

Sea Urchin Spine Injury - a risk to water sports enthusiasts

I MacKay

There are more than 700 species of sea urchin and their spines can be venomous to humans. They puncture the feet of unwary water sports enthusiast and tourists. The long spined black urchin, found in the Canary islands, Caribbean and along the South American coastline is often the cause of wounds. The spines are 10cm-12cm in length, but can grow up to 30cm long. Spines are coated with marine bacterial flora, including the *Vibrio* species, which in some cases cause bacterial infection at site of entry.

Blue/black marks on the affected limb do not necessarily mean there is a retained spine. It is often just dye from the surface of the spine. If it persists for longer than 72 hours, the retention of a spine is likely however.

Case History

An elderly gentleman presented with pain in a foot. He had stepped on a sea urchin while on holiday in Tenerife. Pain had been severe when the foot had first been punctured. He had been wearing light plastic sandals when wading in water at the beach. The spines of a sea urchin had punctured the sole of sandal and foot.

On examination, there were many round, black puncture marks with palpable spines below the skin surface of the foot, but no signs of inflammation, or infection. There was no evidence that the spines had entered nerves, bones or blood vessels but spines were very fragile and not suited to forceps extraction. There was no sign of infection and he could walk with minimal pain.

Surgical removal was deemed inappropriate. Wind surfers, scuba divers and swimmers often encounter this problem and if injured by spines routinely soak the foot for 60-90 minutes in warm vinegar to dissolve the calcium-based spines. They repeat the procedure daily until there are no longer any palpable spines. If the treatment is working, grit-like powder will remain in the vinegar after treatment, with the spines disappearing within four or five days. A localised infection can be treated with ciprofloxacin; If there is suspicion that the spines have penetrated nerves, bones or blood vessels, or pain has lasted for 48 hours and walking is limited, surgical removal would be appropriate.

A tetanus booster should be offered to the patient if protection is not up to date.

Acute management

Remove visible spines

Place injured part in water as hot as can be tolerated, for 60-90 minutes (reduces pain and swelling by denaturing the toxins).

Wound cleansing with antiseptics

Provide early analgesia because pain can be excruciating and may lead to shock.

Further management

Vinegar soaks/compresses several times a day. Antibiotics if infection appears.

Surgical removal of spines for prolonged Pain, or if nerves, blood vessels, bone involved. Tetanus booster.

