Commentary

Addressing the High Incidence of Eye Trauma in Conflict: A Critical Analysis of Recent Events in Bangladesh

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The rise in violent confrontations between law enforcement and civilians in conflict zones has led to a notable increase in eye injuries. This paper investigates recent events in Bangladesh in a retrospective study, where police and paramilitary actions resulted in eye injuries during civilian protests. A retrospective study analyzes the implications of these injuries, highlighting the necessity for improved medical protocols and the prudent use of less-lethal weapons. Findings emphasize the urgent need for policy reform and enhanced medical support to safeguard civilian health in conflict settings.

Introduction

The escalating incidence of eye injuries in conflict zones is a growing global concern. The events in Bangladesh during the protests in July 2024 underscored the impact of violent confrontations on civilian health[1]. Numerous students lost their lives, with many sustaining severe ocular injuries due to the use of less-lethal weapons such as rubber bullets and tear gas[2]. This commentary evaluates a retrospective study on patients treated for eye trauma during these protests and discusses broader implications for ocular injuries and subsequent management and its longer-term psychosocial impact.

Methodology

The study employed a retrospective design, extracting data from newspaper reports from approximately 11,000 medical records in two Bangladeshi hospitals. Around 950 cases of eye injuries

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caused by less-lethal weapons during the July 2024 protests were identified from these public records between July 1 and August 15, 2024.

The analysis focused on injury severity, location (particularly head, neck, and face), surgical intervention, and visual outcomes (total or partial vision loss). The methodology is primarily descriptive and comparative, highlighting the need for further research to fully quantify the problem.

No ethical approval was obtained since the data collected was based on social media and public records.

Results

The protests in Bangladesh were among the largest recorded since the 1971 independence movement. Law enforcement's response included crowd control measures that led to significant injuries. A study of a retrospective analysis was conducted at the National Institute of Ophthalmology and Dhaka Medical College Hospital, and about 11,000 medical records were reviewed/identified. The analysis revealed that 950 patients presented with injuries from less-lethal weapons. 55% of these injuries affected the head, neck, or face, with 520 patients requiring surgical intervention. Eventually, 21 patients suffered total loss of eyesight, and 382 lost the use of one eye[3].

Discussion

Our study, first in its nature from Bangladesh, provides a clear connection between the general concerns about less-lethal weapons and civil unrest. The findings raise critical questions about the intended safety of less-lethal weapons. Although designed to minimize fatalities, these weapons often inflict severe trauma, particularly to vulnerable areas. The United Nations guidelines indicate that such weapons should target extremities; however, data suggests that this principle is frequently violated, leading to significant morbidity and mortality.

This issue becomes even more pronounced when examining specific incidents, such as the analysis of two days of protests in Los Angeles (May 31 - June 1, 2020), which revealed that 14 patients were treated for kinetic projectile injuries, primarily affecting the face and head[4]. This alarming trend underscores the urgent need for improved guidelines and training for law enforcement regarding crowd control measures. Notably, a substantial 78% of these injuries were classified as severe and required hospitalization, with rubber bullets being the primary cause.

Broader trends in research indicate that eye injuries account for up to 15.8% of medical evacuations involving projectiles, with the incidence rising in contexts involving explosive devices. Kinetic impact projectiles, commonly referred to as rubber bullets, can cause devastating upper body trauma, underscoring the need for stricter regulations and better training for law enforcement[5].

Recent incidents in Lebanon, where multiple explosions led to numerous eye and facial injuries, further illustrate the global pattern of rising ocular trauma in conflict settings. Approximately 400 surgeries were performed in response to these injuries, emphasizing the growing prevalence of eye trauma in violent confrontations[6].

A recent study reported a non-fatal ocular injury rate of 24.8 per 100,000 population, with notable differences between urban (16.9 per 100,000) and rural areas (29.0 per 100,000). The incidence was significantly higher in males compared to females. The primary causes of ocular injuries were identified as Road Traffic Injuries and Violence, each accounting for 24.3%, while most ocular injuries occurred on roads (27%)[7].

Given the alarming trends and documented impact of conflict on eye health, there is an urgent need for enhanced medical support and protocols specifically addressing ocular injuries in conflict zones[8]. The recommendations include:

1. Developing Comprehensive Training Programs: Law enforcement personnel should be trained on the safe use of less-lethal weapons with adherence to international guidelines.
2. Establishing Protocols: Immediate medical response protocols should be implemented to ensure timely and appropriate care for eye injuries in conflict situations.
3. Advocacy for Policy Change: Stricter regulations on the use of less-lethal weapons, particularly in crowd-control scenarios, should be enforced at the international level.
4. Rehabilitation Programs: As with any other trauma, psychological support is crucial for eye trauma victims, significantly impacting their rehabilitation and recovery. Eye injuries can lead to various psychological issues, including depression, anxiety disorders, and social isolation. To address these challenges, a thorough psychosocial assessment is essential, identifying individual needs and focusing on mental health evaluation, social support, and coping mechanisms.

