Editorial

Ophthalmic Trauma: The Avoidable Monster

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Despite huge progress in the field of ophthalmic sciences, ophthalmic trauma remains a global epidemic- a preventable cause of vision loss that renders millions blind each year. Children, laborers and young men are most commonly affected by it and face much personal, societal and economic hardship due to it. It is not as much that injuries take sights as the fact that most of these incidences and their consequences are entirely preventable.[1,2] Thus, the most crucial step in ocular trauma management must undoubtedly be focused on preventing it as a whole.

Internationally, trauma remain an important cause of monocular blindness. The World Health Organization has estimated that 55 million eye injuries occur every year that significantly debilitate their everyday lives. Out of these, nearly 200,000 are open globe injuries.[3] It is expected that these numbers are underreported in low- and middle-income countries due to difficulty in accessing health services, ability to get required facilities and lack of proper surveillance systems and trauma registries.

The Aravind Comprehensive Eye Survey and the Andhra Pradesh Eye Disease Study reported a prevalence of 4-7.5% for ocular trauma. However, 55% of them being less than twenty-five years of age with male: female ratio of 3.5:1. [4,5] The Singapore Malay Eye Study showed a 5.0% prevalence of self-reported ocular trauma with male sex, younger age and alcohol consumption being the major risk factors.[6] In Indonesia, 46,488 cases of ocular trauma occur yearly. A tertiary hospital study found that such cases occur more frequent among young male with sharp or blunt objects, Road traffic accidents were the most common cause.[7] In Southeast Asia, road traffic accidents, agricultural injuries and injuries at construction sites occur regularly. The consequences of the vision loss from such ocular trauma extend beyond the individual to the family as well as the community, encroaching on productivity, resources, education and household income. Each preventable injury makes its mark on the person and their families socioeconomically loss with psycho social impact.

Considerable ocular injuries occur at worksites where the people do not take adequate precautions.[8] In the United States of America, more than 65,000 work-related eye injuries translate to absence from work yearly with laborers, heavy equipment operators and production employees being affected the most.[9] Over fifty percent of these occur in manufacturing, service and construction industries.[9] Here, chemical and thermal burns, foreign body impaction and blunt trauma occur regularly, characteristically due to improper or absent protective eyewear. Studies have noted that ninety percent of these occupational eye traumas can be prevented by use of proper protective eye gear. [1,2,9] But lack of enforcement of safety standards, confusion on usage of contact lenses and non-compliance still persist. Even minimal precautions like the use of safety goggles with side shields, eyewash stations and employee awareness still remain minimally practiced, especially in the developing world.

The growing number of wars around the world too are responsible for many of the ophthalmic injuries occurring worldwide. Notwithstanding the advances in body armor, ocular injuries still remain in high numbers. It was observed in the Gulf War in Iraq and

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Afghanistan that eye injuries made up thirteen percent of all combat casualties with bilateral involvement in as many as twenty five percent of cases.[10] These cases usually make up the extreme of the worst ones of their kind. Blast injuries due to explosives cause complex tissue damage due to primary shock waves, secondary fragmentation and tertiary blunt trauma. Penetrating trauma, intraocular foreign bodies and optic neuropathies are common. All of these usually lead to irreversible blindness, especially in a war-torn area where the availability of resources is limited. US military studies have shown that using appropriate ballistic eye protection can reduce these occurrences by more than half. It was seen that on using such gear, eye related injuries were reduced from 6% of the Crimean War era to mere 0.5% in the Operation Iraqi freedom era.[11]

In South Asian countries, firework injuries, bow and arrow injuries and chemical injuries occur frequently at home. Ophthalmology emergency departments commonly have children presenting with such injuries, leaving lifelong anatomical and psychological impact. Many of these too are entirely preventable by careful parental supervision, proper regulation of hazardous products and public education. Unfortunately, enforcing safety standards in household and recreational products has not been surmountable, especially in developing countries.[2,12]

Like immunization is the most cost- effective measure in preventing infectious diseases, eye protection is the vaccine against traumatic blindness. Such a simple act, if followed and implemented by all adequately could prove to be more efficacious than any surgery or medicine. Regular use of certified polycarbonate goggles, helmets with visors, laser and welding filters would avert a voluminous number of these injuries.[2,12,13,14] National programmes and government must be more wary of this and create more public awareness in work places, schools. Policymakers and concerned authorities must make and strictly enforce safety protocols.

One of the major handicaps in the care of ocular trauma has been the absence of adequate data. Trauma registries were either fragmented or nonexistent in the past. Recently, the International Globe and Adnexal Trauma Epidemiology Studies (IGATES) developed under the aegis of the Asia Pacific Ophthalmic Trauma Society (APOTS) has developed a useful standardized place for data collection.[15] Adoption of this or similar registries by more institutions and countries can help guide resource allocation and prevention strategies.

Another important area we need to focus on is training. There is hardly any specific person responsible to attend an ocular trauma case. With its vast scope and presentation, it is difficult to pinpoint a case to a specific specialist. As suggested by Grover, ocular trauma could be taught as a separate fellowship in conjunction with vitreoretinal, corneal and oculoplastic subspecialities.[15]

Moreover, since the beginning of residency, structured academic programs, hands-on workshops and multidisciplinary stimulation training can provide adequate skills to manage complicated ocular trauma.

Regardless of preventive measures and optimal management, a substantial number of people have and will still end up visually debilitated following ocular trauma. Thus, we must always take along rehabilitation, as part of ocular trauma care. Low vision aids, vocational training and psychosocial counseling must be provided with ease of availability. Government and non-government organizations must make visual assistive devices available and affordable. We must focus on restoration of quality of life and dignity post devastating ophthalmic trauma.

Ophthalmic injuries continue to steal sight from millions- an injustice made even more bitter by its preventability. On factory floors, battlefields and even in one's own home, a moment of negligence along with the absence of a protective device can lead to

Lifelong loss of vision. Rather than seeking better technologies and newer medications, awareness, policy making and safety standards must be directed towards preventing as many cases as possible. As ophthalmologists, we must adhere to the special task of spreading awareness not only in our clinics but also in places where we are not playing the role of an ophthalmologist about safety against such avoidable monsters such that preventable blindness due to trauma becomes a lore of the past.

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