



Eye Trauma: Epidemiological, Clinical and Prognostic Aspects at the Garoua Regional Hospital

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Abstract

Introduction: Eye trauma represents a frequent reason for consultation in ophthalmology. It is a major cause of monocular blindness. Purpose: describe the epidemiological, clinical, therapeutic and prognostic aspects of ocular trauma at the Garoua Regional Hospital.

Methods: This was a descriptive cross-sectional study with retrospective collection from January 1, 2019 to December 31, 2023. All patients with ocular trauma with complete files were included. The analysis was done using the SPSS26.0 software.

Results: We collected 13,127 patient records including 689 cases of ocular trauma, giving a prevalence of 5.2%. The age spanned 1 to 83 years with a mean of 26.2 ± 14.8 years. The Male/Female sex ratio was 2.4. The consultation delay of 24 to 72 hours was dominant in 33.6% (n=217). Work accidents dominated in 38.2% (n=247). Metallic objects were incriminated in 13.8% (n=90). Contusion was the predominant type of trauma in 41.4% (n=275) and closed eye trauma accounted for 85.1%. Eyes with OTS (Ocular Trauma Score) 1 were the most represented in 6.9% of eyes (n=46). A poor prognosis was found in 24.6% of male patients and 5.1% of female patients, respectively a ratio (bad/good) M= 0.5 and ratio (bad/good) F= 0.2 (p value=0.004). After treatment, 14.1% (n=87) of eyes had a visual acuity of $<1/20$, with 9.9% in males and 4.2% in females.

Conclusion: The prevalence of ocular trauma is 5.2% at Garoua Regional Hospital. Raising awareness about preventive measures, especially in the workplace, can reduce the risk of blindness.

Keywords: Eye Trauma; Contusion; Blindness

Abbreviations

BETT: Birmingham Eye Trauma Terminology; IOFB: Intraocular Foreign Body; OTS: Ocular Trauma Score; HRG: Garoua Regional Hospital; WHO: World Health Organization; VI: Visual Impairment.

Introduction

Eye trauma can be defined as a set of morbid consequences of lesions produced by external violence on the eyeball [1]. They are ophthalmic emergencies and constitute a public health problem because they are a major

cause of visual impairment (VI) worldwide. They are the leading cause of unilateral blindness in developing countries, but also the leading cause of VI in children [1,2]. According to the World Health Organization (WHO), 1.5 million people worldwide are blind as a result of eye trauma [3].

In sub-Saharan Africa, they are a frequent reason for consultation in ophthalmology departments and the frequency of these injuries varies according to the regions. It is 12.4% in Northern Africa, 19.5 to 31.8% in Eastern Africa, 9.8% to 12.5% in Western Africa and 5.0% to 12.2% in Central Africa [3]. The circumstances of occurrence and the traumatic agents are multiple and vary according to the continents and geographical environments [4]. This study was conducted to determine the prevalence, epidemiological, clinical, therapeutic and prognostic aspects of eye trauma at the Garoua Regional Hospital (HRG).

Materials and Methods

This was a retrospective descriptive study lasting 5 years from January 1, 2019 to December 31, 2023, carried out at the ophthalmology department of the HRG located in the Garoua 1st district and in the Garoua I health district in the North of Cameroon. All the files of patients who consulted for eye trauma during this study period constituted the target population. All complete files of patients diagnosed with eye trauma were included, regardless of age, origin and gender. The classification according to the "Birmingham Eye Trauma Terminology" (BETT) is a classification based on clinical terms and only in the case of mechanical trauma to the eye and grouped into two categories [5]:

- Closed globe ocular trauma including contusion, lamellar laceration, superficial CE [5];
- Open globe ocular trauma consisting of puncture wound, penetrating wound of the eyeball, Intraocular Foreign Body (IOFB), and globe rupture [5,6].

The Ocular Trauma Score (OTS) is a simple calculation system that predicts the final outcome of VA in a traumatized eye. The OTS score ranges from 1 (worst score corresponding to severe injury and poor prognosis) to 5 (less severe trauma and favorable prognosis). Its positive accuracy is approximately 80.0%.

