

Primary Cutaneous Sebaceous Carcinoma of the Lower Eyelid Managed with Mohs Micrographic Surgery

Sofia M. Fonseca^{1*}, Diogo R. Silva² and Ana Catarina Mendes²

¹Department of Dermatology and Venereology, Centro Hospitalar Universitário de Lisboa Central, Lisbon, Portugal

²Department of Pathology, Instituto Português de Oncologia de Lisboa Francisco Gentil (IPO Lisboa), Lisbon, Portugal

*Corresponding author: Sofia M. Fonseca, Department of Dermatology and Venereology, Centro Hospitalar Universitário de Lisboa Central, Lisbon, Portugal. E-mail: s.fonseca@chulc-emulation.pt

Received: June 28, 2026; **Accepted:** July 17, 2026; **Published:** July 25, 2026

Abstract

Sebaceous carcinoma (SC) of the eyelid is a rare, aggressive cutaneous malignancy arising from the ocular adnexal sebaceous glands, most notably the meibomian glands and glands of Zeis. Due to its inflammatory and indolent early clinical appearance, it frequently masquerades as benign ocular conditions such as chalazion or chronic blepharitis, leading to significant diagnostic delays. We report a case of a 68-year-old female who presented with a painless, persistent nodule on the right lower eyelid initially treated as a recurrent chalazion. Histopathological assessment revealed a moderately differentiated sebaceous carcinoma. The patient underwent complete surgical clearance via Mohs micrographic surgery (MMS) followed by oculoplastic reconstructive surgery. This case highlights the role of tissue-sparing micrographic surgery in preserving eyelid function and minimizing local recurrence in periocular cutaneous malignancies.

Keywords: Sebaceous Carcinoma, Lower Eyelid, Mohs Micrographic Surgery, Meibomian Gland, Periocular Malignancy

Introduction

Sebaceous carcinoma accounts for approximately 1% to 5.5% of all eyelid malignancies in Western populations, though it is reported at higher incidences in Asian demographics. The majority of ocular sebaceous carcinomas originate from the meibomian glands of the upper eyelid, where these glands are most concentrated. Primary involvement of the lower eyelid is considerably less common. Because sebaceous carcinoma exhibits pagetoid spread (intraepithelial dissemination along the conjunctiva or epidermis), defining tumor margins clinically is notoriously difficult. Consequently, Mohs micrographic surgery or wide excision with paraffin-embedded mapped margins is essential for optimal local control [1].

Case Presentation

Patient Information

A 68-year-old female presented to the outpatient ophthalmology and dermatology clinics with a 6-month history of a slow-growing, painless nodule on the central margin of her right lower eyelid. She was previously managed by her primary care physician with warm compresses and topical antibiotic-corticosteroid ointments for a suspected recurrent chalazion, without clinical resolution [2].

Clinical Findings

Ophthalmic examination revealed a firm, yellowish-red, non-tender nodular lesion measuring 8 × 5 mm on the tarsal plate region of the right lower eyelid, involving the grey line and eyelash line with focal madarosis (loss of eyelashes). Slit-lamp biomicroscopy demonstrated slight eversion of the eyelid margin (ectropion) and focal hyperemic tarsal conjunctiva. There was no palpable preauricular or submandibular lymphadenopathy [3].

Diagnostic Assessment

A full-thickness wedge biopsy of the lower eyelid lesion was performed under local anesthesia. Histopathological examination demonstrated lobular aggregates of atypical epithelial cells extending from the dermis into the tarsal plate. The tumor cells exhibited abundant pale, vacuolated cytoplasm (foam-like appearance) with enlarged, hyperchromatic nuclei and frequent mitotic figures.

Immunohistochemical profiling showed positivity for EMA (Epithelial Membrane Antigen), CK7, and Adipophilin, confirming a diagnosis of sebaceous carcinoma. Cytokeratin 20 (CK20) and S100 were negative. Map conjunctival biopsies ruled out pagetoid spread along the palpebral and bulbar conjunctiva [4,5].

