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DELAYED DERMATITIS FOLLOWING INJURY CAUSED BY CORAL

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CASE REPORT

A 30-year-old previously healthy woman presented to the emergency department with complaint of a pruritic rash on the dorsal surface of her right foot and anterior aspect of her right knee. Twelve days before presentation she cut her foot and right knee while surfing on a reef in Tobago, Republic of Trinidad and Tobago. She did not recall erythema, pruritus, or burning pain initially after the injury, and there was no rash (Figure 1A). The wounds were asymptomatic until 1 day before presentation when she noted an itchy rash at the site of her injuries. On examination, the patient was afebrile and nontoxic-appearing with normal vital signs. A dermatologic examination revealed red scaly plaques on the dorsal surface of her right foot and her right knee with a distribution corresponding to the cuts and abrasions sustained against the coral (Figures 1B, 2, and 3). The patient was empirically started on 1% hydrocortisone cream. At dermatology follow-up she was diagnosed with delayed hypersensitivity reaction and she began taking clobetasol 0.05% ointment twice daily. The patient had near resolution of symptoms 2 weeks later and complete resolution within 1 month (Figure 1C).

DISCUSSION

Corals, along with jellyfish and sea anemones, belong to the phylum Cnidaria, which are the leading cause of human marine envenomation (1). Dermatologic manifestations of coral exposure may be toxic or allergic and acute or delayed. Dermatologic complaints caused by marine organisms are frequently encountered in coastal emergency departments. Emergency physicians need to be familiar with the cutaneous manifestations of contact with coral, including delayed presentations in travelers. Immediate stinging and cutaneous erythema after direct coral contact is caused by nematocyst release and can be managed with immediate wound cleansing and pain control. Tetanus prophylaxis is recommended. Hot water soak (water temperature 40–45°C) may be attempted because this has been shown to be effective in jellyfish stings and is hypothesized to assist with nematocyst toxin

deactivation (2–4). Acetic acid may also assist in the prevention of nematocyst firing, though not with venom deactivation (5).

Delayed hypersensitivity reactions can also occur, presenting as red macules, papules, or plaques in the distribution of the coral injury or contact (5). These delayed reactions are a type of leukocyte-mediated contact dermatitis that, although well described in the dermatology literature, has received little attention in the emergency medicine literature. Typical contact dermatitis presents within a couple of hours to a few days after exposure (6). Delayed coral dermatitis, on the other hand, can present days to weeks after exposure (5,7–9).

It is hypothesized that delayed reactions may be caused by retained calcium carbonate from the coral exoskeleton, although not all reported cases involve traumatic injury to the skin (8). Retained foreign bodies are also thought to contribute to poor wound healing and the high rate of secondary infection after injuries caused by coral (5). Histopathologic examination of skin lesions in delayed coral contact dermatitis reveals lymphohistiocytic infiltrates with human leukocyte antigen DR–positive cells and occasionally by epidermal spongiosis; granulomas and atypical CD30+ lymphocytes have also been reported (8,9). Delayed hypersensitivity reactions can be treated with moderate- to high-potency topical steroids and antihistamines. Resolution occurs within weeks; chronic or recurrent granulomatous lesions rarely occur.

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Figure 1.
(A) Postinjury day 1, (B) postinjury day 12, and (C) postinjury day 40.

Figure 2.
Right lower extremity lesions on postinjury day 12.

Figure 3.
Right knee lesions on postinjury day 12.