

Eyelid Wounds: Epidemiological, Clinical and Etiological Aspects

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How to cite this paper: Ka, A.M., Diagne, J.P., Aw, A., Sy, E.H.M., Mbaye, S., Diallo, H.M., Samra, A., Sow, A.S., Ndiaye, J.M.M., Senghor, O.N., Ndiaye, L., Ndiaye, M., Gaye, S.S. and Ndiaye, P.A. (2024) Eyelid Wounds: Epidemiological, Clinical and Etiological Aspects. *Open Journal of Ophthalmology*, **14**, 55-62.

<https://doi.org/10.4236/ojoph.2024.141005>

Received: December 28, 2023

Accepted: February 18, 2024

Published: February 21, 2024

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Abstract

Purpose: The aim is to show epidemiological, clinical and etiological characteristics of palpebral wounds. **Methodology:** This was a retrospective study focusing on patients with an eyelid wound, over a 10-year period from 2012 to 2021. We collected and analyzed the data using Excel. **Results:** The frequency of eyelid wounds was 0.1%. The average age of our patients was 19.38 years with a range of 1 and 62 years. The sex ratio was 3.7. Eighty-one percent of patients lived in Dakar. Fifty-seven percent (57%) of patients consulted less than 24 hours after the trauma and 7% of patients on D1. The circumstances were brawls (11%), domestic accidents (9%), road accidents (6%), and work accidents (6%). We noted 1 case of dog bite. Thirteen patients presented with post-traumatic decreased visual acuity. Involvement of the isolated upper eyelid was noted in 40% of cases and both eyelids in 15% of cases. Involvement of the lacrimal ducts was noted in 17% of cases, and that of the free edge in 21% of cases. Eyelid wounds were associated with eyeball damage in 21% of cases. Various associated lesions were observed. Ninety-one percent of patients received surgical treatment. Three cases of superinfections, 1 case of conjunctival granuloma and 1 case of phthisis of the eyeball with postoperative retinal detachment were noted. **Conclusion:** Eyelid sores are relatively common in our context. They require rapid surgical treatment in order to preserve the functional and aesthetic prognosis.

Keywords

Eyelid Wounds, Epidemiology, Clinic, Etiologies

1. Introduction

An eyelid wound is a break in the continuity of the eyelid tissues that can occur following trauma. They may be associated with other damage to the structures of the eye. This is an emergency that requires rapid and appropriate care. Eyelid trauma represents 2% to 6% of general trauma [1]. The treatment period must be early and of good quality as it can compromise the functional and aesthetic prognosis. The lesions can be serious, possibly leading to blindness.

In our department, we receive and treat eyelid wounds of different mechanisms, natures and circumstances. Through this study, we wanted to document our experience in the management of eyelid wounds and contribute to a better knowledge of their epidemiological, clinical and etiological characteristics.

2. Methodology

This was a retrospective and descriptive study covering the files of patients followed for eyelid wounds. The study period extended over 10 years from January 1, 2012 to December 31, 2021. We included all patients with an eyelid wound. Using a collection sheet, we collected epidemiological, clinical, paraclinical and therapeutic data. The data were entered and analyzed in Excel.

3. Results

In our study, we collected 53 cases of eyelid wounds. They represented 0.1% of the entire consultation. During this period, 451 cases of eye trauma were recorded. Eyelid wounds represented 11.75% of ocular trauma. The frequency of eyelid wounds in 2012 and 2021 was 15% and 21% of cases respectively (Figure 1).

The average age of our patients was 19.38 years with a range of 1 and 62 years. The age group between 19 and 30 years represented 36% of cases (Figure 2).