Depending on each initial visual acuity obtained, a number of points called raw score rated from 60 to 100 is assigned and the OTS score is obtained by deducting from the raw score the number of points of the poor prognostic factors between 0 and 60 maximum. The poor prognostic factors include globe rupture equal to -23, endophthalmitis equal to -17, perforating wound equivalent to -14, retinal detachment which is worth -11 and light reflex deficit worth -10. The higher the final score, the better the prognosis,

with 0 being the lowest score and 100 the highest possible score. The prognosis is said to be good for a score greater than 3 and bad for a score less than or equal to 2 [5].

The variables studied were: age, sex; profession, level of education, place of origin, traumatic agent, reason for consultation, eyereached it, thereinitial visual acuity from a distance, lake BETT eye injury classification, the type of trauma, the nature and location of lesions of the globe and annexes, THE complications and observed sequelae, the functional result (visual acuity after 6 months) and the OTS score. Data analysis was done using SPSS 26.0 software. The statistical test used was X² and the significance threshold was retained for $p < 0.05$.

Results

Epidemiological Aspects

We collected 13,127 patient records during the study period, including 689 cases of ocular trauma, or 647 patient records selected as a sample, which is worth a prevalence of 5.2%. The patients were aged from 1 to 83 years with a mean age of 26.2 ± 14.8 years. The age group of [20-39] was the majority in 52.6% ($n = 340$). The male sex was the most represented in our study with 454 cases or 70.2% and a male/female ratio of 2.4 (Table 1).

Workers constituted the largest group in our series with 15.8% ($n=102$) followed by pupils in 15.1% ($n=51$) of cases and students with 10.4% ($n=44$). In our series, patients were in school in 82.2% ($n=532$). The secondary level of education was the majority in 35.7% ($n=231$) of cases. Most of the patients 79.9% or 517 cases came from the urban environment (mainly from the city of Garoua) (Table 1).

Clinical Aspects

The majority of patients in our study 92.1% ($n=596$) came to the consultation on their own and 7.9% ($n=51$) were referred. One third of the patients 33.6% ($n=217$) in the study consulted between one and three days after the ocular trauma.

A delay of less than 24 hours was found in 17.0% ($n=110$) of patients and more than one month in 2.6% ($n=17$). The most common places of trauma were: the workplace, the home, and the street/public highway in 38.2% ($n=247$), 33.4% ($n=216$) and 18.4% ($n=119$) of cases respectively.

The three main circumstances of trauma in our series were: work accidents 31.4% ($n=203$), domestic accidents 17.0% ($n=110$) and fights/assaults 16.4% ($n=106$).

Variables	Staff (n)	Percentage (%)
Age: average 26.2 ± 14.8 years		
[0-19]	208	32.1
[20-39]	340	52.6
[40-59]	86	13.3
≥60	13	2
Gender (M/F ratio = 2.4)		
Male	454	70.2
Female	193	29.8
Occupation		
Worker	102	15.8
Pupil	98	15.1
Student	67	10.4
Housewife	51	7.9
Level of study		
Not in school	115	17.8
Primary	209	32.3
Secondary	231	35.7
University	92	14.2
Origin		
Urban environment	517	79.9
Rural environment	127	19.6
Out of the country	3	0.5

Table 1: Distribution of Trauma Patients According to Sociodemographic Aspects.

Metal objects (13.9% or n=90 of cases) were the leading traumatic agents in our study, followed by blows and injuries (punches, slaps) in 9.7% of cases (n=63) and sticks/wood in 9.4%. Eye pain was the most common reason for consultation in 83.1% of cases (n=538). Comorbidities found in 6.8% of patients (n=44) were mainly dominated by high blood pressure (HTA) and type 2 diabetes respectively in 2.6% (n=17) and 1.9% (n=13). In our series, the most represented traumatized eye was the left eye in 51.6% (n=334), the right eye 45.6% (n=295) and bilateral in 2.8% (n=18), i.e. 665 affected eyes including 366 left eyes and 299 right eyes. In our study, the initial Visual Acuity (VA) without correction (AVS/C) was evaluated in 608 patients or 616 eyes. On admission, the majority of eyes 63.6% (n=392) had a VA ≥ 0.5, 6.5% (n=83) had a VA between [0.1 -0.3]. In our series, lesions in the anterior segment predominated in 50.7% of cases (n=393), and the posterior segment in 49.3% (n=381), 31.3% (n=208) and 9.6% (n=64). Superficial corneal foreign bodies represented the most frequent lesions in 17.5% (n=119) cases. Ocular trauma such as contusion was the most frequent in 28.8% (n=275) (Table 2). The mean OTS score in our series was 3.8. Among the 665 traumatized

