

Ocular Trauma in Albania: A 10-Year Retrospective Study

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ABSTRACT

Ocular trauma remains a significant public health issue worldwide, with varying causes and outcomes depending on geographic, socioeconomic, and environmental factors. This article aims to review the incidence, types, and outcomes of ocular trauma in Albania over the past decade. A total of 284 patients were diagnosed with ocular trauma during this period, with 10% of them experiencing complete vision loss. The majority of cases involved corneal lacerations, which account for a significant proportion of trauma-related injuries. This study provides insight into the types of ocular injuries most prevalent in Albania, offering valuable information for improving preventive measures and management strategies in the future.

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Introduction

Ocular trauma is a leading cause of preventable visual impairment and blindness worldwide, with significant socio-economic and personal consequences [1-4]. The eye, being a delicate and highly sensitive organ, is vulnerable to various types of injuries resulting from accidents, sports activities, industrial work, and even interpersonal violence [5-8]. In Albania, as in many other countries, ocular trauma remains a prevalent public health issue, often leading to emergency medical visits and, in some cases, permanent visual loss [9-14].

Despite the advancements in medical and surgical treatment, ocular trauma continues to present substantial challenges, particularly due to the high rate of severe injuries that result in long-term complications [15,16]. Over the past decade, Albania has experienced a significant number of cases involving trauma to the eye [17-20], with many patients suffering from injuries that could potentially lead to permanent vision loss if not properly managed [21,22].

This article reviews ocular trauma cases in Albania over a 10-year period, analyzing the causes, types of injuries, and outcomes for affected patients. The primary goal of this review is to assess the frequency and severity of ocular trauma in the country, understand the most common types of injuries, and highlight potential preventive measures and strategies for improving eye safety. Special attention is given to corneal lacerations, the most common form of injury observed, as well as the consequences of such trauma on patients' long-term visual health. This study aims to provide valuable insights that can contribute to enhancing the care and prevention of ocular injuries in Albania.

Methodology

This study is a retrospective analysis of ocular trauma cases in Albania over a 10-year period, from 2015 to 2025. Data were collected from the medical records of patients diagnosed with ocular trauma at the Mother Teresa University Hospital in Tirana, which is the largest healthcare facility in Albania, specializing in ophthalmologic care. In addition, data were obtained from the Center of Statistics for Health Data in Albania, which compiles national health statistics and provides valuable insights into the incidence and outcomes of various medical conditions, including ocular trauma.

The study focused on a total of 284 patients who sought medical treatment for ocular trauma during the specified period. The inclusion criteria encompassed all patients who presented with ocular trauma, regardless of age or gender, and who had either temporary or permanent vision impairment as a result of the injury. The study excluded patients with pre-existing eye conditions unrelated to trauma (e.g., chronic diseases such as glaucoma or cataracts) and those with incomplete medical records.

For data collection, detailed information was gathered from patient records, including:

- **Demographic Information:** Age, gender, and occupation, when available.
- **Cause of Trauma:** Categorized into accidental injuries (e.g., work-related accidents, road traffic accidents, and sports injuries), intentional trauma (e.g., violence), and medical trauma (e.g., surgical complications).
- **Type of Ocular Injury:** Identified as corneal lacerations, blunt trauma (including contusions), fractures of ocular bones, retinal injuries, and intraocular foreign bodies.
- **Treatment:** The type of medical and surgical intervention administered, such as suturing of corneal lacerations, intraocular lens implantation, or other surgical procedures.

- Outcomes:** The final visual outcome was recorded, including whether patients experienced complete vision loss, partial vision loss, or full recovery of vision. Visual acuity was assessed during follow-up visits and categorized into groups.

The data were analyzed using descriptive statistics to determine the incidence of different types of ocular trauma and to identify demographic patterns and injury causes. The study also calculated the percentage of patients who suffered complete vision loss and assessed the correlation between the type of trauma and the severity of the outcomes. Statistical software was used to analyze the data and identify significant trends.

Ethical approval was obtained from the appropriate medical ethics committees at Mother Teresa University Hospital. All data were anonymized to maintain patient confidentiality, and informed consent was obtained from patients (or their guardians) for the use of their medical information in the study.

By using this methodology, the study aimed to provide a detailed and specific overview of the incidence, types, and outcomes of ocular trauma in Albania over the past decade, with a particular focus on identifying common injuries such as corneal lacerations and their associated risks. The study also aimed to highlight areas where preventive measures and public awareness campaigns could potentially reduce the incidence and severity of such injuries in the future.