Building upon this foundation, implementing trauma-informed care principles ensures sensitivity to victims' experiences. This approach emphasizes key elements such as safety, empowerment, collaboration, and cultural respect, creating a supportive environment for healing. Therapeutic

interventions, including Cognitive Behavioral Therapy (CBT) and Eye Movement Desensitization and Reprocessing (EMDR), have proven effective in addressing the emotional distress that often accompanies eye trauma[9]. However, these may not be feasible in a low-resource context.

Finally, long-term support plays a critical role in ensuring sustained emotional well-being. Ongoing counseling and access to community resources can provide a safety net for victims. Involving family members in this rehabilitation process further enhances support. Consequently, a comprehensive approach that integrates all these elements should potentially improve the quality of life for individuals affected by eye trauma.

Conclusion

The events in Bangladesh serve as a reminder of the urgent need for improved protocols and medical support for eye injuries in low-intensity conflict zones. As the incidence of ocular trauma continues to rise, addressing these challenges with a comprehensive approach that prioritizes the health and safety of affected individuals is imperative. Only through concerted efforts can we hope to mitigate the impact of conflict on eye health and uphold the principles of human rights and dignity.

Additional studies are necessary to identify the true extent of ocular injuries in conflicts, as current data may not be entirely representative of the actual damage suffered by affected populations.

Although less-lethal weapons are designed as an alternative to lethal weapons, a substantial number of patients may suffer serious injuries, including many injuries to the head, neck, and face (data not shown). These findings show that as employed now, less-than-lethal weapons should be used more carefully or even prohibited or restrained.

Figure

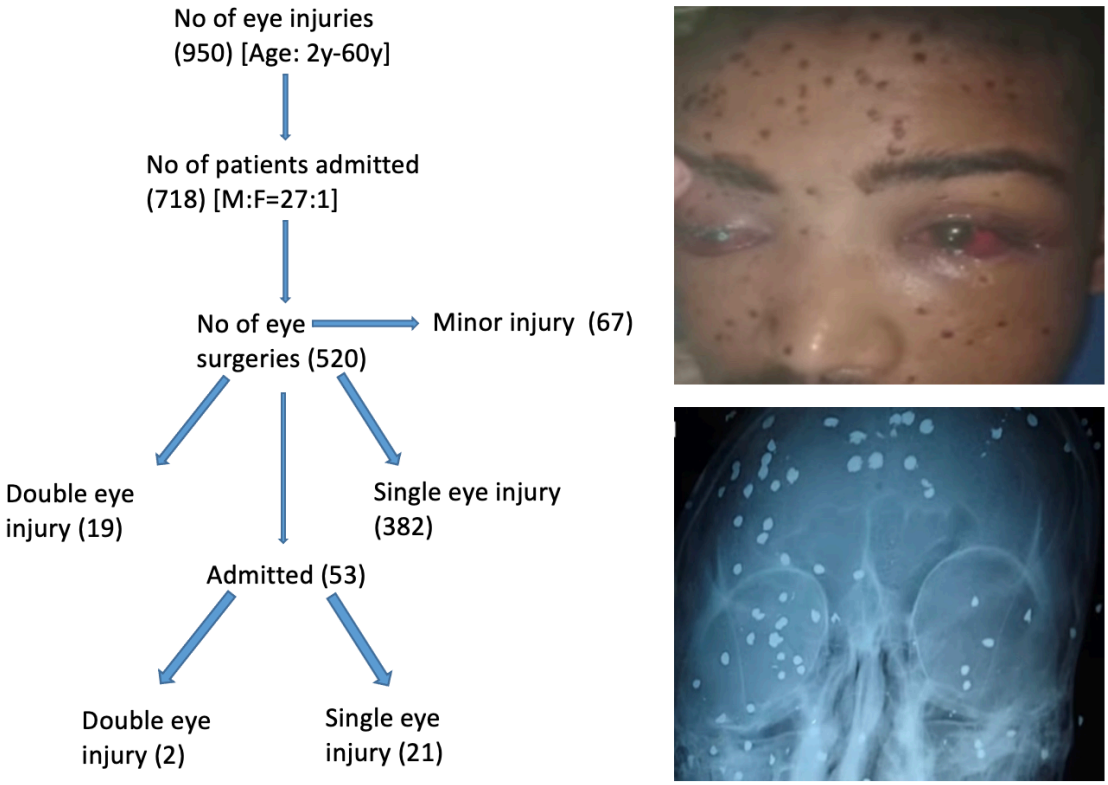

Figure 1. a) Summary of patients injury, management and outcome; b) Patient with multiple splinter injuries; c) Splinters lodged in face and skull of deceased patient.

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Declarations

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