CASE REPORT

Conjunctival Squamous Cell Carcinoma Masquerading as a Post-traumatic Subconjunctival Mass: A Case Report

Oscar A. Acopiado Jr., MD,[1] George Michael N. Sosuan, MD[1] and Ruben Lim Bon Siong, MD[1,2]

[1]*Department of Ophthalmology and Visual Sciences, Philippine General Hospital, University of the Philippines Manila, Manila, Philippines*
[2]*Eye Institute, St. Luke's Medical Center, Quezon City, Philippines*

ABSTRACT

Conjunctival squamous cell carcinoma (SCC) is the most common malignant tumor of the ocular surface, though it remains relatively rare. It typically occurs within the interpalpebral fissure, predominantly affecting elderly males with significant ultraviolet (UV) light exposure. We present the case of an elderly male in his 60s who developed a subconjunctival mass 1 year following ocular trauma.

Initially, the subconjunctival mass was presumed to be of infectious origin, leading to treatment with topical antibiotics and excision. However, the mass recurred, prompting further investigation. Histopathologic analysis of the excised tissue revealed squamous cell carcinoma. Subsequently, the patient was treated with topical 5-fluorouracil, resulting in complete regression of the lesion.

This case highlights the importance of considering neoplastic etiologies, even in the presence of an atypical clinical presentation and history. The delayed onset and unusual anatomic location of the mass, following trauma, underscores the need for vigilance in the differential diagnosis of conjunctival lesions, especially in patients with known risk factors such as advanced age and UV light exposure.

Keywords: conjunctival squamous cell carcinoma, ocular surface squamous neoplasia, post-traumatic subconjunctival mass, case report

eISSN 2094-9278 (Online)
Published: September 15, 2026
https://doi.org/10.47895/amp.v60i17.13423

Corresponding author: George Michael N. Sosuan, MD
Department of Ophthalmology and Visual Sciences
Philippine General Hospital
University of the Philippines Manila
Taft Avenue, Ermita, Manila 1000, Philippines
Email: gmsosuan@yahoo.com
ORCiD: https://orcid.org/0000-0002-1306-3727

INTRODUCTION

Ocular surface squamous neoplasia (OSSN) encompasses a spectrum of neoplastic diseases characterized by the abnormal growth of dysplastic squamous epithelial cells on the surface of the eye. These lesions range from non-invasive, slow-growing tumors to invasive, aggressive tumors with metastatic potential.[1,2] Its incidence is 0.03-1.9 per 100,000 per year in Caucasians, to 3-3.4 per 100,000 per year in Africans, and the usual population is elderly males.[3,4]

Conjunctival squamous cell carcinoma (SCC) is the most common malignancy of the ocular surface and represents the most severe form of OSSN.[5] The most important risk factor includes exposure to ultraviolet B (UVB) radiation. Other risk factors include infection with human immunodeficiency virus (HIV) and human papillomavirus (HPV) serotypes 16 and 18, and mutations in the tumor suppressor gene p53.[2,6] Additional contributing factors include smoking, chemical exposure, and vitamin A deficiency.[1]

The diagnosis of conjunctival SCC is through clinical and histopathologic evaluation. Clinically, it presents with symptoms of eye redness, foreign body sensation, and a

painless papilliform, gelatinous, or leukoplakic mass often exhibiting intrinsic vascularity and supported by feeder conjunctival vessels. The lesion is most commonly located in the interpalpebral region involving the bulbar conjunctiva near the limbus, with potential extension to the cornea and the palpebral conjunctiva. Local invasion into surrounding structures is common, but distant metastases rarely occur. Diagnostic staining with rose bengal, lissamine green, and methylene blue can identify the devitalized tissue and can help delineate the lesion.[7] The histopathologic appearance includes full-thickness disorganized, dyskeratotic, acanthotic epithelium with abnormal polarity, and a mild to marked increase in the nuclear to cytoplasmic ratio. A hallmark finding is the penetration of the basement membrane.[8,9]

The management is mainly through "no touch" surgical resection, with adjuvant or neo-adjuvant topical chemotherapy (mitomycin-C or 5-fluorouracil), topical or local immunomodulation (interferon alpha-2b), topical antiviral medications (cidofovir), and photodynamic therapy.[10] The prognosis is generally excellent despite local invasion; however, the recurrence rate varies with a wide range of 1-43%.[10] Monitoring should be done serially, as recurrence may occur even after months up to years after remission.[1,2]

Here, we report a rare case of conjunctival SCC in an elderly male presenting as a subconjunctival mass following ocular trauma, a clinical scenario not previously described in the literature. This case aims to enhance understanding of the disease and its management, particularly in atypical presentations. Written informed consent to publication of information was obtained from the patient.

