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An Isolated Conjunctival Capillary Hemangioma Masquerading as Ocular Surface Squamous Neoplasia

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ABSTRACT

The purpose of this article is to report a case of isolated subconjunctival capillary hemangioma, masquerading as ocular surface squamous neoplasia (OSSN) in a 58-year-old lady. Conjunctival hemangioma over the age of 58 is rare, with few cases reported in the literature. Here, we present an interesting case of spontaneous development of this tumor at age 58, without associated systemic disease process or cutaneous manifestations. This female presented with complaints of isolated elevated vascular nodular lesions with feeder vessels in superior-temporal bulbar portion of left eye. Provisional diagnosis of left eye OSSN was made. Wide excisional biopsy with cryotherapy was performed for the left eye. Histopathology report of the lesion showed subconjunctival capillary hemangioma with no malignancy. The patient did not show any recurrence of lesion in the left eye at 2-month follow-up.

Keywords: Conjunctival hemangioma, ocular surface squamous neoplasia, vascular nodular lesion, excisional biopsy, cryotherapy

Vascular tumors of the conjunctiva are uncommon and usually arise without pathology. Such tumors are lymphangioma, cavernous hemangioma, Kaposi's sarcoma, pyogenic granuloma and capillary hemangioma. Vascular malformations, such as lymphangioma and arteriovenous malformations, may be seen at birth and growing gradually, may persist into adult life. Capillary hemangiomas of the conjunctiva are quite rare especially in elderly patient. Generally it has been observed that the older the patient, the higher the risk of malignant tumor on the conjunctiva. Thus, such tumors must be carefully examined before removal. Here, we discuss the development of a conjunctival hemangioma with rapid growth in a 58-year-old patient - a presentation not previously noted in the literature. The purpose of this case report is to describe an isolated capillary hemangioma of conjunctiva in an elderly female as a rare entity.

CASE PRESENTATION

A 58-year-old female presented with a brown-colored, blood-filled cyst in the superotemporal region of left eye since 1 month. Patient did not have pain, any diminution of vision, size or color of the lesion, and did not report any kind of eye trauma, allergy or use of medications including anticoagulants or nonsteroidal anti-inflammatory drugs (NSAIDs). The patient was aphakic since last 4 years with horizontal oval pupil left eye. Patient's chief complaint was brown mass in the white portion of eye coincidentally noticed since 3 days along with foreign body sensation and ocular itching in the left eye.

On examination, best corrected visual acuity of the patient was 6/6 in both eyes. Extraocular movements were full in both eyes. Slit lamp biomicroscopy of the left aphakic eye revealed a 6.5 × 2.5 mm, partially mobile, semi-solid, pedunculated conjunctival hemorrhagic lesion. The lesion was dark-brown in color, had well-defined borders and was located in the superotemporal region. There were no associated feeder vessels and pulsations.

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Anterior segment examination showed aphakia with oval-shaped pupil. Intraocular pressure was within normal range in both eyes. Fundus examination in both eyes was normal. The lesion can be seen in Figure 1 as it presented. Ultrasonography revealed the tumor had a sharply defined margin and had no deeper invasion of the sclera. Since, the incidence of malignancy is high for conjunctival neoplasms in patients over 58 years, the lesion was planned for excision biopsy (Fig. 2). The excised mass was sent for histopathological analysis. The patient was treated postoperatively with topical antibiotic and steroid and healed well within a 2-week period. Patient remained asymptomatic in subsequent follow-up at 1 month and 2 months (Fig. 3).

