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CASE REPORT

Surgical excision of sebaceous gland carcinoma of the eyelid: a comprehensive case study

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ABSTRACT

Background: Sebaceous gland carcinoma is a rare but aggressive malignancy with a propensity for metastasis. Delayed diagnosis contributed to increased mortality rates. This carcinoma is primarily found in the periocular region and originates from various sebaceous glands, posing diagnostic challenges. **Objective:** to provide a detailed clinical description and management approach for sebaceous gland carcinoma treated with surgical intervention. **Case:** A 59-year-old male presented with a lesion on his right lower eyelid, accompanied by itching and intermittent discharge. Clinical examination revealed a cauliflower-like lesion on the right lower eyelid. An excisional biopsy confirmed the diagnosis of sebaceous gland carcinoma. Surgical intervention involved wide excision, preserving adjacent structures. Postoperative care included prophylactic measures for dry eye syndrome and antibiotic therapy to prevent infection. Postoperative follow-up demonstrated satisfactory outcomes, with resolution of symptoms and no signs of recurrence. **Discussion:** Sebaceous gland carcinoma can present with various manifestations. Surgical excision is the standard treatment, with adjuvant therapies considered for advanced cases. Dry eye syndrome, ectropion, and entropion are common post-surgical complications, particularly following procedures involving the eyelids as observed in this case. These conditions may resolve spontaneously with appropriate management of the underlying causative factors. Meanwhile, symptomatic relief can be achieved through ocular lubrication. **Conclusion:** This case report emphasizes the importance of timely diagnosis, precise surgery, and thorough postoperative care for sebaceous gland carcinoma. While acknowledging the limitations of this study, further research is necessary to improve therapeutic strategies for this challenging malignancy.

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Highlights

1. A detailed case report of sebaceous gland carcinoma in a 59-year-old male patient.
2. Emphasis on the importance of early recognition of characteristic features and surgical intervention in the management of sebaceous gland carcinoma.

BACKGROUND

Sebaceous gland carcinoma is a rare malignant tumor originating from sebaceous glands (Jodai et al., 2023; Niinimäki et al., 2021). It is characterized by its aggressive nature and tendency to metastasize to regional lymph nodes and distant organs (Niinimäki et al., 2021). While uncommon among Caucasians, sebaceous gland carcinoma is prevalent in Asian populations, with reported incidence rates among malignant eyelid lesions ranging from 1% to 5.5% in the United States. In comparison, the incidence is significantly higher, between 28% and 60%, in Asian-Indian populations (Helmi et al., 2020). Approximately 70% of cases affect the head and neck region, particularly the eyelids (Kaliki et al., 2015), where it primarily arises in the periorbital area (meibomian and Zeis glands) (Dasgupta et al., 2009). This disease also shows a higher prevalence in men than women, with rates of 0.32 versus 0.16 per 100,000 person-years, respectively (Tripathi et al., 2016).

A previous study estimated the mortality rate of sebaceous gland carcinoma to exceed 20% (Aulia and Irawan, 2022). Some studies reported five-year survival rates of 92% and 10-year survival rates of 86% (Adachi et al., 2022)., while others estimated lower five-year survival rates of 78% for localized disease and 50% for metastatic disease (Sargen et al., 2021). Sebaceous carcinoma presents a significant risk for morbidity and mortality regardless of its anatomical site (Adachi et al., 2022). Moreover, its aggressive nature increases the likelihood of metastasis to regional lymph nodes and distant organs (Niinimäki et al., 2021).

Sebaceous gland carcinoma predominantly arises in the periocular region due to the abundance of sebaceous glands in this area. However, it can also occur in extraocular locations, such as the lips and intraoral regions (Ambrosino and Muzio, 2021; Aung et al., 2014; Di Cosola et al., 2022). Sebaceous gland carcinoma can originate from various sebaceous glands, such as the meibomian glands of the tarsus or the Zeiss glands of the eyelash hair follicles (Adamski et al., 2021).

The diagnosis of sebaceous gland carcinoma is often delayed due to its resemblance to other eye disorders such as chalazion or blepharitis. This leads to delayed initiation of appropriate management, resulting in high recurrence rates and, in some cases, metastasis. Early recognition of tumor lesions is crucial to prevent morbidity and mortality in patients (Syed et al., 2022; Xu et al., 2018). The first-line treatment for localized sebaceous carcinoma, which has a relatively good prognosis, is total surgical excision, with extensive surgical resection as the standard approach (Lee et al., 2021; Syed et al., 2022). This case report presents a case of sebaceous gland carcinoma managed through surgical intervention.

