

Acquired sessile conjunctival capillary haemangioma in an adult managed with topical timolol

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DESCRIPTION

A 19-year-old woman presented to the ophthalmology outpatient department with complaints of a reddish mass in her right eye for the past 6 months. There was no history of any trauma, systemic illness or family history of similar lesions.

On general examination she was alert, conscious with stable vitals. On ophthalmological examination, visual acuity was 20/20 in both eyes, intraocular pressure (IOP) was 12 mm Hg in both eyes. On slit-lamp examination, a reddish, elevated lesion was noted on the nasal aspect of the bulbar conjunctiva of the right eye at 3 O'clock position. The sessile lesion was 1.5×2 mm in size. It was surrounded by a mildly dilated network of blood vessels. Rest of the anterior segment evaluation and dilated fundus examination were within normal limits.

A diagnosis of the acquired conjunctival capillary haemangioma was made based on the history and clinical findings. The patient was counselled regarding the disease. As she was complaining of cosmetic blemish, she was started on topical timolol maleate 0.5% gel solution two times per day after ruling out cardiac and pulmonary diseases by the cardiology and pulmonary medicine departments, respectively. There was a remarkable response to the topical beta-blocker as the lesion completely resolved in nearly 4 weeks (figures 1 and 2). The IOP was within normal limits at 6 weeks follow-up.

Haemangiomas are developmental malformations of blood vessels and usually present as red lesions which are elevated.¹ They can be either sessile or pedunculated and are quite common, encompassing nearly 5%–10% of all the soft tissue tumours of infancy.²

According to the age of presentation, haemangiomas can be further classified in congenital, infantile and acquired. Congenital haemangiomas are rare and present in its full size at birth.³ Infantile haemangiomas usually present at birth and grow postnatally followed by involution. Acquired capillary haemangiomas are usually seen in adults but have also been reported in paediatric age group, they gradually increase in size.^{4–6}

In 2011, Shields *et al* first described the term “acquired sessile haemangioma” in a series of 10 patients, where conjunctival vessels were arranged in layers, coursing anterior and posterior with ending loops.⁷

Histologically, these lesions are composed of endothelial cell lined vascular channels, which contain blood. They are positive for CD31 and CD34 hinting the presence of endothelial elements



Figure 1 Clinical picture showing an acquired conjunctival haemangioma in the bulbar conjunctiva of the right eye after 1 week of starting topical timolol.

and are negative for Desmin indicating the lack of smooth muscle component.⁸

Acquired capillary haemangioma of bulbar conjunctiva can present with subconjunctival haemorrhages.⁹ A sudden haemorrhage into the lesion following trauma can also lead to the formation of a chocolate cyst.¹⁰

An isolated bulbar conjunctival haemangioma being a non-malignant condition without causing visual disturbances, some authors advocate regular observation.⁸ However, a similar lesion of the conjunctiva in the elderly age group must raise the suspicion of malignancy. The lesion should be



Figure 2 Clinical picture showing near-total resolution of the haemangioma after 4 weeks of topical timolol 0.5% gel application.



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Table 1 Table showing all reported acquired bulbar conjunctival capillary haemangioma

