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Visual Case Discussion

Chemical burn after exposure to Capric acid

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43 y/o M presented to the ED after sustaining a chemical burn at work. He works in food manufacturing, and was working with capric acid, when he accidentally dropped a barrel containing the substance. The capric acid splashed out of the barrel and splashed on his unexposed skin, on his R leg and L arm. This was approximately 2 h prior to arrival. He did not decontaminate immediately, but finished his shift, and presented to the ED for further evaluation. He denied inhalation or ingestion of capric acid.

Capric acid, also known as decanoic acid, is a naturally occuring fatty acid found in coconut and palm oil. It is used in chemical manufacturing for the production of artificial flavorings and perfumes. It can cause burns from skin contact, and irritation of the mucous membranes and lungs, leading to pulmonary edema, if inhaled. It can also cause GI tract irritation if ingested. There is no known antidote; enhanced elimination or activated charcoal is not effective. Oral administration of water can help to dilute ingestions.

For skin exposures, as in our patient, any contaminated clothing should be removed. The affected areas should be irrigated with water for 60 min. Following irrigation, standard burn care protocols, including coverage with sterile dressing and tetanus vaccination, should be followed. [1]

On examination, his burns were superficial and accounted for approximately 3% of total BSA (Fig. 1, Fig. 2). After irrigation, his wounds were dressed with a sterile dressing. He was discharged in good condition with a referral to the local burn center.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.visj.2019.100609.

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Fig. 1. Capric acid burn to L arm.

Fig. 2. Capric acid burn to R thigh.

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Questions

1. What percentage of burns do chemical burns account for?
   a. 2–5%
   b. 5–10%
   c. 0–2%
   d. 15–20%

2. What is the most common complication of a chemical burn?
   a. Sepsis
   b. Wound infection
   c. Cellulitis
   d. Pneumonia

Answers

1. 2–5%. Explanation: Chemical burns account for approximately 3% of all burn injuries reported. However, due to a lack of a standardized or centralized reporting system, this number may under-represent the true number of chemical burns diagnosed each year.[2]

2. Cellulitis. Explanation: Cellulitis is the most common complication, accounting for 16% of complications, followed by pneumonia. In descending order of occurrence, other complications are wound infections, urinary tract infections, respiratory failure, septicemia, renal failure, other systemic infections, dysrhythmias, and hematologic complications.[2]