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RESOLUTION OF CONJUNCTIVAL SESSILE HEMANGIOMA WITH TOPICAL TIMOLOL

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Abstract

Purpose—To report a single case of acquired sessile hemangioma of the conjunctiva which resolved after treatment with topical timolol.

Methods—Case report and literature review.

Results—A 77-year old African-American woman developed an acquired sessile hemangioma of the conjunctiva of the right eye. She was followed for primary open-angle glaucoma, and the lesion was monitored for 12 months without change. Topical timolol-dorzolamide was then added to her glaucoma medication regimen twice daily. On follow-up examination 6 months later, the lesion had completely resolved.

Conclusion—In this case report, an acquired sessile hemangioma of the conjunctiva resolved with topical timolol therapy.

Keywords

acquired sessile hemangioma of the conjunctiva; timolol; topical beta-blocker; hemangioma

INTRODUCTION

Vascular tumors of the conjunctiva are uncommon and usually arise without concurrent pathology. The most common are lymphangioma, lymphangiectasia, pyogenic granuloma, and capillary hemangioma.¹ Shields *et al* recently described an acquired sessile hemangioma of the conjunctiva.^{1,2} This uncommon vascular tumor (seen in only 10 of their recent series of 140 conjunctival vascular tumors) is usually found on the bulbar conjunctiva and is characterized by a “flat array of intertwining, mildly dilated blood vessels.” These vascular tumors are seen in patients with an average age of 58 and are not associated with any systemic abnormalities.² Of the original 10 cases published in their case series, two spontaneously resolved.

As acquired sessile hemangioma of the conjunctiva is a newly described, benign, vascular lesion, it is still uncertain what characteristics these lesions share with known vascular entities of the conjunctiva and other organs (such as the skin). Infantile hemangioma is a well-studied lesion type that has recently been successfully treated with systemic non-selective beta-blocker therapy (propranolol).³ Topical timolol (another non-selective beta-blocker) has also been used to effectively treat superficial infantile hemangiomas.⁴⁻⁶

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We herein report the first case of acquired sessile hemangioma of the conjunctiva which resolved with topical timolol therapy.

CASE REPORT

A 77-year old **African-American** woman with well-controlled hypertension, hypercholesterolemia, and type 2 diabetes mellitus was followed for several years for primary open-angle glaucoma. Both eyes were treated with travoprost for 1.5 years and brinzolamide for 3 months prior to developing a 1 mm by 2 mm acquired sessile hemangioma of the bulbar conjunctiva anterior the lateral rectus insertion of the right eye (Figure 1A). Examination revealed a loose collection of tortuous, intertwining blood vessels of the temporal bulbar conjunctiva. The lesion had a slightly dilated feeding artery and draining vein.

Given the benign appearance, the decision was made to monitor the lesion. The lesion remained stable for 12 months. Her glaucoma therapy was then escalated from brinzolamide to timolol-dorzolamide in both eyes twice a day. On follow-up examination 6 months after initiating timolol-dorzolamide topical therapy, the vascular lesion completely resolved (Figure 1B).

DISCUSSION

Infantile cutaneous hemangioma has been effectively treated with oral and topical beta-blockers since the original description in 2008.⁷ The most effective treatment has been found with use of propranolol, a non-selective beta-blocker active against both β_1 and β_2 adrenergic receptors.³ The exact mechanism for the robust response seen with this therapy is still unclear, but it is hypothesized that beta-blockade results in inhibition of angiogenesis via the vascular endothelial growth factor (VEGF) pathway, vasoconstriction, and stimulation of apoptosis.^{8,9} Ji and colleagues demonstrated more effective inhibition of hemangioma-derived endothelial cell proliferation with β_2 adrenergic receptor blockade than with β_1 blockade, possibly helping to explain why non-selective beta-blockers are superior to β_1 -selective agents in the treatment of cutaneous hemangioma.⁹

Timolol, like propranolol, is a nonselective beta-blocker with activity against both β_1 and β_2 adrenergic receptors. It has been shown to be effective in the treatment of infantile hemangioma.⁴⁻⁶

The characteristics shared between infantile cutaneous hemangioma and acquired sessile hemangioma of the conjunctiva are unknown. **It was with interest** that we noted complete resolution of the lesion in our case after coincidentally starting topical timolol-dorzolamide therapy for her glaucoma.

These lesions have a benign course and treatment is not absolutely necessary, but some patients may be bothered by the appearance. Shields and colleagues found the average age of patients with this lesion to be 58 years, with 80% of their cases found in women, and 70% affecting the right eye.² Interestingly, all patients in their report are Caucasian/white, but our case is of **African-American descent**.

The lesion may have resolved spontaneously, however, it is strongly suggestive that the medication played an active role as our patient had a stable lesion for 12 months before starting therapy, and initiation of timolol therapy lead to a prompt response. In addition, rationale for the response to a topical beta-blocker exists for the regression of other forms of vascular tumors. Additional study of acquired sessile hemangioma of the conjunctiva will be

necessary to determine the efficacy of topical beta-blockers in the treatment of this benign vascular tumor.

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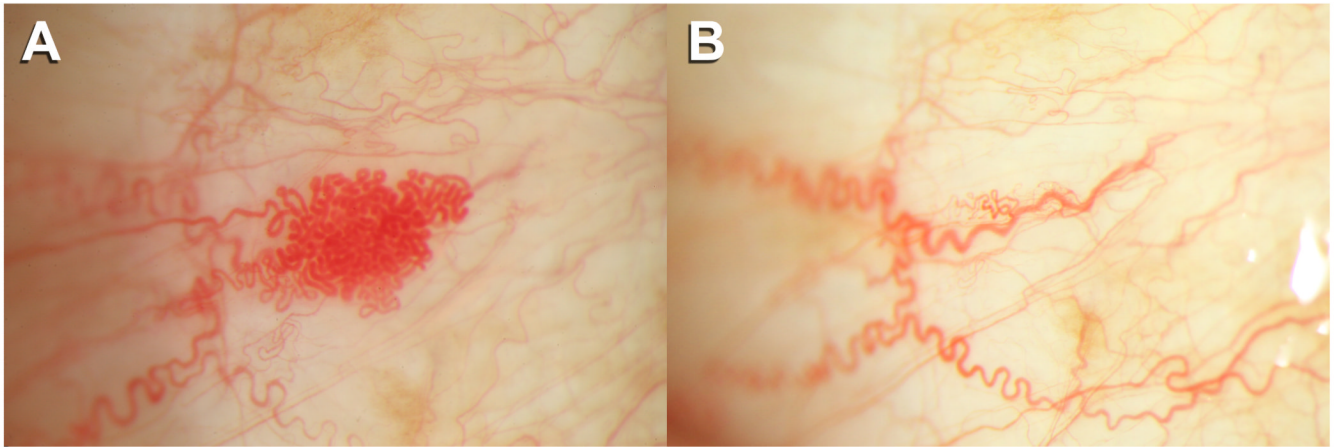


Figure 1. Acquired sessile hemangioma of the conjunctiva of a 77-year old **African-American** woman. A—Lesion as seen before treatment. B—Resolution 6 months after starting topical dorzolamide-timolol with only trace residual vessel irregularity remaining.