

Multifocal primary mucinous carcinoma of the eyelids: Implications for management



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INTRODUCTION

Primary mucinous carcinoma (PMC) is a rare adnexal neoplasm derived from sweat glands.¹ To our knowledge, there has been a single case of ipsilateral and 2 cases of bilateral multifocal PMC of the eyelids reported in the literature.²⁻⁴ In both bilateral cases, the second malignant lesion was discovered following excision of the original carcinoma. We present a very rare case of multifocal PMC presenting with 3 tumors on the ipsilateral upper and lower eyelids and discuss considerations in management.

CASE REPORT

A 68-year-old woman presented with a several-year history of slow-growing painless pink papules on the left upper and lower eyelids. Physical exam revealed an 8-mm pink-red papule on the central aspect of the upper eyelid and 2 smaller papules on the lower eyelid (Fig 1). Histopathology of the 2 biopsied lesions revealed nests of tumor cells floating in pools of mucin and dilated solid-cystic spaces with mucin and atypical cell proliferation, consistent with mucinous carcinoma. Immunohistochemistry was positive for CK7 and GATA 3. She was referred to our institution for definitive treatment. Given the multifocal nature of her presentation, concern was raised for metastatic disease from an internal primary tumor. She underwent metastatic workup with mammography, computed tomography of the head with and without contrast, and positron emission tomography of the skull through mid-thigh which

Abbreviations used:

CA: cancer antigen
MMS: mohs micrographic surgery
PMC: primary mucinous carcinoma

revealed no occult primary tumor. Basic blood test values and serum cancer antigens (CA) 125, CA 19-9, and carcinoembryonic antigen levels were all within normal limits.

Following a negative workup for occult malignancy, the patient underwent Mohs micrographic surgery (MMS) of the 3 lesions with delayed reconstruction by oculoplastics. Histopathology of the first stage of the upper lid tumor revealed a poorly circumscribed tumor in the dermis with thin fibrous septa containing pools of basophilic mucin (Fig 2). Nestled within these pools were poorly differentiated epithelial islands, some forming cribriform structures. These findings were consistent with the diagnosis of mucinous carcinoma. Clear margins were achieved within 2 Mohs stages for all tumors.

Upon completion of the Mohs resections, the largest (upper lid) lesion had a final defect size of 1.4 × 1.5 cm. The central lower lid tumor was removed in a single Mohs stage. The small pink papule on the medial aspect of the lower eyelid was biopsied during Mohs surgery and found to be a third PMC. This tumor was removed in a single Mohs stage that joined the defects of the lower lid tumors, resulting in a final lower lid defect size of 0.8 × 0.8 cm (Fig 3, A). The defects were

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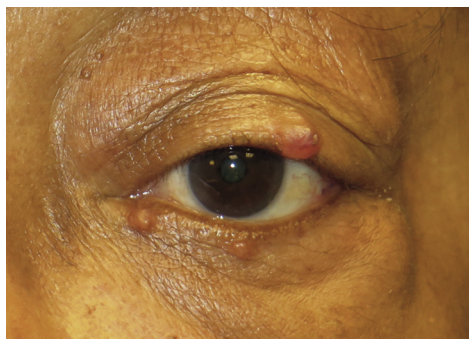


Fig 1. PMC lesions of the left upper lid, central lower lid, and medial lower lid. *PMC*, Primary mucinous carcinoma.

subsequently repaired by an oculoplastic surgeon, requiring a lateral canthotomy, inferior and superior cantholysis, rotational flaps of both the upper and lower eyelids, and a myocutaneous Tenzel advancement flap followed by full thickness skin graft to the left lower lid (Fig 3, B).

DISCUSSION

PMC is a rare malignant tumor of sweat gland origin with 40% of the cases originating periorbitally.⁵ The histopathology of PMC is nearly indistinguishable from metastatic mucinous carcinoma, which most commonly arises from the breast or gastrointestinal tract. Although immunohistochemical staining can assist with this distinction, it is often inconclusive, and all patients with suspected PMC should be considered for occult malignancy workup. The presented patient's workup included mammography, computed tomography scan, positron emission tomography/computed tomography, and the serum markers CA 125, CA 19-9, and carcinoembryonic antigen. CA 27-29 and 15-3 may also be considered.³

On histopathology, PMC is classically described as nests of well-differentiated epithelial cells floating in lakes of basophilic extracellular mucin.¹ Metastatic mucin-producing adenocarcinoma can present with an identical histological appearance. Occasionally, immunohistochemical staining may aid in distinction. However, this tumor was positive for CK7 and GATA 3, a staining pattern which does not conclusively distinguish between metastatic breast carcinoma and primary cutaneous carcinoma, emphasizing the importance of a complete malignancy workup.

