

A TWO YEAR SURVEY OF OPHTHALMIC TRAUMAS IN THE MALTESE ISLANDS, 1986-87.

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SUMMARY Many are the ophthalmic injuries seen daily at the Ophthalmic department of St. Luke's Hospital. The majority are of a minor nature and are treated on an out-patients' basis. This is a retrospective survey of ophthalmic traumas of a serious nature occurring during the years 1986/87. All the cases required admission to hospital. The criteria used are various. Since this is a retrospective study no standardised format for data collection was used. There were 110 cases of which 94 were males and 16 females. The aim of the article is not to present the mode of treatment of these cases but to enlighten on the types of injuries encountered and their causation.

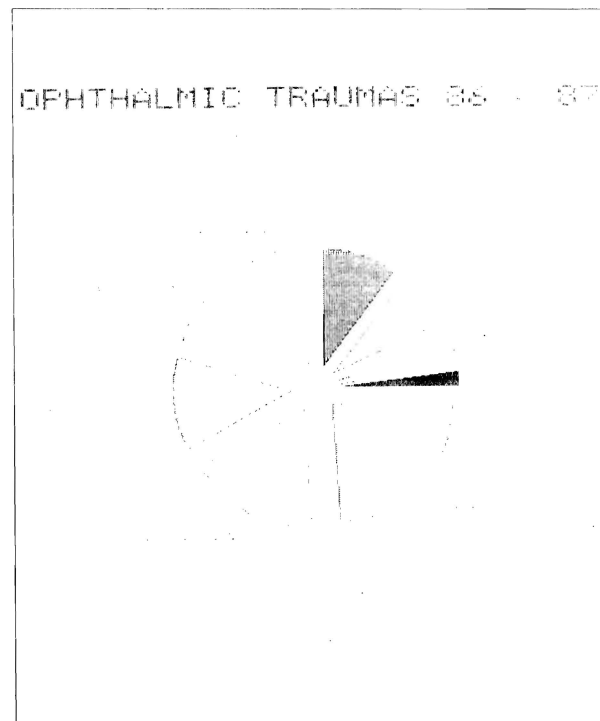
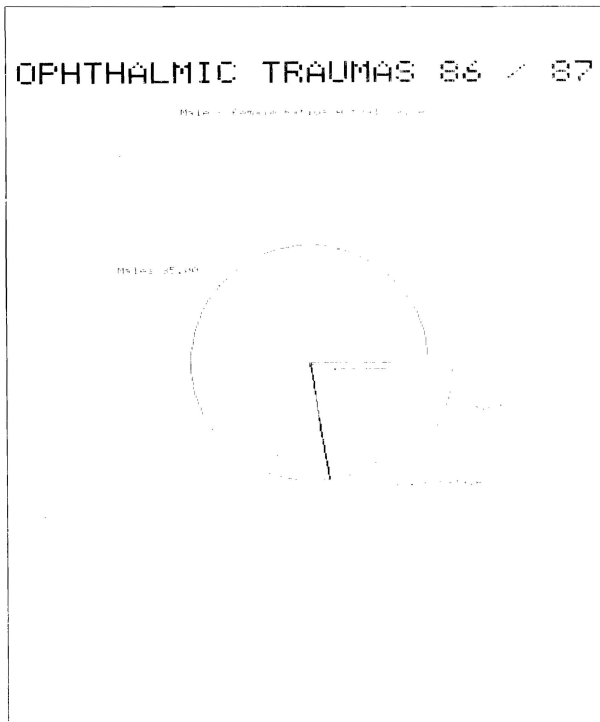
MATERIAL AND METHODS

The data was retrieved from the registers of admissions held at the records department of St. Luke's Hospital. The catchment area of the Ophthalmic ward at St. Luke's includes both Malta and Gozo. Since there is neither a resident Ophthalmologist or Ophthalmic ward at Craig hospital, any serious ophthalmic trauma requiring admission is sent to St. Luke's. Thus the records utilised cover the entire Maltese population together with any tourists requiring admission.

All ophthalmic admissions for the period January 1st 1986 to December 31st 1987 were reviewed and the trauma cases were noted. During the two years 110 ophthalmic trauma cases were admitted. The records of 101 only could be found. The 9 records which could not be traced were all of male subjects.

Due to lack of certain details in the files and also failure of patients to attend follow up clinics, full details of the final outcome was often lacking and therefore it was not possible to go into the permanent complications and final outcome which resulted from the injuries.

