Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Ophthalmology

Suspected Conjunctival Melanoma in a 58-Year-Old Female with a Complex Medical History

Kamar Manzalji[1*], Rime Alaughla[2], Leena Abdullah Kadhem[3], Inour A Nasser Hassan[4]

[1]Specialist Family Medicine
[2]Consultant Ophthalmologist
[3]Senior Consultant Family Medicine
[4]General Practitioner - Family Medicine

DOI: https://doi.org/10.36347/sjmcr.2025.v13i11.021 | **Received:** 20.08.2025 | **Accepted:** 24.10.2025 | **Published:** 10.11.2025

***Corresponding author:** Kamar Manzalji
Specialist Family Medicine

Abstract **Case Report**

Primary Acquired Melanosis (PAM) with atypia is a rare but clinically significant precursor to conjunctival melanoma. We report a case of a 58-year-old female with multiple comorbidities who presented with persistent ocular redness and dryness, initially managed conservatively in primary care. Ophthalmologic evaluation revealed a vascularized temporal limbal conjunctival lesion with superficial corneal pigmentation. Ultrasound biomicroscopy demonstrated episcleral thickening (0.3–0.4 mm) over a 2.5 mm area, and MRI of the orbits and brain showed no intra orbital or intracranial extension. The lesion was excised using a "no-touch" technique with alcohol-assisted corneal epithelial removal and cauterization of the surgical bed. Histopathological analysis confirmed extensive PAM with high-grade atypia, with areas approaching melanoma in situ; superficial invasive melanoma could not be fully excluded. The patient remains under close ophthalmologic surveillance, with no evidence of recurrence to date. This case underscores the diagnostic challenges of PAM, especially in patients with non-specific ocular symptoms and prior eyelid surgery, where early malignant changes may be overlooked. Prompt recognition and surgical management are essential to prevent malignant transformation. The report highlights the importance of multidisciplinary coordination, appropriate imaging, and regular follow-up in managing high-risk conjunctival pigmented lesions to improve visual and oncologic outcomes.

Keywords: Primary acquired melanosis, conjunctival melanoma, ocular surface tumor, limbal lesion, ophthalmology, histopathology, no-touch excision, pigmented conjunctival lesion, corneal pigmentation, case report.

INTRODUCTION

Conjunctival pigmented lesions are commonly encountered in clinical ophthalmology, with a spectrum ranging from benign nevi to malignant melanoma. Among these, Primary Acquired Melanosis (PAM) is a significant precursor lesion, particularly in middle-aged and older adults. PAM typically presents as a flat, patchy, brown pigmentation of the conjunctiva and is often unilateral. Its clinical significance lies in its potential for malignant transformation—especially when atypia is present.

PAM is classified histologically into PAM without atypia and PAM with atypia, the latter being associated with a significantly higher risk of progression to conjunctival melanoma, which accounts for approximately 2% of all ocular malignancies but poses serious consequences due to its potential for local invasion and metastasis [1,2].

Conjunctival melanoma may arise de novo, from a preexisting nevus, or—most frequently—from PAM with atypia. Risk factors for progression include older age, light skin pigmentation, incomplete excision, and location involving the limbus or cornea [3].

Histopathological evaluation is the gold standard for diagnosis. Lesions demonstrating high-grade atypia, as in this case, require complete excision with safety margins and regular long-term follow-up. "No-touch" surgical technique, alcohol-assisted corneal epithelial removal, and cryotherapy or cautery at the surgical bed are often employed to reduce recurrence risk [4].

Imaging with ultrasound biomicroscopy (UBM) or MRI of the orbit and brain is essential in suspected cases of invasive melanoma, helping evaluate deeper or retro-orbital spread. Although rare, intraocular

or optic nerve infiltration should be ruled out when concerning features such as subconjunctival hemorrhage, rapid lesion growth, or pigmentation of the cornea are noted.

This case illustrates the clinical challenges in diagnosing and managing PAM with atypia, particularly in a patient with multiple comorbidities, ocular surface changes post-blepharoplasty, and recurrent non-specific symptoms such as eye redness and dryness. The delay in referral and the non-specific nature of early symptoms emphasize the need for increased awareness of high-risk conjunctival lesions in primary care settings.

