Ask Dr. Debbie...

Common Dive Related Injuries: Common Misconceptions as to How to Handle Them.

By Debra A. Hill, MD

WE ALL KNOW what to do to prevent injuries such as cuts, scrapes, stings, and muscle strains, i.e. use good buoyancy control, wear gloves, don't touch marine life, and stay fit and strong to avoid back injury when hoofing gear. But, there are times when these injuries can't be easily avoided, and once they occur it's valuable to know what to do to avoid the worst case scenarios that can occur from seemingly minor injuries.

Cuts and Scrapes:

The most common marine injuries are cuts and scrapes from contact with the reef and its marine life. Basic wound care is essentially the same no matter what has caused the injury. A minor kitchen knife wound and a cut from being tossed into the reef from severe surge both result in bleeding and risk infection. *But marine related cuts or scrapes expose one to much higher levels of bacteria. So even seemingly minor cuts or scrapes can result in serious infection if not properly cleaned and cared for.*

Step 1: Assess the wound for foreign objects by rinsing the area with fresh water.

Step 2: Carefully remove any foreign object.

Step 3: Apply pressure directly to the wound to stop bleeding. If bleeding persists or the wound is jagged or gaping, stitches may be required and proceeding to an emergency room is indicated.

Step 4: Clean the wound. Begin by rinsing with fresh water and then rub the inside of the wound with clean gauze or a clean wet cloth. The scrubbing of the wound removes much more of the bacteria than rinsing alone. After scrubbing, rinse with fresh water again or use 10% Povidone iodine solution. Contrary to popular belief, a wound cleansing solution does not have to sting to be effective. Also, squeezing a wound to make it bleed more does not decrease the risk of infection either.

Step 5: Apply topical antibiotic ointment such as Bacitracin (which can be purchased over the counter).

Step 6: Apply a clean bandage.

Step 7: Always change the bandage daily and check for evidence of redness or swelling as those signs indicate infection.

Step 8: If redness, swelling, warmth over the wound, pus-like drainage or fever occur, seek medical evaluation as this may require oral antibiotics to treat infection.

DID YOU KNOW:

Location of the wound impacts the risk of infection. Wounds on the face and scalp are less likely to become infected as compared to wounds on the hands or feet. This is because scalp wounds require more bacteria to become infected than hand wounds.

Type of wound impacts the risk of infection. Crush injuries are more likely to become infected than sharp cuts.

Foreign objects left in a wound increase the risk of infection. Wounds with foreign objects in them need less bacteria to start an infection than wounds without anything in them.

Even the best cleaning doesn't prevent swelling and redness. Sometimes a wound may be complicated by toxins that create a localized allergic reaction that causes swelling and redness.

My Halibut Bite Story:

Several weeks ago I was diving at the Long Beach Aquarium of the Pacific and feeding the halibut in the Blue Cavern exhibit. One of those eagerly-eating halibut known as ambush predators grabbed the squid from me so aggressively that it also bit my hand just behind my right first finger knuckle. The bite was extremely painful–kind of like having needles shoved right through my hand.

When I surfaced to clean the wound it looked like three little red dots on the surface of my skin. They didn't bleed much and there was hardly any broken skin to speak of. But about four hours later the back of my hand began to look like that of the Pillsbury dough boy, and about two hours after that it looked blackish and even more puffed up–like a half of a grapefruit. It was very tender to the touch.

The hand can be a serious place for infection because the smaller compartments in the hand don't have much place to expand when infected and tissues can begin to die from pressure within.

I began to get quite concerned about possible serious infection in view of these symptoms. So, I called a friend of mine who is an orthopedic surgeon specializing in hand injuries and hand surgery. He said that there is a high bacteria count in the mouths of most fish and that there can also be mild toxins that can cause a rapid localized swelling like I was experiencing. He recommended immediate oral antibiotics, which I fortunately had at home left over from a recent trip in which I'd taken them along for emergencies. His instructions were to definitely call if the swelling and darkened color of the skin on the back of my hand worsened over the next 24 hours after beginning the antibiotics.

Fortunately, the symptoms stabilized and it took about 5 days for my hand to look normal again–and about two weeks for the numbness that I had around the area of the tooth punctures to remit.

Now not all of you are feeding squid to halibut on your local dives but I caution you to avoid breaking up urchins to attract garibaldi and sheephead. You never know when a bite from one of these lovely guys could cause a similar local toxic reaction or infection.

This is the first of a series of articles that I will be writing on Common Dive Related Injuries. If you have a dive related injury that you'd like to share or a question as to how to handle a particular dive related injury, please email it to me and I will be happy to include it in my future articles.

Prevention is always the best course of action, but to avoid wounding one's pride, remember accidents do happen no matter how careful we are.

Happy diving as always and Happy New Year!

All the best,

Debra A. Hill, MD

First Aid items to add to your dive kit:

Povidone 10% iodine solution
Bacitracin
Bottled water
Small scissors
Tweezers (to remove foreign objects)
Ziplock bag with some 4 x 4 inch gauze pads
Bandaids (all sizes, large to small)
Clear bandage tape