Resurgence of “bow and arrow” related ocular trauma: Collateral damage arising from COVID-19 lockdown in India?

Penetrating ocular trauma in children often presents late and may be associated with complications due to delayed presentation as children are not always able to verbalize their injuries. Previous studies have shown that children aged 5 and above were more frequently affected and it was also noted that boys were more frequently affected than girls. Children involved in unsupervised games often get injured and “bow and arrow” injuries were known to be a fairly common cause of penetrating trauma in children, in the past.[1,2]

In India, such injuries are commonly seen during religious festivities when traditional plays, like “Ram-Leela” involving mythological characters are publicly enacted across the country. In these dramatized enactments, the characters typically use bows and arrows as weapons. Historically, there has been a surge in bow and arrow related ocular trauma.[3,4] From the late 1980s to the early 1990s, television programs depicting Hindu mythology, namely Ramayana and Mahabharat, were aired on the only available television channel at the time in India. They were extremely popular and went to become the world’s most watched mythological series.[5] Thylefors while reviewing epidemiological patterns of ocular trauma, had noted that, in the 1990s, following the airing of televised mythological epics, which depicted numerous battle scenes showing the use of bows and arrows, there was a rise in children presenting with ocular trauma due to “bow and arrow,” in India.[3] These bow and arrows were usually made of broomsticks or wooden twigs.[5]

As of now, in April 2020, most countries around the world have issued strict stay-at-home orders to its citizens on account of the novel coronavirus disease (COVID-19) pandemic.[6,7] India, too is in the midst of an unprecedented lockdown with most offices being closed and classes and examinations in schools and colleges have been suspended.[8] In an effort to keep people indoors, the government decided to re-telecast these popular television programs of the 1980s, starting March 28, 2020.[9,10] The popularity of these reruns reached record-breaking numbers in the following days.[10] However, within the first 4 days of the television series going on air again, we observed two cases of bow and arrow injuries.

The first case was a 10-year-old boy who presented with a corneal epithelial defect in right eye following an injury with a plastic arrow that had a rubber tip. The arrow was shot from a toy bow while playing at home. The eye was patched for 24 hours and the recovery was uneventful.

The second patient was a 12-year-old boy presented with an injury with broom stick, which was shot as an arrow from a bow, which was also made from a broom stick. A part of the wooden foreign body was seen protruding out of the eyeball anteriorly, after having made an entry into the left eye through the inferior half of the cornea. The primary treating ophthalmologist gently removed the foreign body and at the time of presentation to us, the patient had signs of endophthalmitis with a self-sealed corneal wound and a traumatic cataract. The patient underwent primary wound repair with lensectomy, vitrectomy, and intravitreal injection of vancomycin and amphotericin-B. Intraoperatively, posterior vitreous detachment was induced, and vitrectomy was completed. Two eye lashes were also found, entrapped in retina, which probably would have been carried inwards by the travelling projectile at the time of injury. At one week following surgery, the patient had resolving vitritis; the optic disc and retinal vessels were seen on fundus examination. In both cases, the children mentioned that they were re-enacting what they saw on the television shows mentioned above.

“Challenges” and performances by influencers on social media and action seen on television often percolate into real life. Occasionally, these recreational or leisure activities can also result in trauma if things go awry; as has been reported in literature.[11-13] The aim of this communication is to highlight the possibility of an increase in number of cases with bow and arrow injuries in the near future, owing to the popularity of the mythological shows. In a report on the epidemiology of pediatric ocular trauma in India, Singh and colleagues reported that bow and arrow related pediatric eye trauma was far less common in 2017, as compared to reports in the 1990s.[1,2,10] Ophthalmologists should be aware of this possibility and they in turn should sensitize the parents of young children, so that they can then do the needful to prevent it. It may even be prudent for the broadcasters to air a preventive message during the airing of such shows to warn viewers of such forms of ocular trauma such that parents and guardians are mindful of this and can prevent bow-arrow related injuries.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

Maneesh M Bapaye1, Akshay Gopinathan Nair2,3, Pankaj P Mangulkar2, Charuta M Bapaye1, Meena M Bapaye1

1Bapayee Hospital, Nashik, 2Dr. Mangulkar Hospital, Malegaon, 3Ophthalmic Plastic Surgery and Ocular Oncology Services, Aditya Jyot Eye Hospital, Mumbai, Maharashtra, India

Correspondence to: Dr. Maneesh M Bapaye, Bapayee Hospital, Old Agra Rd, Behind NDCC Bank, Shalimar, Nashik, Maharashtra - 422 001, India. E-mail: maneeshbapaye@gmail.com

References
1. Saxena R, Sinha R, Purohit A, Dada T, Vajpayee RB, Azad RV. Pattern of pediatric ocular trauma in India. Indian J Pediatr 2002;69:863-7.
With the current epidemic of COVID-19 related conjunctivitis, the ocular surface needs to be carefully considered as a portal of entry or exit. Frequent instillation of antibiotic and lubricant concentrations as low as 0.02% have been shown to be effective against a large number of viruses in the treatment of adenoviral conjunctivitis in a few studies. BAk was found to be effective as a preservative in various ophthalmic preparations ranging from 0.01% to 0.04%. BAK is a critical chemical constituent in sanitizers and wipes, which is inhibitory to various bacteria and viruses. It is highly effective against a large number of viruses, including coronavirus. It is a quaternary ammonium compound with cationic amphiphilic property, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

2. Sharma T, Agarwal P, Gopal L, Badrinath SS, Murugesan R. Penetrating ocular trauma in children by “broombow and arrows”. Ophthalmic Surg 1994;25:175-9.
3. Thylefors B. Epidemiological patterns of ocular trauma. Aust N Z J Ophthalmol 1992;20:95-8.
4. Available from: https://www.indiatoday.in/television/soaps/story/throwback-thursday-ramanand-sagar-s-ramayan-is-the-most-expensive-mythological-show-of-its-time-1659941-2020-03-26. [Last accessed on 2020 Apr 08].
5. Khanna RC, Honavar SG. All eyes on Coronavirus—What do we need to know as ophthalmologists. Indian J Ophthalmol 2020;68:549-53.
6. Shetty R, Ghosh A, Honavar SG, Khamar P, Sethu S. Therapeutic opportunities to manage COVID-19/SARS-CoV-2 infection: Present and future. Indian J Ophthalmol 2020. doi: 10.4103/ijo.IJO_639_20.
7. Available from: https://www.financialexpress.com/entertainment/ramayan-mahabharat-telcast-time-on-dd-national-dd-bharti-how-to-watch-on-mobile/1912108/. [Last accessed on 2020 Apr 08].
8. Available from: https://theprint.in/india/ramayan-records-8-5-cr-viewers-for-dd-in-first-weekend-youtube-numbers-double/394204/. [Last accessed on 2020 Apr 08].
9. Joondeph BC. Ocular Trauma from the “Knockout Game”. Case Rep Ophthalmol Med 2014;2014:285942.
10. Singh S, Sharma B, Kumar K, Dubey A, Ahirwar K. Epidemiology, clinical profile and factors, predicting final visual outcome of pediatric ocular trauma in a tertiary eye care center of Central India. Indian J Ophthalmol 2017;65:1192-7.