

A Case Series of Pocket Burns In Pediatric Age Group: An Institutional Experience

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Abstract: Fireworks are used for various reasons all round the globe. Firework injuries are common during the festival of Diwali in India and form the majority of trauma cases seen by plastic surgeons during that period. Pocket trouser burns is a common injury occurring in children. And bombs are the most common cause. Lack of supervision by parents, ill regulated legislature for selling of crackers and the inability of children to gauge the danger of playing with firecrackers may contribute to the increasing number of such cases seen today.

We present an observational prospective study on the incidence of burns and trouser pocket burns presenting to a tertiary care center over a period of 3 years.

Keywords : Firecrackers, pocket burns, Diwali

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I. Introduction

Firecrackers are used during various religious and secular festivals and occasions all over the world, like the Guy Fawkes Night in United Kingdom, the Fourth of July in USA and Bastille Day in France[1]. In India, firecrackers are commonly used during celebrations, particularly during diwali expressing the festive mood [2]. Firework injury is a common injury faced during diwali, especially the flame burns and blast injuries sustained by kids while bursting crackers[3]. Children, because of their inquisitive nature and the excitement surrounding fireworks, are particularly vulnerable. They also cannot readily appreciate the dangers involved or act decisively in an emergency, hence their susceptibility to firework injuries. The fireworks responsible are freely available and often sold to under-age children and then indiscriminately used. Injuries are more frequent and more severe among children who were active participants rather than bystanders [4]. In different reports, children below 15 years formed 40-50% of the victims[5-7]. Children often carry the firecrackers in their trouser pocket, which makes them more susceptible to such trouser pocket burns[3].

II. Materials And Methods

In this prospective case series, patients with history of trouser pocket firecracker burn injuries who presented to the Department of Burns and Plastic Surgery, Civil Hospital, Ahmedabad from September 2015 to November 2017 were included. All the patients were admitted and detailed history, examination and assessment of burn surface area was done using Lund and Browder's chart.

III. Results

Total 86 patients presented with firecracker injuries during the study period, mainly around Diwali during October and November. Out of which 9 patients presented with trouser pocket burn injuries. Eight were male and one was female. The age range was 4 -13 years (mean of 8.6 years) . The most common cause of burn injuries were bombs (55%), followed by pencil firework and sparklers (22.2%) . . In four cases, firecrackers in pocket caught fire from the sparks from nearby firecrackers, three patients kept failed fireworks in their pockets while in others, it was a result of mischief played by friends. Genitalia were involved in 8 patients. In five patients bilateral groin/thigh region was involved, while four had unilateral groin/thigh involved.

Out of total nine cases, seven had the superficial partial thickness burns [Figure 1] with only minimal area of deep thickness. Only two patients had deep partial thickness burns [Figure 2]. The range of total body surface area burns ranged from 4% to 10% . All the patients, except two, were managed with silver sulfadiazine (1%) daily dressing, then followed by paraffin gauze dressing. Alginate dressing was used in two patients. All the patients healed successfully with conservative measures only. Outcome in all these cases was good and the burns healed with minimal scarring. The average hospital stay for the patients was 13 days.

IV. Discussion

Fireworkers form an integral part of celebrations of all kinds across the globe. It assumes major importance in diwali festivities and somewhat in other festivals as well. The frameworks and fireworks as a result of the firework injury are seen commonly in children, more so ever when they are left unattended and unsupervised. Pocket burns arise mainly when the children tend to keep failed fireworks and also the ones to be ignited in their trouser pockets.

In our prospective observational study, out of 86 patients, 10.4% (9 patients)constituted the pocket burns. In a study done by Singh et al, about 14% were pocket burns. Bombs were the most common cause of burns and genitalia involvement made the otherwise minor burns, serious. Most of them suffered partial thickness burns and were treated with silver sulphadiazine dressing. Similar observations were made by a separate study[3].

The efforts of the government and the legislative bodies have given mixed results[1,8,9-10].Banners and publishing media have largely published in the past have failed in reducing the injuries.We are yet to fully exploit the more popular means ,mass media and internet to increase the awareness. To prevent fireworks-related injuries among children, a comprehensive approach is necessary. Recommendations include restricted use of firecrackers by children below 5 years, parental education and supervision at home during festive seasons, and only attending publically organized fireworks displays. [11]

Despite the wide spread use of fireworks in India and the rise in the incidence of firecracker injury, there have been limited studies reported in literature regarding the reporting and prevention of same. Young children are generally involved in the trouser pocket burns and attention to its prevention is mandatory. Supervision by an adult and strict standardization and legislature regarding sale of firecrackers may contribute towards this highly preventable entity.

V. Table And Figures



Figure 1: Pocket burns involving left thigh



Figure 2 : Pocket burns involving bilateral groin and genitalia

VI. Conclusion

Firework-related injuries are considered as preventable, and to reduce their menace, many countries have formulated legislations during the past two decades. Fireworks are associated with serious injuries but these are fully preventable particularly in paediatric age group. We need to increase the active children involvement in reducing the usage and understanding the importance of safety measures, rather only targeting on parental education and enforcing strict laws, which have not been very successful in the past.

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