CASE REPORT

Delayed resolution of eyelid swelling in preseptal cellulitis in a child: beware of causing occlusion amblyopia

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SUMMARY

A 7-month-old child presented with a 6-day history of right eyelid swelling and redness. She was being treated with chloramphenicol ointment and oral flucloxacillin by the general practitioner. Clinical examination revealed features of preseptal cellulitis. There was no evidence of orbital involvement and the child was generally well otherwise. Her oral antibiotics were changed and she was advised to attend for a review in 2 days time. However, the child did not return for a review. Three weeks later following resolution of the eyelid swelling, the child represented with a divergent squint in the right eye. Clinical and orthoptic investigations suggested occlusion amblyopia. The child is currently receiving patching treatment for the amblyopia and is awaiting surgery for squint eye.

BACKGROUND

Preseptal cellulitis is a potentially serious infection of the eyelid tissues anterior to the orbital septum. Patients with preseptal cellulitis need to be monitored closely for signs of orbital involvement which needs emergent inpatient management. In the absence of orbital involvement, most cases are managed with appropriate oral antibiotic therapy which do tend to resolve within a week.

When resolution is delayed, the prolonged unilateral eyelid swelling can cause deprivation of form vision in the affected eye and in a child in the amblyogenic age group (less than 7 years of age and particularly less than 2 years of age) can lead to occlusion amblyopia (a subtype of stimulus deprivation amblyopia). The present case highlights the need for educating parents and general practitioners (GP) to be aware of this possibility to ensure that children with prolonged eyelid swellings especially greater than 1 week be monitored very closely for amblyopia and therefore being managed more aggressively to achieve quicker recovery of the eyelid swelling.

CASE PRESENTATION

A 7-month-old child was being treated for right eyelid swelling and redness by the GP for 6 days with oral flucloxacillin and chloramphenicol eye ointment. Her mother was diagnosed to have acute conjunctivitis just prior to her symptoms.

The child was otherwise well. Examination revealed a right-sided preseptal cellulitis. The lid swelling obscured the visual axis. The child was prescribed oral erythromycin instead of the

flucloxacillin and was advised to reattend in 2 days time; however, the child was not brought back for review. About 3 weeks later the child was referred to the paediatric eye outpatient clinic with a squint in the right eye. Clinical examination revealed a right divergent squint. Visual acuity was estimated to be about 6/48 in the right eye and 6/6 in the left eye. There was no structural abnormality noted in the right eye either in the anterior segment or posterior segment. Refraction revealed only mild hypermetropia in the right (+1.25 D sph/ -0.25 D cyl at 90°). The left eye was emmetropic (+0.00 D sph/ -0.25 D cyl at 90°).

INVESTIGATIONS

Visual evoked potentials (VEP) showed normal latency in both eyes and only a moderate decrease in amplitude in the right eye.

DIFFERENTIAL DIAGNOSIS

The child was diagnosed to have amblyopia in the right eye. Given the episode of preseptal cellulitis with significant lid closure for nearly 2 weeks occlusion amblyopia was the main differential diagnosis. Anisometropic amblyopia was also thought to be a factor though the degree of hypermetropia was small. A concurrent optic neuritis was also considered in the differential, but VEP did not reveal any decrease in latency.

TREATMENT

Appropriate spectacle prescription was issued and patching was started. After initial non-compliance with patching, atropine penalisation was started. However, even this was not met with good compliance despite a second trial. Once the child was about age 4 patching was restarted with better results. The vision in the right eye improved to 6/15. At around age 5 the child underwent right divergent squint surgery.

OUTCOME AND FOLLOW-UP

There has been an improvement in the squint following the surgery and at time of the last review after 6 months follow-up there is only a small divergent squint noted. Visual acuity is 6/15 in the right eye and 6/5 in the left eye. There has been no change in the refraction. The child continues to attend the eye clinic for regular follow-ups.

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DISCUSSION

Preseptal cellulitis of the eyelid refers to infection of the eyelid anterior to the orbital septum. Eyelid oedema and redness are universal features of the condition. The presence of an injected conjunctiva with conjunctival chemosis, restriction of eye movements and proptosis suggests orbital involvement (which warrants emergent management with intravenous antibiotics and imaging). Most cases of preseptal cellulitis can be managed as an outpatient with an oral antibiotic therapy though on occasions inpatient management may be warranted with intravenous antibiotics.¹

In addition to the common risks of orbital cellulitis in these patients, this case highlights the need to be aware of the possibility of developing occlusion amblyopia in children especially under the age of 6 years as a result of the eyelid swelling obscuring the visual axis. Occlusion amblyopia is well known to occur in young children with other types of eyelid swellings (eg, haemangiomas)² and also in congenital ptosis when the droopy eyelid covers the visual axis.^{3 4} While any child under the age of 7 years is at risk of amblyopia, children under the age of 2 years are particularly vulnerable to develop occlusion amblyopia.⁵ Parents and healthcare individuals should be aware of this problem to ensure that prompt referrals are made to the ophthalmologists in such situations.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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Learning points

- Preseptal cellulitis in children can be potentially sight threatening and needs prompt appropriate antibiotic treatment.
- Occlusion amblyopia is a possible mechanism of vision loss in preseptal cellulitis in any child less than 7 years of age but is particularly important in children younger than 2 years.
- General health practitioners should be aware of the potential for occlusion amblyopia to develop in any situation where the visual axis (pupil) is obstructed in young children even for a few days.

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