

Role Of Social Media As A Catalyser For Ocular Injury: A Case Study Of Calcium Carbide Gun Use In India

Namrata Kabra, Smriti Gupta

Department of cornea, Shri Ganapati Netralaya, Jalna, Maharashtra, India.

Abstract

Introduction: Social media allows social growth of the society but has both advantages and disadvantages. We came across one such example where people are making calcium carbide guns after watching video, spreading through social media to get rid of animals and birds from their field. This in turn leads to blinding injuries in eyes.

Purpose: To highlight this novel mode of eye injury and to create awareness among people to stop use of such dangerous calcium carbide guns that is leading to serious ocular injuries.

Material and method: A prospective study of all cases of calcium carbide related ocular trauma reporting to our outpatient department (OPD). The demographic profile, severity of ocular injuries and management of cases were recorded.

Result: We studied 14 eyes of 13 patients with variable degree of ocular injury sustained due to calcium carbide exposure while mishandling calcium carbide gun. All of them were young males. Significant number of patients (30.7%) had grade V injury according to Dua's classification.

Conclusion: Video of making calcium carbide guns floating in social media leading to serious ocular injuries. Awareness should be created among people to avoid making and using such dangerous weapons.

Delhi J Ophthalmol 2020;31;62-64; Doi <http://dx.doi.org/10.7869/djo.593>

Keywords: Social Media, Videos, Calcium Carbide, Ocular Injuries.

Introduction

In this day and age, social media constantly surrounds us. It has become a part of our generation's lives. There are both positive and negative impacts of social media platforms. We take misinformation seriously. Most users who generate misinformation do not share accurate information too, so it can be difficult to tease out the effect of misinformation itself. Here by, we are presenting an interesting case series, which shows the dangerous consequence of a video which is spreading through social media.

Spread of such video showing some layman technique of making calcium carbide (CaC₂) gun at home, in order to get rid of monkeys or birds from the field without highlighting its adverse effect leading to blinding or sight threatening consequences in people's life. Its parts are easily available at the market at cheaper prices. People are making carbide guns as shown in the video. When this gun did not work, most of them tried to peep into the gun from the muzzle side. The unfortunate delayed explosion of this gun causes projection of calcium carbide particles leading to severe ocular injuries. In few of the cases, after first firing, the residue gas got fired while gazing through the muzzle. In one case, the gas exploded from the opposite end into the eye instead of the muzzle.

We reported 14 eyes of 13 patients of ocular injury with variable extent of chemical, thermal and blast injury with carbide gun giving similar history affecting either of the eyes. One patient had bilateral injury. We performed a prospective review of all patients who sustained ocular

injury due to carbide exposure seen at tertiary eye care centre from February 2020 to March 2020.

Material And Method

This case series includes 14 eyes of 13 patients with a history of carbide exposure attending OPD from February 2020 to March 2020. Complete history taking, slit lamp examination, fundus examination with 90D lens and indirect ophthalmoscopy were done. Ultrasound b scan was done when required. The classification of injuries was done by Dua's classification¹.

Table 1: Classification Of Injury According To Dua's Classification

GRADE I	1	7.6%
GRADE II	2	15.3%
GRADE III	3	23%
GRADE IV	3	23%
GRADE V	4	30.7%

Result

All the patients were young male. Best corrected visual acuity was ranging from perception of light to 6/18.

Most common presentation was periocular skin burn with corneal burn with multiple foreign bodies in cornea with variable degree of limbal and scleral ischemia as shown in the (Figure 1 and 2).

Thorough eye wash was given to all the patients along with removal of debris and calcium carbide particles from eyes

