Firecrackers:The Blinding Truth

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Abstract:

Firecracker injuries can cause serious and irreparable damage to vision. In India, firecracker injuries are common during the festival of'Deepavali' where firecrackers are an essential part of the celebrations. We report a case series of ocular injuries caused by fire-crackers. This is a hospital-based study involving 10casesof firecracker associated ocular injuries. Injuries were thoroughly examined, analysed and possible treatments given in our centre; visual outcomes before and after the intervention were recorded. As ocular firecracker injury results in significant visual morbidity; public education regarding safety measures to be taken during use of firecrackers may help in reducing the incidence and severity of ocular injuries.

Keywords: *Deepavali, firecracker related ocular injuries*

Introduction:

Though firecracker-related ocular injuries have been decreasing over the years,still there is a need to increase awareness about the dangers of firecrackers. These injuries constitute an important cause of preventable blindness worldwide, and in India, such injuries are very common among children. [1,2] In the most severe cases, firecrackers can cause chemical and thermal burns, corneal abrasions, retinal detachment, ocular laceration, rupture of the eyeball- all of which can lead to permanent vision loss and even eye. Those injured by firecrackers are not necessarily handling the explosives by themselves. In fact, nearly half of people injured by firecrackers are bystanders. This study was planned to evaluate the types of firecrackers-related ocular injuries and visual outcome in these patients.

Materials And Methods:

All patients with ocular firecracker injuries who attended the regular outpatient department and emergency during the 'Deepavali' festival week (from 29october to 2 November 2016) were included in this study.These patients underwent a detailed ocular examination. Proper slit-lamp evaluation,fundus examination, along with B scan, OCT, CT scan /X-ray orbit were done as and when indicated.

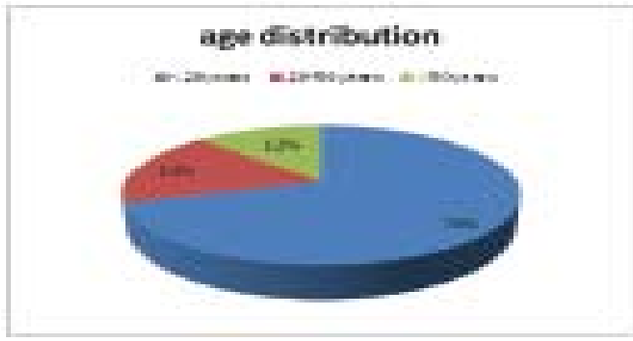
Results:

Presenting features	**No of cases**
1.corneal injuries with or without foreign bodies(soot)	3
2.subconjunctival hemorrhage	2
3.hyphema	2
4.lid injuries with singing of eyelashes	3
5.traumatic iridodialysis	1
6.vitreous hemorrhage	1

VA at presentation	No of cases
1.>6/18	2
2.<6/18-6/60	1
3.<6/60-CF2m	5
4.<CF2m-PL present	2
5.PL absent	nil

Type of firecrackers	No of cases
1.bombs	5
2.sparklers	3
3.cone fountains	1
4.gun crackers	1

VA at 1week follow up	No of cases
1.>6/18	5
2.<6/18 – 6/60	2
3.<6/60-CF2m	2
4.<CF2m-PL present	nil
5.lost to follow up	1



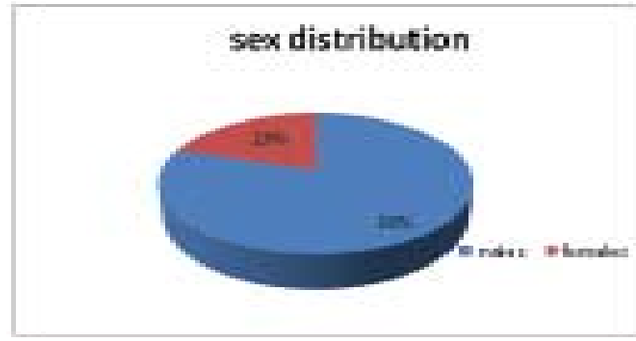


Fig1: corneal foreign body(firecracker soot)