CASE PRESENTATION

An elderly farmer in his 60s with no known comorbidities and a non-smoker presented with a whitish mass on the left eye. History of present illness started 1 year prior, when the patient incurred sharp trauma from a flying duck's wing, causing blurring of vision, ocular surface pain, eye redness, and occasional tearing. No consult was done, and no medications were taken.

Over the subsequent months, there was spontaneous improvement in pain, redness, and tearing. However, a whitish mass slowly developed on the nasal aspect of his left eye. The mass progressively enlarged, prompting him to seek medical consultation at our institution.

The patient's best-corrected visual acuity (BCVA) in the left eye was 20/200. Slit lamp examination showed a 9mm x 8mm friable whitish subconjunctival mass near the 7 o'clock limbus with surrounding congestion of vessels with uptake on fluorescein staining and a 5mm x 2mm epithelialized uveal prolapse with adjacent conjunctivalization and scleral thinning (Figure 1). The anterior chamber was shallow with an eccentric pupil. The patient was assessed as a sealed sclerocorneal perforating injury with conjunctival abscess on the left eye: he was started on topical moxifloxacin 0.5% eye drops every hour and was scheduled for wound exploration and possible scleral patch graft. The examination of the right eye was essentially normal for his age.

The patient underwent wound exploration, excision of conjunctival abscess, povidone-iodine wash, and scleral patch graft of the left eye (Figure 2). The conjunctival abscess was sent for bacterial, fungal, and mycobacterial culture studies. Post-operatively, he was sent home on topical moxifloxacin 0.5% eye drops every 3 hours and tobramycin-dexamethasone ointment 3x/day. On follow-up after one week, BCVA improved to 20/80, and the scleral graft is in place Figure 2.

The patient was on regular follow-up at the clinic. All culture studies yielded negative results. The scleral graft remained intact with good healing. No recurrence of the whitish mass was noted until 2 months later, when a friable whitish subconjunctival mass recurred on the previous surgical site. There was also a new white friable mass on the temporal side at the 2 o'clock limbus with a large conjunctival feeder vessel (Figure 3). The recurrence was assessed as a recurrent subconjunctival mass to rule out malignancy. He then underwent repeat excision of the subconjunctival mass,

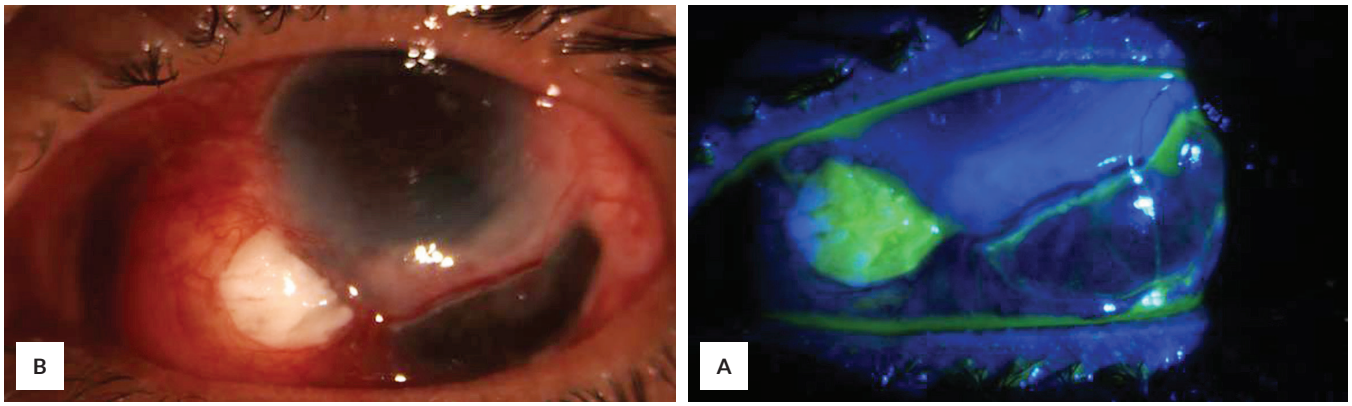

Figure 1. Slit lamp examination showing **(A)** a 9 mm x 8 mm friable whitish subconjunctival mass near the 7 o'clock limbus with **(B)** uptake on fluorescein staining and a 5 mm x 2 mm epithelialized uveal prolapse.

