

Psychiatric sequelae and psychosocial adjustment following ocular trauma: a retrospective pilot study

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Abstract

Aims—To identify the prevalence of psychiatric and adjustment problems after ocular trauma and those factors related to a poor outcome.

Methods—47 patients were assessed by structured interview, of whom 45 satisfactorily completed three standardised self report measures of psychological functioning, subjective distress, and social adjustment.

Results—33% of patients displayed psychiatric “caseness”. A number of features of the victim consistently resulted in poor outcome including a psychiatric history and peritraumatic dissociation.

Conclusion—These preliminary findings suggest ocular trauma is associated with psych morbidity and problems of adjustment. The improved management of such patients would benefit from a more detailed analysis by means of a longitudinal study involving larger samples.

(Br J Ophthalmol 2001;85:560–562)

ocular trauma, 47 of whom fulfilled the following inclusion and exclusion criteria.

INCLUSION CRITERIA

- Able to give written consent
- 18–65 years of age
- victim of accidental injury (as opposed to self harm) requiring inpatient care.

EXCLUSION CRITERIA

- A peritraumatic period of unconsciousness exceeding 15 minutes (post-concussional syndrome may mimic post-traumatic psychopathology)
- evidence of cognitive impairment
- minor ocular trauma (for example, corneal abrasion, etc).

ASSESSMENTS

Structured interview

All interviews were conducted by a trained interviewer (RK) using a modified version of the Road Traffic Accident Research Questionnaire⁵ to collect information on, for example, the nature of and reactions to trauma.

General Health Questionnaire (GHQ-28)⁶

This well validated and widely used self report measure provides an index of psychological functioning in non-psychiatric samples. A total score based on the GHQ scoring system yields a measure of “caseness”. Scores of 5 and over suggest that, on examination by a mental health specialist, genuine psych morbidity would be identified. (This cut-off point obtains a specificity and sensitivity of 84% and 88%, respectively.)

Impact of Event Scale—Revised (IES-R)⁷

This widely used self report measure of subjective distress following trauma provides an index of intrusive experiences (especially flashbacks and nightmares), avoidance reactions (in the face of reminders of the trauma), and autonomic hyperarousal (for example, as indicated by an exaggerated acoustic startle response). Subscale scores and total scores can be obtained based on the original scoring scheme of Horowitz *et al.*⁸

Social Adjustment Scale—Modified (SAS-M).⁹

This is a self report measure of adjustment over six domains of life—for example, work and relationships. A score of global adjustment and one of each domain are available.

MEDICAL RECORDS

From these were obtained clinical data relating to the patients’ injuries and management.

Historically, our understanding of the impact of trauma derived mainly from the annals of military combat and, more recently, from the observations of survivors of major civilian calamities.¹

Following the introduction of post-traumatic stress disorder into the third edition of the *Diagnostic and Statistical Manual of Mental Disorders*,² there has also developed an awareness that the traumas of daily life—for example, road traffic and industrial accidents and assaults, are also potent sources of psychopathology and problems of adjustment.³

Despite these trends, the possibility of psych morbidity following ocular trauma has been ignored. Emotional reactions to ocular trauma received scant attention in even contemporary textbooks on ocular injuries and emergencies.⁴

This retrospective pilot study addresses this gap in the clinical and scientific literature. It identifies: (i) the prevalence of post-traumatic psychopathology and problems of adjustment, and (ii) factors which may be associated with a poor prognosis in terms of psych morbidity following ocular trauma.

Materials and methods

Between January 1995 and June 1999 the theatre records and patients’ database of the ophthalmology inpatient service, Aberdeen Royal Infirmary, were searched for cases of

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Accepted for publication
28 November 2000

Table 1 Demographic and clinical data of participants (n = 47)

Variable	No	%
Age (mean 38.5, SD 14.9; range 18–79)		
18–34	20	43
Sex		
Male	45	96
Marital status		
Married/cohabiting	31	66
Divorced	3	6
Widowed	1	2
Single	12	26
Employment status		
Professional/skilled	27	57
Semiskilled/unskilled	15	32
Student	2	4
Unemployed	1	2
Retired	2	4
Experience of previous injury		
None	39	83
Hand	4	9
Facial	2	4
Back	2	4
Psychiatric history		
Yes	6	13
Cause of ocular injury		
Tools/ machinery	36	77
Road traffic	5	11
Assault	5	11
Sporting	1	1
Nature of ocular injury		
Penetrating	32	68
Blunt	7	15
Penetrating/blunt	4	9
Chemical	2	4
Thermal	2	4
Visual loss		
None	18	38
Partial	21	45
Full (visual acuity <3/36)	8	17

STATISTICAL ANALYSIS

Data were analysed using SPSS for Windows (version 9.0). Because of skewed distributions and heterogeneity of variance non-parametric tests were used. The χ^2 test and the Fisher's exact test were used to analyse the categorical GHQ-28 data. The Mann-Whitney U test was used for between group comparisons. To protect against a type 1 error, analysis was restricted to comparisons using the total scores of two of the three standardised measures—namely, the GHQ-28 and the IES-R.

