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Advanced Conjunctival Melanoma Masquerading as a Hemangioma: A Case Report

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Abstract | **Case Report**

Background: Conjunctival melanoma is a rare but potentially life-threatening ocular malignancy. It may masquerade for months or even years as a benign-appearing red lesion or focal conjunctivitis resistant to topical therapy, leading to delayed diagnosis. ***Case Presentation:*** We report a rare and misleading case of conjunctival melanoma presenting as a highly vascularized, friable, and bleeding conjunctival mass, clinically suggestive of a conjunctival hemangioma. Histopathological and immunohistochemical analyses confirmed the diagnosis of conjunctival melanoma. ***Conclusion:*** This case highlights the diagnostic challenge posed by atypical hemorrhagic presentations of conjunctival melanoma and underscores the importance of early biopsy in suspicious conjunctival lesions.

Keywords: conjunctival melanoma; hemangioma; hemorrhagic lesion; histopathology.

INTRODUCTION

Conjunctival melanoma is a rare but potentially life-threatening ocular surface malignancy arising from melanocytes [1,2]. It accounts for a small proportion of ocular tumors, with an estimated annual incidence ranging from 0.2 to 0.8 cases per million, predominantly affecting fair-skinned populations and elderly individuals [2].

Clinically, conjunctival melanoma typically presents as a pigmented lesion. However, atypical presentations, including amelanotic and highly vascularized forms, have been described. These unusual variants may mimic benign conditions such as conjunctival nevus, racial melanosis, or primary acquired melanosis, as well as vascular lesions such as conjunctival hemangioma or pyogenic granuloma, potentially leading to diagnostic delay.

Due to its variable clinical appearance, diagnosis requires a high index of suspicion. Histopathological examination, supported by immunohistochemistry, remains the gold standard for definitive diagnosis (1). Complete surgical excision with adequate margins is the cornerstone of management, as delayed or incomplete treatment increases the risk of local recurrence and systemic metastasis [1].

CASE PRESENTATION

A 73-year-old man with no significant medical history presented to the emergency department with a 2-month history of progressive upper eyelid swelling, recurrent bleeding, and decreased visual acuity in the right eye.

Ophthalmologic examination revealed a best-corrected visual acuity of 2/10 in the right eye. A friable, hemorrhagic tumoral mass involving the upper eyelid was observed (Figure 1). The anterior segment and fundus examinations were unremarkable. The left eye was within normal limits.

Laboratory investigations, including complete blood count and C-reactive protein levels, were within normal limits.

Orbital MRI revealed an irregular exophytic lesion of the upper eyelid measuring 20 × 24 mm, in close contact with the globe. The mass was associated with conjunctivo-scleral thickening and showed intense

contrast enhancement, suggestive of tumor infiltration (Figures 2–4).

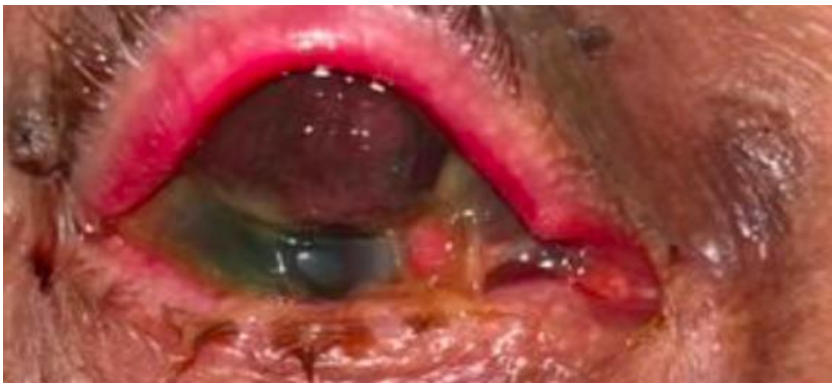
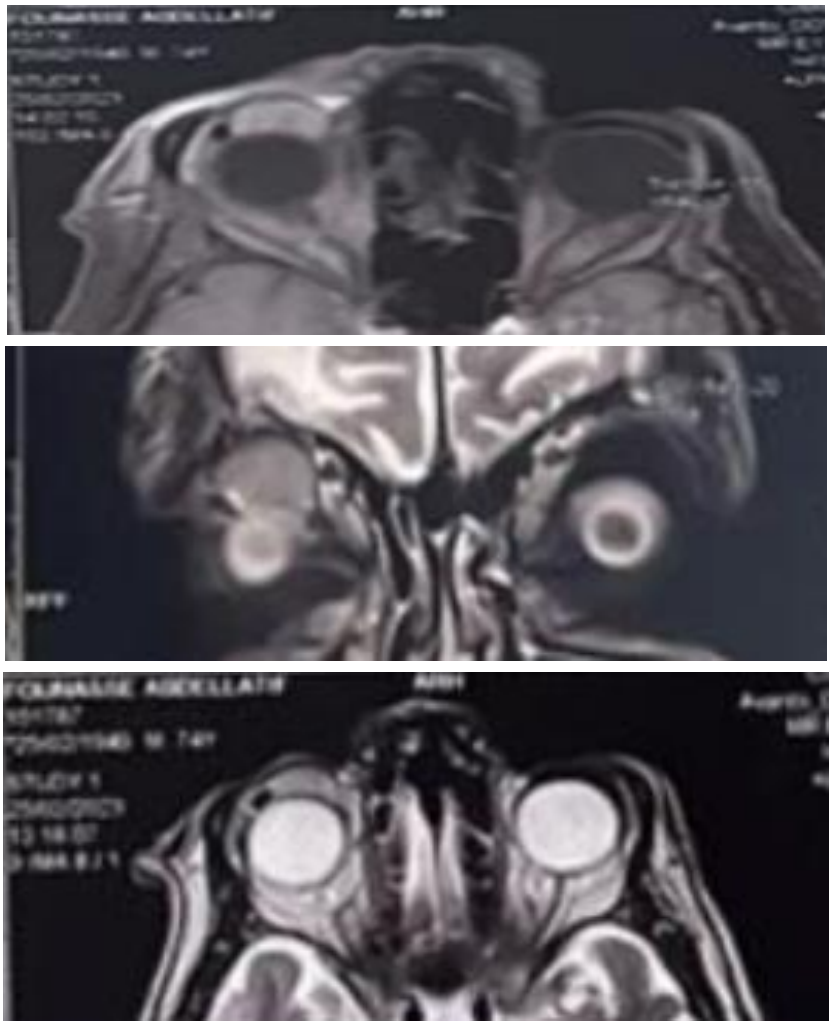