Results

In this study, we analyzed 284 cases of ocular trauma that occurred in Albania over the 10-year period from 2015 to 2025. The following table summarizes the key demographic characteristics, causes, types of ocular injuries, and outcomes of the patients included in the study.

Table 1: Demographic Characteristics of Patients with Ocular Trauma (2015-2025)

Characteristic	Frequency (n = 284)	Percentage (%)
Age Group		
0-18 years	40	14.1%
19-40 years	98	34.6%
41-60 years	85	29.9%
61+ years	61	21.5%
Gender		
Male	174	61.3%
Female	110	38.7%
Occupation		
Industrial/Construction	102	35.9%
Traffic-related (drivers)	65	22.9%
Sports-related	50	17.6%
Domestic/Accidental	67	23.6%

The majority of patients (61.3%) were male, which is consistent with global trends, where males are generally more prone to traumatic injuries, particularly in industrial and traffic-related accidents. Most injuries occurred in the age group of 19-40 years (34.6%), suggesting that younger adults, particularly those in the workforce, are at higher risk of ocular trauma.

Table 2: Causes of Ocular Trauma

Cause of Trauma	Frequency (n)	Percentage (%)
Accidental	185	65.2%
Work-related accidents	102	35.9%
Traffic-related accidents	65	22.9%
Sports accidents	50	17.6%
Intentional/Violence	35	12.3%
Medical Complications	64	22.5%

Accidental injuries were the most common cause of ocular trauma, accounting for 65.2% of all cases. This category includes a high number of work-related accidents (35.9%) and traffic-related incidents (22.9%), which indicate that unsafe working environments and road traffic accidents are major contributors to eye injuries in Albania. Sports injuries (17.6%) also represent a significant portion of the cases, highlighting the need for better safety measures and protective eyewear in these contexts. A smaller percentage (12.3%) of ocular trauma cases resulted from intentional violence, which reflects a concerning social issue but is still a minority compared to accidents.

Table 3: Types of Ocular Injuries

Type of Injury	Frequency (n = 284)	Percentage (%)
Corneal Lacerations	143	50.4%
Blunt Trauma (Contusions)	78	27.5%
Retinal Injuries	34	12.0%
Intraocular Foreign Bodies	15	5.3%
Fractures of Ocular Bones	14	4.9%

The most common ocular injury was corneal lacerations, which were found in 50.4% of the cases. This suggests that the cornea, due to its anatomical location and exposure, is particularly vulnerable to trauma, especially in work-related and traffic accidents. Blunt trauma injuries, including contusions and minor fractures, were also common, affecting 27.5% of patients. Retinal injuries, while less frequent (12.0%), can result in significant long-term damage, and intraocular foreign bodies (5.3%) often require surgical intervention to prevent further complications. The presence of fractures of ocular bones (4.9%) indicates a severe type of trauma that may require complex surgical procedures.

Table 4: Visual Outcomes of Ocular Trauma

Outcome	Frequency (n = 284)	Percentage (%)
Complete Vision Loss	28	9.9%
Partial Vision Loss	45	15.8%
Full Recovery of Vision	211	74.3%

Complete vision loss occurred in 9.9% of the patients, which is a concerning outcome. This emphasizes the severity of ocular trauma in certain cases, despite medical intervention. **Partial**

vision loss was observed in 15.8% of cases, while the remaining 74.3% of patients experienced **full recovery of vision** after treatment. This outcome suggests that while ocular trauma remains a significant cause of visual impairment, a majority of patients recover, especially with timely and appropriate medical care.

Conclusion

The results of this study demonstrate that ocular trauma remains a major health issue in Albania, with a significant proportion of patients suffering from serious injuries, including corneal lacerations and vision loss. Preventive measures, including better safety protocols in workplaces, improved road safety [23,24], and education on the importance of protective eyewear in sports, could play a vital role in reducing the incidence of ocular trauma in the future. Additionally, timely medical intervention and access to specialized care are essential to improving the outcomes for patients affected by these injuries.

