

# An Interesting Case of Capillary Hemangioma Treated with Propranolol

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**Abstract:** Hemangiomas are the most common lid tumours of infancy. They generally show spontaneous regression and hence can be observed, but hemangiomas that cause significant functional visual sequelae or disfigurement need to be treated. We describe a 6 month child with hemangioma of cheek and right lower eyelid that was vision threatening and was successfully managed with oral propranolol therapy. oral propranolol can be used as a treatment modality to treat infants with vision threatening peri-ocular hemangiomas after appropriate systemic work.

**Keywords:** Eyelid, oral beta blocker, corticosteroids, amblyopia

## 1. Introduction

Hemangiomas are the most common lid tumours of infancy.[1] They generally show spontaneous regression and hence can be observed, but hemangiomas that cause significant functional visual sequelae or disfigurement need to be treated. Various treatment options are available and the recent advances has seen the use of oral propranolol for the treatment of hemangioma.[1],[2],[3],[4]. We describe a 6 month child with hemangioma of cheek and right lower eyelid that was vision threatening and was successfully managed with oral propranolol therapy.

## 2. Case Report

A 6 month old child presented for swelling near cheek and lower eyelid on the right side. The swelling was observed after 3 weeks of birth and it began growing rapidly from 4 months of age. On examination, there was a large diffuse bluish coloured swelling involving the right cheek and right lower eyelid. The soft and compressible swelling pushed the lower lid across the inferior pupil margin (image 1A) and also resulted in significant astigmatism of the right eye.



Image 1 A: Capillary hemangioma pre treatment



Image 1B: Resolution of hemangioma post treatment

The child was fixing and following with both the eyes. The eyes were aligned well and the extra-ocular movements were full. Anterior segment, dilated fundus examination in both

the eyes and systemic examination was normal. The girl had been treated with oral steroids elsewhere and was not responsive to the treatment. Hence it was decided to start the child on propranolol along with part time patching of the left eye. A baseline investigation including blood sugar estimation, electrocardiogram and echocardiogram was done and were all normal. The child was admitted in the hospital and was started on 2.50 mg/day (at a dose of 0.5 mg/ kg/day) of oral propranolol in divided doses and was increased gradually till a dose of 10 mg/day (at a dose of 2 mg/kg/day) was reached by 14th day. There was a dramatic effect on the hemangioma and a very definite change in the colour and consistency was noticeable from the first day. The hemangioma had reduced to a great extent by 9 months of age, but the astigmatism was still significant and refractive error was corrected with spectacles. An attempt was made to taper the dose of propranolol at 1 year of age, but the lesion recurred. Hence, propranolol was continued till 2 years of age and then stopped after tapering the dose. The lesion had almost resolved (image 1B) , There was a reduction in the astigmatism and there was no recurrence.

## 3. Discussion

Infantile hemangiomas appear by 2<sup>nd</sup>-3<sup>rd</sup> week of life and regress by 7-8 years of age . [1] Nearly 43-60 % of patients with peri-ocular infantile hemangiomas can develop amblyopia.[ 2 ] , [ 3 ] Peri-ocular hemangiomas can cause visual disturbance by deprivation (occlusion of pupillary axis by the lid lesion), by causing anisometropia (astigmatism due to compression of the globe), by inducing strabismus or by direct compression of optic nerve. The first two mechanisms were at play in our child and hence it was decided to treat her.

Corticosteroids have been the mainline of treatment, but produce variable results and can cause systemic side effects.[4]

Léauté-Labrèze et.al., noted a significant reduction in the hemangioma in patients receiving propranolol for cardiac indication .[5] Our child failed to respond to systemic corticosteroids prescribed elsewhere and hence was started

on propranolol therapy. Propranolol is started at a dose of 0.5mg/kg/day in three divided doses. The dose is slowly increased till a maximum dose of 2mg/kg/day is reached . [1]

In our child, there was a reduction in the astigmatism, but it was still significant enough to cause amblyopia and hence needed refractive correction with spectacles and patching treatment.

Fabian et al suggested that propranolol be continued till around 1 year of age, by which proliferative phase of hemangioma is over or till the refraction becomes stable on 2 consecutive visits.[4] In our case treatment was continued till 2 years of age. Eventually in our case it was tapered and stopped at 2 years of age and there was no recurrence subsequently. Claerhout et. al., reported recurrence of hemangioma after abrupt cessation of propranolol and recommend tapering of the drug before stopping it. [1]

In summary, oral propranolol can be used as a treatment modality to treat infants with vision threatening peri-ocular hemangiomas after appropriate systemic work.

#### **4. Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

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