   a. Leave in place for at least 20 minutes then reassess
   b. This can be repeated as needed
5. Hydrofluoric acid exposure is very painful. Calcium gel is the foundation of pain control. While intravenous pain medications may be less effective, they should be added to calcium gel to assist with pain control. Hydrofluoric acid exposure typically causes pain out of proportion to the visible dermal effects. Minimal skin changes may exist with substantial exposures
6. If fingers are involved, apply the calcium gel to the hand, squirt additional calcium gel into a surgical glove, and then insert the affected hand into the glove
7. For patients who have ingested hydrofluoric acid or who have a large dermal exposure consider intravenous calcium gluconate, 1–2 grams of 10% solution, as symptomatic hypocalcemia can precipitate rapidly as manifest by muscle spasms, seizures, hypotension ventricular arrhythmias, and QT prolongation

Patient Safety Considerations

1. Don PPE
2. Take measures to prevent the patient from further contamination through decontamination
3. Take measures to protect the EMS clinician and others from contamination
4. Do not attempt to neutralize an acid with an alkali or an alkali with an acid as an exothermic reaction will occur and cause serious thermal injury to the patient
5. Expeditious transport or transfer to a designated burn center should be considered for burns that involve a significant percentage of total body surface area or burns that involve the eyes, face, hands, feet, or genitals

Notes/Educational Pearls

Key Considerations

1. IV fluid resuscitation should be guided by patient age, percentage of body surface area involved in burn, body habitus and calculated by the Parkland Formula [See Appendix VI. Burn and Burn Fluid Charts]
2. Since the severity of topical chemical burns is largely dependent upon the type, concentration, and pH of the chemical involved as well as the body site and surface area involved, it is imperative to obtain as much information as possible while on scene about the chemical substance by which the patient was exposed. The information gathering process will often include:
   a. Transport of the **sealed** container of the chemical to the receiving facility
   b. Transport of the original or a copy of the Material Safety Data Sheet (MSDS) of the substance to the receiving facility
   c. Contacting the reference agency to identify the chemical agent and assist in management (e.g., CHEMTREC®)
3. Inhalation of HF should be considered in any dermal exposure involving the face and neck or if clothing is soaked in the product
4. Decontamination is critical for both acid and alkali agents to reduce injury — removal of chemicals with a low pH (acids) is more easily accomplished than chemicals with a high pH (alkalis) because alkalis tend to penetrate and bind to deeper tissues
5. Some chemicals will also manifest local and systemic signs, symptoms, and bodily damage