You Must-ard Be Kidding Me: A Case of Sulfur Mustard Exposure

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Background: Sulfur mustard is a vesicant chemical warfare agent used in World War I. Today, exposure to sulfur mustard is a rare event. Exposures sporadically occur from abandoned artillery shells in coastal waters. We present a case of sulfur mustard exposure in a fisherman off the coast of New Jersey.

Methods: A 40-year-old male fisherman was dredging for clams on a commercial boat when he pulled up an old artillery shell. With his right arm, he threw the shell into the water without incident. Shortly after, he developed pain and blisters along his right hand and forearm. Over the next few hours the pain worsened until he presented to an emergency department and subsequently transferred for burn care. The patient denied shortness of breath, cough, eye and throat irritation. Vital signs and physical exam were normal except for a partial thickness circumferential second degree burn from the hand to the elbow with ruptured blisters diffusely. The patient was treated with silver sulfadiazine and foam dressing, opioid pain control, and occupational therapy. The patient required a prolonged hospital stay with split thickness graft of the entire right forearm twenty days after admission. Upon follow-up, the patient was improving without complications.

Discussion: Sulfur mustard, (dichlorodiethyl sulfide) is a viscous liquid used as a blistering agent in chemical warfare. Until the 1970's, the dumping of unwanted munitions, including sulfur mustard artillery shells, into coastal waters was a standard practice. While sulfur mustard production in the US ceased in 1968, there are sporadic reports of sulfur mustard exposure to military personnel and civilians from discarded artillery shells. Cutaneous exposure to the yellow-brown liquid commonly leads to a significant cutaneous blistering injury that may take several months to heal and may result in considerable permanent cosmetic and functional impairment. The long-term effects of sulfur mustard exposure include an increased risk for various cancers, chronic respiratory problems and post-traumatic stress disorder.

Conclusion: We present a rare case of sulfur mustard exposure from a discarded artillery shell off the coast of New Jersey causing to significant blistering that required skin grafting.