

MANAGEMENT OF CONTUSION INJURY OF THE EYE – A CLINICAL STUDY

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ABSTRACT

A common result of contusion injuries is downward and inward displacement of the globe. As a general rule either the anterior segment of the eye in front of the iris-lens diaphragm or the posterior half is preferentially affected. The present study shows the incidence, effects and prognosis of contusion injury. In majority of cases 32% were in the age group of 31 to 40 years. 96% cases sustained injury accidentally.

Keywords: *Contusion, Injury*

INTRODUCTION

Arnold (1977) presents the different types of injury those effects to the eye. Types of injuries are discussed in detail. Ralph (1985) shows that how eye can be affected due to various reasons and he further suggests the Remedy for this purpose. Ruderman (1986) examined different cases of blunt trauma. He further suggested the cause and remedy for this trauma. Romen (1985) discussed the post traumatic glaucoma in his study. The study suggests the effects of glaucoma on eye. Different defects of vision are also discussed. Stephen (1990) discussed the different diseases of the eye. Diseases are mentioned in detail. Different remedies are also suggested.

MATERIALS AND METHODS

The material for this study consisted of 42 males and 8 females who presented with history of direct blunt injuries to the eye ball.

In all cases a thorough history has been obtained with particular emphasis on the circumstances leading to the injury, the exact nature of the event and the object causing the injury.

If the accident occurred at work, a record was made whether regular safety glasses or goggles were worn. In case of damage to the lens or frames of goggles were recorded. Patient's symptoms following injury like, pain, watering, photophobia, diminution of vision, loss of vision, floaters, redness, bleeding, diplopia etc. were enquired in detail.

The sequence of changes occurring in the patient symptoms were noted and as also the type of treatment, they had received were recorded. Relevant past and general medical history was obtained to see if there were any contributing factors to explain the patient's symptoms and signs. All the patient's were subjected to complete ophthalmic examination. These included visual acuity assessment by using standard Snellen's chart, slit lamp biomicroscopy of both anterior and posterior segments (using 3 mirror Goldmann contact lens and Hruby lens). Gonioscopy, fundus examination with direct and indirect ophthalmoscopy, tonometry using Schiotz/Goldmann applanation, and pulsair has been done. Ultrasonography particularly B-Scan has been done to assess the posterior segment. Fluorescein staining has been done using 1% sterile solution of fluorescein or fluorescein strip to detect corneal abrasions. All the ocular findings were recorded using diagrams wherever necessary and important findings were also documented by a color photograph using fundus camera.

The patients were managed according to generally accepted principles and the subsequent changes occurring were documented.

RESULTS AND DISCUSSION

Of the 50 cases examined 42 are males and 8 are females. In all of them only one eye was affected due to the blunt injury. The age of the patients ranged from 1 year to 60 years.

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Table 1: Age Incidence

Age group in years	No. of cases	Percentage
1 – 10	5	10
11 – 20	11	22
21-30	6	12
31-40	16	32
41-50	9	18
51-60	3	6

The majority of the cases were in the age group of 31-50 years. 32% followed by those in the age group of 11-20 years – 22% as shown in Table 1.

Table 2: Sex incidence

Sex	No. of cases	Percentage
Male	42	84
Female	8	16
Total	50	100

Majority of cases are males – 84% as shown in Table 2.

Table 3: Eye involved

Side of eye involved	No. of cases	Percentage
Right eye	22	44
Left eye	28	56
Total	50	100

Left eye is more often affected than the right eye, as presented in Table 3.

Table 4: Occupation of the Patient

Occupation	No. of cases	Percentage
Labourer's (coolie, engaged in stone carrying work, stone cutting work)	17	34
Agriculture	16	32
Students	10	20
House wife	5	10
Business	1	2
Official	1	2
Total	50	100

A high percentage of patients are labourers, engaged in stone carrying work – stone cutters, coolies. 34% followed by agriculturists 32% officials and business people are least affected, which is presented in Table 4.

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Table 5: Causes of Injury

Nature of Injury	No. of cases	Percentage
Fall	10	20
Wooden stick/ wooden piece/stick	8	16
Stone	7	14
Bull gore injury	5	10
Whiplash injury	3	6
Blow fists	3	6
Road traffic accident	2	4
Tennis ball	2	4
Marble	1	2
Coconut chips	1	2
Shuttle cock	1	2
Brick piece	1	2
Brick piece	1	2
Dynamite blast (mines)	1	2
Cracker	1	2
Assault with elbow	1	2
Cow's tail	1	2
Sugar cane stick	1	2
Total	50	100

20% of the blunt injuries are caused by fall and in 16% of the cases injuries were caused by wooden stick, wooden piece, or stick as shown in Table 5.

In 14% of cases the injuries were caused by stones and in rest of the cases were caused by dull gore, whip lash, blow, R.T.A. Tennis ball etc.

Table 6: Types of injury

Type of injury	No. of cases		Percentage	
	Male	Female	Male	Female
Accidental	40	8	80	16
Assault	2	-	4	-
	42	8	84	16

Accidental: 96%, Assault : 4% as presented in Table 6
 Table 7 presents different types of lesions related to eye.