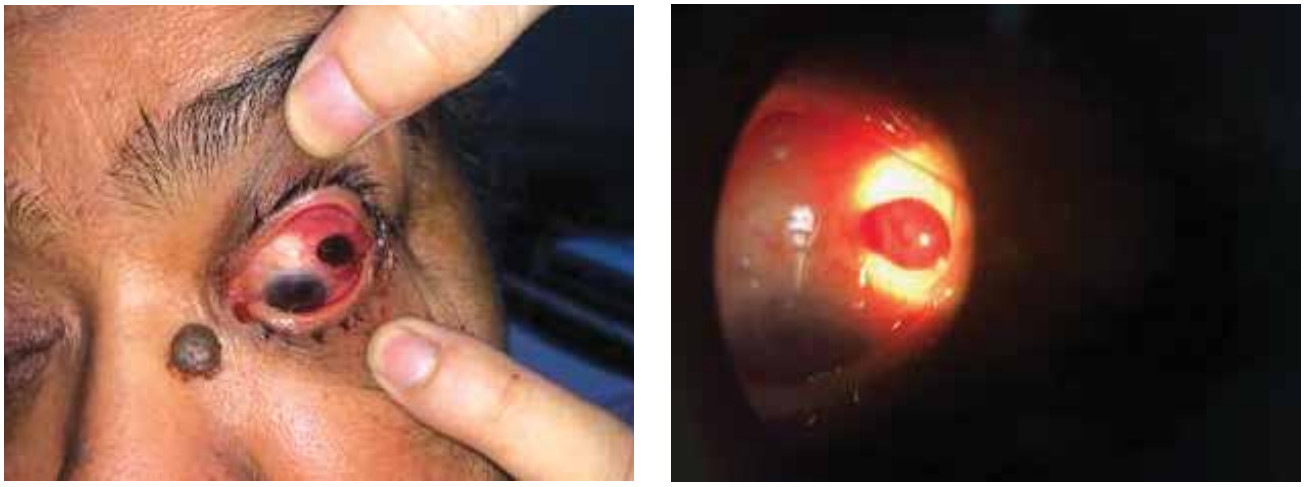

Figure 1. Conjunctival mass.

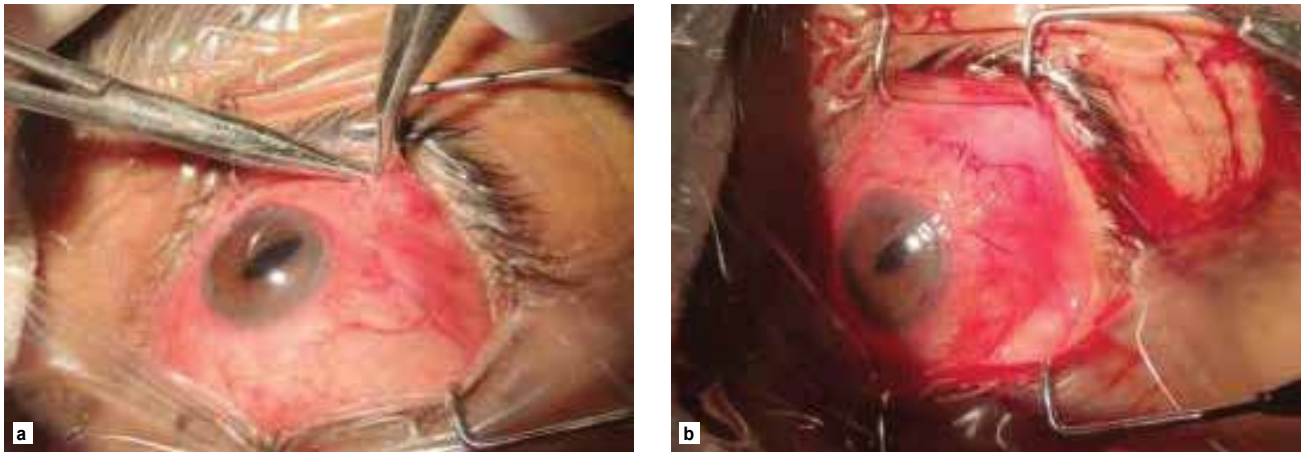

Figure 2 a and b. Excision of growth.