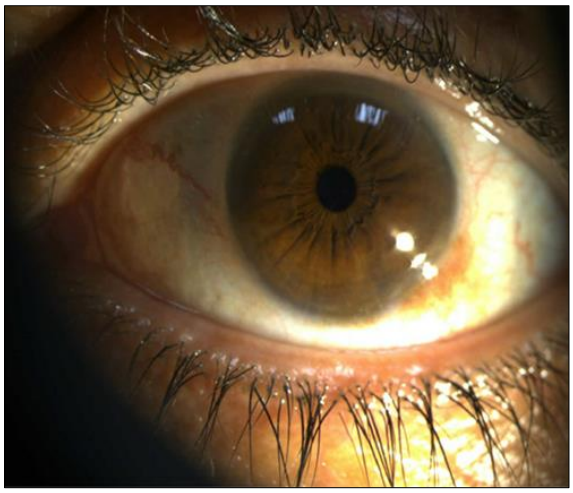
CASE PRESENTATION

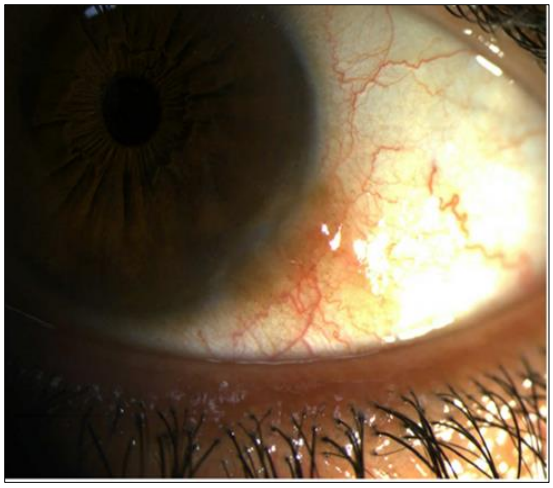
- Age: 58 years
- Sex: Female
- Medical History: Dyslipidemia, osteoarthritis, gastroesophageal reflux disease (GERD), osteoporosis (treated with Denosumab), and a history of thyrotoxicosis treated with radioiodine in 2003.
- Surgical History: Bilateral lower lid blepharoplasty performed 6 years ago, followed by mild lid retraction and persistent ocular dryness postoperatively.

This is a 58-year-old female with multiple comorbidities who had recurrent visits to the Family Medicine and Walk-In Clinics over several months, primarily complaining of red eye, ocular dryness, and repeatedly requesting referral to ophthalmology.

In September 2023, she was evaluated by an ophthalmologist at the Primary Health Care Corporation (PHCC), where she was found to have a small, vascularized limbal conjunctival lesion in the left eye, laterally positioned with pigmented corneal infiltration extending from 2 to 6 o'clock.

Due to the suspicion of conjunctival melanoma, she was urgently referred to secondary care, where she was seen on October 23, 2023. At that time, she also reported a history of subconjunctival hemorrhage in the left eye 2 months earlier, associated with itching, and noted progressive increase in the size of the limbal lesion.





Upon examination found to have: temporal limbal conjunctival lesion at 4 o'clock starting 2 mm away from the limbus extension of the lesion on the cornea superficially around 1 mm with surrounding pigmentation on the corneal epithelium vision is not affected, UMB showed: There is episcleral thickening of about 0.3 mm to 0.4 mm thickness and around 2.5 mm length with irregular surface seen in the temporal limbus.

She underwent limbal mass excision with safety margines no touch technique with alcohol corneal epithelium removal temporal half, cautery at the bed. on 25/10/23 lesion sent for histopathology which showed:
Extensive primary acquired melanosis with high-grade atypia (high-grade conjunctival melanocytic intraepithelial lesion), with areas approaching melanoma in-situ. Focally, superficial invasive melanoma can not be completely excluded. [1] Referred to neurology clinic to rule out retro-orbital lesion/ optic nerve infiltration/ request MRI orbital with gad/ and MRI head with contrast done also.

MRI Orbit with contrast Both1\11\2024 as follow up Eye globes, optic nerves, extraocular muscles and retrobulbar fat are grossly preserved on both sides. No evidence of intra orbital abnormal enhancing lesions can be seen.

Asymmetric enhancement of both cavernous sinuses is seen Multiple T2 bright spots are seen in the frontal subcortical frontal parietal subcortical and periventricular regions bilaterally likely mild chronic microangiopathic changes. No hydrocephalus. No

evidence of abnormal enhancement in the brain seen. Brainstem and cerebellum are unremarkable.

