COMMENTARY

Ocular Injuries and Severe Ocular Surface Diseases in Malaysia

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By some co-incidence there is an unusually large the number of papers on Ophthalmology in this issue of the Medical Journal of Malaysia [1,2,3,4,5]. The three case reports involve eye injuries. The spectrum of eye injuries in Malaysia is not different from many other industrializing countries – there is an increasing trend in the number of industry and motor vehicle related accidents. Despite the advocacies of safety measures in industrial practice and motoring, the number of ocular injuries continues to be high. Of special concern is the increasing incidence of road traffic accidents in the country, perhaps due to the surge of numbers of vehicles and drivers on the road. There has been an ever increasing number of vehicles and drivers on the road in Malaysia over the past years. (Table 1)

Table I: Number of Motor Vehicles in Malaysia

Year	Number of		
	Motor cars	Motorcycles	Drivers
2005	6,473,261	7,008,051	9,928,238
2009	8,506,080	8,940,230	
2010			12,236,254

(source : Road Transport Department, Malaysia)

However, of similar, if not greater importance are the issues of road users' attitude and awareness of safety measures when on the road. The report on maxillofacial trauma with total avulsion of the right globe in an 18 year old men who participated in an illegal motor cycle race speaks of the gravity of such juvenile problem in this country [1]. In trauma cases globe injuries can take various forms but total avulsion is rare. An ophthalmologist must be aware of the cases of total or near total avulsion of the globe presenting to the A & E. The case report highlights the management of such a case. This case not only highlights the importance of wearing proper safety attire when traveling on motorcycles, but also the urgent need for instilling a proper perspective of road safety and civic mindedness among our youth.

Intraorbital foreign bodies can also occur as a result of various kinds of accidents. A rare case of a metallic intraorbital foreign body occurring through the frontal sinus is described[2]. Removal of such a foreign body may present a challenge to the ophthalmologist. Childhood ocular trauma continues to be a significant cause of blindness in this country. CT scanning of the orbits remain the most sensitive test in detecting intra-orbital or intra-ocular foreign bodies in cases of orbital trauma. It must be emphasized that the MRI (Magnetic Resonance Imaging) is absolutely contra-indicated if a foreign body is suspected, as a magnetic foreign body can become a high speed missile under the influence of the MRI magnets, thus causing more damage to ocular structures.

Removal of vegetative and large intra-orbital foreign bodies is mandatory. However, small metallic foreign bodies which are sterile can be safely left in-situ, especially if they are very deep-seated or near the optic nerve, as removal of deep-seated foreign bodies can be very tricky and damage to optic nerve and other intra-orbital structures can occur during the course of removal.

There is a need to note that in cases of blinded eye secondary to trauma, proper documentation of vision is mandatory, and if possible, by more than one ophthalmologist. Unless delayed enucleation or evisceration is life threatening, it should be postponed until the patient is fully conscious and proper assessment of visual acuity is done. A visual evoked potential (VEP) test or Electro-retinogram (ERG) should be done, if possible, in unconscious patients before removal of the blinded eye. Informed consent from the patient and/or close relatives or next-of-kin must be obtained before the procedure is carried out. This will avoid any unnecessary controversy and law suits should there be any query on the management rendered.

The report on the first case of osteo-odonto-keratoprosthesis (OOKP) done in Malaysia is certainly laudable [3]. End-stage corneal blindness when occurring in the better eye or in both eyes can be a frustrating experience for both the patient and the ophthalmologist. Since penetrating keratoplasty is not possible in these patients osteo-odonto-keratoprosthesis (OOKP) offers a ray of hope for restoring some vision. This procedure is certainly an option to consider in patients with an only eye with severe anterior segment damage while having a viable posterior segment, with the aim of achieving more visual independence and mobility in selected visually handicapped persons. OOKP surgery is not technically easy. The authors have highlighted the steps and the complications which can occur in performing this procedure.

The corneal endothelium is the single most vital layer of the cornea. The study of the corneal endothelial cell density and morphology in Malay eyes provides normative data in this country [4]. Since there can be differences among different ethnic races the establishment of this data is important.

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Before performing any corneal procedure or intraocular surgery a clinician must be able to perform specular microscopy to determine the state of health of corneal endothelium. Thus the clinician will be able to take precautions in cases where the cell density is reduced or the morphology is compromised.

Management of various ocular surface diseases has come to the forefront for anterior segment surgeons with the knowledge that limbal stem cell deficiency needs to be rectified. The cultivation of limbal epithelial cells on amniotic membrane through bio-engineering technique locally is clearly a breakthrough which we had been longing to see in our upstream research in ophthalmology [5]. Transplantation of cultivated corneal epithelium cells is an important modality in the treatment of ocular surface disease. The authors must be commended on this project. The outcome will definitely benefit a lot of patients with ocular surface diseases such as anterior segment damage in Steven Johnson's syndrome or chemical injuries. Interests that may arise from the success of this study reported will hopefully prompt more scientists in this country to venture further in researches in the field of pre-clinical molecular biology and bio-technologies, especially in eye-related diseases, that will hopefully lead to more breakthroughs in medical research in general and ophthalmological research in particular. With the establishment of the safety and efficacy of the bioengineered ocular surface tissue the clinical applications will be forthcoming. In the near future use of this modality of treatment for ocular surface diseases will be a standard mode of practice.

REFERENCES

1. AR Norazah, HZ Akmal, HHashima, TVasantha, A Samsudin. Globe Avulsion Secondary to Maxillofacial Trauma. Med J Malaysia 2011; 66: 359.
2. PS Mallika, YJ Chong, AK Tan, IP Tang, S Aziz, HK Lee. An Unusual Entry Site of An Intraorbital Foreign Body in a Child. Med J Malaysia 2011; 66: 361.
3. HS Wong, KY Then, R Ramli. Osteo-odonto-keratoprosthesis for End-stage Cornea Blindness. Med J Malaysia 2011; 66: 369
4. PAK Mohammad Salih. Corneal endothelial cell density and morphology in normal Malay Eyes. Med J Malaysia 2011; 66:300.
5. MN Lim, T Umapathy, PJN Baharuddin, Z Zubaidah. Characterization and Safety Assessment of Bioengineered Limbal Epithelium. Med J Malaysia 2011; 66: 335.