These problems of data compilation and retrieval in retrospective studies, and patient follow-up have been encountered and commented upon



by authors of papers discussing the subject. In a study on civilian ocular traumas, carried out in Israel the study was planned in advance. Data sheets were formulated beforehand and the participants were in agreement as to what information was necessary. In this survey the information had already been collected and no standardised plan was available. (1)

RESULTS

In the two years of the survey, 101 cases have been considered. 107 eyes were injured 49 right and 58 left. As already explained the 9 cases whose files could not be found were males. The male/female pattern of distribution is shown in (graph 1).

Of the 101 cases 85 were males and 16 females. There were 89 Maltese patients and 8 Gozitans with 4 foreigners. 84.2% were below the age of 45 years and 39.6% were under 18 years of age. Only one injury occurred in the 65 years and over age-group. In all age-groups there was a predominance of males over females

CAUSES

The causes of injuries were various and have been grouped into the following accident groups:-

Home, Industrial, Burns, Field, Sporting, School, Fireworks, Traffic (M.T.A.), Assaults, Others.

Accidents at work form the largest group, 38.6% of all accidents. This group has been further subdivided into industrial, field, and burns some also occurred in the home and some while driving. The latter are included with the relevant groups. Burns are divided into thermal and chemical and shall be commented

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upon later. The industrial group includes accidents in all spheres of manual work.

Carpenters are prone to accidents caused by flying pieces of wood during sawing with high powered electric circular saws, the accidental slipping of drills and screwdrivers. Chip metal injuries caused by the hammering of metal on metal were also often encountered. A chip of the tool fractures and penetrates or perforates the eye. Another source of injury was steel nails which break and fly off.

In the burns group are included those who have suffered a thermal or a chemical burn. The former includes the splashing of molten metal in foundry and galvanising plant workers. Chemical burns were mainly caused by lime or cement both of which are very irritating substances. A few originated in textile factories during the preparation of 'moonwashed' denim and in laundries where caustic soda is used. An explosion of a sulphur dioxide canister used in the sterilisation of the tubing of a winery was responsible for severe and permanent

damage. Other chemical injuries were due to sulphuric acid from car accumulator explosions after incorrect connection of jump leads.

All field accidents occurred in farmers. The culprit was always a tree branch or twig. The injury was sustained when the individual either turned round or bent over inadvertently on the branch/twig. The injury in this group resulted in a perforation or a hyphaema.

Home accidents comprise a group second in size to the industrial accidents and make up 23.8 % of all accidents. 70.8% of these were in individuals under the age of 18. The causes of child ocular traumas varied from falls, traumas at play, snapping catapult elastic, and projectiles shot from children play-guns, to objects being thrown by members of the family during a moment of rage or hitting the child with a belt buckle.

9.9% were sporting accidents. The majority of sporting injuries occurred during football, badminton, tennis or squash. Football traumas were usually caused by

the ball striking the player in the face. The other injuries were caused either by the racket or the ball.

Road traffic accidents accounted for 7.9% of cases. The injured is usually the driver or front seat passenger however this information was not always available. Details regarding the wearing of seat belts was not always recorded by the admitting officer.

In RTA's, on impact, the individual is thrown across the windscreen, head first, with the result that the glass shatters. Toughened glass windscreens shatter into small sharp pieces which are responsible for the injuries seen. The ocular injuries which occurred in such cases were perforating injuries with complete destruction of ocular anatomy. The degree of the injury in such cases is severe.

Assaults made up 12.9% of injuries. They varied from perforations of the globe, hyphaemas lacerations, abrasions and hematomata. In these cases the trauma was caused by:- fists, wood, metal bars, glass, gun shot etc. In one case of assault the fellow eye was blind from previous disease and the injury rendered the injured totally blind.

School accidents accounted for 9.9% of the admitted cases. Included were injuries at the bench in trade schools which ranged from metal chips penetrating the globe, thermal burns, to glass and metal explosions from mischievous and unsupervised 'experiments'. One particular student filled a lemonade bottle with acetylene and ignited it. Other school accidents include fighting amongst students. The throwing of hard objects ranging from pea-shooting to apples, hard-boiled eggs, stones, etc. were also responsible for severe admissions.