eyes in our series, approximately half of the patients 46.9% (n=312) were classified OTS 5, 23.8% (n=158) OTS 4, 13.5% (n=87) OTS 3, 9.3% (n=62) OTS 2 and 6.9% (n=46) OTS 1. Closed globe ocular trauma was the most common in the study in 85.1% or 182 cases (Table 3).

Therapeutic Aspects

Medical treatment was mainly indicated in 93.1% of patients (n=619) while surgery was resorted to in 45.7% (n=361). Medical treatment was mainly administered in our patients, and the leader was nonsteroidal anti-inflammatory drugs with 51.0% (n=330).

Foreign body extraction (FB) and corneo-scleral wound suture were mainly dominant among surgical procedures with respectively 38.6% (n=119), and 13.9% (n=43). Of the 647 trauma patients during our study period, 36 patients were hospitalized or 5.6% of cases for an average hospital stay of 3.9 days. The duration of hospitalization of two to three days and those longer than seven days were the most represented respectively in 36.1% (n=13) and 27.8% (ten cases).

Variables	Staff (n)		Percentage (%)
	OD (%)	BONE (%)	
Initial visual acuity without correction			
≥0.5	160 (26.0)	232 (37.7)	392 (63.6)
[0.3 -0.5]	23 (3.7)	20(3.2)	43 (6.9)
[0.1 -0.3]	21 (3.4)	19 (3.1)	40 (6.5)
[0.05-0.1]	10 (1.6)	15(2.4)	25 (4.0)
<0.05	55 (8.9)	61 (9.9)	116 (18.8)
Location of lesions			
Cornea	321	41.5	
Anterior chamber	32	4.1	
Crystalline	23	3	
Iris	17	2.2	
Sclera	229	29.6	
Choroid	91	11.7	
Vitreous body	36	4.7	
Retina	22	2.8	
Nature of the lesions			
Corneal superficial CE	119	17.9	
Corneal edema	94	14.1	
Corneal ulcers	78	11.7	
Type of trauma			
Bruises	275	28.8	
Wounds	259	27.1	
CE superficial	119	12.4	
CEIO	12	1.3	
Annexes	250	26.1	
Extraocular lesions	41	4.3	

Table 2: Distribution of Patients (Eyes) According to Clinical Aspects.

Lesions	Staff (n)	Percentage (%)
Contusion of the globe	275	41.4
Lamellar laceration/corneal erosion	172	25.8
Superficial corneal foreign bodies	119	17.9
Closed globe	566	85.1
Puncture wound	39	5.9
Penetrating wound	35	5.2
CEIO	12	1.8
Wound (laceration) of the globe	9	1.4
Globe rupture	4	0.6
Open globe	99	14.9
Total	665	100

Table 3: Distribution of Eyes According to the BETT Classification.

Prognostic Aspects

A total of 25.0% (n=162) of patients had a complication. The major complication in our study was isolated ocular hypertension reaching 15.4% (n=25) of eyes followed by cataract in 14.2% (n=23) and corneal abscess in 13.0% (n=21) of cases. Corneal opacities (corneal smear, adherent leukoma) were the most common sequelae in 5.7% (n=38) of cases or 52.1%. After six months of treatment, the final visual acuity without correction was restored in 72.6% (n=470) of patients with a VA \geq 0.5, a frequency of blindness of 14.1% (n=87), i.e. 9.9% for males and 4.2% for females, including 4.7% (n=29) with No Light Perception (PPL), 4.9% (n=30) with VA between Light Perception (PL+) and 1/50th (Table 4).

Visual acuity	OD (%)	BONE (%)	Total (%)
\geq 0.5	183(29.7)	264 (42.9)	470 (72.6)
[0.3 -0.5]	19 (3.1)	15 (2.4)	34 (5.5)
[0.1-0.3]	12 (2.0)	13 (2.1)	25 (4.1)
[0.05 -0.1]	13 (2.1)	10 (1.6)	23 (3.7)
< 0.05	42 (6.8)	45 (7.3)	87 (14.1)
Total	269 (44.9)	347(56.3)	639(100.0)

Table 4: Eye Distribution According to VA without Correction after Six Months.

