is rarely an initial and sole presenting feature.^{2–6} Additionally, it is extremely rare as a presenting feature in a patient with normal breast examination.^{5–7} However, when orbital metastasis occurs in a patient without a known history of breast cancer, it can present diagnostic challenges. Here, we report a case of a previously healthy woman who presented with left orbital pain. This was attributed to orbital pseudotumour; however, 3 months later, she was diagnosed to have bilateral breast carcinoma with metastatic orbital lesion.

CASE PRESENTATION

A 46-year-old premenopausal patient presented to a medical clinic with complaints of gradual onset left orbital pain since 4 weeks. The pain was mild in severity, constant, worse with ocular movements and without any radiation or relieving factor. She denied any other symptom. She denied any medical, surgical or significant family history. She was not on any medication. She denied smoking, drinking alcoholic beverages or use of illicit drugs.

On physical examination, she had a pulse of 72/min, blood pressure of 126/74 mm Hg, respiratory rate of 18/min and temperature of 36.7°C. Neurological examination failed to reveal any focal neurological deficit; cranial nerves II, III, IV and VI were normal. Her physical examination including ocular and breast examinations failed to reveal any abnormality.

INVESTIGATIONS

Laboratory studies included: WBC 5000/ μ L with 61.0% granulocytes, haemoglobin 11.6 g/dL and platelet count 243 000/ μ L, ESR of 9 mm/h, CRP of 0.5 mg/dL, TSH of 1.21 mIU/L, T4 of 7.8 μ g/dL, total T3 of 119.08 ng/dL and negative ANA. Glucose, electrolytes, liver and renal function

tests and coagulation profile were all within normal limits. Her last mammogram done 3 months ago for screening was unremarkable. CT scan and MRI of head and bilateral orbits was unremarkable except mild swelling of the left medial and inferior extraocular muscles.

DIFFERENTIAL DIAGNOSIS

- Inflammatory: for example, orbital pseudotumour (idiopathic benign inflammatory condition), SLE
- Vascular: for example, arteriovenous malformation
- Neoplastic: primary or metastatic
- Infective: viral or bacterial.⁸

TREATMENT

She was started on a trial of prednisone for orbital pseudotumour and was asked to follow-up in 2 weeks time.

OUTCOME AND FOLLOW-UP

The patient did not return until after 3 months with complaints of left breast pain since 2 weeks and worsening left orbital pain and left eyelid swelling. She was found to have left eyelid swelling; however, ocular motility, visual acuity and pupillary light reflex were normal. Breast examination revealed a 2 cm firm nodule on the left breast. So, she was referred to our oncology clinic for further work-up.

An ultrasound of bilateral breast showed multiple irregular masses in the left breast with the largest one being 2.1 cm×2.8 cm×1.7 cm in size. On the right side, there were three irregular masses with the largest one being 7 mm × 8 mm × 6 mm in size. Bilateral breast MRI confirmed the presence of these masses. Core biopsies of the masses confirmed the presence of oestrogen and progesterone receptor positive and human epidermal growth factor receptor 2 (HER-2) negative, well differentiated, invasive lobular carcinoma of the breasts. Patient was negative for BRCA mutation.

MRI of bilateral orbits revealed postseptal infiltrative changes and enhancement surrounding the left optic nerve and associated thickening of the medial and inferior extraocular muscles (figures 1 and 2). A left orbital biopsy revealed metastatic invasive lobular carcinoma with invasion of the surrounding medial rectus muscle. The cancer stained positive for pancytokeratin and oestrogen receptor.

Patient underwent bilateral mastectomy and resection of left orbital mass and was started on tamoxifen and leuprolide. On a follow-up visit 6 months after her surgery, she continues to be disease free.

DISCUSSION

Although breast cancer is among the most common causes of orbital metastasis,^{9–13} orbital metastasis occurs very infrequently in breast cancer with one study showing an overall rate of 0.2%.¹ Prostate, skin (melanoma), gastrointestinal tract and lung cancers are other common causes of orbital metastasis.^{9–10 12–14} The majority of orbital metastasis from breast cancer (more than 80%) occurs in the patients with a history of breast cancer. Furthermore, it occurs several months (40–70 months) after the diagnosis of the primary cancer.^{9–11 15} In this patient, orbital symptoms preceded the diagnosis of breast cancer by 3 months

Figure 1 Coronal section of T1 weighted fat saturation postcontrast MRI of bilateral orbits showing infiltrative changes and enhancement surrounding left optic nerve.

Figure 2 Coronal section of T2 weighted non-contrast MRI of bilateral orbits showing thickening of the left medial and inferior extraocular muscles.

and were the sole presenting feature. Furthermore, the initial breast examination and a recent mammography were unremarkable.

Orbital metastasis is mostly unilateral and affects both left and right sides equally. They can present with different ocular symptoms and signs including pain, mass effect or visual or motility problems.^{9–11} CT scan or MRI of orbits can show the presence of a mass, which often involves the orbital fat or extraocular muscles.^{9–10} However, as in this case, the initial clinical and radiological findings can be subtle and may not differentiate between benign versus malignant lesions. In fact, many cases of orbital metastasis can present with inflammatory signs^{5–13–16} and can be misdiagnosed as orbital pseudotumour,^{5–16} particularly in the absence of known primary cancer. Therefore, in a female patient with suspected orbital pseudotumour, a thorough breast evaluation should be performed. Likewise, a search for other possible cancers, autoimmune diseases, thyroid orbitopathy, infection or vascular lesions should be considered.

In one study, overall 36% of space-occupying orbital lesions were found to be malignant; the chances of the lesions to be malignant increased with increasing age.¹² Therefore, biopsy of any suspicious orbital mass should be seriously considered especially in cases refractory to steroids, older people and probably patients who may be lost to follow-up. Fine needle aspiration biopsy or open biopsy can confirm the diagnosis. Fine needle biopsy under radiological guidance is especially useful in patients with the history of primary cancer, or in patients considered high-risk for open biopsy. In the absence of primary cancer^{9–10} or when the lesion mimics inflammatory or lymphoproliferative lesions,¹⁰ or is well circumscribed and amenable to complete removal,¹⁷ excisional biopsy is preferred.

Learning points

- Orbital metastasis can be the initial and sole presenting feature of breast cancer.
- It can occur in the presence of normal breast examination or negative mammogram.
- It can be misdiagnosed as orbital pseudotumour.
- In a patient with orbital swelling, biopsy and histopathological examination of the orbital lesion should be considered, particularly in cases refractory to steroids, older patients and probably patients who may be lost to follow-up.

Orbital metastasis has been treated with systemic chemotherapy or hormonal therapy for the underlying cancer with or without local radiation and/or surgical resection. Patients with advanced metastatic disease may just be observed without any additional local therapy. The mean survival time for patients with orbital metastasis is reported to be 18–22 months.^{9–10} A study reported a median survival time of 26 months, which was depended on the age and the stage of breast cancer at the time of diagnosis of orbital metastasis. Older patients were found to have longer median survival than younger patients.¹¹

Competing interests None.

Patient consent Obtained.

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