Table 2

Age	OPHTHALMIC TRAUMAS 86-87									
	Accidents		Burns Chemical	Burns Thermal	Sport	M.T.A.	Assault	School	Fireworks	Others
	Home	Indust. Field								
5	3									
5 - 18	9	7	1		5	2		10	2	
18 - 45	1	10	1	2	5	1	2		1	
45 - 65	1	2	1	6			7			2
>65							1			
Total:	24	19	5	9	15	6	17	10	7	2

Table 3

Age	OPHTHALMIC TRAUMAS 86-87								
	Perforation	Hyphaema	Commotio Retinae	Abrasions Burns	Lacerations	I.C.F.B.	Dislocated Lens	Detachment	
5	2	1			4				
5 - 18	6	15	2	4	5				
18 - 45	11	12	4	9	7	1			1
45 - 65	5	1		5	1		1		
>65	1								
Total:	27	29	6	19	17	1	1		1

DISCUSSION

It is not the scope of this paper to discuss the management of the individual cases. The intention is only to classify the cause of severe ocular injuries, requiring hospital admission, their age and sex distribution, and the type of injury incurred.

Table 3 shows the different major indications which necessitated admission to hospital and is subdivided into age groups. These have been divided into (1) infant and preschool; (2) 5 - <18 - School; (3) 18 - <45; (4) 45 - <65; and (5) those over 65 years. Besides the heading under which each group has been listed an individual may have had two or three other associated injuries e.g. a perforation together with a hyphaema, or a perforation and an intraocular foreign body. The subjects were however classified under what was considered to be the most grievous injury incurred.

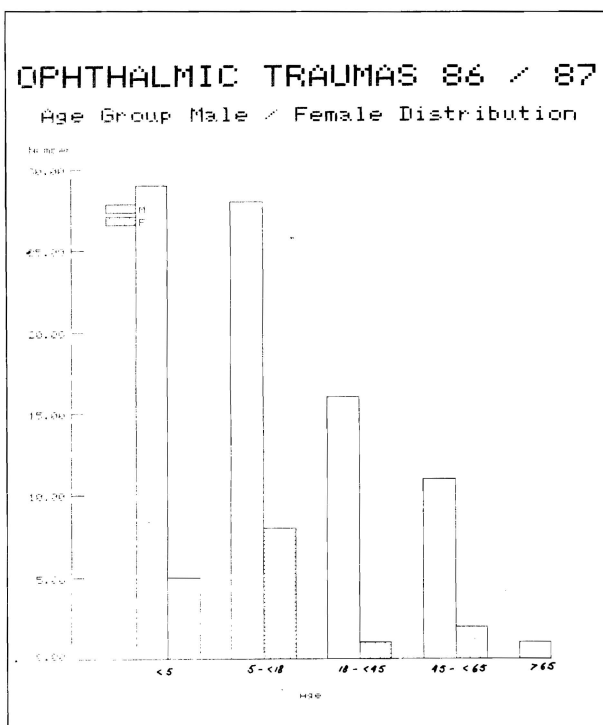
Under the heading 'abrasions' are listed severe corneal abrasions and lamellar tears not constituting a perforation due to, direct trauma, chemical or thermal burns where, very often, the corneal stroma was also involved or where, permanent conjunctival damage is most likely to occur with possible future symblepharon. Lacerations group lid and conjunctival lacerations.

The average length of stay in hospital was of 12.02 days with a range from 1 to 24 days. Some cases which required specialised surgery or diagnostic tests e.g. vitrectomy or ultrasound had to be sent abroad because the department lacks the equipment to carry out the interventions. The period of time spent in hospitals abroad has not been considered in this survey.

Information regarding the wearing of protective apparel e.g. polycarbonate glasses at school, work and also during sport such as squash and badminton, and seat belts, was not always available in the notes, however no record was found where the injured stated that he/she was wearing the protective glasses/belts, etc. when the accident happened. (2)

One notes that there were no admissions caused by the shattering of spectacles used for visual acuity correction, during sports activities. (3)

The wearing of seatbelts should be enforced by law, it should follow the crash-helmet law. Some car manufacturers still fit in toughened glass rather than laminated windscreens. The former has the properties of shattering into small pieces whilst



the latter shatters but remains in one single piece. (4)

Major traffic accidents on the motor-bike are more serious than car accidents. In these however the ocular injuries are minor when compared to the other injuries sustained.

CONCLUSION

Though ocular injuries can never be eliminated completely and though no preventive measure is 100% safe they can be minimised.

The major age-groups concerned are those <45 (graph 3). Accidents at home, sport, and school are responsible for serious injuries in the young, (<18 years), and industrial accidents in the 18 - 45 year age-group. Adequate supervision at work, the provision of protective clothing, and strict adherence to safety measures should minimise the number of traumas. Road accidents would not be minimised by the introduction of compulsory wearing of seat belts but the seriousness of the injuries would be much reduced as has been noted in England after the introduction of the seat-belt law. (5)

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