The mean OTS score in our series was 3.8. Among the 665 traumatized eyes in our series, approximately half of the patients 46.9% (n=312) were classified as OTS 5, 23.8% (n=158) as OTS 4, 13.5% (n=87) as OTS 3, 9.3% (n=62) as OTS 2, and 6.9% (n=46) as OTS 1.

Discussion

We have a prevalence of 5.2% of all files examined for all consultations combined. Several studies in Africa have highlighted the prevalence of eye trauma, this is the case of Koki, et al. [7] in 2015 in Cameroon and Sovogui MD, et al. [4] in 2022 in Guinea with variable rates, respectively 3.5% and 5.9%.

These results are superior to those found in France by Mayouego, et al. [8] in 2015 where ocular trauma represented 3.0% of cases received in the ophthalmology emergency department, as well as those of Shah, et al. [9] in India in 2024 who compiled data from 28 studies conducted, and found a prevalence of eye trauma of 3.8%. However, a prevalence of 7.5% had been reported in the United States in 2020 according to a meta-analysis conducted by Swain, et al. [10] who compiled 159 similar studies. These different variations would be linked to the lifestyle that varies in these studies but also to the frequent nature of eye trauma in certain regions of Africa. In addition, this variation could

be explained by the different incomes from one country to another (In Cameroon the average salary is 63.8 euros, in France it is 1621.6 euros and in India 1771.2 euros).

Sociodemographic Aspects

Age: The mean age of this series was 26.2 ± 14.8 years, and was predominated by the 20-39 age group. These results are superimposable with those of Kyei, et al. [2] and Koki, et al. [7] in urban Cameroon in 2015, with slightly higher results respectively of 29.3 ± 17.7 years with extremes of 1 to 81 years and an average age of 32.9 years with extremes of 0 and 87 years. On the other hand, Oluyemi, et al. [11] in 2011 in Nigeria had a much lower average age of 18 years with extremes of 1 and 70 years.

In the literature, eye trauma remains the prerogative of young people, probably due to their turbulence, clumsiness and exposure to dangerous practices.

Sex: In this study, the male sex was in the majority in 70.2% of cases with a male-female ratio of 2.4. This male predominance had been observed by several other authors such as: Koki, et al. [7] in Cameroon in 2015 who found 61.4% and a male-female sex ratio of 1.6, Kyei, et al. [2] having obtained 67.2% and a male-female sex ratio of 2.3 and Sangho H [12] in Mali in 2022 with 68.2% and a sex ratio of 2.1.

This worldwide predominance could be explained by high exposure to activities and games with high risk of eye trauma on the part of men, and the turbulence and recklessness of young boys.

Socio-Professional Activity

The most dominant occupation in our study was manual workers in 15.8% of cases. Koki, et al. [7] in 2015 in Cameroon, and Sovogui MD, et al. [4] in 2022 in Guinea had reported the same professional category respectively with 28.6% and 37.2% of cases.

This professional category of workers would be the most affected due to their manual activities which expose them to eye trauma. Indeed, the lack of wearing of personal protective equipment in the exercise of certain trades and the lack of experience could explain this primacy of the worker profession.

Nlevel of Study: In this series of work more than $\frac{3}{4}$ of the patients were educated or 82.2% and 17.8% were illiterate. Ouédraogo, et al. [13] in Burkina Faso and Maurya, et al. [14] in 2019 in India found that two-thirds of children (69.0%) were school-going and 27.9% illiterate in India respectively; which is different from our case.

This difference could be justified by the sample profile and methodology of the studies or could just be the expression of an even greater number of the uneducated population in the city of Garoua.

Place of Origin: The majority of our patients came from the city of Garoua 80.0%. These results are superimposable to those of Shah, et al. [9] in India who found only 14.3% of patients from the rural population.

This result could be due to the remote geographical location of the ophthalmology department compared to the rural area and its proximity to the urban population. Indeed, the HRG is a 3rd level reference hospital on the health pyramid and is located in the city center of Garoua, the capital of the Northern Region. Furthermore, the closest agglomeration to the regional capital Garoua (city center) is more than 10 km away.

