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TRAUMATIC OCULAR EMERGENCIES: THE DIFFICULTIES ASSOCIATED WITH THEIR CARE AT THE UNIVERSITY HOSPITAL OF BRAZZAVILLE

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ABSTRACT

Background: In black Africa, the severity of traumatic ocular emergencies (TOE) is increased by a lack of ophthalmologists and often inadequate or even the inexistence of surgical equipment.

Objective: To make an inventory of the difficulties associated with the management of TOE at the ophthalmology department of the University Hospital of Brazzaville (UHB).

Design: A retrospective study.

Setting: The University Hospital of Brazzaville.

Subjects: Records selected were those of patients seen for traumatic pathologies that could compromise the visual prognosis and require immediate surgical treatment. The patients seen for injuries of related structures of the eye were excluded. Types of lesion, consultation period, time of surgical treatment, clinical appearance of the eye and visual acuity (VA) at three months were analysed.

Results: The frequency of TOE was 1.8%. The average age was 35 ± 4 years old. The average time for consultation and treatment were 35 ± 10 days and 74 ± 5.5 hours. These TOE were: corneoscleral rupture (63.2%), vitreoretinal iron foreign body (16.8%), retinal detachment (15%), and macula hole (5%). At three months 73.2% of eyes did not see the light, 19.2% had a VA waving from light perception and counting fingers, and for 7.6% the best VA did not exceed three out of ten.

Conclusion: In the UHB, the rate of blindness associated with TOE is high. Training of ophthalmologists and adapted surgical equipment should be a priority.

INTRODUCTION

The TOE are a diverse group of disorders. They are a frequent reason for consultation (1, 2). Eye pain and lower VA essentially dominate the symptoms that leads the patient to consult urgently (3-5). The management of these TOE often requires sophisticated and expensive equipment (vitrectom...), as well as the knowledge of highly specialised technical (vitrectomy, corneal transplant ...).

In black Africa, severity of TOE is resulting in insufficient supply in ophthalmologists and inadequate specialized surgical equipment or even inexistence. The ophthalmology department of the UHB is the largest in the country (Congo). It has four specialists but none practiced posterior segment surgery. We proposed to carry out this investigation, with the aim of making a state of place in taking these TOE in this department.

MATERIALS AND METHODS

It is a retrospective study over eight years (January 2003 - December 2010), carried out in the ophthalmology department of the UHB. It was based on a survey sheet. Records were selected were those of patients seen for TOE, could compromise the vision and requiring immediate surgical treatment. The records of patients seen for trauma of the related structures of the eye were excluded. Ultrasound and/or CT-Scan were performed in cases of intraocular foreign body suspicion. For patients aged ten years and under, the VA was assessed using the Rossano's scale located at 5 m. Above ten years, the Snellen's scale located at 5 m has used. Blindness was defined as the state of an eye with a far VA lower than or equal to 1/10. The following parameters were analysed: type of injury, consultation period, time of surgical management, as well as at three months (after the first

consultation) clinical appearance of the eye and VA. The Birmingham Eye Trauma Terminology (BETT) has used to classify the different lesions observed.

RESULTS

Two hundred and five (205) records of patients (302 eyes) were involved in a serie of 9.775 patients (16.784 eyes) seen during this period, a frequency of 1.8% (302/16784).

The mean age was 35 ± 4 years (5 years - 74 years).

The average time for consultation and surgical treatment were respectively 35 ± 10 days (10 hours - 90 days) and 74 ± 5.5 hours (12 hours - 5 days).

Eye pain 67% (202 eyes), visual blurring 23% (69 eyes) were the two main reasons of consultation.

Table 1 represents the different ocular lesions observed. Total corneal opacity was the main clinical appearance after three months of evolution (Table 2).

Table 1

Traumatic ocular emergencies observed at Brazzaville University Hospital between January 2003 and December 2010

Type of lesion	Effective (eyes)	Frequency (%)
corneoscleral wound	201	66.56
Intraocular foreign body	51	16.89
Retinal detachment	45	14.90
macular Hole	5	1.65
Total	302	100

Table 2

Traumatic ocular emergencies, clinical aspects observed after 3 months of evolution, University Hospital of Brazzaville (January 2003 - December 2010)

Type of lesion	Effective (eyes)	Frequency (%)
Total corneal opacity	145	48.01
Phtisis bulbi	65	21.52
corneal neovascularization	55	18.21
Centro corneal scar	32	10.60
Non-axial corneal scar	5	1.66
Total	302	100

On admission, 100% of eyes (302) had a VA ranging from simple light perception to counting fingers at about 20 cm. After three months of evolution, 95.7% of eyes were blind (Table 3).

Table 3

Visual acuity after 3 months of evolution in eyes victim of trauma, University Hospital of Brazzaville (January 2003 - December 2010).

VA	Effective (eyes)	Frequency (%)
No light perception	221	73.18
light perception	30	9.93
Count fingers at 20 cm	28	9.27
1/10	10	3.31
2/10	8	2.65
3/10	5	1.66
Total	302	100

No lesion of the posterior segment, 33.44% (101 eyes), had been operated.

DISCUSSION

The frequency of TOE is lower than for Tchabi in Benin (7), 3%. The Benin study includes all eye emergencies, even those that don't involve the visual prognosis. The methodology is probably the origin of this difference. Xiao (1) in a survey of eye injuries in the Chinese military reports a frequency of 13.51%. This high percentage, almost eight times larger than ours, has some connection with the profession of patients. In fact, the injury risk is statistically significant in the military than in the general population.

The open globe injuries represented by corneoscleral wounds and vitreoretinal iron foreign body were the main TOE observed. The mechanism of these TOE was not mentioned in this study, however the severity of the lesions observed has a direct link with the patients' age. Negussie in Ethiopia (8) had observed that within a young population (from 16 years old to 30 years old), 22.6% of ocular emergencies were open globe injuries trauma caused by contending objects. The Ethiopian survey (8) confirms that in young patients the mechanism causing eye injury is usually violent, with a high risk of ocular perforation. Tchabi (7) noted that between 16 years old and 45 years old, 58.6% of ocular contusion in Benin were due to violent trauma namely the accident of the public highway. Onakpoya in Nigeria (9) confirms this reasoning, indeed in an elderly population (over 65 years old), it was observed that 85.9% of eye injuries were closed globe injuries. The trauma in this age is often associated with a less violent mechanism.

The functional prognosis of TOE depends on several factors, among others, the nature of the injury, the medical equipment, time of consultation and treatment. The average value of these last two parameters were respectively 35 ± 10 days (10 hours

- 90 days) and 74 ± 5.5 hours (12 hours - 5 days). In the survey conducted by Xiao (1), 59.28% of patients were seen within 24 hours, and 56.64% were operated on within 24 hours following the accident. More than 40% of patients in the Chinese study (1) had higher final VA, greater than or equal to 5/10. Nuzzi (5) has observed that 92% of patients operated within 48 hours for ocular trauma had, after a follow up of six months, have better or stable VA.

In our survey, no lesions of the posterior segment had been operated because of lack of specialist. Any traumatic injury of the posterior segment is a priori a poor prognosis (3, 10). After three months of evolution, substantially all of these eyes were blind ($VA \leq 1/10$). With the exception of a minority of population able to seek treatment abroad, a lesion of the posterior segment requiring surgical treatment is synonymous with blindness for the majority of Congolese.

In conclusion, in the UHB, the rate of blindness related with eye traumatic injuries is high. The difficulties in their care are multiple, mainly the lack of specialist in retinal surgery and the delay in the consultation. Training and adequate surgical equipment could reverse this trend.

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