IMPRESSION:
Mild chronic microangiopathic changes in the brain.

1 Investigations (If relevant)

- MRI orbital with gad
- MRI head with contrast
- US abdomen

Referred to neurology to rule out retro-orbital lesion/ optic nerve infiltration/

- Ophthalmic Examination Findings
- Temporal conjunctival lesion at 4 o'clock, starting 2 mm from the limbus
- Superficial extension onto the cornea (~1 mm), with surrounding pigmentation of the corneal epithelium
- Visual acuity preserved
- Ultrasound biomicroscopic (UBM) revealed:
    - Episcleral thickening (0.3–0.4 mm in thickness and ~2.5 mm in length)

Irregular surface over the temporal limbus

- Surgical Intervention

On October 25, 2023, the patient underwent:

- Limbal mass excision using a no-touch technique
- Alcohol-assisted superficial corneal epithelium removal (temporal half)
- Cauterization of the lesion bed
- Specimen sent for histopathological examination
- Histopathology Report
- Diagnosis:
    - Extensive Primary Acquired Melanosis (PAM) with high-grade atypia
    - Areas approaching melanoma in situ
    - Superficial invasive melanoma could not be completely excluded
- Further Investigations

To rule out orbital extension or optic nerve involvement, she was referred to the Neurology Clinic and underwent imaging:

- MRI Orbit with Gadolinium + MRI Brain (1 November 2024):
- Orbits: Normal appearance of globes, optic nerves, and retrobulbar fat
- No infraorbital masses or enhancement
- Asymmetric enhancement of both cavernous sinuses
- Brain findings:
    - Multiple T2 bright foci in frontal, parietal, and periventricular white matter
    - Likely mild chronic microangiopathic changes
    - No evidence of abnormal brain enhancement, hydrocephalus, or cerebellar pathology

2 Differential Diagnosis (If relevant)

- Benign conjunctival nevi
- Extraocular extension of uveal melanoma or melanocytoma
- Pigmented conjunctival squamous cell carcinoma
- Metastasis of cutaneous melanoma

3 Treatment (If relevant)

Limbal mass excision with safety margines no touch technique with alcohol corneal epithelium removal temporal half, cautery at the bed, lesion sent for histopathology.

Lesion sent for histopathology which showed:

- Extensive primary acquired melanosis with high-grade atypia (high-grade conjunctival melanocytic
  intraepithelial lesion), with areas approaching melanoma in-situ.
- no chemotherapy needed
- follow up

4 Outcome and Follow-Up

- For regular follow up in ophthalmology clinic to monitor any signs or recurrence.
- Need observing for evidence of growth is documented.

5 Discussion: Emphasizes why the case is important to medicine. Adequate literature review pertinent to the case. Mentions the limitations related to the case.

This case highlights a clinically significant and relatively rare presentation of Primary Acquired Melanosis (PAM) with high-grade atypia, a lesion with strong potential for malignant transformation into conjunctival melanoma. Its recognition is vital, particularly in primary care and ophthalmology settings, as early detection and intervention significantly affect outcomes.

The patient's repeated presentations with non-specific ocular symptoms—such as redness, dryness, and discomfort—are not uncommon in primary care. However, the presence of a progressive pigmented conjunctival lesion with corneal extension was a red flag warranting prompt referral. As seen in the literature, PAM with atypia is considered a precursor to melanoma in nearly 75% of conjunctival melanoma cases, especially when the atypia is high-grade [1,2].

In this patient, the lesion's limbal location, vascularization, and pigmentation spreading to the cornea were particularly concerning. Studies have shown

that limbal and corneal involvement are high-risk features associated with an increased chance of recurrence and invasive behavior [3]. The use of UBM to evaluate episcleral involvement and the subsequent MRI of the orbits and brain demonstrate best-practice multidisciplinary care in ruling out deeper or retro-orbital extension.

Surgical excision using the "no-touch" technique with adjunctive alcohol corneal epithelial removal and cautery is well-supported in the literature as the preferred method for managing PAM with atypia or early melanoma in situ [4,5]. Histopathology confirmed high-grade atypia with areas concerning for superficial invasion, thus justifying the need for close follow-up and potential future intervention.