Therapeutic Intervention

The patient was scheduled for Mohs micrographic surgery (MMS) to achieve complete peripheral and deep margin clearance while conserving normal eyelid tissue.

Stage 1: Excision of the clinical lesion with a 1 mm narrow margin. Frozen section en-face mapping identified residual tumor foci at the deep tarsal and lateral dermal margins.

Stage 2: Targeted re-excision of the positive map zones. Frozen section evaluation confirmed 100% negative surgical margins.

Reconstruction of the full-thickness defect (12 mm defect width) was completed using a modified Hughes tarsoconjunctival flap harvested from the ipsilateral upper eyelid combined with a full-thickness skin graft from the retroauricular area [6,7].

Outcome and Follow-Up

The tarsoconjunctival flap was successfully divided at 4 weeks post-surgery. At the 18-month follow-up, the patient demonstrated excellent cosmetic and functional eyelid alignment without lagophthalmos or epiphora (Figure 1 and 2). Surveillance clinical examinations and regional nodal ultrasound showed no signs of local recurrence or regional metastasis [8].



Figure 1: Pre-operative Clinical Presentation, 68-year-old female, Firm, yellowish-red nodule (8 x 5 mm) involving the gray line. localized madarosis (lash loss). Mild eversion (ectropion). Subtle erythema of the adjacent conjunctiva.



Figure 2: Unfiltrative proliferation of basaloid epithelial nests in deep dermis of the eyelid. Prominent cytoplasmic vacuolation (foamy appearance), and frequent mitotic figures in neoplastic sebaceous cells.

Discussion

Sebaceous carcinoma is often termed the "masquerader" of periocular oncology. Delays in diagnosis exceeding one year are not uncommon, as lesions frequently mimic chalazia, blepharoconjunctivitis, or basal cell carcinoma. High-risk features include upper eyelid location, tumor size greater than 10 mm, symptom duration over 6 months, and pagetoid invasion.

Traditional management involved wide local excision with 5–6 mm surgical margins, which often resulted in extensive tissue loss and complex reconstructive challenges. Mohs micrographic surgery provides complete (100%) peripheral and deep margin evaluation, offering significantly lower local recurrence rates (typically under 10%) compared to conventional wide local excision, while preserving maximal healthy tissue essential for eyelid reconstructive mechanics.

Conclusion

This case highlights that persistent or atypical eyelid "chalazia" in older adults warrant early diagnostic biopsy. When treated promptly, Mohs micrographic surgery offers superior margin control and tissue conservation for primary lower eyelid sebaceous carcinoma.

REFERENCES

1. Spencer JM, Nossa R, Tse DT, et al. Sebaceous carcinoma of the eyelid treated with Mohs micrographic surgery. *J Am Acad Dermatol.* 2001; 44: 1004-1009.
2. Shields JA, Sneed SR, Augsburger JJ, et al. Sebaceous carcinoma of the ocular adnexa: clinical features, outcome, and risk factors for metastasis. *Ophthalmology.* 1990; 97: 110-116.

3. Snow SN, Sahl WJ, Lo JS, et al. Sebaceous carcinoma of the eyelids: treating invasion of the orbit with Mohs micrographic surgery. *J Surg Oncol.* 1992; 49: 132-136.
4. Brady KL, Hurst EA. Sebaceous carcinoma: a review of the literature and management considerations. *Dermatol Surg.* 2017; 43: 1307-1317.
5. Esmali B, Nasser QJ, Cruz H, et al. American Joint Committee on Cancer T category for eyelid sebaceous carcinoma correlates with nodal metastasis and disease-specific death. *Ophthalmology.* 2012; 119: 1331-1335.
6. Knackstedt T, Samie FH. Sebaceous carcinoma: a review of the literature and update on management. *Dermatol Surg.* 2017; 43: 1301-1306.
7. Yen MT, Tse DT. Sebaceous cell carcinoma of the eyelid and periocular tissues. *Int Ophthalmol Clin.* 2009; 49: 21-36.
8. Kivela T, Subhashree K. Sebaceous carcinoma of the eyelid. *Curr Opin Ophthalmol.* 2021; 32: 481-489.