

## Ocular Trauma in the Ophthalmologic Department of Sikasso Hospital: About 256 Cases

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### Abstract

### Original Research Article

Ocular trauma is a set of lesions that affect the eyeball and its appendages. The lesions caused are multiple and varied, the functional prognosis of which depends on the time taken for treatment. The aim was to evaluate the management of ocular trauma at Sikasso hospital. This was a retrospective study from June 1, 2017 to May 31, 2018. 256 cases of ocular trauma out of 3294 consultations, i.e. a frequency of 7.7%. The 16-45 age group accounted for 52.3% of cases and 68% were male. Pupils/students accounted for 28.5% of cases. The causative agent was vegetal and metallic with respectively 35.5% and 14.5%. Traumatic lesions were contusion in 58.2% of cases, followed by laceration in 15.2% and lamellar laceration in 11.3%. 49.2% of our patients. Management was surgical in 18.8% of cases. Complications were: cataract (38.5%), post traumatic uveitis (14.1%) and bursting of the globe (2.3%). The sequelae accounted for 27.7% with 47.8% corneal damage followed by monocular blindness 29.6% responsible for a poor functional result of the traumatized eye. The absence of light perception (PPL) was 9.8%. Eye injuries are frequent, their reduction requires awareness and communication for behavior change.

**Keywords:** Eye trauma; monocular blindness; Sikasso hospital (Mali).

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## INTRODUCTION

Ocular trauma is a set of lesions affecting the eyeball and its appendages [1]. It is a frequent reason for consultation in ophthalmology departments. According to the WHO, it is estimated that 55 million eye injuries occur each year, of which 19 million involve unilateral loss of vision and 2.3 million bilateral loss [2]. In 2000, ocular trauma represented 10.4% of ophthalmological consultations [2] in Benin and 7.63% in 2005 in Lomé found in the series by Ayena *et al.*, [3]. In Burkina Faso; in 2001 eye and eye injuries accounted for 9.80% [4]; In Mali, at IOTA Boundy. A found a frequency of 1.46% [5]. A study carried out at the Nianakoro Fomba hospital in Ségou in 2010 found a frequency of 12.2% [6]; In Koulikoro in 2010, C. Kamaté *et al.*, reported 30.4% [7]. However, in Sikasso in 1989 Moussa, A. G *et al.*, found a frequency of eye injuries at 1.49% [8]. After less than 30 years of this first study carried out and given the number of road

accidents (1636 cases) in 2017 at the Sikasso hospital, what is the frequency and management of eye injuries in the hospital? from Sikasso?

## EQUIPMENT AND PATIENTS

We carried out a retrospective study from June 1, 2017 to May 31, 2018 on the medical records of ocular trauma in the ophthalmology department of Sikasso hospital. All patients admitted for ocular trauma with a complete medical file were included. The data has been entered and analyzed using SPSS version 20 software.

## RESULTS

We have collected 256 cases of ocular trauma out of 3294 patients consulted, i.e. a hospital frequency of 7.7%. The male gender was majority 174 men (68%) against 82 women (32%) with a sex ratio of 2.12. The 16-45 age group accounted for 52.3% of cases. The

average age was 23.17 years with extremes ranging from 1 to 85 years. Schoolchildren accounted for 28.5% of cases. Pain was the reason for consultation in 59.4% of cases. Ocular trauma being an ophthalmological emergency, 49.2% of our patients had consulted after 72 hours. Domestic accidents were found in 21.5% of follow-up cases children's games and field work with respectively 19.9% and 16.8% of cases. The injuring agents found were plants 35.5% followed by metals with 14.5% of cases.

The lesions found were diverse and involved almost all the structures of the eye:

At the level of the annexes, the palpebral wounds with or without involvement of the lacrimal ducts 37%, the scleral wound represented 72.2%, the intrascleral foreign body 11.1%.

As for the anterior segment, corneal erosion accounted for 30.4% followed by corneal wound with 21.7%. The surface and intra corneal foreign body with respectively 13% and 7.3%. Post traumatic

cataracts represented 24.6%, and post traumatic dislocation in 1.6%.

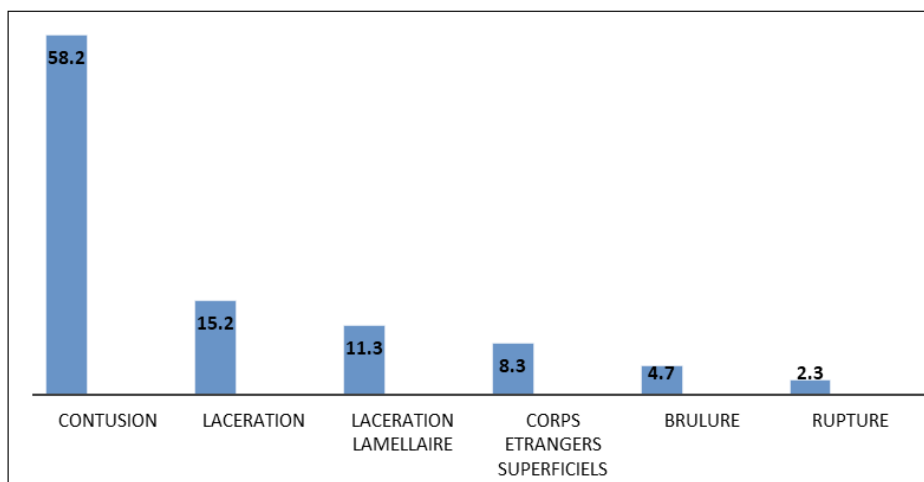
The posterior segment: Vitreous and retinal hemorrhages accounted for 17.6% and 23.5% respectively. Retinal detachment 17.6%, and edema-type macular involvement with 11.8%.

