Marine Envenomation
Pain or Visible Wound

Puncture Wounds*

Sea Snake
Blue-ringed octopus
Cone Shell‡

Stingray
Scorpionfish
Stonefish
Sea Urchin
Starfish
Catfish
Weeverfish

Local suction
Pressure
Immobilization§

Respiratory Support
Consider antivenin¶

Immersion in nonscalding water (45°C) for 30-90 min or until pain subsides

Radiography for calcified fragments
Fluoroscopy for spine extraction, especially in the hand and foot

Debridement

Consider antibiotics
Consider antivenin**

Sea Snake
Blue-ringed octopus
Cone Shell‡

Stingray
Scorpionfish
Stonefish
Sea Urchin
Starfish
Catfish
Weeverfish

5% acetic acid (do not abrade or irrigate with fresh water)
Shave

Topical corticosteroids after decontamination††

Consider antivenin

Sea Snake
Blue-ringed octopus
Cone Shell‡

Stingray
Scorpionfish
Stonefish
Sea Urchin
Starfish
Catfish
Weeverfish

5% acetic acid‡‡
Adhesive tape to extract spicules‡‡

Topical corticosteroids after decontamination††

Consider antivenin

Rash, vesicles, urticaria (exclude allergic reaction)†

Fire Coral
Hydroid
Jellyfish
Anemone

5% acetic acid‡‡
Adhesive tape to extract spicules‡‡

Topical corticosteroids after decontamination††

Consider antivenin

Sponge

Bristleworm

Adhesive tape to extract spicules‡‡

Topical corticosteroids after decontamination††

Consider antivenin

Radiography for calcified fragments
Fluoroscopy for spine extraction, especially in the hand and foot

Debridement

Consider antibiotics
Consider antivenin**
* A gaping laceration, particularly of the lower extremity, with cyanotic edges suggests a stingray attack. Multiple punctures in an erratic pattern with or without purple discoloration or retained fragments are typical of a sea-urchin sting. One to eight fang marks are usually present after a sea-snake bite. A single ischemic puncture wound with an erythematous halo and rapid swelling suggests scorpionfish envenomation. Painless punctures with paralysis suggest the bite of a blue-ringed octopus; the site of a cone-shell sting is punctate, painful, and ischemic in appearance.

† Wheal-and-flare reactions are nonspecific. Rapid (within 24 hours) onset of skin necrosis suggests an anemone sting. "Tentacle prints" with a frosted appearance or cross-hatching are pathognomonic for box-jellyfish (*Chironex fleckeri*) envenomation. Ocular or intraoral lesions may be caused by fragmented hydroids or coelenterate tentacles.

‡ Sea-snake venom causes weakness, respiratory paralysis, myoglobinuria, myalgias, blurred vision, vomiting, and dysphagia. The blue-ringed octopus injects tetrodotoxin, which causes rapid neuromuscular paralysis.

§ If immediately available, local suction can be applied without incision with a plunger device, such as the Extractor (Sawyer Products, Safety Harbor, Fla.). Alternatively, local sequestration of venom is accomplished with a proximal venous-lymphatic occlusive band of constriction or the pressure immobilization technique, in which a cloth pad is compressed directly over the wound by an elastic wrap that should encompass the extremity at a pressure of 9.33 kPa or less (≤70 mm Hg). Incision and oral suction are not recommended.

¶ Early ventilatory support has the greatest influence on outcome. The minimal initial dose of sea-snake antivenin is 1 to 3 vials; up to 10 vials may be required.

‼ The wounds range from large lacerations from stingrays to minute punctures from the dorsal spines of stonefish. Persistent pain after immersion in hot water suggests a retained fragment of spine. The puncture site can be identified by forcefully injecting 1 to 2 percent lidocaine without epinephrine near the wound and observing the egress of fluid. Do not attempt to crush the spines of sea urchins if they are present in the wound.

** The initial dose of stonefish antivenin is one vial per two stings.

†† If inflammation is severe, steroids should be given systemically (beginning with 60 to 80 mg of prednisone or its equivalent), and the dose should be tapered over a period of 10 to 14 days.

‡‡ An alternative is to apply and remove commercial facial-peel materials followed by topical soaks of 25 to 30 ml of 5 percent acetic acid (vinegar) diluted in 1 liter of water for 15 to 30 minutes several times a day until the lesions begin to resolve. Anticipate surface desquamation in three to six weeks.