

ENVIRONMENTAL DISORDERS: PRACTICE CLINICAL SCENARIOS

Scenario A

Presentation: A middle-aged antique dealer presents with hand discoloration and weakness. His symptoms started after using a rust and glass cleaner on some newly purchased glass sculptures and metal etchings. Laboratory studies are normal except for hypocalcemia.



Source: Dr. Watchorn (Wikimedia Commons: http://en.wikipedia.org/wiki/File:61569264_jamesheilman-224x2991.jpg)

Diagnosis: hydrofluoric acid burn

Management: IV Calcium repletion should be done as necessary. Local skin treatment is the main treatment, following copious irrigation. Use 2.5% calcium gluconate gel, 3:1 calcium gluconate IV preparation to water-soluble lubricating gel, or subcutaneous infiltration with calcium gluconate. Nebulized calcium gluconate may be necessary for respiratory exposures.

Scenario B

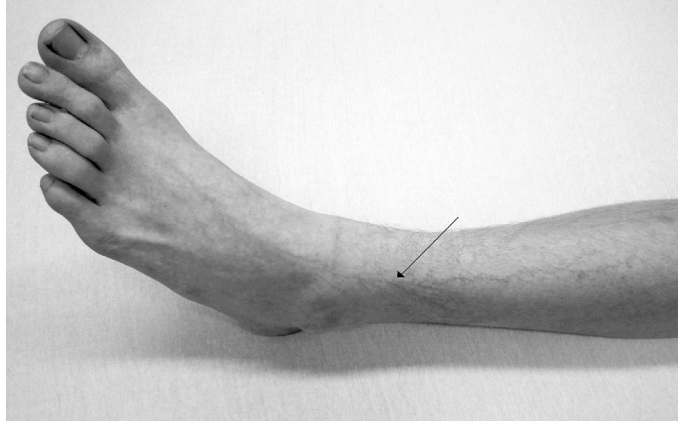
Presentation: A 4-year-old boy bites a household electrical cord and receives burn care at a local urgent care that day. Seven days later, his parents bring him to the local ED with profuse lip bleeding with arterial pulsations. ABCs are started, and an emergent plastic surgery consult is obtained.

Diagnosis: electrical lip burn

Management: Acutely, do not debride these wounds. Cleanse and apply a petroleum-based antibiotic ointment. Observe closely and refer to a plastic or oral surgeon for splinting and further care. Complications include delayed hemorrhage from the labial artery (10%–15% of patients) 3–14 days after injury, when clot retraction occurs and the eschar separates, which is what occurred in this patient.

Scenario C

Presentation: A grandfather flies a kite with his grandson on a warm summer day when a storm rolls in. The grandfather attempts to rapidly bring down the kite when he is hit by lightning. He thinks he tripped while bringing the kite down but only recalls waking up on a grassy knoll. He is asymptomatic other than Lichtenberg figures.



Source: James Heilman, MD - Own work, CC BY-SA 3.0 <https://commons.wikimedia.org/w/index.php?curid=11110313>

Diagnosis: lightning strike

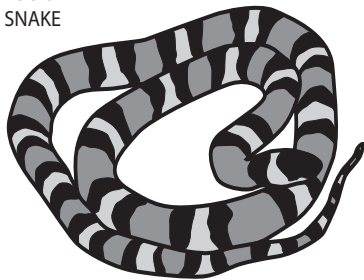
Management: Remember reverse triage. Resuscitate the dead first, opposite of the procedure in standard mass casualty triage. Treatment is supportive care. Patients should be admitted for 24 hr on a cardiac monitor.

Scenario D

Presentation: A licensed California marijuana farmer brings in a dead snake. He states the snake bit him on the hand while he was trying to harvest his crop. The snake has wide red bands next to narrow black bands.

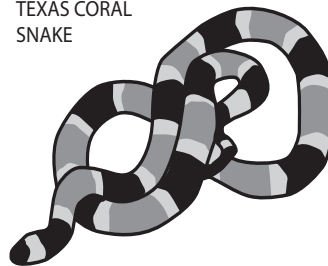
Diagnosis: snake bite: “red on black, venom lack”

LOUISIANA MILK SNAKE



red | black | yellow | black | red

TEXAS CORAL SNAKE



yellow | red | black | red | yellow

Scenario E

Presentation: An emergency physician from Ohio takes a morning flight into Denver after working all night. He and his wife drive immediately to a large ski resort a few hours outside of Denver. He begins to notice severe headache and nausea as he rides up the chairlift. His symptoms seem to improve as he descends the slope and recur as he rides back up the chairlift.

Diagnosis: acute mountain sickness

Management: Ibuprofen for symptomatic treatment. Prevention with acetazolamide for 48 hours before ascending and during first 3 days of ascent. In case of worsening symptoms, patient should remain at same altitude or descend. If high-altitude cerebral edema (HACE) or high-altitude pulmonary edema (HAPE) appear, this is an inability to acclimate, and the only effective definitive treatment is descent.