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Editorial

Polytrauma in ophthalmic prospective

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The term *Polytrauma* was first used by Tscherne in 1966 for patients having minimum two severe injuries including abdomen, head or chest, or one of them along with an injured extremity. Border defined polytrauma 10 years later, as a *patient having two or more significant injuries*. Later on Ostern defined polytrauma as two or more injuries, one of them being life threatening.¹⁻³ The new definition of Berlin – A patient with Abbreviated Injury Scale (AIS) ≥ 2 for two or more different sites and with ≥ 1 following findings- 1. GCS ≤ 8 , 2. Systolic blood pressure (SBP) ≤ 90 mm Hg 3. PTT ≥ 40 sec or INR ≥ 1.4 4. Age ≥ 70 years.⁴ New definition of polytrauma is helpful in improving the enterprise of the trauma centres.⁵ The severity of trauma is generally indicated by the (ISS) injury Severity Score.⁶ ISS ≥ 16 is considered equivalent to polytrauma, multiple trauma or severe injury. German Society of Traumatology suggested that term polytrauma should be differentiated from both multiple injuries that do not threaten to life and severe life threatening multiple injuries.

Uncontrolled bleeding has been found to cause 25% of all polytrauma related deaths.⁷ Polytrauma is associated with blood loss resulting in hypothermia, hypoperfusion, coagulopathy and acidosis as originally reported earlier.⁸ Early response followed by polytrauma is (SIRS) Systemic inflammatory response syndrome, first observed in lungs then other multiple organs. SIRS initiates dysregulated cytokines and intense inflammatory cascade reactions

resulting irreversible end organ dysfunction.⁹ SIRS with bacterial infection known as sepsis which further causes hemodynamic instability known as Septic shock. Late systemic response is in the form of (MOD) Multiple organ dysfunction which involves two or more organs simultaneously followed by trauma or shock.

Management of polytrauma patient is always challenging. Polytrauma patients usually suffer from both life-threatening injuries (head injury, cardiothoracic & abdominal injuries etc), where early intervention is mandatory to prevent mortality from uncontrollable haemorrhage usually during the “golden hour”, and non-life threatening injuries of lower priority which receive delayed referral or treatment.

Polytrauma patients are at high risk for vision loss because ocular injuries are often overlooked by treating physician. They consider ocular trauma as non-life threatening injuries hence patients remain untreated until a much later stage. Although managing life threatening injuries should be the immediate priority in a patient with polytrauma, but the possibility of vision loss due to ocular trauma should not be overlooked. Sometime occult ophthalmic or even innocuous trauma may be missed by treating physician thus early reference to ophthalmologists for ocular assessment and appropriate management needs to be emphasized. Early reference is a vital step to save the sight in case of severe injuries such as globe rupture, retinal detachment, retained intraocular foreign bodies and orbital compartment

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syndrome etc. The risk of ocular trauma in a patient with a facial fracture increases 6.7 times as compared to a patient with no facial fracture. All patients of polytrauma having head injury or oculo-facial injuries should be assessed for any ocular injury particularly in those involved in road traffic accidents, fall from height and physical assault etc.

Assessment of visual acuity, pupillary reflex / RAPD, extraocular movements and visual field if possible must be done for management at the earliest. Significant help can be taken by Computed Tomographic orbit scans along with clinical examinations, in diagnosing orbital fractures and injuries of optic nerve and other ocular soft tissue injuries.^{10[10]}.

When there is an open globe injury, it should ideally be closed before any orbital surgery or oculo-facial surgery. Chemical burns, retrobulbar hemorrhage should be given priority at earlier. Early treatment of traumatic optic neuropathy via high dose corticosteroids should be considered, instead of observation alone.¹¹

The ocular trauma management should be a coordinated multidisciplinary intervention involving physicians, anesthetics, oculo-facial surgeon, neuro surgeon and otolaryngology surgeons.

Conflict of Interest

None.

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