and samples were sent for histopathologic examination. Post-operatively, he was sent home on topical moxifloxacin 0.5% eye drops every 3 hours and tobramycin-dexamethasone ointment 3x/day.

The histopathological examination of the friable whitish subconjunctival mass revealed atypical polygonal cells with abundant eosinophilic cytoplasm, pleomorphic round vesicular nuclei with prominent nucleoli, and intercellular bridges within the stroma (Figure 4). These findings were consistent with a diagnosis of conjunctival squamous cell carcinoma.

On follow-up after 1 week, the patient was started on topical 5-fluorouracil (5-FU) 1% four times a day for 1 month. On the latest follow-up after 1 year, there was no recurrence of the mass with scleral thinning at the previous sites of the subconjunctival mass, with BCVA remaining at 20/80 (Figure 5).

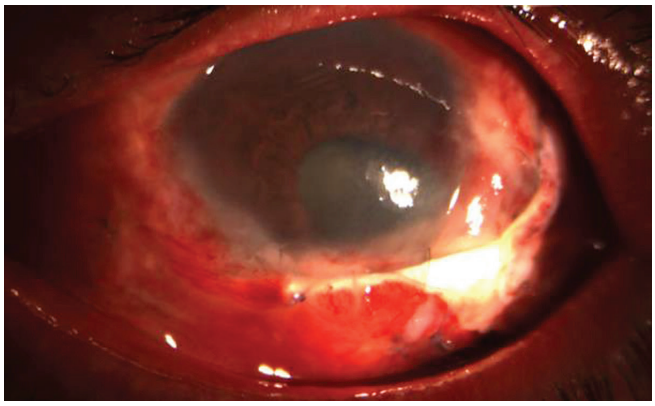

Figure 2. Slit lamp examination 1 week after wound exploration, excision of conjunctival abscess, povidone-iodine wash, and scleral patch graft showing no recurrence of the whitish mass.

DISCUSSION

We presented a case of an elderly male with recurrent whitish subconjunctival mass in the background of trauma. At initial presentation, the subconjunctival mass was easily mistaken for a conjunctival abscess, due to its appearance of a white friable mass and the history of trauma. Despite appropriate treatment with antibiotics and excision of the mass, there was recurrence of the subconjunctival mass. All culture results were also negative. In this case, malignancy was then highly suspected.

Conjunctival SCC has a variable appearance, which makes diagnosis challenging. It usually presents as a unilateral, vascularized limbal mass in the interpalpebral fissure. The mass may be non-pigmented or pigmented, and can appear as fleshy, gelatinous, leukoplakic, or papillomatous.[11] Surrounding vessels are dilated and appear as feeder vessels. Because of its non-specific appearance, SCC can mimic other common conjunctival lesions such as pterygium, pinguecula, abscess, and granuloma.[7] In cases where neoplasia is suspected, routine diagnostic stains with rose bengal, lissamine green, and methylene blue should be done. When there is a high index of suspicion, biopsy should be performed.

This patient had multiple inherent risk factors of living in a tropical country with high UVB exposure, as well as an elderly age and being male, and a farmer. However, there have been no reports of conjunctival SCC presenting as a subconjunctival mass following trauma. The authors hypothesize that the trauma, combined with the patient's risk factors, may have contributed to the aberrant healing response, leading to the development of SCC.

