



Contents lists available at [ScienceDirect](http://www.sciencedirect.com)

JPRAS Open

journal homepage: <http://www.journals.elsevier.com/jpras-open>



Case Report

Dangerous games: Pool shock chemical burn to the face

Luis Quiroga ^{*}, Saarah Ebrahim, Mohammed Asif, Julie Caffrey

Johns Hopkins Burn Center, The Johns Hopkins Bayview Medical Center, 4940 Eastern Ave, Baltimore, MD 21224, USA

ARTICLE INFO

Article history:

Received 20 February 2018

Accepted 22 March 2018

Available online 6 April 2018

Keywords:

Alkaline injury
Calcium hypochlorite
Chemical burn
Explosion
Pool shock

ABSTRACT

Today information about fascinating chemical reactions is readily available on the internet. Unfortunately, these experiments can have catastrophic consequences. Pool chemicals account for a significant number of injuries in the United States. Pool Shock (calcium hypochlorite) is a powder widely used to disinfect swimming pools and has the potential to cause injury, as described in previous studies. Here, we report a case of a young male patient with a superficial chemical burn to the face and eyes due to a combined explosion of Pool Shock and regular Coke in a bottle. This type of chemical burn secondary to this chemical combination has not been reported elsewhere. We discuss the chemistry involved in producing significant inadvertent blast injury and present the management to treat these cases.

© 2018 The Authors. Published by Elsevier Ltd on behalf of British Association of Plastic, Reconstructive and Aesthetic Surgeons. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Case report

A 17-year-old Caucasian healthy male presented to the Emergency Department, complaining of burning sensation and irritation to his face and eyes four hours after sustaining a superficial chemical burn. The patient is a lifeguard at a swimming pool. He and his friends mixed a packet of Pool

^{*} Corresponding author. Johns Hopkins Burn Center, The Johns Hopkins Bayview Medical Center, 4940 Eastern Ave, Baltimore, MD 21224, USA.

E-mail address: lquirog1@jhmi.edu (L. Quiroga).

<https://doi.org/10.1016/j.jpra.2018.03.004>

2352-5878/© 2018 The Authors. Published by Elsevier Ltd on behalf of British Association of Plastic, Reconstructive and Aesthetic Surgeons. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



Figure 1. Patient on admission to the Burn Center (twelve hours post injury).

Shock (calcium hypochlorite) and regular Coke in a plastic bottle. The capped bottle exploded releasing the combination of fluid, pressurized vapor, and gas. At the nearest local emergency room, his eyes and face were irrigated with more than two liters of Ringer's Lactate. The pH of his conjunctivas was then measured with Litmus paper and found to be neutral. He was then transferred and admitted to our Burn Center intensive care unit twelve hours post injury (Figure 1). Although the patient reported some improvement with the water irrigation, he continued to suffer from blurry vision and burning sensation. Ophthalmologic evaluation revealed conjunctival injection and clear corneas. He was started on preservative free artificial tears every two hours and his facial wounds were treated with Bacitracin ointment. After twenty-four hours, the patient improved significantly and was discharged home with two weeks follow-up in clinic.

Discussion

Today information is easily available through the internet and social media. Our young generation is granted a great amount of information, including fascinating chemical reactions that could potentially endanger their own health and safety. Unfortunately, these chemical experiments found on the internet are reproduced at home and have the potential to cause catastrophic consequences.

Calcium hypochlorite $\text{Ca}(\text{ClO})_2$ is an inorganic anhydrous salt which is a white-crystalline granular solid with a strong smell of chlorine.¹ It is commercially available in a mixture with calcium carbonate

Download English Version:

<https://daneshyari.com/en/article/8836255>

Download Persian Version:

<https://daneshyari.com/article/8836255>

[Daneshyari.com](https://daneshyari.com)