Traumatic ocular blunt trauma in a child: lessons to learn

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INTRODUCTION

Ocular blunt trauma is a common injury in children, and may result in significant unilateral acquired visual loss. It is, therefore, an important public health issue. Predisposing factors of eye injury in children includes manner of play, lack of eye protection, and limitations of common sense. In pediatric age group, trauma results in visual loss from direct injury to ocular structures or from its complications. Common complications of ocular injury are secondary amblyopia, traumatic optic neuropathy, glaucoma and cataract. We report a case of pediatric ocular injury with relatively late presentation to tertiary center.

Key words
Ocular blunt trauma, hyphema, intraocular pressure, anterior chamber washout.

CASE PRESENTATION

A 10 year old Malay boy presented with painful and acute onset of deteriorating vision of the left eye following a three day history of trauma with plastic gun pellet at a close range. He went to consult a general practitioner immediately and was only prescribed panadol 500mg. At that time, eye pain was minimal. The pain became rapidly intolerable in next two days, with dramatic reduction in vision. He vomited a few times and reported headache. On examination, there was marked left pupil dilatation, and total hyphema with visual acuity of perception of light (Fig 1). Intraocular pressure was elevated to 48 mm Hg. Reverse relative afferent pupillary defect was present on the affected eye.

He was admitted and started on maximum antiglaucoma medications, topical steroids and was started on tranexamic acid 400mg TID. Anterior chamber washout and evacuation of blood clot was performed for recurrent and non resolving hyphaema associated with persistently high intraocular pressure.
Post operatively, anterior subcapsular cataract and vitreous haemorrhage was noted, (Fig 2), which was managed conservatively on parents request. There was cyclodialysis and traumatic mydriasis. The intraocular pressure remained normal without antiglaucoma medications. His optic disc was pale, and final visual acuity was 6/36 on the left eye.

DISCUSSION
Blunt trauma is commoner in children than penetrating injury and domestic accidents account for the majority of cases. Educational background, social and economic status determines the urgency of patients' presentation to hospitals and delay in seeking treatment is common, which results in poorer outcome. Parents prefer to consult general practitioners or primary physicians during any medical occurrence. Hence, family physicians are the front-line persons in providing effective initial treatment and advice on safety measures at home for children. Awareness and education among parents are important steps in prevention of ocular trauma and highlighting the consequences of orbital injury in children, which may have long-lasting impacts on their future and health. Cautions against toys which may produce detrimental injury need to be forwarded. Children should be supervised at all times and self-protection needs to be taught. Complications such as traumatic optic neuropathy, hyphema and secondary glaucoma are often difficult to manage. Recurrent hyphema is common among children as they are generally more active and less compliant to confinements of bed rest. Although outpatient management of traumatic hyphema is feasible, associated ocular injuries, severe hyphema and pain warrants admission and close observation. Non-resolving hyphema results in rapid elevation of eye pressure and optic nerve compromise. Although intraocular pressure may normalize after washout of hyphema, cyclodialysis may actually be the cause of 'normal' intraocular pressure. Criteria for surgical intervention of hyphema have been proposed. Rapid elevation of intraocular pressure in association with increasing hyphema is an ocular emergency. In children and the young, more aggressive measure is indicated in view of development of amblyopia and long term debilitating effect on vision. Secondary glaucoma, vitreous hemorrhage and traumatic optic neuropathy often complicate other direct injury to ocular structure further impeding visual rehabilitation. In summary, traumatic eye injury may result in permanent visual loss with detrimental effects on visual functions. Ophthalmology referral is mandatory for comprehensive assessment and evaluation of the extent of eye injury. Provision of safe environment and increasing awareness among parents regarding preventive measures is important in public health education.

REFERENCES
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