

Original Article

Shivlilik burns: injuries resulting from traditional celebrations

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Received June 30, 2015; Accepted September 24, 2015; Epub October 12, 2015; Published October 15, 2015

Abstract: Introduction: In Konya, Turkey, the community celebrates the traditional ceremony of Shivlilik, which occurs on the first day of the seventh month in the lunar-based Hijri calendar. In the evening, people light bonfires of tires in the streets, and children and young people attempt to jump over the flames. Flame burns regularly occur due to falling. Attention should be given to preventing injuries such as these that are caused by social and regional customs. Methods: This retrospective study was carried out using data from the Konya Education and Research Hospital Burn Unit. Patients admitted to our hospital between June, 2009, and May, 2012, was evaluated. Results: Eleven patients were admitted to hospital with flame burns caused by jumping over fires on the days when the traditional Shivlilik ceremony was celebrated. The clinical data evaluated included the patient's age and sex, the depth of the burn injury, the total burned surface area (TBSA), and the distribution of the burn areas. Conclusions: Serious flame burns occur because of the traditional Shivlilik ceremony. We must promote some changes in this ceremony in order to prevent these burns.

Keywords: Pediatric burn, traditional celebrations, flame

Introduction

The Hijri calendar used in the Islamic world is based on the lunar cycle, and consists of 12 months and 354 days. On the first Thursday of Recep, which is the Turkish name for the seventh month, the city of Konya, Turkey, celebrates the traditional Shivlilik festival. In the evening, people build bonfires with tires in the streets, and children and teenagers attempt to jump over the flames. As might be expected, flame burns occur as a result of falling into the fire.

Scalding is the most common type of pediatric burn in Turkey [1, 2], being caused most frequently by liquids, including hot milk and the hot water used in traditional Turkish tea-making, which employs stacked kettles or pots [3, 4]. Flame burns are considerably less common. However, we report on the cases of 11 pediatric patients who had flame burns caused by a traditional ceremony. By means of this study, we attempt to evaluate the results of this unnecessary situation and to educate families with children concerning burn prevention.

Methods

This retrospective study was carried out using data from the Konya Education and Research Hospital Burn Unit and included 384 patients who were treated in this unit between January, 2009, and December, 2012 and also exempted to IRB. Of their injuries, 72.9% were caused by scalding (61.8% by tea, 37.5% by hot water, and 0.7% by steam), 13.5% were chemical burns, 5% were contact burns, 1% was electrical burns, and 7.6% were flame burns. Of the flame burn cases admitted to the hospital, 37.9% (11 out of 29) were due to jumping over bonfires on days on which the traditional Shivlilik ceremony was carried out (**Figure 1**). Clinical data evaluated included the age and sex of the patient, the depth of the burn injury, the total burned surface area (TBSA), the distribution of the burn areas, and the treatment.

Results

The 11 study subjects included 10 (90.9%) male pediatric patients and just 1 (9.1%) female (male mean age, 12.8 years, range 9-16 years;

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Figure 1. Sivlilik traditional ceremony.



Figure 2. Burned area forearm, arm.

female age, 11 years). Of the male patients, 70% had superficial second-degree burns and 30% had third-degree burns; the female patient had third-degree burns. The mean percentage TBSA of the male patients was 11.5% (range 4-35%), and the TBSA of the female patient was 10%. The forearm and abdomen were the burn areas for the female patient. Among male patients, the most frequently burned area was the forearm, 80% (Figure 2); followed by the arm, 50%; head, 50%; trunk, 40% (Figure 3); hand, 20%; abdomen, 20%; and thigh 10% (Table 1). The mean length of hospital stay was 13 days. In treatment, silver sulfadiazine cream, bacitracin, and neomycin sulfate pomade were used daily as topical agents. Cincinnati Shriners Burn Hospital's Formula for children ($4 \times \text{kg} \times \text{percentage of TBSA}$) + (1500 cc/m² body surface area) ml for 24 hours) was used for fluid resuscitation. Paracetamol, 15 mg/kg, and ibuprofen, 10 mg/kg, were also used for analgesia. Patients with third-degree burns (4 out of 11) were treated with partial-thickness skin autografts. Postoperative recov-



Figure 3. Burned area forearm, arm, trunk.

ery was without complication in every case. We used a topical scar gel containing allium cepa extract, allantoin, and heparin for all patients. The children's parents were given information concerning burn injuries and their prevention.

Discussion

Burns are an important problem in pediatric medicine. Although natural disasters cannot be avoided, accidents can be for the most part, and their effects can be reduced by maintaining an adequate margin of safety. Emergency medicine physicians and pediatric surgeons manage the greatest number of burns; therefore, these practitioners should have a clear understanding of burn management.

Most burns are potentially preventable, and it is important to educate families with children in order to promote burn prevention. Over 90% of fatal fire-related burns occur in developing or low- and middle-income countries, with South-East Asia alone accounting for over half of these fire-related deaths [5]. Ethnic, cultural, socioeconomic, and environmental factors have been reported to affect the occurrence of these injuries [1, 6]. Accordingly, epidemiological studies of burn injuries have highlighted risk factors and in turn have led to the establishment of effective preventive programs. The impulsivity, high activity, and natural curiosity of the pediatric age group all contribute to the increased incidence of burns [7]. The most common major burns in this age group are scalds, contact burns, and flame burns, all of which can result in the need for hospitalization and intravenous fluid resuscitation [8, 9]. House fires and motor-vehicle crashes cause flame burns [9] but of different forms.

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Table 1. Features of Sivlilik burns

	Age	Burn Degree	Total burned surface area	Burned Area
Female (n:1)	9	3. Degree	10%	Forearm Abdomen
Male (n:10)	12.8 (9-16)	3. Degree (30%) 2. Degree (70%) (superficial)	11.5% (4-35)	Forearm (80%) Arm (50%) Head (50%) Trunk (40%) Hand (20%) Abdomen (20%) Thigh (10%)

In this study, we report the cases of 11 pediatric patients who experienced flame burns in an interesting traditional ceremony in which children jump over burning tires, partly just for fun and partly in observance of a religious tradition. This situation cannot properly be classified as an accident, like most other types of flame burns, but is rather a case of impolicy, in the sense of a misguided action. While the age and sex of the patient, the depth of burn injury, the TBSA, the distribution of the burn areas, and finally the treatment of the patient are all very important, we think that the main point to be noted is the cause of this specific burn.

The literature contains reports of traditional treatment methods. Other researchers have reported three cases of different full-thickness burns treated with a poultice of wetted wood ash, a multipurpose agent used under occlusion as a folkloric prescription to ease pain and edema [10]. However, we could not find any references in the literature to burns caused by traditional celebrations similar to Shivlilik. Much of the Middle Asian and Turkish world observes the festival of Nevruz by lighting bonfires and encouraging young people to jump over them, just as with Shivlilik. Nevruz, which is associated with the vernal equinox, has been recognized as a worldwide observance by the United Nations General Assembly. We present these cases to increase awareness of the burn injuries that can be associated with all such celebrations.

Conclusion

Official holidays and religious festivals should be celebrated; however, there must be changes to make these ceremonies safer for the participants, particularly children. Parents must be educated about the need to forbid their children to jump over bonfires and burning tires,

and a government ban might well be considered. Clearly, as well, social and regional factors must be taken into consideration in preparing educational programs against burn injuries. Although wound closure with topical agents, tangential excision, and autografting are important in treatment, we think that prevention is the best choice.

Disclosure of conflict of interest

None.

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