The treatment was medical in 81.2%. It consisted of eye drops and eye ointments. The treatment was surgical in 18.8% of cases.

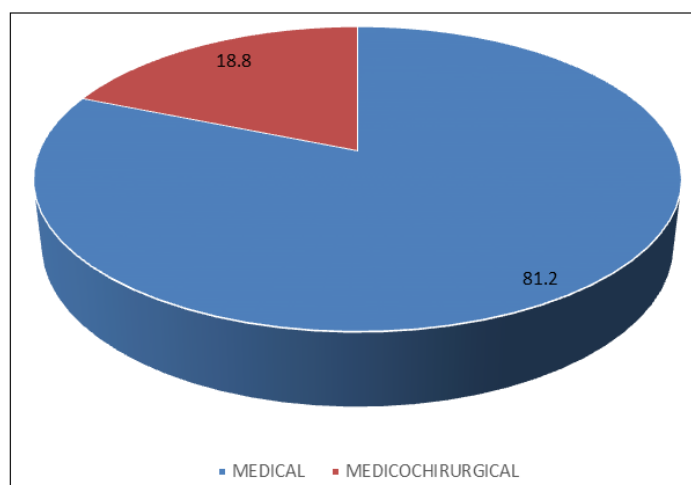
We classified our patients according to the Birmingham Eye Trauma Terminology (BETT) classification.

**Closed globe trauma:** Ia contusion 58.2%, and Lamellar laceration 11.3%, Superficial foreign body 8.3%,

**Open globe trauma:** Laceration 15.2%, and Rupture 2.3%.  
Eye burn 4.7% (not part of BETT)



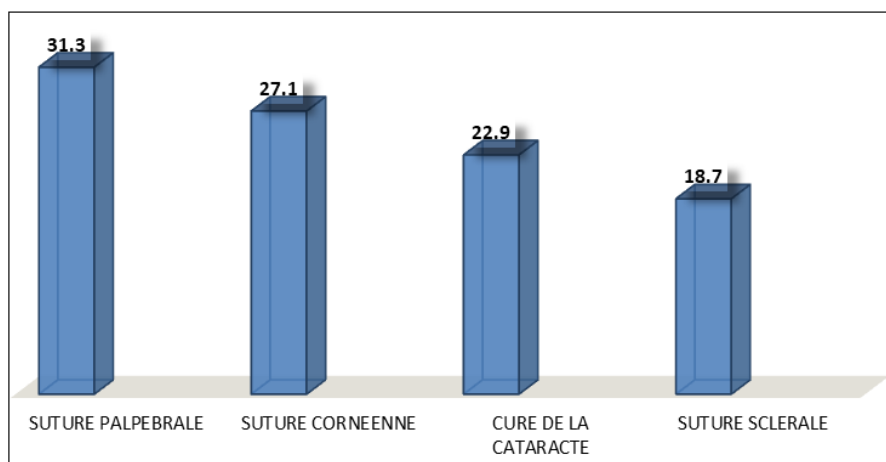
**Figure 1: Distribution of patients according to the nature of ocular lesions**



**Figure 2: Depending on the type of treatment**

Open globe lesions accounted for 17.5% and the surgical technique was reintegration and/or resection associated with a separate point suture with monofilament 10/0 (corneal), vicryl 6/0 (scleral) and

vicryl 4/0 (palpebral): palpebral suture 5, 80%; corneal suture 5.20%; cataract surgery 4.30 scleral suture 3.50%.



**Figure 3: Surgical technique**

The lid suture accounted for 31.3%. Posterior segment injuries were referred for lack of a technical platform.

Rapid management of ocular trauma can restore good anatomical and functional results.

However, with 72 hours of delay in treatment, we found 47.8% corneal damage and 29.6% monocular blindness. Final visual acuity was measured at non-perception of light (PPL) in 9.8% of our patients.