Surgical management of conjunctival SCC involves excision of the lesion with wide margins, via a "no touch" technique to prevent seeding of the tumor, together with

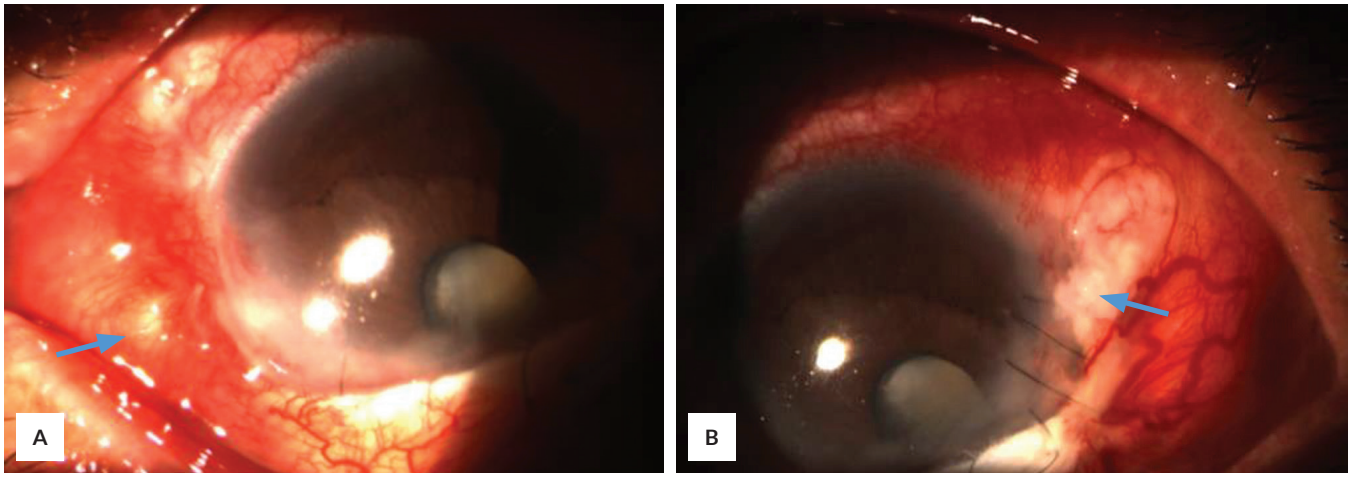

Figure 3. Slit lamp examination 2 months after initial surgery showing **(A)** recurrent friable whitish subconjunctival mass *(blue arrow)* at the 7 o'clock limbus at the previous surgical site, and **(B)** new friable whitish subconjunctival mass *(blue arrow)* on the temporal side at the 2 o'clock limbus, with large dilated conjunctival vessels.

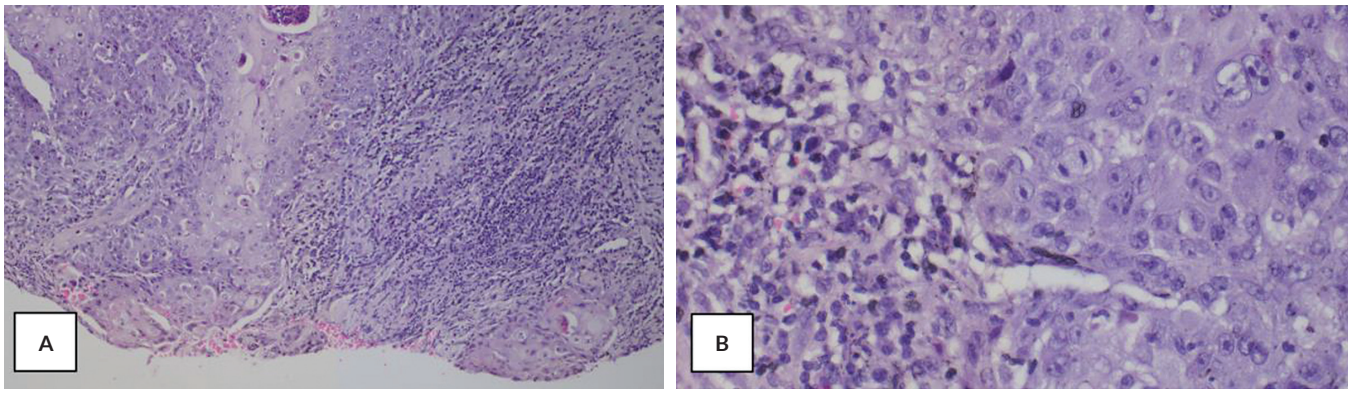

Figure 4. Hematoxylin and eosin stain of the subconjunctival mass. **(A)** At 10x magnification, hyperkeratotic epithelium extending downward within the stroma. **(B)** At 40x magnification, abundant atypical polygonal cells with abundant eosinophilic cytoplasm and pleomorphic round vesicular nuclei with prominent nucleoli and intercellular bridges.