Clinical Aspects

Reason for Consultation: In this series, the majority of trauma patients had consulted for eye pain in 83.1% (n=538). This result corroborates that of Atipo-Tsiba, et al. [15] in Congo who reported pain as the primary reason for consultation and Sovogui MD, et al. [4] in Guinea in 2022 which found that eye pain and redness were the most common symptoms in 75.6% and 68.3% respectively.

Indeed, eye pain is one of the main reasons for consulting an ophthalmologist, even more so in a patient who has suffered eye trauma.

Consultation Deadline: In this work, 33.5% of patients came for consultation between the 2nd and 3rd day post-traumatic. This result is similar to that of Sovogui MD, et al. [4] in Guinea in 2022 who found 26.8% of patients had a consultation time of between 24 and 72 hours and the same as those of Ombgwa, et al. [16] in Cameroon who noted 44.5% of consultations between the 2nd and 7th day after the trauma. In addition, the average consultation time was 6.3 ± 3.1 days with extremes of 1 to 12 days and only 19.4% of patients had consulted within a period ≤ 6 hours after the trauma according to Koki, et al. [7] in Douala in 2020.

In France, 59.2% of patients came for consultation as early as possible (before the first 6 hours) according to a study conducted by Mayouego, et al. [8].

On the other hand, our results differ from those of Ebana, et al. [17] in 2019 in Cameroon, and Chinwe, et al. [18] in 2021 in Nigeria which reported 41.2% and 43.0% of patients received within the first 24 hours after eye trauma respectively.

This could be explained by the use of self-medication, and consultation in non-specialized ophthalmology centers as a first-line treatment in developing countries. This is probably due to the lack of insurance (or universal health coverage) in some regions, while specialized consultation was preferred for other countries whose population benefits from health insurance.

Circumstances of the Trauma: In relation to the circumstances of the occurrence of the trauma, the main circumstances were work accidents in 31.4% and domestic accidents in 17%. Our results are similar to those of Sovogui MD, et al. [4] in 2022 in Guinea who found 42.7% of cases of work accidents. On the other hand, Koki, et al. [7] in 2015 in Cameroon in their series reported fights as the first circumstance of occurrence in 31.0% of cases, followed by road accidents in 10.2%.

These disparities observed in the results could be justified by the difference in methodologies adopted, in particular the choice of location and the study population.

Location of Trauma

Eye trauma occurred at work in 38.2% of cases in our series. This result is contrary to that of Ombgwa, et al. [16] in 2005 in Cameroon, which found the home as the predominant place of trauma with 52.3% as well as that of Gordon, et al. [19] in Canada where injuries occurring at home were the majority in 37.5%.

Traumatic Agent: Metal objects were the most common traumatic agents in our series (13.8%). This finding is similar to that made by Ombgwa, et al. [16] in 2005 in Cameroon who had found projectiles and whips respectively with 18.0%, and 17.2%.

On the contrary, Sovogui MD, et al. [4], Maurya, et al. [14] in 2019 in India, plant objects were found first in 31.7% and 24.9% followed by metal objects. Driving machines from a young age, playing with metal objects such as marbles, bottle caps and certain professions (such as welding, mechanics, masonry) and the urban nature of the habitat would be at the origin of this predominance of metal objects as a traumatic agent in our series.

Laterality: In this study, the left eye was the most affected, i.e. 51.6% and bilateral in 2.8% of cases. Several series have reported a predilection of the left eye, this is the case of Ombgwa, et al. [16] in 2005 in Cameroon who found 52.3% cases of trauma to the left eye. On the other hand, Sovogui MD, et al. [4] in 2022 in Guinea reported 58.5% of cases of right eye involvement, 40.9% for the left eye and 10.6% bilateral cases.

Laterality would only be the product of chance according to Sekkat A, et al. [20] in Tunisia, however, bilaterality would be linked to etiologies such as grains of sand (or dust), the projection of chemical products, but also the circumstances of occurrence (AVP, multiple blows, etc.).

Anatomical Site of Lesions: This study series reports 50.7% (n=393) cases of lesions that were located at the level of the anterior segment. This result is similar to that of Oluyemi, et al. [11] in Nigeria in 2011 which found a predominance of corneal involvement in 43.7% of cases.