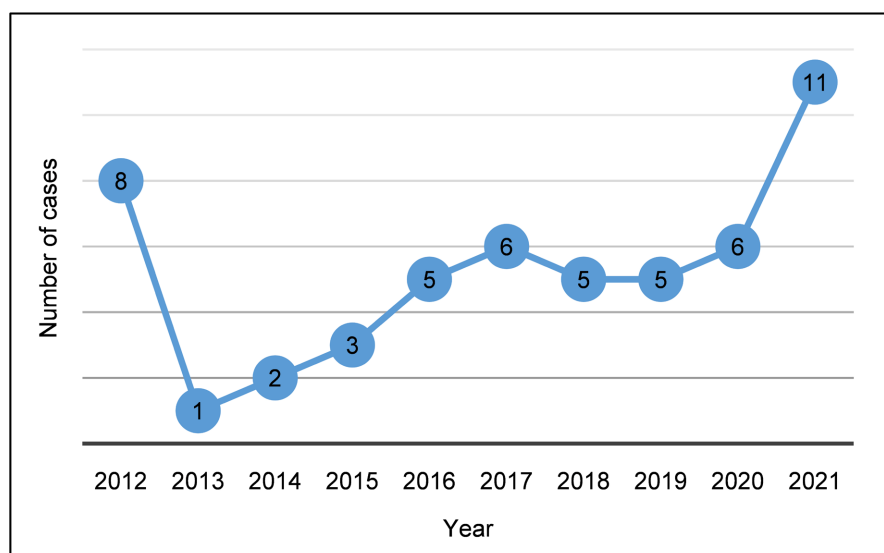


Figure 1. Distribution of the number of cases per year.

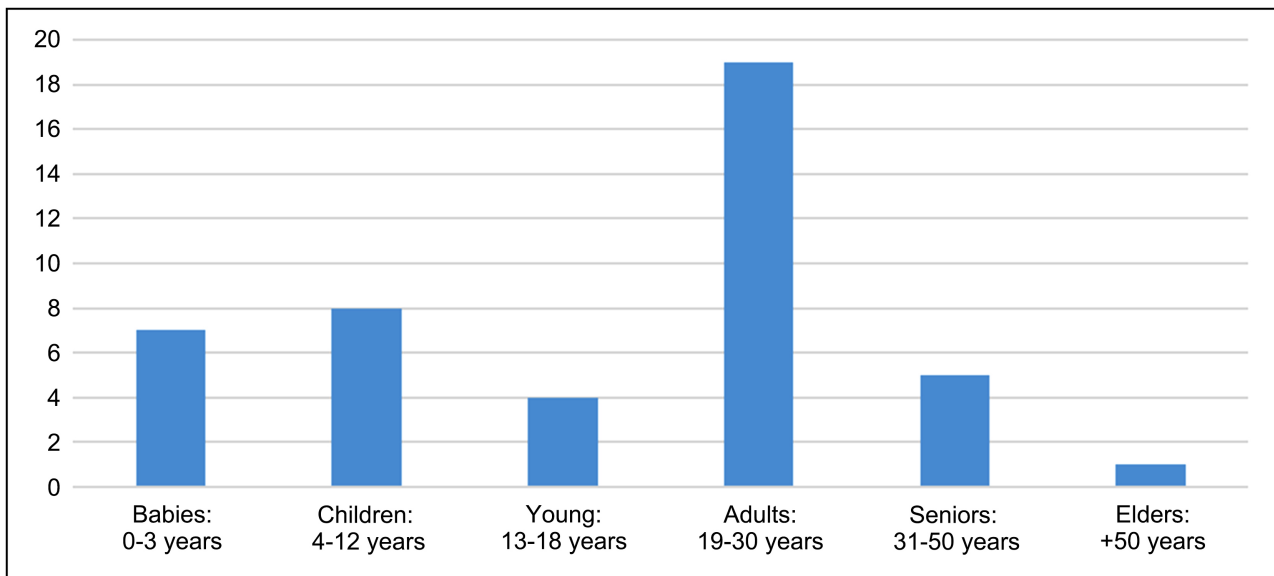


Figure 2. Distribution of the number of cases according to age groups.

The sex ratio was 3.7. In our study, 81.03% of patients came from Dakar. We noted 12 unemployed patients (23%), 11 schoolchildren and students (21%), 6 workers (carpenter, mechanic, mason) (11%) and 2 footballers (4%). A decrease in visual acuity was observed in 7 patients. Thirty patients (57%) had consulted within 24 hours following the accident, 4 patients (7%) the day after the trauma on D1, 1 patient between D2 and D5, 3 patients had consulted beyond D5 post-trauma. Brawls represented 11% of trauma cases, domestic accidents (DA) 9% of cases. Public road accidents (PRA), work accidents (WA) and recreational accidents (RA) each represented 6% of cases.