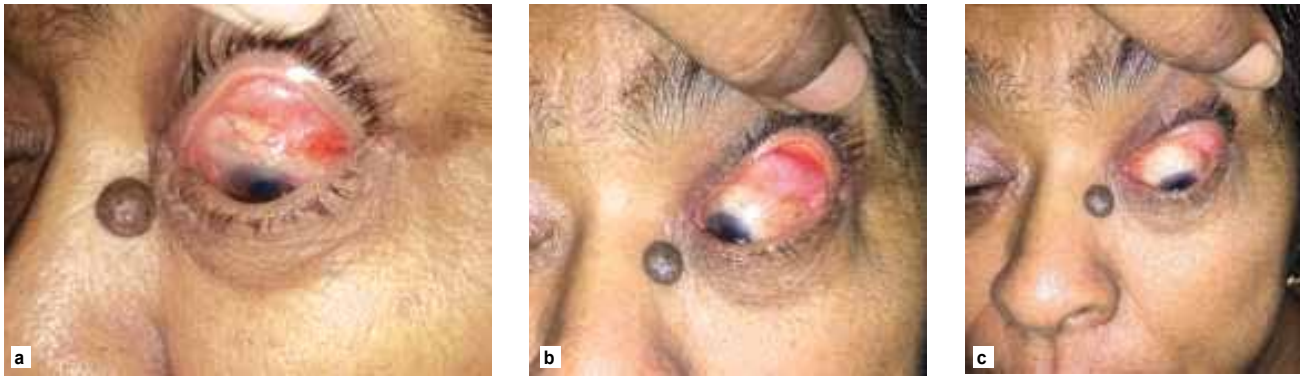

Figure 3 a-c. Postoperative follow-up.

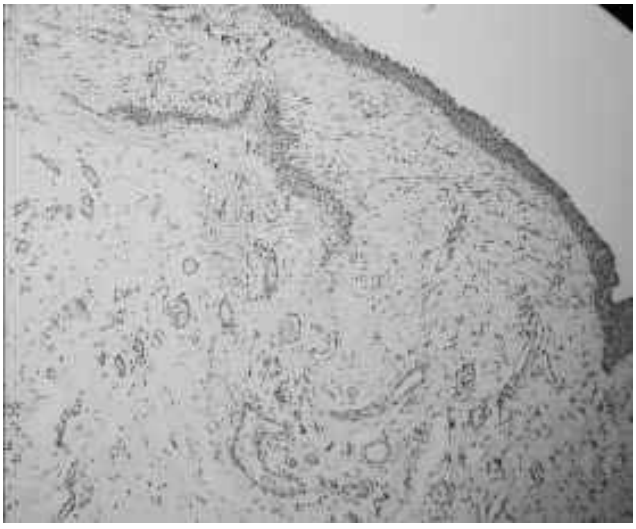

Figure 4. Conjuctival epithelium and capillary proliferation.

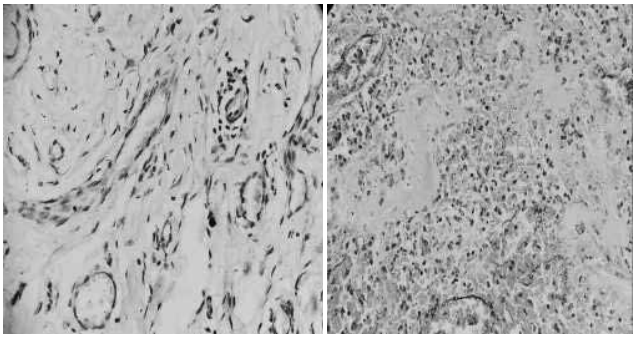

Figure 5 and 6. Capillary proliferation.

Conjunctival biopsy revealed subepithelial proliferation of variably thin-walled vascular channels that were lined by a single layer of endothelial cells. Some were filled with blood. Extravasated red blood cells could also be seen. The final diagnosis was conjunctival capillary hemangioma. The tumor was diagnosed as a conjunctival capillary hemangioma. Figures 4-6 present the histopathology findings.