The distribution of facial mucinous carcinomas that are primary *versus* metastatic is unknown, and in each case, a search for occult malignancy should be considered. Cutaneous metastasis to the face from internal malignancy is uncommon (6%),⁶ and a

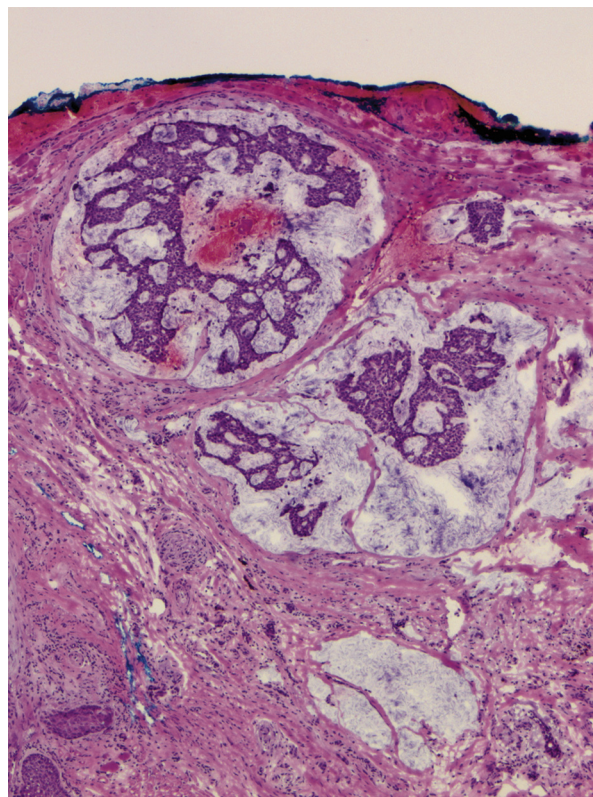


Fig 2. Histopathology of the first stage of the upper lid tumor revealing nests of well-differentiated epithelial cells floating in pools of mucin separated by thin fibrous septae, consistent with mucinous carcinoma (Hematoxylin-eosin stain; original magnification: $\times 10$.)

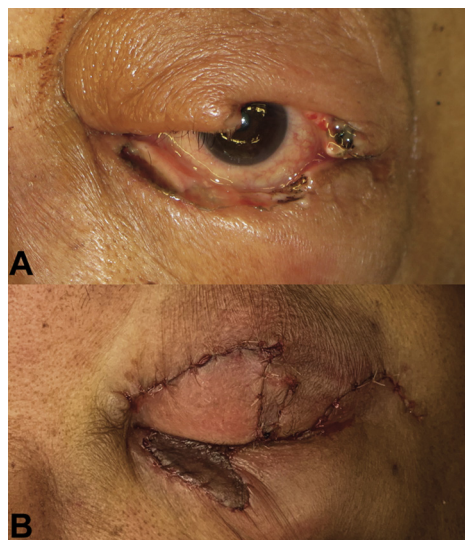


Fig 3. **A**, Final deficits following multiple stages of Mohs microscopically controlled excision. **B**, Clinical results following extensive repair by oculoplastic surgery.

review by Kazakov et al found that cutaneous metastases of breast and gastrointestinal adenocarcinoma tended to occur in skin near the original

tumor. In common types of cancer, even rare metastases can occur in relevant numbers as illustrated by over 30 published case reports of breast adenocarcinoma metastatic to the eyelid.⁷

PMC is a slow-growing and locally destructive tumor with frequent recurrence but rare metastasis.⁵ It may be locally highly destructive with infiltration into the muscle, orbital fat, and bone. Treatment is primarily surgical. The traditional treatment of wide local excision with 1 to 2 cm margins is limited by high recurrence rates (>30%). The majority of morbidity in patients with PMC is due to incomplete lesion resection. Although the possibility of a discontinuous focus of the tumor cannot be excluded, the majority of recurrences are suspected to be due to extensive subclinical spread. For this reason, MMS has been utilized by several authors to improve margin control. A 2017 review of PMC treated with MMS found a 9.6% (6/31) recurrence rate, a sizeable improvement over excision alone.⁸ For facial PMCs, MMS has advantages over standard excisions because of improved tissue conservation and better margin control. A variation of Mohs surgery described to treat PMC is slow Mohs (staged excision with complete peripheral and deep margin assessment using permanent sections) aided by mucin staining (eg, Alcian blue) or cytokeratin immunohistochemistry.³ The superiority of one Mohs technique for treating PMC remains unproven. Following wide local excision, recommended follow up is 6 months. Due to the indolent nature of this tumor we recommend long-term

follow up for all patients with a history of mucinous carcinoma, regardless of treatment method.

A thorough malignancy workup should be considered with the presentation of PMC, as multifocal primary disease does not necessarily signify metastasis. These tumors require meticulous extirpation to prevent recurrence with MMS as our preferred method for treatment.

Conflicts of interest

None disclosed.

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