Concerning infants aged 0 to 3 years, domestic accidents were the cause in 57% of cases. The latter were found in 13% of cases in children aged 4 to 12 years. Among adults aged 19 to 30, we noted fights, work accidents, playful accidents in 11% of cases each and public road accidents in 5% of cases. Regarding seniors aged 31 to 50, fights and work accidents were found in 20% of cases each (**Figure 3**).

The impact of an object represented 23% and falls, 17% of mechanical cases. Among other things, we noted a case of dog bite, hoof kick, tear gas grenade reception. Post-traumatic decreased visual acuity was found in 13 patients.

We note involvement of the upper eyelid in 40% of cases, of the lower eyelid in 38% of cases. The damage affected both the upper eyelid and the lower eyelid in 5% of cases.

Examination of the eyelids revealed damage to the lacrimal ducts (LD) in 17% of cases. Sixty-seven percent of patients had no tear tract involvement (**Figure 4**).

Eyelid wounds with involvement of the free edge were (FE) present in 21% of cases (**Figure 5**). They were absent in 57% of cases.

Eight patients presented with an eyelid wound with loss of substance (15%) (**Figure 6, Figure 7**). We noted eyeball involvement in 11 patients (21%).

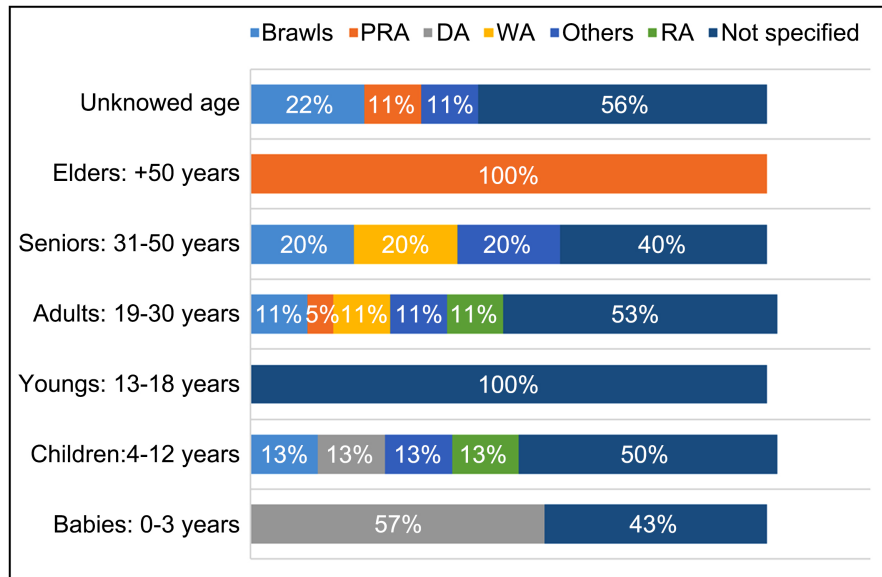


Figure 3. Circumstances of occurrence of eyelid sores according to age.

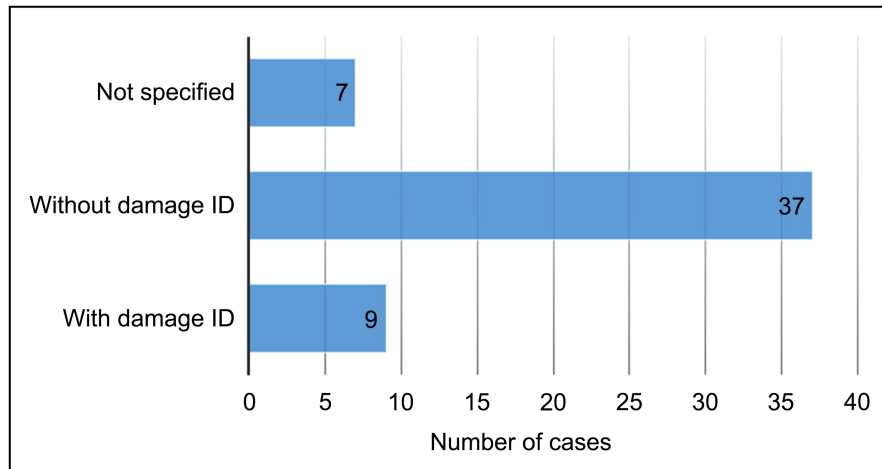


Figure 4. Distribution of lesions depending on the involvement of the tear ducts.

