Curvilinear undulating erythematous plaque

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A 35-year-old woman presented with a curvilinear undulating erythematous plaque on the right proximal pretibial region (Fig 1). No lymphadenopathy or systemic symptoms were present. The patient relayed that she and her friends had recently vacationed in Freeport on Grand Bahama Island. During the trip, the patient exhibited severe pruritus and a burning sensation localized to the area of the lesion shortly after swimming in the ocean. The symptoms have progressively worsened as the time from the initial exposure increased. The patient was the only traveler in her group to experience such a reaction.

Histopathology of the lesion found a moderately dense, perivascular round cell infiltrate composed of lymphocytes, monocytes, plasma cells, and scattered eosinophils surrounding both superficial and deep dermal vessels, which become more diffuse within the papillary stroma, with focal exocytosis, basal cell vacuolopathy, and spongiosis. A periodic acid—Schiff stain was negative (Fig 2).

**Question 1: What is the most likely diagnosis?**

A. Cutaneous larvae migrans (CLM)  
B. Coral dermatitis  
C. Phytophotodermatitis  
D. Granuloma annulare  
E. Granulomatous tattoo reaction

**Answers:**

A. CLM — Incorrect. CLM is a dermatitis involving pruritus, erythema, and a migrating maculopapular serpiginous rash representing larval tracks. It is usually localized to the feet but may occur on other body surfaces exposed to sand contaminated with dog and cat feces containing *Ancylostoma braziliense* hookworm larvae. Here, no larvae were found in the epidermis, and the lesion did not migrate or increase in size from the initial area.  
B. Coral dermatitis — Correct. The specimen contained spongiosis, which is usually found in contact and allergic dermatitis. Coral dermatitis, a subtype of contact dermatitis, is the most likely diagnosis owing to the characteristic impression of the coral left on the patient. Branching fire corals, scientific name known as *Millepora alcicornis*, are endemic to the Bahamas and are a likely cause of the aforementioned lesion. These corals have specialized organelles called nematocysts, responsible for this form of contact dermatitis.  
C. Phytophotodermatitis — Incorrect. Phytophotodermatitis is a skin eruption occurring after skin contact with psoralsens in certain plants (eg, limes, lemons, celery) and then is exposed to Ultraviolet A radiation. In phytophotodermatitis, lesions resemble severe sunburn with streaks caused by the dripping juice, hyperpigmentation, blisters, erythema, plaques, or vesicles.  
D. Granuloma annulare — Incorrect. Granuloma annulare results in slightly raised patches with a ring-like border.  
E. Granulomatous tattoo reaction — Incorrect. This lesion is not located at the site of a tattoo.

**Question 2: A punch biopsy is taken from the site, and the patient is treated with one of the following. Figure 3 shows clearance of the erythematous plaque following this treatment. Which of the options below is the best choice for treatment in this case?**

A. Topical corticosteroids  
B. Intralesional corticosteroids  
C. No treatment; typically self-resolving  
D. Systemic antihelminthic and antihistamine  
E. Liquid nitrogen cryotherapy

**Answers:**

A. Topical corticosteroids — Correct. This is the treatment of choice for coral dermatitis, reducing pruritus and resolving the rash within approximately 2 weeks. In the case at hand, 10 days of treatment with clobetasol propionate cream, 0.025%, applied twice a day resulted in clearance of the erythematous plaque (Fig 3 shows the right proximal pretibial region before and after suture removal, following treatment with clobetasol propionate cream, 0.025%).  
B. Intralesional corticosteroids — Incorrect. When considering the differential diagnoses included as possible answer choices in question 1, this would be most suitable as a treatment option for granuloma annulare or granulomatous tattoo reactions.  
C. No treatment; typically self-resolving — Incorrect. This is the treatment of choice for phytophotodermatitis.  
D. Systemic antihelminthic and antihistamine — Incorrect. These antihelminthics are the treatment of choice for CLM, not coral dermatitis.  
E. Liquid nitrogen cryotherapy — Incorrect. This is a second-line treatment for CLM used to destroy helminth larvae.
Question 3: Exposure to which of the following is the most likely cause of this lesion?

A. Idiopathic, the cause is unknown
B. *M alcicornis*
C. *A braziliense*
D. Rutaceae plant family
E. Tattoo pigment

Answers:

A. Idiopathic, the cause is unknown — Incorrect. Coral dermatitis is caused by exposure to certain species of coral, most commonly, *M alcicornis.*

B. *M alcicornis* — Correct. Branching fire corals, scientifically known as *M alcicornis,* are endemic to the Bahamas and are a likely cause of the aforementioned lesion.

C. *A braziliense* — Incorrect. *A braziliense* is the most common cause of CLM. Humans become infected with this hookworm found in dog and cat feces when they walk on contaminated sand or soil. It penetrates intact exposed skin surfaces.

D. Rutaceae plant family — Incorrect. The Rutaceae plant family is made up of citrus plants that produce psoralens, the most common causative agents in phytophotodermatitis.

E. Tattoo pigment — Incorrect. This is true with regard to granulomatous tattoo reactions, not coral dermatitis.

Abbreviation used:

CLM: cutaneous larvae migrans

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