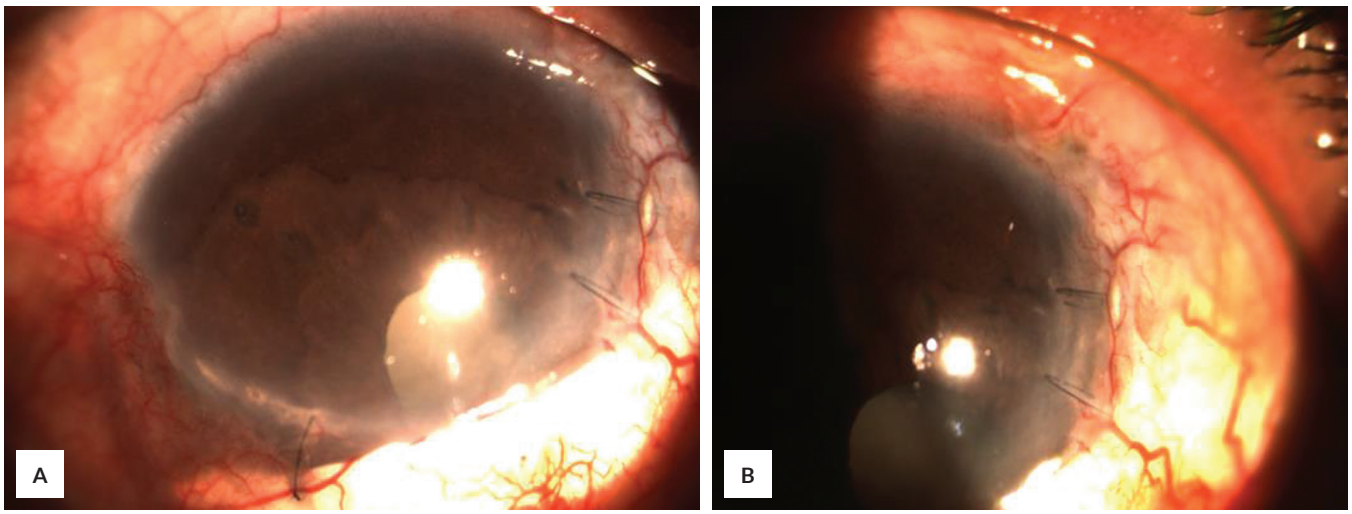

Figure 5. (A and B) Slit lamp examination 1 year after repeat excision showing no recurrence of the whitish subconjunctival mass, with scleral thinning at the previous surgical sites.

topical chemotherapy or cryotherapy.[10] In this case, the initial surgical excision of the subconjunctival mass without adjuvant treatment contributed to the recurrence and seeding of the mass in an adjacent location. Surgery alone carries a high rate of recurrence; hence, adjuvant therapy with 5-FU was used in this patient after the repeat excision.

Medical management of conjunctival SCC includes chemotherapy with antimetabolites such as mitomycin C and 5-FU, immunotherapy with interferon alpha-2b, antiviral therapy such as cidofovir, and photodynamic therapy. 5-FU, a structural analog of thymine, acts as an inhibitor of thymidylate synthase, thereby impairing DNA and RNA synthesis in both normal and tumor cells. Due to the higher rate of nucleic acid synthesis in tumor cells, 5-FU preferentially targets neoplastic tissues. Its usual regimen is 4 times a day for 4 weeks or 4 times a day for 1 week followed by a 3-week drug holiday. Topical 5-FU therapy has been shown to have good efficacy of 85-100%.[10,12] In this case, a 5-FU regimen of 4 times a day for 1 month was used, leading to tumor regression over an initial one-month follow-up period and sustained regression within one-year of follow-up.