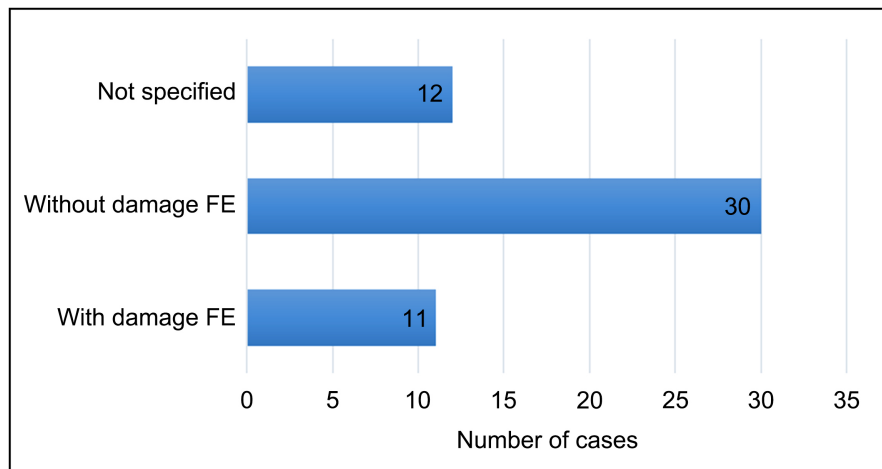


Figure 5. Distribution of lesions depending on involvement of the free edge.



Figure 6. Deep lower eyelid wound with damage to the free edge, tear ducts and shattering of the eyeball by stone throwing.



Figure 7. Wound with loss of eyelid substance.

We noted 10 cases of para-orbital lesions, 21 cases of conjunctival damage, 4 cases of corneal damage, 1 case of hyphema, and 1 case of iris hernia. Medical treatment was initiated in 52 patients. Forty-eight patients (91%) had benefited from surgical treatment at the same time. Forty-three patients did not present any complications. We noted a superinfection in 3 cases, 1 case of conjunctival granuloma and 1 case of phthisis of the eyeball with retinal detachment.

4. Discussion

Ocular trauma is common in Senegal. They represent 12.5% of patients who consult the ophthalmological clinic of Dakar University Hospital [1]. In Burkina Faso, the frequency of oculopalpebral trauma reports a frequency of 9.6% of cases [2]. In our study, eyelid wounds represented 0.1% of all ocular pathologies and 11.75% of ocular trauma, a high frequency compared to Kaya's study which

reported a frequency of $1.0\% \pm 0.1\%$ of all trauma patients at the Brazzaville University Hospital Center [3]. Berete [4] found in his study carried out in Treichville on oculopalpebral trauma an incidence of 36 cases in 7 years. Our study showed an average annual incidence of eyelid wounds of 4.8 cases.

The incidence of eyelid sores was higher in the age group of 19 to 30 years (36%). In fact, this age group is naturally more exposed to the risk of trauma. This is the age of learning various trades and the environment is often not secure. It should also be noted that young people are most present on sports fields and other places of play activities presenting a risk of traumatic accidents.

A male predominance was noted. This was observed by Berete with the same trend of a sex ration of 2 [4]. The male predominance could be explained by the fact that men are often more engaged in risky activities.

In our study, the majority of patients came from Dakar (81.03%). This is due to the fact that eyelid wounds cause significant bleeding which leads patients to consult the nearest health facilities. The same observation was made in Abidjan by Berete [4] which reports that 72.2% of patients come from the locality of the structure.