Fig2: lid abrasion injuries due to firecracker

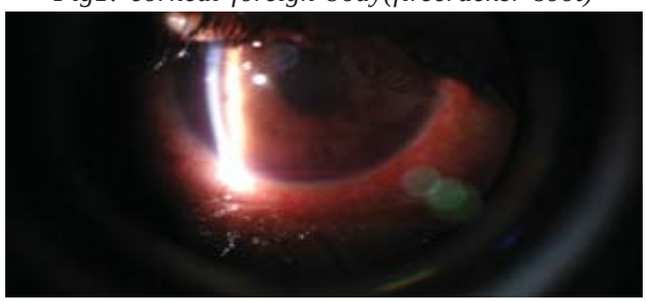


Fig3: Hyphema due to firecrackers

Fig4: vitreous haemorrhage with hyphema due to firecrackers

Fig5: Non-resolving hyphema due to firecrackers

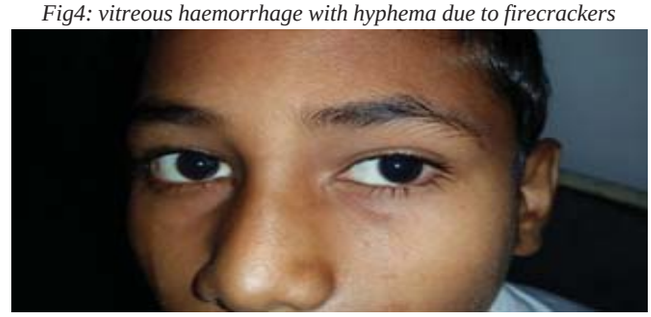


Fig6: Traumatic iridodialysis due to firecrackers

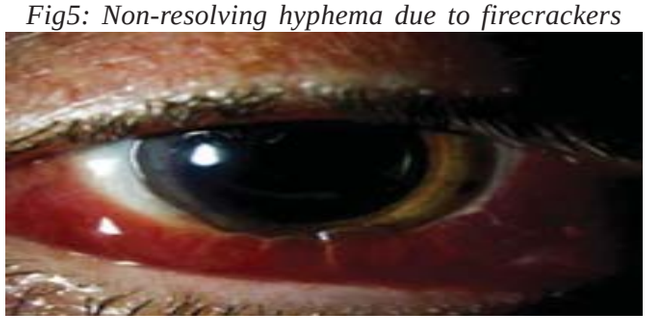


Fig7: Subconjunctival haemorrhage with chemosis due to firecrackers

Fig8: Eyelash singing with corneal injury

Discussion:The injuries reported ranged from conjunctival or corneal injuries to vitreous hemorrhage, most common being corneal injuries followed by hyphema.Most of the patients were below the age of 20 years with male preponderance.More than half of the victims in our study were bystanders. The most common firecrackers causing injury in our study were bombs followed by sparklers and gun firecrackers. Even though sparklers were reported to cause minimal injuries in one of the studies, were not found to be innocent in our study.[3].Kumar R et al in 2010 in a similar study found similar results with bombs and rocket firecrackers being most common causative fireworks while most common presenting visual acuity was HM to PL present in most of their cases.

Ocular injuries by firecrackers are common during 'Deepavali'. Lack of knowledge about safety measures or not following them was a reason for eventualities. Absence of parental supervision, and failure to maintain safe distance from firecrackers were contributory in some cases of injuries. The other major cause of injury is the common practice of igniting firecrackers in the streets thus exposing passers-by to injury.

Fireworks Safety Tips!!

* Respect safety barriers at fireworks shows and view fireworks from at least 500 feet away.
* Do not touch unexploded firecrackers
* Never let young children play with fireworks of any type, even sparklers.
* People who handle fireworks should always wear protective eyewear and ensure that all bystanders are also wearing eye protection.
* Adults should supervise their wards during any type of firework shows
* Public awareness by print and electronic media can decrease fireworks related ocular injuries significantly.[4]

What To Do Immediately??

If an eye injury from fireworks occurs, remember:

* Seek medical attention immediately.
* Do not rub your eyes.
* Do not rinse your eyes.
* Do not apply pressure.
* Do not remove any objects that are stuck in the eye.
* Do not apply ointments or take any blood-thinning pain medications such as aspirin or ibuprofen.[4]

References

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