The prognosis for conjunctival SCC and ocular surface squamous neoplasia (OSSN) in general is favorable, as these conditions typically present with local invasion and have a low risk of distant metastasis. However, the recurrence risk is as high as 43% in those treated solely with surgery and occurs within the first 6 months after resection. The recurrence rate is dependent on the involvement of surgical margins and the presence of feeder vessels.[10]

CONCLUSION

In elderly male patients presenting with a whitish subconjunctival mass, ocular surface squamous neoplasia, particularly conjunctival SCC, should always be considered as a differential diagnosis. The routine diagnostic tests,

including vital stains, should be performed, and if there is a high index of suspicion, histopathologic examination should be conducted after excision. Although conjunctival SCC typically presents as a papilliform, leukoplakic, or gelatinous conjunctival mass, it may present atypically as a subconjunctival mass. Given the high recurrence rate associated with surgical resection, adjuvant topical chemotherapy has proven to be an effective treatment for promoting tumor regression in conjunctival SCC.

Acknowledgments

The authors thank the Department of Ophthalmology and Visual Sciences of the Philippine General Hospital for the support in making this paper.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

All authors declared no conflicts of interest.

Funding Source

None.

REFERENCES

1. Basti S, Macsai M. Ocular surface squamous neoplasia: A review. Cornea. 2003;22:687–704. doi: 10.1097/00003226-200310000-00015. PMID: 14508267.
2. Kiire C, Srinivasan S, Karp C. Ocular surface squamous neoplasia. Int Ophthalmol Clin. 2010;50:35–46. doi: 10.1097/IIO.0b013e3181e246e5. PMID: 20611016.
3. Sun E, Fears T, Goedert J. Epidemiology of squamous cell conjunctival cancer. Cancer Epidemiol Biomark Prev. 1997;6(2):73–7. PMID: 9037556.
4. Gichuhi S, Sagoo M, Weiss H, Burton M. Epidemiology of ocular surface squamous neoplasia in Africa. Trop Med Int Health. 2013;18(12):1424–43. doi: 10.1111/tmi.12203. PMID: 24237784; PMCID: PMC4440345.
5. Shields C, Demirci H, Karatza E, Shields J. Clinical survey of 1643 melanocytic and nonmelanocytic conjunctival tumors. Ophthalmology. 2004;111:1747–54. doi: 10.1016/j.ophtha.2004.02.013. PMID: 15350332.
6. Lee G, Williams G, Hirst L, Green A. Risk factors in the development of ocular surface epithelial dysplasia. Ophthalmology. 1994;101:360–4. doi: 10.1016/s0161-6420(94)31328-5. PMID: 8115157.
7. Sayed-Ahmed I, Palioura S, Galor A, Karp C. Diagnosis and medical management of ocular surface squamous neoplasia. Expert Rev Ophthalmol. 2017;12(1):11–9. doi: 10.1080/17469899.2017.1263567. PMID: 28184236; PMCID: PMC5293314.
8. McKelvie P, Daniell M, McNab A, Loughnan M, Santamaria J. Squamous cell carcinoma of the conjunctiva: A series of 26 cases. Br J Ophthalmol. 2002;86(2):168–173. doi: 10.1136/bjo.86.2.168. PMID: 11815342; PMCID: PMC1770993.
9. Mishra D, Taneja S, Singh V, Veena U, Kaliki S. Histopathological spectrum of ocular surface squamous neoplasia: A retrospective study of 776 lesions. Indian J Pathol Microbiol. 2022;65:3–7. doi: 10.4103/IJPM.IJPM_1313_20. PMID: 35074957.
10. Cicinelli M, Marchese A, Bandello F, Modorati G. Clinical management of ocular surface squamous neoplasia: A review of the current evidence. Ophthalmol Ther. 2018;7:247–262. doi: 10.1007/s40123-018-0140-z. PMID: 30030703; PMCID: PMC6258579.
11. Shelil A, Shields C, Shields J. Aggressive conjunctival squamous cell carcinoma in a patient following liver transplantation. Arch Ophthalmol. 2003;121(2):280–2. doi: 10.1001/archopht.121.2.280. PMID: 12583801.
12. Nanji A, Sayyad E, Karp C. Topical chemotherapy for ocular surface squamous neoplasia. Curr Opin Ophthalmol. 2013;24(4):336–42. doi: 10.1097/ICU.0b013e3283622a13. PMID: 23680759.