The exposure of the anterior segment but also its fragility in the face of trauma could explain this similarity of observation.

Extraocular Lesions: In our series, 291 patients had associated lesions, or 53.6% of the population. Eyelid lesions ranked first, followed by conjunctivae with 50.3% (n=156) and 32.3% (n=94) respectively.

These results expressing the predominance of the involvement of the annexes are frequent in the literature, this is the case of Maurya, et al. [14] in 2019 in India who found 52.8% of lesions of the adnexa, Koki, et al. [7] in urban Cameroon had determined 70.9% of conjunctival lesions, 34.3% of palpebral lesions. In contrast, Mir TA, et al. [21] in 2020 in the United States, facial or orbital fractures were observed in 5.5% of cases and eyelid injuries in 4.4% of cases. This primacy of the involvement of the adnexa during ocular trauma is due to its protective role of the eyeball against external threats thanks to the reflex.

Type of Trauma

In our study series, contusion was the most represented type of trauma in 41.4%. These data have been found classically in several studies such as those of Koki, et al. [7] in 2015 in Cameroon who found 55.2% of cases of contusions, Ombwa, et al. [16] who reported a much higher rate of 83.6% of contusions, and Kyei, et al. [2] found 71.2% cases of contusions.

This similarity of the predominance of contusion is common in the literature of ocular trauma in general.

Nature of the Lesions

Corneal superficial foreign bodies were the most common with 17.9%, followed by corneal edema in 14.1%. These data are different from several studies such as that of Ombwa, et al. [16] who identified corneoconjunctivoscleral wounds as the most common lesions in 42.3%, and Wafae, et al. [1] in Morocco in 2020 which mainly identified hyphema

in 60% of cases.

The degree of exposure of the patients in the study according to their profession, the circumstances of occurrence and the nature of the traumatic agent which vary between these studies would be at the origin of these different results.

Classification according to BETT: In this series 85.1% of eyes had closed globe trauma versus 14.9% had open globe trauma. These results are similar to those reported by several authors: Kyei, et al. [2] in Zimbabwe in 2023 who found 71.2% cases of closed globe ocular trauma, Ebana, et al. [17] in 2019 in Cameroon who reported 91.0% of closed globe eye injuries and Sovogui MD, et al. [4] in 2022 in Guinea who found 91.3% of closed globe trauma. The predominance of closed globe trauma is common in the literature on ocular trauma studies in Africa.

However, our findings are different from those of the series of Koffi KV, et al. [22] in Ivory Coast which showed that open globe eye trauma was predominant with bursts of the globe in the foreground in 61.1% followed by penetrating wounds in 16.7%.

It all depends on the mechanism, the traumatic agent and the kinetics of the trauma. In addition, Koffi KV, et al. [22] in Ivory Coast had conducted a study on eye trauma by the braid needle which is a perforating agent unlike our study which covers all types of eye trauma without distinction.

Classification of Functional Result according to the Initial AV without Correction: In this study, initial uncorrected VA was normal in 63.6% (n=392) eyes, 17.5% (n=108) eyes had VA between 0.05 and 0.5, and 18.8% (n=116) cases of temporary blindness of which 5.5% (n=34) were no light perception (PPL).

These results are lower than those of Sovogui MD, et al. [4] which reported 39.4% blindness including 5.4% PPL and 14.6% PL+, to that of Oluyemi, et al. [11] who found 63% blindness and 11.8% AV between 0.05 and 0.5.

Prognosis according to OTS Score: The mean OTS score in our series was 3.8. Among the 665 traumatized eyes, approximately half of the eyes 46.9% (n=312) were classified as OTS 5, 23.8% (n=158) as OTS 4, 13.5% (n=87) as OTS 3, 9.3% (n=62) as OTS 2 and 6.9% (n=46) as OTS 1. These results are similar to those of Koki, et al. [7] in 2015 in Cameroon who found a result with 75.7% of eyes as OTS 5, and 16.2% as OTS 4.

This similarity between these two studies could be explained by the fact that these two studies were conducted

in the same country with a similar methodology, with similar traumatic agents, nature and location of the lesions.

