

## Eyelid metastasis from breast carcinoma misdiagnosed as chalazion

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### Abstract

Metastasis confined to the eyelids represents less than 1% of all eyelid malignant lesions. Approximately 29% -70% of these have the breast as the primary site.

The patient presented with right lower lid swelling of two months duration, initially diagnosed as chalazion, increasing in size despite the conservative measures. Her systemic history revealed an intra-ductal breast carcinoma, staging cT2N2M0, triple negative. She had received two cycles of chemotherapy with partial resolution of breast lesions. She had secondaries in lymph nodes, brain and ovaries. Histopathology confirmed eyelid lesion as malignant.

Eyelid metastasis secondary to breast carcinoma may clinically present as a mass mimicking a benign lesion like chalazion. Appropriate and thorough clinical evaluation supported by imaging and histopathology are key to arrive at the right diagnosis. Metastasis must be considered in the differential diagnosis of an eyelid lesion such as in our case.

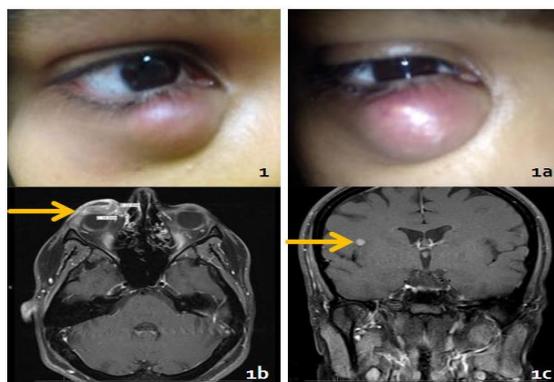
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### Introduction

Metastases confined to eyelids are extremely rare in the literatures representing less than 1% of malignant eyelid lesions. Approximately 29-70% of all these are reported to have the breast as the most common primary origin.<sup>(1)</sup> We are reporting a case of eyelid metastasis of a breast carcinoma in a 30 year-old woman presented with unilateral lower lid painless swelling and erythema. She had been diagnosed 1 year before as invasive ductal carcinoma of left breast with suspicious ovarian lesion. Though orbital, choroidal and ciliary body metastasis have been reported from primary tumors elsewhere in the body, eyelid metastasis has not been reported in autopsies from cancer-related deaths, however in large series the incidence of eyelid metastasis is less than 1%, as described initially, and majority of such eyelid secondary's are from breast cancer which is notorious for its presentation diversity. Bone and brain metastasis are common in breast cancers but eyelid metastasis is rare and misdiagnoses are common.

### Case Report

A 30-year-old female patient presented to our oculoplastic unit with referral diagnosis of non-responding chalazion of right lower lid. The description of the eyelid swelling featured a 2cmx1 cm hard, non-tender, slightly mobile mass with overlying erythema and telangiectatic vessels at medial two-third of the lower eyelid (Fig. 1).



**Fig. 1: Lid swelling on first presentation. 1a: Lid swelling after one week had increased in size. 1b: A heterogeneous mass confined to right lower lid confined to preseptal region showing no intraorbital extension. 1c: A solitary metastatic lesion in right frontal cerebral tissue**

Her systemic history revealed an infiltrative intra-ductal carcinoma of breast, staging cT2N2M0, triple negative. She had received two cycles of chemotherapy and radiotherapy in addition to radical mastectomy. Systemic evaluation at the time of presentation showed secondaries in lymph nodes, brain and ovaries. In this regard, the eyelid diagnosis was assessed clinically and presumed to be possibly metastatic in nature.

At this stage she was treated conservatively and booked for radiological evaluation and surgical resection of the mass. Magnetic resonance imaging (MRI) revealed a heterogeneous lesion in the right lower lid measuring 25mm x 14mm suggestive of metastatic disease. The lesion was limited to the preseptal compartment with no intraorbital extension (Fig. 1b). A solitary cerebral metastatic lesion showed up in the right frontal region (Fig. 1c).

A week later, the patient reported with increase in swelling and more signs of inflammation (Fig. 1a). Surgical resection was carried out by an external approach and specimen submitted for histopathological examination. Intra-operatively, the mass was found to be vascularized and the underlying bed of orbicularis and orbital fat was hard and thickened. (Fig. 2, 2a)

Histopathology using hematoxylin stain showed diffuse invasion of tumor cells with malignant cells invading skeletal muscle in mitosis phase (Fig. 2b). Cytokeratin stain was strongly positive in tumor cells, confirming malignant epithelial neoplasm (Fig. 2c). The morphology and immunophenotyping was compatible with poorly differentiated metastatic breast eyelid cancer.



**Fig. 2: Intraoperative exposure of the mass. 2a: thickened underlying bed of orbital fat and muscle (arrow). 2b: High magnification (40x) tissue hematoxylin stain showing cytology of the malignant cells invading muscle fibers with mitosis (arrow). 2c: Strong and diffusely positive cytokeratin stain in tumor cells confirming malignant epithelial neoplasm (20X)**

## Discussion

Our case presented with a solitary large nodule, relatively painless in the lower lid. Riley has confirmed that misdiagnosis of eyelid swellings is not uncommon.<sup>(2)</sup> It is also known that 47% of eyelid metastasis present as solitary nodules, others being diffuse, ulcerated or multiple.<sup>(2)</sup> This patient on first presentation had no clinical signs or symptoms of the eyelid harboring a metastatic lesion of a highly undifferentiated malignancy elsewhere (in this case breast). There was none of the scirrous or desmoplastic features demonstrated clinically on her eye examination as is commonly found in secondaries to eyelids in carcinoma of breast. Eyelid metastasis is rare in literature. Postmortem survey of 230 eyes from patients of cancer related deaths has reported ocular metastasis in 28 patients but none in eyelid.<sup>(3)</sup> Ferry and Font also did not report any eye lid tumors in 227 of their patients with ocular metastasis.<sup>(4)</sup> However, Hutchinson and Smith in a study of 100 patients with ocular metastasis found eyelid involvement in only three patients.<sup>(5)</sup> In a

large review of 1773 patients, eyelid metastasis was found in just 1.1% patients.<sup>(6)</sup> Metastasis confined to eyelids are rare, representing less than 1% of malignant eyelid lesions and 29%-70% of all eyelid metastasis are reported to have the breast as the most common primary origin.<sup>(1)</sup> Experience gained from our patient and as reported by Ahmad et al, metastatic disease should always be considered in differential diagnosis of eyelid lesions.<sup>(7)</sup> The diagnosis in our patient was straightforward from the evidence obtained from imaging and histopathology, though, first clinical impression of the chalazion was not totally rude. A multidisciplinary approach from oncology, radiology and ophthalmology led to an appropriate management of this patient. Excisional biopsy, Radiotherapy, chemotherapy, immunotherapy and palliative treatment completed the approach till last moment. Same has been outlined by Carlos and Hakan in a guideline to treatment of metastatic eye lid tumors.<sup>(6)</sup>

## Conclusion

Eyelid metastasis secondary to breast carcinoma may clinically present as a mass, mimicking chalazion. Appropriate and a thorough clinical evaluation and histopathological interpretation are necessary to arrive at the diagnosis. This condition must be considered in the differential diagnosis in patients with an eyelid mass. Oncologists and ophthalmologists should be vigilant for the observation and interpretation of symptoms and signs compatible with ocular disease in patients with an established diagnosis of breast cancer. A combination of local and systemic treatments may help preserve vision and patients' quality of life.

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