Figure 1: Clinical photograph of the patient demonstrating a hemorrhagic tumoral mass of the right upper eyelid



Figures 2+3+4: MRI demonstrating a well-circumscribed oval lesion, exhibiting high signal on T1-weighted images and low signal on T2-weighted and FLAIR sequences, with preserved cleavage planes from the eyelid, globe, and adjacent extraocular muscles

The lesion was initially suspected to be a conjunctival hemangioma. However, an excisional biopsy was subsequently performed. Histopathological and immunohistochemical analyses confirmed the diagnosis of conjunctival melanoma.

Microscopic examination revealed a proliferation of atypical epithelioid cells with high cellularity, round nuclei, prominent nucleoli, focal necrosis, and areas of melanin pigmentation.

Immunohistochemical staining demonstrated strong positivity for melanocytic markers HMB-45 and Melan-A, whereas epithelial markers (AE1/AE3, cytokeratin CAM5.2) and the vascular marker CD34 were negative.

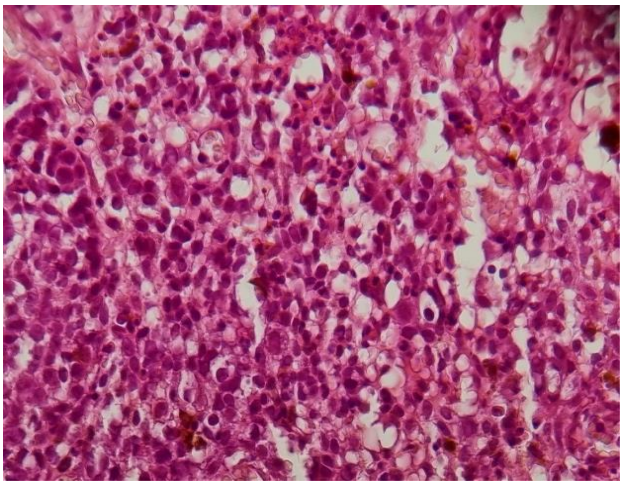


Figure 5: Malignant tumor proliferation arranged in diffuse sheets, composed of cells with cytoplasmic melanin pigment deposition (H&E, ×40)

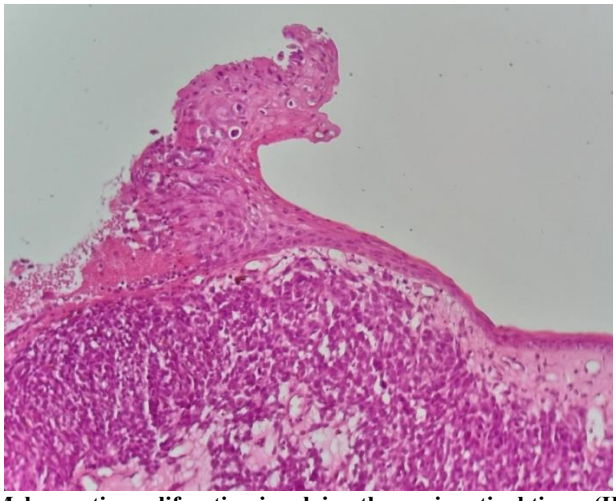


Figure 6: Melanocytic proliferation involving the conjunctival tissue (H&E, ×200)

A multidisciplinary decision was made to proceed with right orbital exenteration after obtaining the patient's informed consent. Following surgery, the persistent bleeding resolved.

