

Treatment guidelines for marine puncture wounds

In BC waters, the sharp spines of dogfish, ratfish, rockfish, and sea urchins have varying degrees of toxicity. Spines can pierce gloves, boots, and hats and cause serious injury. Bacteria in spines and fish slime are serious infection hazards.

Marine puncture wounds

Marine puncture wounds can lead to

- › Serious or life-threatening infections
- › Tissue destruction and loss of joint mobility

First aid treatment

First aid treatment should start immediately

- › Follow acute wound care
- › Do NOT apply a tourniquet or pressure to the wound unless anaphylaxis is developing⁽¹⁾

Pain control

Hot water immersion is supported as an accepted treatment for fish-spine puncture wounds.⁽²⁻⁵⁾

- › Soak the wound in tolerably hot (40-45°C) water to relieve pain
- › Continue soaking for 30 to 90 minutes or longer if required for pain control
- › The role of corticosteroids is controversial^(1, 6-9)

Spine removal

Spines are fragile and often break during removal attempts, leaving fragments in the tissue.

Location and surgical removal of embedded spines is important as their presence can lead to chronic synovitis or granulomas.^(6, 10-12) A purple dye released by the urchin spines may give the appearance that spines are still embedded under the skin.^(7, 13) This dye is not toxic and will be absorbed in a few days. X-ray imaging for

spine fragments may be inconclusive (due to calcium resorption) and ultrasound or MRI may be indicated.⁽¹⁴⁻¹⁷⁾ A puncture wound that enters the joint space between bones is especially critical and early, aggressive intervention is essential to prevent loss of function.^(5, 18) Fluoroscopy is recommended for spine extraction.⁽⁶⁾ Referral to a specialist for exploration is advised and exploration should take place in an operating room, not the emergency department.⁽⁶⁾

- › Remove any visible spines
- › If a spine has entered the joint space, splint the joint until it can be explored by a specialist, to limit further injury.^(5, 19)

Observe and inform

- › Monitor for signs of infection or toxicity. A delayed hypersensitivity-type reaction may occur days or even weeks after injury.^(20, 21) Deep puncture wounds are an indication for prophylactic antibiotics, but they are otherwise not warranted for healthy persons with non-infected marine wounds.^(1, 5, 22)

› Discuss patient's tetanus immunization history and consider a tetanus toxoid booster if it has been more than 5 years since their last immunization.^(1, 13, 22, 23)

- › A note on specimens for culture should specify the source as a marine wound to inform the lab to be aware to test for marine-specific organisms.^(1, 22, 24)

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