Therapeutic Aspects

Admission Mode: Of the 647 trauma patients during our study period, 36 patients were hospitalized, or 5.6% of cases. This result is lower than that of Wong MY, et al. [23] in Singapore in 2011 which reported hospitalization in 20.0% of cases.

These differences would come from the type of injury, the severity of the injury and the nature of the associated injury which vary between these two studies.

Treatment Received before Admission: Before admission, 58.9% of patients initially resorted to self-medication (with pharmaceutical products), 2.9% used traditional products. These results corroborate the data of Sangho H [12] in 2022 in Mali who found medical treatment in 33.8%, and 8.9% traditional treatment.

These data would indicate to us the attachment of the population of the sub-Saharan zone to street products or to self-prescription while they resort to the hospital when the situation becomes alarming which can be linked to the lack of health insurance or universal health coverage.

Medical Treatment Prescribed upon Entry: Anti-inflammatory drugs were the most commonly used drugs in 51.0% of our series as was the case in the study by Sovogui MD, et al. [4] in Labé of Guinea and that of Sangho H [12] in 2022 in Mali. This would be linked to the inflammatory reaction generated by the trauma.

Surgical Procedures

Foreign body extraction was the most commonly performed surgical procedure in our study in 26.4% of cases. The results of our series are different from those of the series of Sovogui MD, et al. [4] who had found 13.4% wound suture/debridement, second 2.4% CEIO extraction and 1.2% evisceration and that of Sangho H [12] in 2022 in Mali which had obtained 7.0% of corneal suture in the foreground. These variations are attributed to the different types and degrees of lesions observed.

Surgery Time

In our series, 38.2% of patients had surgery within 24 hours of consultation. This result is close to that of Haingomalala Z, et al. [24] in Madagascar in 2016 which reported 45% of care after the 2nd day of trauma.

This could be explained by the promptness of the staff in caring for patients, but also the cooperation of the patients. However, it is different from that of Koffi KV, et al. [22] in Ivory Coast in 2016, where the delay in receiving therapeutic care for patients was 7.5 days and they received surgical care after an average delay of 8 days.

Prognostic Aspects

Post-traumatic Complications

In our series, the major complication of ocular trauma was ocular hypertension in 3.8% of cases, followed by cataract in 3.5% and corneal abscess in 3.2% of cases.

This finding differs from several previous works. Haingomalala Z, et al. [24] and Sangho H [12] had objectified post-traumatic cataract as the most frequent complication with 38.7% and 25.7% respectively. In addition, Swain, et al. [10] in 2020 found 6.1% visual deficit.

The similarity or difference between these studies would depend on the type of trauma and the traumatic agents which change from one study to another.

Post-traumatic Sequelae: Corneal opacities (3.4% corneal scab, 2.3% adherent leukoma) were the most represented in 5.7% (n=38) cases or 52.1% of the sequelae and they therefore constituted the main post-traumatic sequelae in our work. This result is close to that found by Sovogui MD, et al. [4] who found 11.6% of eyelid tissue. This is probably due to the fragility of the cornea and its high exposure to mechanical trauma.

Functional Result According to AV after 6 Months: After six months of follow-up, the final VA without correction found a blindness frequency of 14.1% (n=87) including 4.7% (n=29) PPL, and 13.3% (n=82) cases of VA between 0.05 and 0.5. These results are similar to those of Kyei, et al. [2] reporting 38.2% VA between 0.05 and 0.5 and 22% blindness, by Sovogui MD, et al. [4] who found 23.0% cases of AV between 0.05 and 0.5, 18.8% cases of blindness of which 3.6% were PPL and 3.6% PL, but different from that of Oluyemi, et al. [11] which reported 59.3% blindness and 19.2% VA between 0.05 and 0.5 and that of Ouédraogo, et al. [13] who found 27.5% blindness and 19.2% VA between 0.05 and 0.5. Kindie, et al. [25] in Ethiopia in 2018 found 59.7% blindness and 4.9% cases of AV between 0.05 and 0.5.

This similarity could be explained by the prognosis of ocular trauma linked to the traumatic agent, and the type of lesion.

Conclusion

Eye trauma is a major cause of blindness, mainly due to corneal opacities. Proper management can improve the prognosis of eye trauma (reduces complication rates, and promotes recovery).

Conflict of Interest

We have no conflict of interest.

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