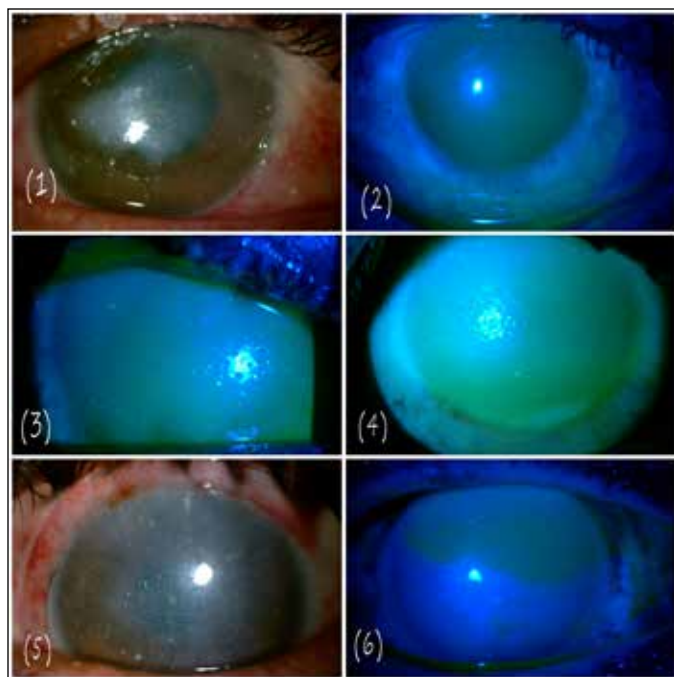


Figure 1: Slit lamp photos (case 1-6) of carbide injury showing variable degree of ocular burn.

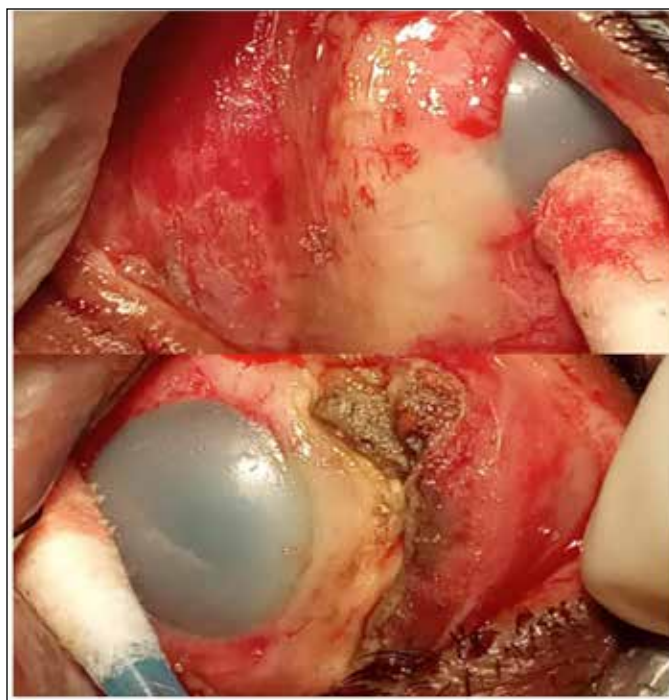


Figure 3: Intraoperative picture showing limbal and scleral ischemia with retained carbide particles and plaque in upper fornix.

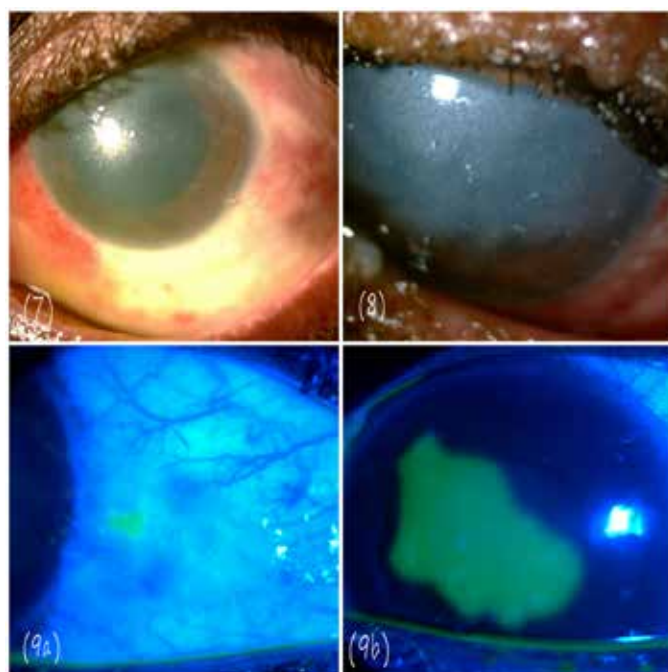


Figure 2: slit lamp photos (case 7-9) showing variable degree of ocular burn. Figure (9a) and (9b) showing bilateral grade 1 injury.