References

- Krasniqi M, Trebicka B (2020) Visual impairment and quality of life, a cross-sectional study. *Int J Psychosoc Rehabil* 24: 10234-10240.
- Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Pararajasegaram R, et al. (2004) Global data on visual impairment in the year 2002. *Bull World Health Organ* 82: 844-851.
- Cao H, Li L, Zhang M, Li H (2013) Epidemiology of Pediatric Ocular Trauma in the Chaoshan Region, China, 2001–2010. *PLoS ONE* 8: e60844.
- Al Mahdi HS, Bener A, Hashim SP (2011) Clinical pattern of pediatric ocular trauma in fast developing country. *Int Emerg Nurs* 19: 186-191.
- American Academy of Ophthalmology (2013) Eye injuries: recent data and trends in united states. Available from: <http://www.aao.org/newsroom/guide/upload/Eye-injuries>, <http://www.aao.org/newsroom/guide/upload/Eye-injuries>.
- Krasniqi M, Bino S (2016) Clinical and laboratory findings of Crimean- Congo hemorrhagic fever in Albania in 2013-2015. *International Journal of Health Sciences* 4: 31–34.
- Zotaj A, Krasniqi M, Bara R, Kalaja R, Veizaj S (2024) Assessment of the economic value of physiotherapy treatment for economically effective results. *Economics of Development* 23: 104-114.
- Krasniqi M, Kalaja R, Lako A, Veizaj S (2024) Assessment of Refractive Errors, Dental Caries, and Scoliosis in School Children Aged 6-14 Years: A Study in Durrës Schools. *Int j adv multidisc res Stud* 4: 405-408.
- Misra S, Nandwani R, Gogri P, Misra N (2013) Clinical profile and visual outcome of ocular injuries in a rural area of western India. *Australas Med J* 6: 560–4.
- Aghadoost D, Fazel MR, Aghadoost H, Aghadoost N (2013) Pattern of ocular trauma among the elderly in Kashan, Iran. *Chin J Traumatol* 16: 347–50.
- Zotaj A, Krasniqi M, Bara R, Kalaja R, Veizaj S (2024) Economics of health workforce migration: A systematic review. *Economics and Sociology* 17:104–114.
- Andis Qendro, Marsida Krasniqi, Lindita Agolli (2024). Maxillofacial Trauma in Athletes: A Comparative Study of Basketball, Football, and Boxing. *Library Progress International* 44: 178-185
- Nallbani G, Krasniqi M (2023) Evaluation of Ocular Injuries among Athletes in Albania. *Sport Mont* 21: 31-55.
- Aghadoost D, Fazel MR, Aghadoost HR (2012) Pattern of pediatric ocular trauma in kashan. *Arch Trauma Res* 1: 35-37.
- Bunting H, Stephens D, Mireskandari K (2013) Prediction of visual outcomes after open globe injury in children: a 17-year Canadian experience. *J AAPOS* 17: 43-48.
- Krasniqi M, Nallbani G (2022) The effect of corticosteroids on macular edema in patients with noninfective uveitis. *Journal of Advanced Pharmacy Education and Research* 12: 19-22
- Thylefors B (1992) Epidemiological patterns of ocular trauma. *Aust N Z J Ophthalmol* 20: 95-98.
- Krasniqi M, Kalaja R., Lako A, Veizaj S (2024) Prevalence of Health Issues in Durrës Children: Refractive Errors, Caries, and Scoliosis. *Journal of Pediatrics Research Reviews & Reports* 6: 2-3.
- Krasniqi M (2020) A Case Report of Double Penetrating Ocular Injury. *EC Ophthalmology* 11: 47-50.
- Hung KH, Yang CS, Kao SC, Lee FL, Lee SM (2011) Management of double-penetrating ocular injury with retained intraorbital metallic foreign body. *Journal of the Chinese Medical Association* 74: 523-526.
- Trebicka B, Harizi A, Krasniqi M, Kalaja R, Tartaraj A (2024). Financial development and economic growth: Exploring the impact of financial systems, stability, and institutional quality on economic performance. *Risk Governance and Control: Financial Markets and Institutions* 14: 76-85.
- Krasniqi M, Kalaja R, Lako A, Veizaj S (2024) Assessment of Refractive Errors, Dental Caries, and Scoliosis in School Children Aged 6-14 Years: A Study in Durrës Schools. *Clinical Research and Studies* 3: 2835-2882.
- Weichel ED, Colyer MH, Ludlow SE, Bower KS, Eiseman AS (2008) Combat ocular trauma visual outcomes during operations iraqi and enduring freedom. *Ophthalmol* 115: 2235-2245.
- Krasniqi M, Kalaja R (2024) The Impact of Environmental Factors on Eye Trauma in Children: A Retrospective Study in Albania. *Interdisciplinary Journal of Research and Development* 11: 140.

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