OBJECTIVE

This case report aims to present a detailed clinical description and management approach for a patient with sebaceous gland carcinoma treated with surgical intervention.

CASE

A 59-year-old male presented to the ophthalmology clinic with a chief complaint of a right lower eyelid lesion persisting for two months. The patient reported itching and intermittent discharge from the lesion, but denied any prior episodes of pain, bleeding, or recurrent chalazion. He had no history of medical problems, prior ocular or non-ocular surgeries, or previous periocular irradiation.

During the physical examination, the patient exhibited visual acuity of 5/15 in the right eye and 5/20 in the left eye, with normal intraocular pressure and ocular motility bilaterally. Slit eye examination of the right eye revealed a cauliflower-like lesion measuring 1.2 × 0.3 cm, characterized by pearly telangiectatic vessels, located on the nasal aspect of the lower palpebra (Figure 1). The bulbar conjunctiva adjacent to the lesion appeared normal, as did the remaining conjunctival surfaces, while the cornea and anterior chamber exhibited no abnormalities. The skin overlying the palpebra appeared normal and exhibited unrestricted movement over the tarsus. Palpation of the lesion indicated a firm

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consistency along with its confinement to the palpebra, with no evidence of tarsal thickening or induration. Slit lamp examination of the left eye revealed no abnormalities.

Figure 1. A lesion with a cauliflower-like appearance, characterized by pearly telangiectatic features, originating from the posterior lamella at the lower palpebral margin on the nasal side

The patient underwent an excisional biopsy of the cauliflower lesion, with the base shaved off at the palpebral margin. The histopathological examination showed an abundance of anaplastic epithelial cells exhibiting round to oval nuclei, pleomorphic morphology, coarse chromatin, and extensive vacuolated cytoplasm. Additionally, macrophage cyst distribution and infiltration of lymphocytic inflammatory cells were observed, suggesting adenocarcinoma with features consistent with sebaceous gland carcinoma.

Prior to surgery, local anesthesia was administered to the lower palpebra region of the right eye. Once the patient was adequately anesthetized, an incision was made along the indicated borders of the sebaceous gland tumor, precisely following the natural contours of the palpebra (Figure 2).

Figure 2. An excisional incision made along the margins of the sebaceous gland tumor, meticulously tracing the natural contours of the palpebra

Given the tumor's origin in the sebaceous gland, the surgical approach prioritized the preservation of adjacent structures, including the meibomian glands and palpebral margin. As the dissection proceeded, the tumor was excised en bloc from the adjacent tissues. After excision, the orbicularis muscle, tarsal plate, and skin were repositioned to restore the anatomical form and function of the lower palpebra (Figure 3). Following closure, we ensured the absence of bleeding and confirmed that the eyelid maintained its typical shape and functionality before applying antibiotic ointment and a non-adherent dressing.

One day following the surgery, the patient presented with visual acuity of 4/60 in the right eye and 5/20 in the left eye, experiencing minimal pain. Both eyes were able to be opened, although there was notable superior palpebral edema of the right eye. Examination of the surgical wounds revealed securely sutured incisions at the medial and lateral canthi, with no signs of blood leakage. Additionally, the cornea appeared clear, while the conjunctiva appeared hyperemic, and eye motility was intact for both eyes. The patient was advised to continue with prescribed postoperative care, which included oral antibiotic and eye ointment twice daily, and scheduled for a follow-up appointment in one week.

One week following the surgery, the patient exhibited visual acuity of 5/15 in the right eye and 5/20 in the left eye. Inspection of the surgical site indicated securely sutured incisions at the medial and lateral canthi, with no signs of infection, wound dehiscence, or blood leakage. However, ectropion of the medial and lateral canthi was noted in the right eye. The patient was advised to continue applying the prescribed antibiotic ointment twice daily and scheduled for a follow-up appointment in one week.

Figure 3. The orbicularis muscle, tarsal plate, and skin were readjusted using sutures

Two weeks following the surgery, the patient exhibited visual acuity of 5/20 in both the right and left eyes. Inspection of the surgical site indicated securely sutured incisions at the medial and lateral canthi, with no signs of infection, wound dehiscence, or blood leakage. However, ectropion of the medial canthus and entropion of the medial canthus were noted in the right eye. Sutures were removed, and the patient was instructed to apply the prescribed sodium hyaluronate eye drops four times daily until the next follow-up visit.

At the one-month follow-up appointment, the patient demonstrated further improvement at the surgical site, with resolution of residual erythema, edema, ectropion, and entropion. Visual acuity remained stable, and there were no signs of recurrence or complications. The patient was discharged from further follow-up, with instructions to contact the clinic if any new symptoms or concerns arose.