Table 2 Comparison of variables with total scores on the standardised measures (n = 45)

Variable	Yes		No		Mann-Whitney U test (corrected for ties)	
	Mean rank	(No)	Mean rank	(No)	z	p Value (two tailed)
GHQ-28 total score						
Predisposition to mood swings	28.60	(21)	18.10	(24)	-2.82	0.005
Predisposition to worry	29.57	(23)	16.14	(22)	-3.62	0.000
Psychiatric history	34.50	(6)	21.23	(39)	-2.43	0.015
Peritraumatic dissociation	28.90	(15)	20.05	(30)	-2.25	0.024
Experienced fright immediately after the accident	27.15	(24)	18.26	(21)	-2.40	0.017
Injury caused by tools/machinery	20.16	(31)	29.29	(14)	-2.28	0.023
IES-R total score						
Predisposition to mood swings	29.40	(21)	17.40	(24)	-3.52	0.000
Psychiatric history	33.83	(6)	21.33	(39)	-2.19	0.029
Experience of a previous accident	33.69	(8)	20.69	(37)	-2.56	0.010
Peritraumatic dissociation	28.50	(15)	20.25	(30)	-2.00	0.045
Still upset by the memory of the accident	28.79	(14)	20.39	(31)	-2.00	0.045
SAS-M total score						
Predisposition to mood swings	32.10	(21)	15.04	(24)	-4.37	0.000
Predisposition to worry	29.76	(23)	15.93	(22)	-3.55	0.000
Psychiatric history	39.25	(6)	20.50	(39)	-3.27	0.001
Peritraumatic dissociation	29.07	(15)	19.97	(30)	-2.23	0.028
Experienced fright immediately after the accident	27.54	(24)	17.81	(21)	-2.49	0.013
Injury caused by tools/machinery	18.40	(31)	33.18	(14)	-3.51	0.000

Results

PARTICIPANTS

All 47 patients agreed to participate. Table 1 shows the demographic and clinical profile of these patients. Of the injuries listed in Table 1, the most frequent type was metal intraocular foreign body (IOFB) (13/47) and IOFB plus corneal and conjunctival laceration (8/47). In sustaining these injuries, the majority of patients (39/47) reported the absence of protective eyewear. Forty one of the patients feared at some time they would lose their sight; however, only eight suffered full visual loss.

Of the 47 participants, 45 (96%) satisfactorily completed the standardised measures. The mean interval between assessment and the trauma was 25.70 (SD 19.25) months. However, despite an interval range of 3–59 months, analysis by means of the Spearman's rank correlation coefficient revealed that there was no significant relation between such an interval and the total scores for: the GHQ-28 ($r_s = 0.18$, $p = 0.235$); the IES-R ($r_s = 0.09$, $p = 0.569$), and the SAS-M ($r_s = 0.17$, $p = 0.272$).

PSYCHIATRIC SEQUELAE AND PSYCHOSOCIAL ADJUSTMENT

A between group comparison of patients with certain features against their total scores on the three standardised measures was conducted by means of the Mann-Whitney U test. Table 2 presents all those comparisons for which a significant difference was found between the two groups.

The mean total score for the GHQ-28 was 4.40 (SD 6.69). Fifteen of the 45 patients (33%) displayed "caseness". A psychiatric history ($\chi^2 = 7.79$, $df = 1$, Fisher's exact test = 0.012), and a predisposition to both mood swings ($\chi^2 = 6.43$, $df = 1$, Fisher's exact test = 0.025) and to worry ($\chi^2 = 16.05$, $df = 1$, Fisher's exact test = 0.000) were significantly associated with "caseness", whereas injury caused by tools or machinery was significantly related to "non-caseness" ($\chi^2 = 5.18$, $df = 1$, Fisher's exact test = 0.04).

The total score for subjective distress as measured by the IES-R resulted in a mean of 10.40 (SD 12.84). Total scores on the SAS-M produced a mean of 1.80 (SD 0.47). In terms of social adjustment those below the age of 35 years were more likely than those in the higher age group to report family relationship problems ($z = -3.28$, $p = 0.001$). Such problems were less likely to be reported by those who had experienced injury through tools and machinery ($z = -2.57$, $p = 0.01$). These individuals also had fewer social problems ($z = -3.29$, $p = 0.001$). Of the 20/47 patients who reported difficulty in returning to work, 16 were worried about further injury. However, analysis by means of the χ^2 test revealed no significant association between these two variables ($\chi^2 = 3.46$, $df = 2$, $p = 0.178$).

Discussion

The limitations of a retrospective study involving a moderately sized sample are that: (a) there is no information about the process of adjustment (post-traumatic reactions tend to be phasic); (b) there is reliance on the accuracy of patients' recall; (c) causal relations cannot be adduced; and (d) multivariate analyses cannot be used.

None the less, this is the first reported survey of its kind following ocular trauma, and compliance with standardised measures was high. The importance of high response rates in trauma studies has been emphasised elsewhere.¹⁰

Despite the survey's limitations it has shown that there are important issues to be explored in relation to ocular trauma. The prevalence of "caseness" is approximately twice that to be found in the normal population.¹¹ The responses to the IES-R confirm too that such injuries can cause considerable and sustained

distress. Finally, there can be problems of adjustment even many months after trauma. In particular, it should be noted that significantly higher levels of psychopathology and problems of adjustment are consistently found for victims with certain features. These are: having a psychiatric history, a predisposition to mood swings, and having had difficulty in making sense of what was happening at the time of the incident (that is, peritraumatic dissociation).

The identification of stable prognostic indicators would allow early selective psychiatric intervention to facilitate post-traumatic adjustment. The data suggest that a larger, prospective study of adjustment following ocular trauma is required.

Thanks are due to the charity, Remedi, for financial support and Mr A Scott (SR) and Dr M Costen (SHO) of Aberdeen Royal Infirmary for their assistance in obtaining the clinical data.

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