

Role of Intralesional Bleomycin in Periocular Capillary Hemangioma

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Abstract :

Background : Capillary hemangioma is one of the most common benign orbital tumor of childhood that appears in early childhood. Primary conjunctival capillary hemangioma resolves in majority of cases spontaneously. However, some periocular and conjunctival hemangioma may not regress and require treatment to prevent serious complication and/or to restore cosmesis. There are many therapeutic options available but these tumors do not always respond well to conventional treatment.

Aim : To treat periocular / conjunctival capillary hemangioma by Intralesional bleomycin, a cytotoxic agent.

Results : The Bleomycin (0.5mg/Kg) diluted in normal saline was used in two cases of periocular and conjunctival capillary hemangioma. Complete resolution occurred in one case after two injections while other is regressing after two injections. No significant side effects were noted.

Conclusion : Intralesional bleomycin turned up to an useful treatment modality for periocular capillary hemangioma refractory to other conventional treatment and reduces the need of surgical intervention.

Key words : Periocular, Bleomycin, Capillary hemangioma, Intralesional

Introduction :

Periocular capillary hemangioma is one of the most common benign vascular tumor of childhood.¹ Histologically, they are characterized by proliferating endothelial cells. They can present within a few weeks after birth or in early childhood. Usually followed by rapid proliferating phase tumor starts regressing but clinical course can be variable.² These cases are more common among females.³ Acceptable indications for intervention may include rapidly enlarging lesions, obstruction of the visual axis, significant induced astigmatism, and cosmetic concerns. There are several treatment options available.

Here we are presenting two cases of periocular hemangioma exemplifying the successful use of intralesional bleomycin injection (IBI) without surgical excision. Bleomycin is an antineoplastic agent, now being used as a sclerotherapeutic agent in such vascular tumors.⁴

Case Reports :

A written and informed consent was taken from the parents of both patients.

Case 1 :

A 13-year-old female with complaints of a purplish-colored mass in the right upper lid since childhood reported to our institution. No history of other systemic illness found. On ocular examination, best-corrected visual acuity was 20/20 in both eyes for distance. On slit lamp examination anterior- and posterior-segment were within normal limits in both the eyes. On external examination, a violaceous red-colored upper lid mass was present. Widest diameter was around 1.5 cm.

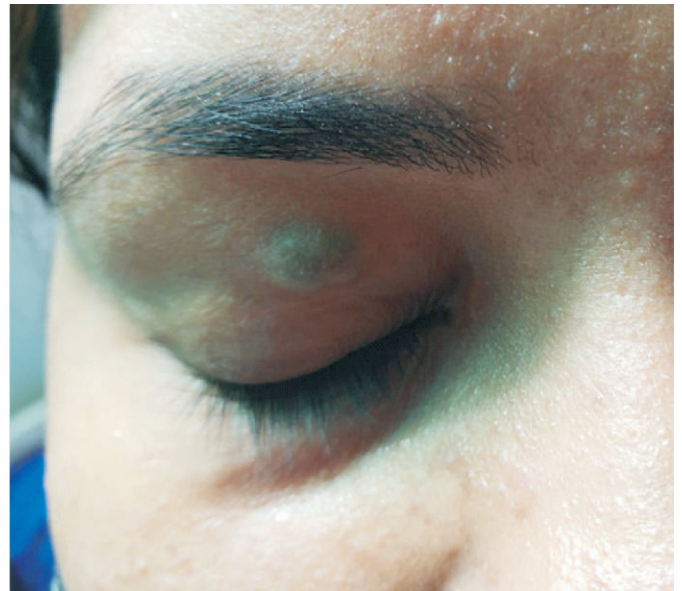


Figure 1a : Upper lid hemangioma

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Patient was managed conservatively for which intralesional bleomycin (dose of 0.5 mg/kg diluted in volume with normal saline along with lignocaine) was injected taking all aseptic precautions. Two injections were given over a period of 2

months and response was assessed resulting into near total regression .

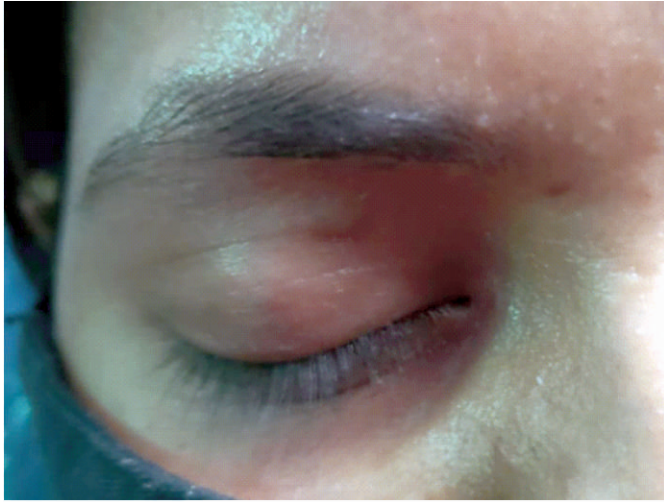


Figure 1b : Regression of hemangioma post Injection Bleomycin

Case 2 :