Author/ year	Age/sex	Clinical features	Imaging	Treatment	Holoprosencephaly	Recurrence/follow-up
Chauhan <i>et al</i> 2017 ⁹	17/Male	Mass in the right eye for 3 months	Nil	Excision biopsy followed by antibiotic-steroid and topical timolol eye drops	Endothelium lined vessels indicative of capillary haemangioma.	No recurrence reported
Nattis <i>et al</i> 2017 ⁸	68/Male	Complain of blood-filled mass in the right eye for 3 months	Nil	Excision biopsy	Thin-walled vessels which are endothelium lined filled with blood.	No recurrence reported
Lubahn <i>et al</i> 2014 ⁵	77/Female	Red mass on the temporal bulbar conjunctiva	Nil	Topical timolol therapy	Nil	6-follow-up showed complete resolution of lesion
Shields <i>et al</i> 2011 ⁷						
Case 1	54/Female	Sessile red mass with intertwined blood vessels (reported in all cases), largest diameter 2 mm on temporal bulbar conjunctiva	Fluorescein angiography of one case showed feeding artery and vein, with leakage of dye from the deep vessels, and no or minimal leakage from superficial vessels	Observation		No regression
Case 2	66/Male	Largest diameter 3 mm, on inferotemporal bulbar conjunctiva		Excision	Lesion consists of layers of dilated and congested blood vessels.	No recurrence reported
Case 3	71/Female	Largest diameter 1.5 mm, on inferonasal bulbar conjunctiva		Observation		No regression
Case 4	34/Female	Largest diameter 2 mm, on inferotemporal palpebral location		Observation		No regression
Case 5	58/Female	Largest diameter 2 mm, on temporal bulbar conjunctiva		Observation		Spontaneous regression after 7 months
Case 6	31/Female	Largest diameter 2 mm, on nasal bulbar conjunctiva		Observation		No regression
Case 7	58/Female	Largest diameter 2.5 mm, on inferotemporal bulbar conjunctiva		Observation		Spontaneous regression after 12 months
Case 8	83/Female	Largest diameter 2 mm, on temporal bulbar conjunctiva		Observation		No regression
Case 9	65/Female	Largest diameter 3 mm, on nasal bulbar conjunctiva		Observation		No regression
Case 10	57/Male	Largest diameter 2 mm, on temporal bulbar conjunctiva		Observation		No regression
Godfrey <i>et al</i> 2016 ⁶	11/Male	A 6 mm, raised, highly vascular dome-shaped mass in the left nasal interpalpebral bulbar conjunctiva with multiple large feeding vessels	Nil	Complete excision with wide margins and placement of Amniotic membrane graft on the conjunctival defect.	A well-circumscribed lesion in the substantia propria composed of capillary channels and proliferation of spindled to plump endothelial cells. Immunohistochemistry demonstrated CD31 expression in blood vessels and proliferating endothelial cells. Ki-67 reactivity was detected in rare, scattered cells. GLUT-1 was negative.	No recurrence at 1 month follow-up

biopsied and sent for histopathological examination as studies show that there is a 60% chance of malignancy for lesions which present over 60 years of age.^{10 11}

The management of conjunctival haemangiomas depends on the presentation, growth and extent of the tumour. Many studies have shown complete resolution of capillary haemangiomas in infants where the capillaries are in their immature stages, with oral or topical beta-blockers.^{12 13} The proposed mechanism of action of beta-blocker is by triggering apoptosis, inhibition of angiogenesis and vasoconstriction.¹⁴ Timolol, a non-selective beta-blocker, has also been used topically in the treatment of orbital haemangioma with superficial and deep components. Lubhan *et al* have shown promising results with a topical beta-blocker.⁵ The advantage of topical preparation is that it decreases the adverse effects which are seen with systemic medication. Systemic propranolol has been widely studied in the management of infantile haemangiomas,

which possesses risk of bronchospasm, bradycardia, hypotension, hypoglycaemic and cardiac failure.¹⁵

Excision, cryotherapy and radiotherapy have also been described as management options.¹⁶ We performed a review of literature and could find a total of 14 acquired bulbar conjunctival haemangiomas which is illustrated in table 1.

In our case, the patient had an acquired sessile capillary haemangioma of the bulbar conjunctiva which responded very well to topical 0.5% gel application and there was no recurrence at 6 months follow-up.

Patient's perspective

The red patch in my right eye had made my life hell. I was taunted at college by my friends. I am happy that it is not there anymore.

Learning points

- ▶ Acquired capillary haemangioma of bulbar conjunctiva is usually a benign condition but a similar lesion in the elderly age group should raise a suspicion of malignancy.
- ▶ If the lesion is stable close monitoring can be done. Intervention can be done for cosmesis, in case of a chocolate cyst or increase in size.
- ▶ Topical timolol maleate 0.5% gel-forming solution is a well-tolerated treatment option for capillary haemangioma with promising result.

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