What makes this case important is not only the pathology itself but also the delay in definitive evaluation, despite multiple visits for eye symptoms. It underscores a broader issue: non-specific ocular complaints in older adults may be mistakenly attributed to benign causes, such as post-blepharoplasty dryness or chronic eye irritation, leading to delayed diagnosis of potentially malignant conditions

CONCLUSION

This case illustrates the importance of early ophthalmologic referral in patients with persistent red eye, dryness, and conjunctival changes, especially in those with a history of eyelid surgery, chronic dryness, or other risk factors.

The diagnosis of PAM (Melanosis with high-grade atypia) with high-grade atypia is clinically significant due to its potential to evolve into invasive melanoma.

Timely excision with safety margins, histopathologic confirmation, and multi-disciplinary follow-up were key to this patient's management.

Ethical considerations

[List all possible ethical issues related to the study and the way it's managed to reduce their risk. Consent form, and waiver of consent templates can be obtained from the Department of Clinical Research. In addition, all completed forms should be appropriately translated into a language understood by the research participant]

How is the study addressing the principle of Beneficence (Belmont Report)?

[How will the study minimize harm or discomfort and what possible benefits are there for participants? Please tick the appropriate checkbox box]

Is there any direct benefit to study participants?

Yes ☐ No ☒

Is there any potential harm to study participants?

Yes ☐ No ☒

Please select the type of harm to individual/ group/ society from the list below. [tick the appropriate checkbox]

☐ Social (Unwarranted exclusion from society; ostracised by neighbours/ friends/ family/ significant reference or peer group).

☐ Economic (Economic deprivation as consequence of answering questions).

☐ Legal (Legal penalties from accidental breach of confidentiality).

☐ The study addresses sensitive topics (e.g., sexual activity or preference, drug use, mental problems, politics).

☐ The study may cause harm consequent on: Participation, Exclusion, or Dissemination of findings.

Please describe any attempts to minimize risk of potential harm and other comments in the text box below.

Privacy/Autonomy of study participants

[Explain how you will maintain privacy of study participants at all time? What options will you provide to allow participants to make voluntary decisions? Consent to use a patient's story should be obtained a priori to publishing the report whenever possible. Please describe any process that protects privacy and autonomy (like an informed consent in detail]

☐ The study involves participants who cannot give informed written consent.

☐ The patient is still under care of the PI as the treating physician (an existing power relationship between the researcher and the participant needs to be considered).

☐ The participants were asked to confirm that they have received and read the information about the study.

Can you identify sources of undue coercion and show how to address this ethical risk?

Are you applying for a "Waiver of Informed Consent"

Yes ☒ No ☐ *(Please tick the appropriate checkbox box)*

[How will you maintain confidentiality/anonymity of study participants? What safety precautions have you arranged in case of leakage of personal data? Who will have access to confidential research information… etc.?)]

(Please tick the appropriate checkboxes)

☒ A password protected computer system is used to assure secure data storage.

☒ Only encrypted systems are used for storing research data on laptops.

☒ A locked file cabinet is used to store research related paper forms.

☒ Access to study data is limited to only a few members of the study team.

☒ Plans are set to destroy all research generated data after 3 years according to PHCC regulations.

☒ The study report / publication will show only aggregate results with no identifiers.

☒ Only deidentified study data is stored.

☐ Research generated data will be shared with a third party. In this case describe a plan to protect participants confidentiality in the textbox below.

BIBLIOGRAPHIC REFERENCES

1. Shields CL, Shields JA. Tumors of the conjunctiva and cornea. *Surv Ophthalmol*. 2004;49(1):3-24.
2. Jakobiec FA, Folberg R, Iwamoto T. Clinicopathologic characteristics of premalignant and malignant conjunctival melanocytic tumors. *Ophthalmology*. 1989;96(4):436-60.
3. Paridaens D, McCartney AC, Hungerford JL. Multifocal acquired melanosis of the conjunctiva. *Br J Ophthalmol*. 1992;76(3):177-80.
4. Kim HJ, Shields CL, Shields JA. Conjunctival melanoma: management, surveillance, and outcomes. *Int Ophthalmol Clin*. 2009;49(1):79-91.
5. Shields JA, Shields CL. Conjunctival primary acquired melanosis and melanoma: risks, diagnosis, and management. *Middle East Afr J Ophthalmol*. 2010;17(3):171-7.