Ocular trauma: prevention

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Ocular trauma is an important cause of unilateral visual impairment worldwide. According to Nepal blindness survey (Brillnat et al, 1985), it accounted for 2.4% of blindness, and in another community based study (Upadhyay M et al, 2001), the prevalence of ocular trauma was observed to be 0.7%. The Bhaktapur Eye Study confirms that “corneal trauma leading to ulceration” is the second most common cause of blindness after cataract in Nepal.

Most of the ophthalmologists come across the patients with injury to the eye, which could range from small epithelial erosion to ruptured globe. Therefore, visual outcome would vary from very minimal effect to profound loss with significant socioeconomic and psychological impact (Nordber E, 2000; E Pradhan et al, 2000). However, with the use of new technologies and the immediate intervention, the burden of the aftereffect could be minimized.

The workplaces, home, recreational activities, road traffic accidents and physical assaults are the common causes of eye injuries for all age groups. However, the significant age group affected by trauma is the pediatric population and the damage is rather serious (Werner, 1952; Shreard RM, 2007; Hosseini H, 2011). It is a leading cause of non-congenital unilateral blindness in this age group. Nevertheless, most ocular injuries in children are preventable (Saxena et al, 2002), irrespective of causative agents or the site of occurrence. Often with such injuries, parental education or the adult supervision seems to be an important means of preventative medicine. In order to provide such education to parents, ophthalmologists must remind themselves as to the several factors related to pediatric trauma that are most pertinent to prevention of ocular trauma.

More than 65,000 work-related eye injuries and illness are reported in the United States annually [Peate, W.F, 2007]. In less developed country, it accounted for 8% of all occupational injuries as recorded in selected hospitals [Yu, T.S.I et al, 2004]. A study in China (Cai, M.and Zhang, J, 2015) indicated that male worker, low education level, lack of safety training, without machine guarding and eye protection were significant risk factors for occupational injuries. A Work-Related Injury Statistics Query System is established in developed countries like the US [Xiang, H et al, 2005]. However, many developing countries, including Nepal do not require employers or health care providers to report preventable injuries. Therefore, an ocular trauma databank, for further epidemiologic studies would be very useful.

Occupational injuries are largely avoidable particularly if adequate eye protection is used and appropriate machine securities are placed over obvious hazards (Lipscomb, 2000; NORA 1998). The eye protection devices could reduce the risk of work-related
eye injury by up to 60%, however only 18.4% of workers were wearing eye protection devices when injured [Chen S.Y et al, 2009]

Similarly, an implementation of seat-belt legislation and use of redesigned airbags in vehicles have significantly reduced the number of ocular injuries in cases of road traffic accidents (Johnston and Armstrong, 1986; Lehto KS et al, 2003). Therefore, knowledge of the causes of eye injuries can aid in guiding preventative strategies and optimizing management capacity.

The sports related injuries are more common in developed counties [ Leivo T et al, 2015; Kim T Et al, 2011; Maxen M et al, 2011]. In order to prevent the damage, the protective eyewear during the activities is very effective [Leivo T et al, 2015; Bro T and Ghosh F, 2016] and should be mandatory in all age groups.

In conclusion, the prevention of ocular injury and trauma is an important topic but it is often a neglected part of the discussion. Therefore a mass awareness, trauma related education to children and their parents, factory workers, farmers is very important aspect of prevention of catastrophic effect of trauma to the eye and reduction of ocular morbidity and prevalence of blindness.

References


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