Table 7: Lesions of eye lids

Lesions	No. of cases	Percentage
Black eye	24	2
Crush wounds	5	10
Ptosis	2	4
Total	31	62

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Table 8: Lesions of Conjunctiva

Lesions	No. of cases	Percentage
Tr.conjunctivitis	30	1
Subconjunctival haemorrhage	10	20
Chemosis	7	14
Bruising and lacerations of conjunctiva	0	0
Total	47	94

Table 9: Lesions of the Sclera

Lesions	No. of cases	Percentage
Rupture of globe	3	6
With prolapsed of uveal tissue	3	6
With vitreous prolapsed	1	2
Total	7	14

Table 10: Lesions of the Cornea

Lesions	No. of cases	Percentage
Abrasion	7	14
Erosion	0	0
Oedema	12	24
Recurrent erosion	0	0
Opacities	3	6
Fold's Bowman's membrane	0	0
Fold's Descemet's membrane	2	4
Blood staining	1	2
Corneal laceration	1	2
Total	26	52

Table 11: Lesions of Iris and Ciliary body

Lesions	No. of cases	Percentage
Traumatic miosis	0	0
Traumatic mydriasis	16	4
Primary hyphaema	14	28
Iridodialysis	5	10
Tears in iris sphincter	3	6
Irodyclitis	13	26
Traumatic miosis	0	0
Anteflexion of iris	0	0
Retroflexion of iris	0	0
Anirida	0	0
Pigmentary changes	0	0
Antrophy of uveal tract	0	0
Total	51	102

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Table 12: Lesions of Lens:

Lesions	No. of cases	Percentage
Diffuse concussion cataract	10	20
Anterior capsular cataract	1	2
Rosette shaped	1	2
Subluxation	7	14
Dislocation		
Anterior	2	4
Posterior	2	4
Vossius Ring opacity	0	0
Discrete sub epithelial opacity	0	0
Subepithelial disseminated opacities	0	0
Cubweb subcapsular opacity	0	0
Post traumatic atrophy lens	0	0
Total	23	46

Table 13: Lesions of the Vitreous

Lesions	No. of cases	Percentage
Opacities	3	6
Vitreous haemorrhage	18	3
Posterior vitreous detachment	1	2
Total	22	44

Table 14: Lesions of the Retina

Lesions	No. of cases	Percentage
Berlin's edema	14	28
Macular haemorrhage	3	6
Pigmentary changes at macula	2	4
Retinal haemorrhage	3	6
Retinal tear	1	2
Retinal detachment	1	2
Retinal dialysis (nasal quadrant)	1	2
Concussion necrosis of retina	0	0
Macular cyst & hole	0	0
Traumatic macular atrophy of Haab	0	0
Tr.proliferative chorioretinopathy	0	0
Total	25	50

Table 15: Lesions of the Choroid

Lesions	No. of cases	Percentage
Choroidal rupture	5	10
Choroidal haemorrhage	0	0
Choroidal detachment	0	0
Chorioretinal rupture	0	0
Total	5	10

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Table 16: Lesions of the Optic Nerve

Lesions	No. of cases	Percentage
Optic atrophy	1	2
Optic nerve avulsion	0	0
Papillitis	0	0
Haemorrhage into optic	0	0
Total	1	2

Table 17: Fracture of Orbit

Lesions	No. of cases	Percentage
Fracture of frontal bone	1	2
Fracture of zygomatic bone	1	2
Associated with fracture of temporal bone & parietal bone & parietal bone		
Total	2	4

“The Biblical injunction is an eye for an eye a tooth for tooth”. Ethical connotations indicates that ocular as well as dental injuries were common in ancient times. 50 cases of blunt trauma were examined, which consisted of 42 males and 8 females. In majority of cases 32% were in the age group of 31 to 40 years. 96% cases sustained injury accidentally.

The lesions commonly seen in the anterior segment include black eye, traumatic conjunctivitis, subconjunctival haemorrhage, corneal oedema. Traumatic mydriasis hyphaema, iridocyclitis and traumatic cataract. The lesions commonly seen in posterior segment include vitreous haemorrhage, macular oedema, sometimes retinal haemorrhages, choroid rupture.

Blunt trauma to the eye causes a wide variety of damage to ocular tissues. This damage often leads to loss of vision. Minimizing the visual loss entails recognizing the clinical manifestations of blunt trauma, understanding and anticipating the normal course of healing and making the appropriate medical and surgical interventions with as little additional trauma as possible. Any contused eye should have its anterior chamber angle and peripheral retina examined.

Steroids have definitely reduced the incidence of loss of vision because of their use in a wide variety of lesions of concussion and contusion injuries such as traumatic iridocyclitis, macular oedema etc.

Various agents such as inj. Revici haemostypticum; Tab Bidanzen forte (serratio peptidase); Tab Capimin (Diosmin) play a role in the management of patients with traumatic hyphaema, vitreous haemorrhage etc.

Antiglaucoma drugs such as timolol maleate, acetazolamide and I.V. mannitol play a role in controlling traumatic glaucoma.

Timely surgical intervention such as paracentesis in total hyphaema with raised IOP, reduces the incidence of blood staining of the cornea.

Vitrectomy plays a significant role in management of nonabsorbed vitreous haemorrhage. Prognosis in case of contusion injuries of the eye depends upon the extent of ocular damage, caused, and the infrastructure available for managing such patient.

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