

Evaluation of Eye Injuries

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A total of 386 Battle Casualties were received at this hospital between 12th October 1987 to 27th October 1987 out of which 43 had ocular injuries of different types and severity. Bed side ocular examination was carried out for all the casualties since cases of ocular injury may go unnoticed when patients are more concerned about other associated injuries. The incidence, methods of examination, types of ocular injuries, treatment institute and their disposal are discussed in the text.

Keywords : Battle casualties, ocular injury during war

A total number of 386 OP PAWAN battle casualties were received in Command Hospital, Air Force, Bangalore between 12th October 87 and 27th October 87. Out of the total cases, which 43 had ocular injuries representing 12% of total casualties. Each case was seen on arrival after necessary resuscitative measures had been implemented.

Methods of Examination

Eye examination included gross assessment of vision at bed side, Anterior segment examination including movements, digital estimation of intra ocular pressure and fundus examination, X-ray and exploration under General Anaesthesia (GA) where necessary. Later all the ambulant cases were seen in detail in the Eye Department where their exact visual acuity was recorded, slit lamp and detailed fundus examination were done. Only in 3 cases were the eyes explored under GA to rule out any occult perforation. A small scleral perforation was detected in one case and was sutured at that time.

Observations

Types of ocular injuries observed in the total number of 43 cases are presented in table I.

Table - I Types of ocular injuries (n = 43)

Injuries	No	%
IOFB	4	9
EOFB	13	30
Perforation	10	23
Lid Wounds	12	28
Concussions	10	23
Burns	2	5
Enucleation	5	12
Bilateral	4	9

Table II presents a comparative study of ocular injuries in the present study vis-a-vis II World War and Vietnam War (1966) as reported by Hoettle¹.

Table - II Comparative study of ocular injuries in various military operations n(%)

Injury	II World War *	Vietnam War #	OP PAWAN
IOFB	65(18)	16(13)	4(9)
EOFB	94(27)	33(28)	13(30)
Perforations	141(40)	37(31)	10(23)
Lid Injuries	30(9)	13(11)	12(28)
Concussion	13(4)	10(8)	10(23)
Burns	9(3)	8(7)	2(5)
Enucleation	104(30)	26(22)	5(12)
Total Analysed	352	119	43

* Series of consecutive ocular war injuries.

Cases of ocular injuries treated on board uss repose.

The comparison shows a relatively high incidence of lid injuries and concussions in our series. Since majority of the injuries in our study were mineblast injuries and especially while they were travelling in vehicles it is quite likely that they escaped serious ocular injuries. A lower percentage of enucleation can be explained by the fact that these days better suturing techniques and better instruments are available for management of ocular injuries.

Management

Intra ocular foreign bodies (IOFB)

2 eyes with IOFB had to be enucleated as the globe had large laceration with prolapse of intraocular contents. The remaining 2 had minute splinters in the lens which were cataracts and were not removed immediately.

Extra ocular foreign bodies (EOFB)

All corneal foreign bodies were removed. In 2 cases complete scraping of corneal epithelium

had to be done to remove the studded debris and foreign bodies. One patient had a splinter about 2 mm x 3mm which entered the orbit through upper lid causing proptosis due to retrobulbar haemorrhage and damage to the optic nerves. The FB was lying in the roof of the orbit. This case was transferred to Command Hospital(Southern Command), Pune. Another patient had no ocular complaints. His eyes were normal and he had a small healed wound by the side of nasal bridge. After 3 days, he complained pain in that area while washing the face. Examination revealed tenderness and a splinter was detected on X-ray examination which was lying behind the anterior lachrymal crest. However before this could be removed he was transferred for management of other injuries.

Perforating Injuries

7 out of 10 perforating injuries were sutured. 2 eyes were enucleated. The other patient had badly lacerated lids with loss of lid tissue and perforation of the globe. This eye required enucleation and reconstruction of the lids. He was transferred to Command Hospital(Southern Command), Pune for management alongwith Plastic Surgeon

Lid Injuries

10 out of 12 lid injuries were given primary sutures as the wounds were small and clean. The other two cases had badly mutilated lids and needed reconstructive surgery. In one case there was an intact globe with other eye enucleated. Reconstruction of lid was a must to save the remaining eye from exposure and further damage. Both these cases were transferred to Command Hospital(Southern Command), Pune.

Concussion Injuries

Out of the 10 concussion injuries 5 had sub conjunctival haemorrhage, 1 had concussion cataract and 1 had macular oedema. Except for the patients with cataract and macular oedema all regained good vision.

4 patients had no ocular complaints and were asymptomatic. Routine ocular examination

revealed sub conjunctival haemorrhage in 2 patients, 1 had corneal foreign body and 1 had a foreign body near lachrymal sac. They were given appropriate treatment.

Disposal

9 patients were given fitness in medical category 'A' for eyes after different periods of stay. 4 patients were transferred to Command Hospital(Southern Command), Pune for management of ocular injuries. 5 patients were sent on sick leave. 25 patients were transferred to other hospitals for other reasons.

Conclusion

In our study we have had a higher incidence of ocular injuries probably due to the fact the the situation in OP PAWAN was different from conventional battles. In explosion injuries an eye which on initial examination give the appearance of gross damage may ultimately have good visual recovery where as a normal looking eye may have a gross internal injury resulting in almost total loss of vision. Every effort must be made to preserve the eye and with advent of ultrasound, microsurgery and vitreophage we can do so to quite an extent. An early, efficient management and a good team work go a long way in salvaging many cases of gross ocular injuries.

Recommendations

All the war casualties should be examined for eyes also and leading questions should be asked to elicit any ocular complaint. A gross examination of vision, external examination and movements must be done during initial examination in the field level with high degree of suspicion of ocular injury and cases should be transferred for definitive treatment to Eye centres as soon as possible after giving first aid.

REFERENCE

1. Hoefle FB : Initial treatment of Eye Injuries. Arch of Ophthalmology, 1968; 79; 33-35.