ORIGINAL RESEARCH PAPER

Ophthalmology

A STUDY ON CLINICAL PRESENTATION AND MANAGMENT OUTCOME OF DIFFERENT TYPES OF CORNEAL INJURIES

KEY WORDS: Corneal Injuries, Management, Outcome

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ABSTRACT

In present study, 132 patients attending the Department of Ophthalmology, during the period of 1year and 6 months, with corneal trauma by different kinds of vegetative and organic material. The predominant traumatic agent in our study was paddy leaf injury (51.51%) and most of the patients after corneal trauma presented with corneal ulceration (75.76%). Most common local predisposing factor was dacryocystitis (9.85%) and systemic factor was diabetes mellitus (14.39%). After trauma, corneal scraps done for microbiological examination showed 40.15% fungal keratitis whereas clinically 49.24% patients appeared to be fungal keratitis. Fungal keratitis was significantly associated with paddy leaf injury. Most of the patients in our study responded to the medical management (65.15%) and healing response was found to be good (56.58%). However, poorly responsive patients found to have some of the predisposing factors. Structural prognosis was good (54.55%) as patient healed with Leading to poor visual prognosis (72.73%).

INTRODUCTION

In India, there are approximately 6.8 million people who have corneal blindness, with vision less than 20/200 in at least one eye and of these, about a million have bilateral corneal blindness. It is expected that the number of corneal blind people in India will increase to 10.6 million by 2020[1]. A recent national survey by the Government of India (1991-2001) estimated that corneal lesions are responsible for 9% of all blindness in our country[2]. Ocular trauma has been reported to be the most important cause of the unilateral loss of vision in developing countries, and up to 5% of all bilateral blindness has been attributed to direct ocular trauma. Corneal and corneoscleral perforation and subsequent scarring due to ocular trauma may result in a variable amount of blindness[3].Most of these ulcers follow minor agricultural injuries (farming related) bacterial and fungal infections are more common in developing countries. Viral involvement of cornea mainly occurs in herpes infection as in *herpes simplex* and *herpes zoster and* other viral infection like *adenovirus* infection.). Parasitic involvement of cornea occurs specially in *Acanthamoeba* infection usually in contact lens users or followed by dirty water, mud, soil exposure. Fungal keratitis is an 'inflammation of the cornea (called *keratitis*) that results from infection by fungi. Corneal trauma is the most frequent and major risk factor for fungal keratitis, particularly with plant or soil matter. Injury to the cornea is the leading cause of microbial keratitis, particularly fungal keratitis.

AIMS AND OBJECTIVES

- To find out the different modes of corneal injuries
- To observe the visual outcome with management in patients with corneal trauma

METHOD AND MATERIAL

Following study was observational including 132 walk-in patients seen in the department of ophthalmology in tertiary hospital with history of corneal trauma by vegetative material. All suspected cases with corneal trauma, which is enrolled in department of ophthalmology Trauma by agricultural materials like, husk, leaves, Wooden stick, chips, Insects exposure, Tail of animals, Finger nails. Their ocular manifestation, clinical course and prognosis were assessed over a period of November to April. Documentation of all patients included duration of symptoms, predisposing factors, slit lamp bio microscopy findings, associated ocular conditions, other systemic diseases, therapy received prior to presentation, visual acuity at the time of presentation, treatment given, response to treatment and the clinical outcome.

TABLE – 1 Different attributes and outcome of corneal injuries

Traumatic agent distribution		
Characteristics	Number	Percentage
Paddy leaf	68	51.51%
Wooden stick	38	28.78%
Insects	6	4.55%
Cow tail	6	4.55%
Fingernail	8	6.06%
Others	6	4.55%
Post traumatic corneal presentation		
Abrasion	6	4.55%
Ulcer	100	75.76%
Laceration	26	19.69%
Showing anterior chamber content in the study		
Clear	55	41.66%
Hypopyon	48	36.36%
Exudates	10	7.5%
Hyphaema + exudates	19	14.39%
Management of corneal trauma		
Medical	86	65.15%
Surgical	46	34.85%
Showing healing response to management		
Good	76	56.58%
Poor	56	42.42%
Showing structural prognosis of corneal trauma		
Heals with no opacity	4	3.03%
Heals with some opacity	72	54.55%
Glue + bcl	10	7.57%
Keratoplasty	9	6.82%
Eviserated eye	11	8.33%
Primary repair	26	19.69%
Showing visual prognosis of patient with corneal trauma		
>6/18	8	3.03%
6/18 – 6/60	22	4.54%
6/60 – 3/60	40	19.70%
<3/60	62	72.73%