under topical anaesthesia. Treatment was given according to grade of injury. Oral and topical steroid was started along with topical antibiotic, lubricant, cycloplegic and oral vitamin C. Surgical intervention was required in 7 cases according to grade of injury. Amniotic membrane transplantation (AMT) under local anaesthesia was done in 3 cases. Figure 3 showing an intraoperative picture of a patient undergoing AMT. Amniotic membrane transplantation with tenoplasty

under local anaesthesia was done in 1 case. Two patients refused for surgical intervention and 1 lost to follow up. All patients were advised 1 weekly follow up and were found to be responding to the line of management on subsequent follow up visits. Though final visual acuity is yet to be determined in all the patients, we felt the urgency of reporting of the emerging novel modality and sight threatening consequence which the ophthalmologist should be aware of, as social media can further bring a surge in similar patients across the country. Around 12 plus videos are present in social media with a range of 500- 7 lacs views with a with more than 39 lac views in total till date.

Discussion

Social media facilitates the sharing of ideas, thoughts, and information through the building of virtual networks and communities. The power of social media is the ability to connect and share information with anyone on earth, with many people simultaneously. But many times, social media may be a conduit for misleading information, falsehood or information without adequate warning for possible hazards. We recently came across one such example. The calcium carbide is one of the most commonly used ripening agents for fruits inspite of being banned under Food Safety and Standards regulations, 2011. CaC₂ reacts with water and produces acetylene gas also known as calcium carbide gas. While its use is being discouraged due to associated health hazards and carcinogenic properties, people are finding new ways to use this cheap and easily available chemical in the market. A video of making calcium carbide guns using calcium carbide, plastic pipes, lighter and water is getting viral in social media to get rid of animals

and birds in the field. Inadvertent ignition of this chemical can cause severe ocular injuries with unilateral or bilateral burn. Calcium carbide explodes when it comes in contact with water. This technique is used by people nowadays in their field. When this gun doesn't work, people look inside the pipe to check. Delayed explosion of the chemical leads to variable degree of ocular injury.

Bandyopadhyay S2 et al reported 55 eyes of 33 patients with calcium carbide injury during mango ripening season in West Bengal, eastern India. Most common mode was indigenous firework while playing, in children or igniting evening lamps by house wives causing permanent visual disability. While the majority of patients in their study were children and females, in our study, all of them were young male.

Testud et al³ in 2002 reported a case of calcium carbide ocular burn in an amateur speleologist.

To the best of our knowledge, as per medline and literature search there is no case report regarding the homemade calcium carbide guns, in the field, leading to eye injury.

We immediately prepared a video regarding carbide gun and ocular injuries and floated in social media. The link is as follow: <https://youtu.be/3EfhR11BXK4>

Conclusion

Effective surveillance to prevent use of banned substances and restrict the easy availability of products with potential for health hazards is needed. Any promotional videos on social media should also include the precautions to avoid health hazards if any and viewers of such videos should also not follow the shared ideas blindly and be cautious and use protective glasses during trying such ideas.

Conflicts of interest: No financial disclosures or conflict of interest.

Reference

1. Dua HS, King AJ, Joseph A. A new classification of ocular surface burns. *Br J Ophthalmol* 2001;85(11):1379-1383.
2. Bandyopadhyay S, Saha M, Biswas S, Ranjan A, Naskar AK, Bandyopadhyay L. Calcium carbide related ocular injuries during mango ripening season of West Bengal, eastern India. *Nepal J Ophthalmol* 2013;5(10):242-245.
3. Testud F, Voegtli R, Nordmann JP, Descotes J. Severe ocular burns by calcium carbide in a speleologist: a case report. *J Fr Ophthalmol* 2002;25:308-311.

Cite This Article as: Namrata Kabra, Smriti Gupta Role of social media as a catalyser for ocular injury: A case study of calcium carbide gun use in India. *DJO* 2020;31(2):62-64

Acknowledgments: Acknowledgment: Dr Vaibhav Patil for technical support and support for video. *Delhi J Ophthalmology*. 2020; 31(2):62-64

Conflict of interest: None declared

Source of Funding: None

Date of Submission: 5th May 2020

Date of Acceptance: 20th May 2020

Address for correspondence

Namrata Kabra ms

Consultant and Head, Department of cornea, Shri Ganapati Netralaya, Jalna, Maharashtra
Email: drnkabra@gmail.com



Quick Response Code