**Table I: Distribution of patients according to final visual acuity**

Final visual acuity Laterality			Total	
OD	OG	ODG		
<b>PPL</b>	<b>14 (5.5%)</b>	<b>11 (4.3%)</b>	<b>0 (0.0%)</b>	<b>25 (9.8%)</b>
PL	1 (0.4%)	0 (0.0%)	0 (0.0%)	1 (0.4%)
VBM to CLD	14 (5.5%)	16 (6.2%)	1 (0.4%)	31 (12.1%)
1/10 to 5/10	7 (2.7%)	9 (3.5%)	0 (0.0%)	16 (6.2%)
6/10 to 9/10	21 (8.2%)	13 (5.1%)	4 (1.6%)	38 (14.8%)
10/10	59 (23.0%)	51 (19.9%)	4 (1.6%)	114 (44.5%)
NOT EVALUATED	14 (5.5%)	15 (5.9%)	2 (0.8%)	31 (12.1%)
Total	130 (50.8%)	115 (44.9%)	11 (4.4%)	256 (100%)

## DISCUSSION

### SOCIO-EPIDEMIOLOGICAL CHARACTERISTIC

Our hospital frequency of ocular trauma was 7.7%. This result differs from those of Kouam, J. M *et al.*, [21] and A. Lam *et al.*, [20] who reported 45.2% (P=0.00) and 12.5% (P=0.030) respectively. It agrees with those reported respectively by N. Meda *et al.*, [4] and Yaya, G [10] 9.8% (P=0.4) 8.1% (P=0.86). This frequency is underestimated compared to those reported by some authors. This is explained by the important place of traditional medicine and self-medication in the city of Sikasso.

However, the 16-45 age group accounted for 52.3% of cases. This result differs from those reported by K. Giles *et al.*, [12] who reported 76.4% and N. Meda, *et al.*, [4] 75% (P= 0.00). It agrees with that

reported by Kaya, G *et al.*, [15] in their series for the same age group. The predominance of this age bracket can be explained by the fact that it is the most active and dynamic segment of the population on the labor market.

The male sex represented 68% of cases with a sex ratio of 2.12 in favor of men (P= 0.00). This male predominance is consistent with data from the literature [11, 9, 14].

This male predominance is explained by the fact that they are most often in the front line during traumatic risk activities.

Pupils and students represented 28.5%, which is consistent with the results reported by G. Koki *et al.*, [11] Ahnoux *et al.*, [14] who found 23.8%, 34.4%

respectively ( $P = 0, 00$ ). This socio-professional category is more exposed due to ignorance of certain compromising practices on the one hand and the turbulence of young people at this age on the other.

### CLINICAL AND THERAPEUTIC ASPECTS

Domestic accidents accounted for 21.5% followed by games and field work with respectively 19.9% and 14.1% of cases. This result is similar to those reported by A. Baba *et al.*, [13], Lam *et al.*, [6] and Limaïem *et al.*, [16]. This is explained by the absence of eye protection during activities with a risk of trauma. As for games, children were more victims with 18.7% of cases. This infantile predominance can be explained by the turbulence of the children on the one hand and on the other hand parental inattention in the face of certain risky games.

Ocular involvement was in the anterior segment in 88.6% with hyperemia in 73.2% of cases and subconjunctival hemorrhage in 23.2% of cases.

On the other hand, retinal hemorrhage was the frequent lesion of the posterior segment with 23.5% of cases. However, contusion represented 58.2% followed by laceration and lamellar laceration with respectively 15.2% and 11.3% of cases. This result agrees with that reported by Kaya, G *et al.*, [15] 56% of cases ( $P = 0.66$ ); and differs from those reported respectively by LAM *et al.*, [6] and Sebilléau, V *et al.*, [17] 23.4% ( $P = 0.00$ ) and 13% ( $P = 0.00$ ). This is explained by the nature of the traumatizing agents which was vegetal and metallic in our series and the context in which they occur.

Plants represented 35.5% followed by metals with 14.5% of cases. This result is consistent with those reported respectively by: Ahnoux *et al.*, [14] and N.Meda *et al.*, [4] 26.4%; 26% of cases. This plant predominance can be explained by their daily use for our needs and agricultural activities which are one of the main sources of income in the Sikasso region.

The treatment was surgical in 18.8% of cases. This result is explained by a non-negligible frequency of open-globe lesions, ie 17.5% of cases.

Complications were present in 30.5% of our patients with a predominance of cataract 38.5% followed by uveitis and bursting of the globe with respectively 14.2% and 2.3% of cases. This result differs from that of Diarra *et al.*, in Koulikoro [9] who reported 59.5% complications and 27% cataracts ( $P = 0.00$ ). This predominance of cataracts is explained by the frequency of bruises in our study with 58.2% of cases.

The corneal case represented 47.8% of cases. This observation is shared by Atipo [18] who reported 48%. The predominance of the corneal layer as a sequel

is explained by the anatomical situation of the cornea, hence its frequent involvement during trauma on the one hand, and on the other hand the high frequency of open-globe trauma (17.5%) in our series.

Final visual acuity was measured at non-perception of light (PPL) in 9.8% of our patients. Skiker *et al.*, [19] made the same observation in their series (13%  $P = 0.52$ ). The functional prognosis is reserved in most African series. This poor functional recovery could be explained by the delay in consultation, the absence of an adequate technical platform and the severity of the initial lesions.

### CONCLUSION

Eye injuries are common in Sikasso hospital, with a predominance in young adults aged 16-45 years old male. The lesions found ranged from contusion to bursting of the globe, responsible for complications and disabling sequelae. We found a response time of 72 hours at 49.2% of our patients resulting in monocular blindness in 29.6%. For a reduction in eye injuries, it would be desirable to organize awareness campaigns.

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