RESULT AND DISCUSSION

In this study among 132 cases paddy leaf (51.51%) appear to be most common mode of corneal trauma, next to it was wooden stick (28.78%) injury. Various others agents were finger nail (6.06%), cow tail (4.55%), insects (4.55%), others (4.55%).Thus, the paddy leaf trauma was more prevalent than above studies. **Patel S et al[4],**(43.9%). **Srinivasan M et al[5]**,(43.4%). **R.C. Gupta et al[6],** (35.8%), all found that among various type of traumatic agent, paddy leaf was most common. In study done by **Omolase et al[7], Thylefors, B.[8]**corneal ulcer was the commonest traumatic lesions (48.2%) In this study, majority were presented with corneal ulcer, 100 patients (75.76%) at the time of their first presentation in our hospital. Among the corneal ulcer group, majority were farmers (44.70%) and labourers (11.36%). Other were, corneal laceration (26 patients, 19.69%), all of them underwent to surgical intervention (primary repair). Out of 26, 22 were students and 21 were of age group <20 yrs. In the study by **R Nath et al[9].** Fungal keratitis was demonstrated in 65.2% patients which was higher as compared to our study. It was observed that, fungal keratitis was associated with paddy leaf trauma were 51(38.64%) followed by wooden stick/ chip trauma 11(8.33%). It was also observed that, Insects, cow tail, finger nail were not associated with fungal keratitis. 76(56.58%) patients showing good response to management, whereas 56(42.42%) were showing poor response. Out of poor responsive, 52 patients had some of predisposing factors, dacryocystitis 13(9.85%) & Topical steroid 9(6.82%) was most common local factor and diabetes mellitus 19(14.39%) was systemic factor. **Bharathi MJ et al[10]**. In our study was that, most of the patients with corneal trauma were managed medically (86 patients, 65.15%), out of them 72(54%) patients heal with some degree opacities due to corneal ulcer involving the deeper layer of cornea, 10(7.58%) patient needed glue and BCL. Other left was managed surgically (46 patients, 34.85%). Most of them were primary repaired (26, 19.69%), others were evisceration (11, 8.33%), penetrating keratoplasty (9, 6.82%). **Patel S. Et al[4],** 70% patients healing of corneal trauma occurred with dense leucomatous opacity. **Bibhudutta Rautaraya et al[11]** Clinical outcome of healed scar was achieved in 35.6%. 19.7% required therapeutic PK, 3.4% went for evisceration, 18.9% received glue application with bandage contact lens (BCL) for impending perforation. **Saha S et al[12].** (40.55%) patients healed with corneal scar formation with medical treatment whereas 44 cases (59.45%) required therapeutic kerat oplasty.

Corneal trauma healing outcome was slightly higher (54%) in our study as compared to the studies of **Bibhudutta Rautaraya et al[11]**& **Saha S et al[12],** whereas it was lower to **Patel S. Et al[4]** study. Evisceration (8.33%) was higher in our study as compared to **Bibhudutta Rautaraya et al[11],** i.e.3.4%, because most of the patients in our setup came with scleral involvement and large corneal perforation. In our study, post management 72.73% patients had vision <3/60 in affected eye due to dense opacity.**Patel S. Et al[4] ,** 70% patients healing of corneal trauma occurred with dense leucomatous opacity which result to vision in affected eye, no perception of light to finger counting (58%).

CONCLUSION

Early diagnosis with prompt identification of the pathogenic organism is mandatory to initiate appropriate therapy for corneal injuries to restores good vision. Fungal ulcers should be suspected in every patient with a corneal lesion occurred by vegetative and organic material and should be ruled out before commencing topical medication. Fungal ulcers were more common than bacterial ulcers. The community need to be educated and informed about the importance of preve ntive measures including protective eye devices like protective glasses while working, so that it works as preventive measure against traumatic lesions. Patients should be encouraged to present early following ocular injury. It was seen that, response to medical treatment is poor in patients with late presentation.

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