A 17-year-old female with complaints of a red-colour mass in the right eye since childhood came to us. Complete ocular examination was done. Best-corrected visual acuity was 20/20 in both eyes for distance. Anterior- and posterior-segment were normal in both the eyes On external examination, a red-colored subconjunctival mass involving both bulbar and palpebral part was present in right eye extending from limbus to fornices, involving quadrants from 1'o clock to 8'o clock .



Figure 2a : Periocular capillary hemangioma

It was associated with mild upper eyelid ptosis and fullness below the lower lid. Ocular motility was full in all gazes. Magnetic resonance imaging was done. It showed the lesion involving anterior part of the orbit. Based on clinical and

imaging findings, the diagnosis of periocular capillary hemangioma involving conjunctiva was confirmed.

Intralesional bleomycin injection was given at multiple locations under local anesthesia and dose of 0.5 mg/kg was used. Total of 2 injections were given at 1 month interval .The hemangioma is regressing and no adverse effect related to the treatment was noted .



Figure 2b : Regressing hemangioma post Injection Bleomycin

Discussion :

The prevalence of periocular capillary hemangioma ranges from 1% to 3%.¹ Capillary hemangiomas are capillary unit structure of endothelial cells surrounded by pericytes.⁵ These tumors can present as small isolated lesions, or large masses that can cause visual impairment. Many capillary hemangiomas can be diagnosed on examination, but occasionally identification may require the imaging and biopsy. Spontaneous involution occurs in majority of cases. However some periocular and orbital capillary hemangiomas require treatment to prevent serious complications, to lessen the surgical burden and to obtain cosmesis .When treatment is necessary, there are a number of therapeutic options available.

Bleomycin was used in both the cases as patients were not responding to conventional corticosteroid therapy, beta blockers and surgical excision was not possible due to the extent of the lesion. Bleomycin is a chemotherapeutic agent derived from *Streptomyces verticillus*, a soil fungi. The mechanism of action of Bleomycin is to induced apoptosis in rapidly growing cells via oxidative damage and has a sclerosing effect on the vascular endothelium. Due to its sclerosing effect on the endothelium of the abnormal vasculature intralesional bleomycin is useful in the management of vascular neoplasm.^{6,7} Bleomycin injections have also been used for the treatment of basal cell carcinoma and Kaposi sarcoma.⁴

The common adverse reaction after intralesional bleomycin are erythema, pain, swelling , bleeding, hypopigmentation and flu-

like symptoms. The adverse effect of intralesional bleomycin therefore compares favorably with that of conventional modalities of treatment.

Conclusion :

Intralesional bleomycin is useful in the treatment of periocular and superficial orbital hemangioma when conventional modalities have not been successful. Surgical excision of entire mass is not possible and the patient is also concerned about cosmesis. This could be an important step forward in the treatment of disease that can prove very difficult to manage.

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Popular class of diabetes medications may be protective against glaucoma

A popular class of diabetes medications called GLP-1R agonists (Trulicity and Rybelsus) may also protect against glaucoma in diabetic patients, according to a new study led by researchers in the Scheie Eye Institute at the University of Pennsylvania's Perelman School of Medicine. The findings were published in the *British Journal of Ophthalmology*.

The researchers looked at retrospective data of 1,961 diabetic patients who were new users of this class of drugs and matched them to 4,371 unexposed control subjects. After 150 days on average, 10 patients in the medicated group were newly diagnosed with glaucoma (0.5 percent) compared to 58 patients (1.3 percent) in the control group. The findings suggest that GLP-1 receptor agonists may decrease a diabetic patient's risk of developing glaucoma by half.

The findings are supported by a Penn Medicine study from 2020, which found that GLP-1R agonists reduced neuroinflammation and prevented retinal ganglion cell death in mice. This class of drugs has also shown similarly protective effects against Alzheimer's and Parkinson's diseases in animal models, and clinical trials are underway to test the medications against neurodegenerative diseases in humans.

Source :

University of Pennsylvania

Journal reference :

Sterling, J., et al. (2021) Glucagon-like peptide 1 receptor agonist use is associated with reduced risk for glaucoma. *British Journal of Ophthalmology*. doi.org/10.1136/bjophthalmol-2021-319232.