

QUIZ SECTION

An Ulcer on the Foot: A Quiz

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A 51-year-old man was admitted with an ulcer on the plantar surface of the left foot. The ulcer had appeared 3 weeks earlier, during a trip to the Solomon Islands, in the south-west Pacific Ocean, after he was stung by a shellfish while snorkelling near a reef. Twenty minutes after being stung, the patient experienced pruritus and a burning sensation at the site of sting. Five hours later, an area of painful erythematous oedema appeared and 5 days later the ulcer developed. Before admission the patient was treated unsuccessfully at other centres with topical antiseptics, econazole, betamethasone 17-benzoate and oral nimesulide, as pain-relieving drug.

Dermatological examination revealed a linear ulcer, 4 cm in length, surrounded by a 6×4 cm purpuric area (Fig. 1). General physical and neurological examination was normal. Laboratory examinations showed leukocytosis (10,100 cells/mm³) and increase in erythrocyte sedimentation rate (first hour: 41 mm). Bacteriological examination was positive for *Staphylococcus aureus*.

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What is your diagnosis? See next page for answer.



Fig 1. Linear ulcer on the plantar surface of the left foot.

An Ulcer on the Foot: Comment

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Diagnosis: Skin ulcer caused by *Conus geographus* sting

The shell (brought by the patient) was classified as a 9.8 cm long specimen of *Conus geographus* (Linnaeus, 1758) (Fig. 2). The genus *Conus* (phylum *Mollusca*, class *Gastropoda*) includes more than 500 different species (1, 2). The patient was treated with sodium hypochlorite packs, intra-muscular ceftriaxone (2 g/day for 10 days) and oral tramadol (200 mg/day). Complete remission was observed 4 weeks after the beginning of the therapy.

Cone shells are widely distributed in the Indo-Pacific. They are often found under rocks in shallow waters, along coral reefs and crawling on the sandy sea-bed (3, 4). Several species of cones are venomous. They have an apparatus consisting of a duct, where the venom is synthesized, a bulb, where it is stored, and a harpoon-like tooth that serves as a needle for injecting the venom (2).

More than 100 different venom components have been found for each conus species (2). Human envenomation caused by cones is rare, although potentially fatal. Divers and shell collectors, in the Pacific and Indian Oceans, are most frequently involved. Most human stings occur when a collector attempts to clean or wash a freshly-caught shell (3, 4).

Systemic symptoms of cone envenomation include neurological and circulatory signs (3–11). Skin manifestations are often located on the hands, feet or on areas covered by the bathing suit: swimmers often put cone shells that they



Fig. 2. *Conus geographus*. Size 9.8 cm.

found in shallow waters inside the bathing suit. Stinging, burning sensation or pain, are initial symptoms (4). However, cone sting may be asymptomatic (10). Swelling, ischaemia, cyanosis, localized paraesthesia and numbness are common features (3). Generalized pruritus is rare (3). In our patient, the development of an ulcer was probably caused by the hot-humid climate, which facilitated bacterial superinfection.

There is no anti-venom for conotoxins. Treatment is symptomatic. Hot packs or immersion of the affected area in hot water can be helpful. For prevention divers and collectors should always wear thick protective gloves.

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