DISCUSSION

Conjunctival hemangioma accounts for about 2% of all the conjunctival neoplasms. Conjunctival vascular tumors are not common and a few of the lesions commonly found in this group are pyogenic granuloma, lymphangioma and capillary hemangioma. A hemangioma represents a developmental malformation of the blood vessels and presents an example of a hamartoma. A hemangioma may be capillary, venous or arterial with an incidence of 1-2% of all benign growths of the conjunctiva. Sixty percent of conjunctival tumors in patients over 60 years of age are malignant.

The conjunctival vascular tumors remain asymptomatic for a long time and exhibit a benign clinical behavior. These tumors may occur as isolated or may be linked with other ocular capillary hemangiomas such as Sturge-Weber syndrome. The lesion usually presents with an intact surface epithelium with positive vascular endothelium and pericytes markers, including CD31, CD34, IA-4.

Management of these lesions is decided on the basis of presumptive diagnosis, size and extent of the lesion. Serial observation, incisional/excisional biopsy, cryotherapy, chemo-/radiotherapy, modified enucleation, exenteration are all possible options, depending on suspicion, growth and nature of the tumor.

CONCLUSION

As is the case with other tumors of the conjunctiva, each case must be managed individually and any atypical characteristics and growth pattern must be looked for. This case is unique from the cases that have been previously published in the literature as our patient developed this tumor at age 58 without any associated systemic or cutaneous manifestations.

SUGGESTED READING

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Pooled COVID-19 Testing Feasible

Mixing specimens can conserve personal protective equipment (PPE), improve patient care and bring about a significant reduction in staff and patient anxiety. These findings were published on July 20 in the *Journal of Hospital Medicine*. The study depicted that combining specimens from various low risk inpatients in a single test for SARS-CoV-2 infection will make way for the hospital staff to stretch testing supplies and enable them to provide results at a faster rate for an increased number of patients.

The pooled testing strategy involves combining testing samples taken from multiple people within a single test. If the reports are negative, the pooled testing is beneficial in providing the test results for 3-5 people simultaneously, while the testing resources used were that of a single test. In retrospect, the challenge is that if the reports are positive, then every individual whose sample was mixed has to go for a retest as one or more from the group could be infected.

In the present study, all the patients admitted to the hospital including those admitted for observation, underwent testing for SARS-CoV-2. Patients who did not have any symptoms or clinical evidence of COVID-19, were considered to be at low-risk and underwent pooled testing.

However, patients with any clinical evidence of COVID-19 (respiratory symptoms or laboratory or radiographic findings) were considered high-risk and were excluded from the study.

The study included 530 patients visiting the hospital between April 17 and May 11. One hundred seventy-nine cartridges (172 with swabs from 3 patients and 7 with swabs from 2 patients) were used. The results showed 4 pooled positive tests, making it necessary for all those study participants to be individually retested leading to an additional use of 11 cartridges. In all, the study made use of 190 cartridges, a number 340 less than if the patients were individually tested.

The findings from the low-risk patient group was encouraging with the positive rate of 0.8% (4 out of 530); none of the patients from pools tested negative were tested positive later during the course of their hospitalization or developed any evidence of the infection.

The researchers concluded that pooled testing strategy is most beneficial when 3-5 patients are included in a pooled test; however, larger batches increase the risk of having a positive test.

Pooled testing is primarily based on the COVID-19 positive rate in the population of interest along with the sensitivity of the RT-PCR method used for COVID-19 testing. The research findings clearly suggested that the pooled testing could raise the testing capability by 69% or more when the incidence rate of SARS-CoV-2 infection is 10% or lower.

The authors recommend that asymptomatic population or surveillance groups including students, athletes and military service members are ideal for pooled testing. Even though the study did not shown any false-negative specimen, its limitation is that there is a risk of missing specimens with low concentration of the virus owing to the dilution factor of pooling (false-negative specimens).