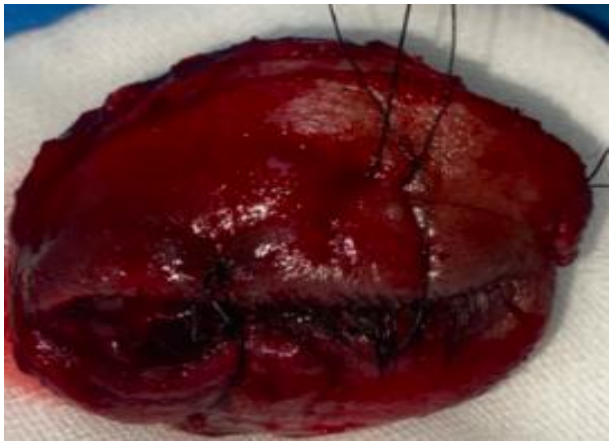


Figure 7: Specimen obtained after orbital exenteration

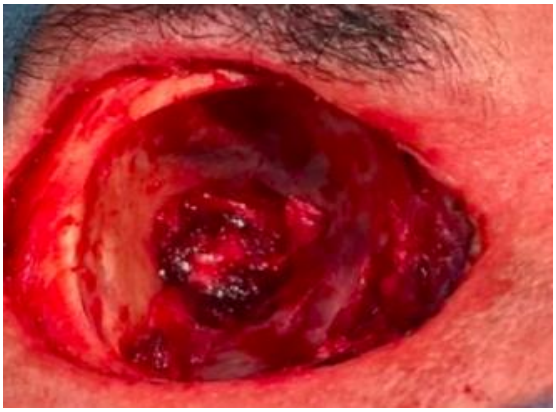


Figure 8: Intraoperative photograph of the orbital cavity during right orbital exenteration

A thoraco-abdomino-pelvic CT scan demonstrated no evidence of pulmonary or adrenal lesions, and showed no radiological signs of systemic metastatic disease.

DISCUSSION

Conjunctival malignant melanoma is a rare but aggressive ocular surface malignancy characterized by a significant risk of local recurrence and systemic dissemination [1,2]. Despite therapeutic advances, evidence remains limited due to the rarity of reported cases.

This tumor arises from conjunctival melanocytes and represents a small proportion of ocular surface neoplasms. It carries a poor prognosis, with reported 5-year mortality rates of approximately 25% and local recurrence rates reaching up to 50% [4].

Clinically, conjunctival melanoma most often presents as a pigmented lesion, but several benign conditions may mimic its appearance, including conjunctival nevus, racial melanosis, and primary acquired melanosis [4].

Atypical presentations may significantly complicate diagnosis. In particular, amelanotic or highly vascular variants may resemble benign vascular lesions such as conjunctival hemangioma [5], leading to diagnostic delay.

In the present case, the lesion presented as a highly vascularized hemorrhagic mass clinically suggestive of a conjunctival hemangioma [5].

Histopathological examination remains the gold standard for diagnosis, confirming malignant melanocytic proliferation with cytoplasmic melanin pigment.

One remarkable feature in this case was the presence of abundant intratumoral vascular channels and hemangioma-like microvascular structures. Persistent bleeding is a rare but severe complication of conjunctival melanoma and may require radical surgical management such as orbital exenteration [6].

Tumor-associated angiogenesis and lymphangiogenesis are known to play an important role in conjunctival melanoma progression [7]. However, such a marked vascular architecture remains exceptional in the literature.

Early diagnosis remains crucial to prevent orbital extension and systemic metastasis.

CONCLUSION

Conjunctival melanoma is a rare but highly aggressive ocular surface malignancy with significant potential for local invasion, recurrence, and systemic metastasis. Although it most commonly presents as a pigmented lesion, it may exhibit atypical clinical features that closely mimic benign conjunctival conditions, thereby complicating and delaying diagnosis.

This case illustrates an uncommon hemorrhagic and highly vascular presentation of conjunctival melanoma, clinically simulating a conjunctival hemangioma. Such misleading appearances may lead to initial diagnostic uncertainty and highlight the limitations of clinical examination alone in atypical conjunctival lesions.

Histopathological examination, supported by immunohistochemistry, remains the gold standard for definitive diagnosis and should be systematically considered in any atypical, rapidly evolving, or vascular conjunctival mass in adults.

Early recognition and prompt surgical management are essential to improve prognosis, reduce the risk of orbital extension, and prevent systemic dissemination. Multidisciplinary management is crucial in advanced cases, particularly when radical procedures such as orbital exenteration are required for local control.

Overall, this case underscores the importance of maintaining a high index of suspicion for conjunctival

melanoma, even in lesions with a benign or vascular appearance, in order to avoid delayed diagnosis and optimize patient outcomes.

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