

which caught fire resulting in burns. The burns were managed conservatively with topical ointment application. Satisfactory healing was achieved within 2 weeks without residual scarring.

Fire breathing is a stunning but potentially injurious stunt. The fire-breathers direct a mouthful of fuel forcefully or creates a fine mist by spitting through pursed lips which is ignited over a flame resulting in a stunning visual show of plume, pillar, ball, volcano, or a cloud of fire [Figure 2]. The important thing in this process is controlling the fuel's direction and the consistency of



Figure 1: Fire-breathing burns

Fire-breathing burn

Sir,

Fire breathing is one of the most skillful and the most dangerous acts of all the fire arts. This stunt is commonly performed by jugglers, magicians, and entertainment performers by spitting out a jet of inflammable liquid over an open flame producing a spectacular "breath of fire." Since the process involves fire and inflammable fuel, fire-breathing accidents can result in significant burn.

A 26-year-old fire-breather presented with a 3% area of superficial partial thickness perioral burns in a typical spilt-fluid pattern [Figure 1]. The patient sustained the injury while exhibiting a fire-breathing act in an entertainment show. The patient used naphtha as the ignition medium and not too forceful blow resulted in spillage of the material around the mouth



Figure 2: Fire-breathing show

the spray. The choice of fuel also plays an important role in a fire-breather's technique. The important factors in choosing a fuel includes flash point, toxicity, odor, color, visibility of flame, amount and thickness of the smoke produced. The flash point of a fuel is the temperature at which vapor given off will ignite when an external flame is applied under test conditions. Higher flash point fuels are safer and preferable for the act. Usually, a pure fuel is used; however, a mixture of fuels is often used by the performers to enhance the visual effect. The consideration of angle of the fuel and flame is also important. The lower angle can make the flame fall on the body, while the higher angle can cause unignited fuel to fall back into the face.

Various types of fuels used for fire breathing are liquid hydrocarbons including Naphtha's (Zippo), gasoline (petrol), diesel; alcohol (methanol, ethanol); liquidified natural gases (propane, butane); and various types of oils including mineral, kerosene (paraffin), and lamp oils.^[1,2] The kerosene and purified unscented lamp oil are the commonly used fuels as they have a high flash point (~90°C), making them a safer choice. The naphtha is usually considered as a dangerous fuel choice for fire breathing because of its low flash point and high volatility. The methyl alcohol is extremely toxic and has extremely low flash point; ethyl alcohol in addition allows drunkenness and should be avoided for the fire work. For igniting the fire, flaming juggling torches are the preferred choice, while matches are considered unsafe as they keep the performer's hand dangerously close to the flame. Gas lighters are also not used as they can explode in the hand.

There are several immediate and long-term health hazards associated with fire-breathing act. Burns are the most obvious fire-breathing danger; however, there could be facial hair loss, ingestional toxicity, cutaneous irritation, peptic ulcers, fire-eater's pneumonia (hydrocarbon pneumonitis/chemical pneumonia),^[3,4] inhalational injuries, and Acute Respiratory Distress Syndrome. The post-burn perioral hypopigmentation referred to as leucoderma can cause significant cosmetic concerns in dark-skinned individuals and often leads to adverse psychosocial impact. Naphtha is quite carcinogenic and fuels like gasoline and kerosene often contain carcinogenic additives or refining byproducts, such as sulfurated compounds or benzenes.

It is well known among fire manipulators that they will at some stage sustain burns.^[1] Fire safety should be the number one priority for this art. The recommended fire safety measures are professional training, awareness of the hazards involved, using the right fuel, availability of Manufacturers Safety Data Sheet, avoidance of "blow-back," having an assistant, awareness of the surroundings including power cables and trees with low hanging branches, flame-resistant clothing, use of fire-proofing chemicals to coat the mouth, knowledge of the first aid, immediate access to fire extinguishing equipments,

immediate availability of the medical help, awareness of local fire safety regulations and permits if required, keeping onlookers at a safe distance, and the strict nonperformance of the act under the influence of alcohol or drugs.^[1,2,5] The above mentioned recommendations will not only ensure the safety of the performer, but will also keep the audience safe.

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