We noted in the group 12 unemployed patients (23%), 11 schoolchildren and students (21%), 6 workers (11%). These socio-professional categories are more mobile, particularly during peak hours, and therefore are more exposed to AVP. Our results differ a little from those of Berete [4]. The socio-professional categories identified are the same as ours, but in different proportions. In his study, company workers are more numerous, 11 (30.55%), followed by students, 8 (22.22%). There are only 3 (8.33%) and 2 (5.56%) students and traders respectively. There are 8 unemployed people (22.22%) and in 4 patients the profession could not be identified (11.11%).

In our study, we found decreased visual acuity in 7 patients. On the other hand, a cause-consequence relationship has not been established between the trauma and this reduction in visual acuity.

Thirty patients (57%) were consulted and treated within 24 hours following the accident, 4 patients were consulted the day after the trauma on D1, *i.e.* 7% of cases, 1 patient between D2 and D5, 3 patients beyond D5 post trauma, *i.e.* 6% of cases. This early treatment is justified by the heavy bleeding which worries patients and leads them to consult early. Ndiaye reports that the majority of patients consult within 24 hours after the trauma [1].

The treatment time can be postponed by 48 to 72 hours in the case of an isolated eyelid wound, in order to be in the best possible conditions for repair, ideally in one step. We always start with the repair of the globe before that of the eyelids [5]. In Berete's study, 61.11% of patients consulted before the 48th hour following the trauma, which is similar to our results [4].

Several authors report that public road accidents constitute the most frequent cause of eyelid sores [6] [7]. This corroborates our results although its study population is larger than ours, because it concerns ocular trauma in general. On

the other hand, our results seemed close to those of Berete [4] who report that assaults and fights are the most encountered circumstances (33.33%), followed by road accidents (22.22%), work accidents, present in 19.44%, fun accidents (13.89%) and domestic accidents (8.33%).

Our study revealed that the mechanisms of eyelid wounds were diverse and varied. Most of these were falls whose circumstances were poorly understood. We also noted a case of dog bite, receiving tear gas among others.

Ducasse, who carried out his study on palpebro-lacrimal wounds in children, reports that dog bite wounds are very common [8]. However, note that the mechanisms of eyelid wounds are reported in few studies. The traumatic agents involved in the Berete study [4] are mostly metallic (33.33%), followed by bladed weapons (22.22%).

Damage to the lacrimal ducts was noted in 17% of cases. Eyelid injuries are often associated with damage to the canaliculi, particularly in children following a dog bite or in older subjects after a fall [9]. Berete found damage to the lacrimal tract in 16 cases (20.78%).

Eyeball damage was observed in 21 % of cases. Berete [4] reports a frequency of eyeball lesions of 34.48% [4].

Furthermore, paraclinical examinations, even if they are not essential in the case of an eyelid wound, become necessary if an intraorbital foreign body or an associated fracture is suspected [3].

Treatment was initiated in 52 patients. Forty-eight patients underwent surgical treatment at the same time. Berete [4] reports in his study that surgical treatment is carried out before 48 hours in 44.44% of patients. All patients are operated on under general anesthesia. The operating technique depends on the site, the complex or guided nature of the lesion as well as the recent or old nature of the wound. Usually, treatment involves suturing the severed eyelid and canalicular wound under an operating microscope, most often with single-canalicular intubation. In Valle's study, treatment consists of suturing with realignment of the free edge and, in the event of canalicular involvement, intubation using mini-Monoka after canalicular suturing using the Adenis technique [9]. In our study, 43 patients did not present any complications. On the other hand, 5 patients had complications such as superinfection in 3 cases, 1 case of conjunctival granuloma and 1 case of phthisis of the eyeball with retinal detachment in a patient who had associated eyeball damage. Note that the clinical examination is essential and allows the prevention of complications in primary surgery [10]. Valle in his study on oculo-palpebral traumatology reports that the results of eyelid surgery are satisfactory in the vast majority of cases [9]. The subsequent results and the absence or presence of after-effects depend on the quality of the care [8].

5. Conclusion

Eyelid wounds represent a relatively common pathology, which can compromise

the aesthetic and sometimes functional prognosis of the eye. Any life-threatening emergency must be ruled out. Eyelid trauma can involve a medico-legal aspect, particularly in the event of a work accident or brawls. Prevention is of paramount importance.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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