DISCUSSION

Sebaceous gland carcinoma presents a diverse range of clinical manifestations, which highlights the importance for ophthalmologists to remain aware of its varied presentations. Despite its rarity, sebaceous carcinoma is the second most common eyelid malignancy, following basal cell carcinoma and squamous cell carcinoma. Other potential periocular malignancies include Merkel cell carcinoma, melanoma, lymphoma, as well as less common tumors such as hereditary benign intra-epithelial dyskeratosis, conjunctival squamous papilloma, and metastatic carcinoma (Vissers et al., 2022).

This case report involves a 59-year-old male diagnosed with sebaceous gland carcinoma based on clinical and histopathological findings. Epidemiological studies indicate that this disease more frequently in men than in women, with an incidence of 3.5 versus 1.7 cases per million, respectively (Sargen et al., 2021; Wang et al., 2022). The patient's age is consistent with findings from a retrospective case series of 241 sebaceous gland carcinoma cases, which revealed that 51% of the cases occurred in middle-aged adults (aged 41-60 years), indicating a notable prevalence within this age group. Additionally, 12% of the cases were classified as young adults (≤40 years), while 37% were categorized as older adults (>60 years), highlighting the distribution of this malignancy across different age groups (Aulia and Irawan, 2022). Advanced age is thus considered one of the risk factors for this disease (Wang et al., 2022).

When sebaceous gland carcinoma is diagnosed at an early stage, surgical intervention involving wide excision followed by primary reconstruction is typically sufficient for treatment (Lee et al., 2021). In more advanced cases, adjuvant therapies such as chemotherapy and radiation may be considered (Mangan et al., 2021). Prognosis is generally favorable with complete surgical resection, while radiation therapy is typically reserved for specific scenarios such as recurrence or metastasis (Ito et al., 2022; Taoufik et al., 2022). Due to the aggressive nature of sebaceous gland carcinoma, comprehensive

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surgical resection is imperative, with orbital exenteration occasionally warranted in more advanced cases (Ferreira et al., 2019).

Postoperative complications such as dry eye syndrome are common following ocular surgery and can result from several mechanisms, including the administration of topical anesthetics, exposure-related desiccation, nerve disruption, heightened inflammatory mediators intra- and post-operatively, diminished conjunctival goblet cell density, Meibomian gland dysfunction, and conjunctival irritation induced by povidone iodine (Vehof et al., 2021). In this case, prophylactic administration of sodium hyaluronate eye drops were prescribed to mitigate the risk of dry eye syndrome. Additionally, antibiotic therapy was initiated to prevent wound infection.

Apart from dry eye syndrome, ectropion and entropion, particularly involving the lower eyelid, are recognized as common postoperative complications, particularly following eyelid surgeries, as observed in this case. The development of ectropion and entropion post-surgery may arise from various etiological factors such as trauma, infection, or the surgical intervention itself (Kiran et al., 2022). These conditions may resolve spontaneously with appropriate management of the underlying causative factors. Meanwhile, symptomatic relief can be achieved through ocular lubrication, hence the use of sodium hyaluronate eye drops (Gall and Ortiz-Perez, 2023).

Limitations

This case report provides a thorough overview of a patient's clinical journey, encompassing his medical history, symptoms, examination findings, surgical procedure, and postoperative care. The inclusion of histopathological analysis enhances the accuracy of diagnosing sebaceous gland carcinoma, shedding light on its characteristic features and improving our understanding of the disease. However, several limitations should be acknowledged. As a single-case study, the findings may lack generalizability. Moreover, the absence of long-term follow-up beyond one month hampers our understanding of recurrence and complications. Additionally, the lack of comparative analysis restricts the ability to assess treatment efficacy. The retrospective data collection and subjective assessments may also introduce bias, affecting external validity.

CONCLUSION

This case report describes the diagnosis and therapeutic approach to sebaceous gland carcinoma in a 59-year-old male patient. This case highlights the importance of prompt diagnosis, precise surgical excision, and comprehensive postoperative management. Nonetheless, it is crucial to acknowledge the limitations of this study, particularly the lack of extended follow-up and comparative analysis. Future research is needed to address these limitations and enhance our understanding of optimal therapeutic modalities for this challenging malignancy.

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Conflict of Interest

The author declares no conflict of interest.

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Patient concern for Publication

Informed consent was voluntarily obtained from the patient regarding the dissemination of their case information, upholding their autonomy and privacy rights.

Author Contribution

MENCP: patient's care, conception, collecting and interpreting the data, drafting the manuscript, and conducting the literature review; EI: drafting, conducting the literature review, and revising.

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