

# Marine Envenomations / Injury



## History

- \* Type of bite / sting
- \* Identification of organism
- \* Previous reaction to marine organism
- \* Immunocompromised
- \* Household pet

## Signs and Symptoms

- \* Intense localized pain
- \* Increased oral secretions
- \* Nausea / vomiting
- \* Abdominal cramping
- \* Allergic reaction / anaphylaxis

## Differential

- \* Jellyfish sting
- \* Sea Urchin sting
- \* Sting ray barb
- \* Coral sting
- \* Swimmers itch
- \* Cone Shell sting
- \* Fish bite
- \* Lion Fish sting

Call for help/ additional resources  
Stage until scene safe

|          |   |
|----------|---|
|          | Wound Care Procedure WTP 4  |
|          | IV / IO Access Protocol UP 6<br><b>if indicated</b>                               |
| <b>P</b> | Cardiac Monitor<br><b>if indicated</b>  |
|          | Drowning Protocol TE 3<br><b>if indicated</b>                                     |
|          | Age Appropriate Allergy / Anaphylaxis Protocol AM 1 / PM 1<br><b>if indicated</b> |
|          | Age Appropriate Hypotension / Shock Protocol AM 5 / PM 3<br><b>if indicated</b>   |
|          | Pain Control Protocol UP 11<br><b>if indicated</b>                                |

If Needed  
Carolinas Poison Control  
1-800-222-1222

Identification of  
Sea Creature

**Jelly Fish  
Anemone  
Man-O-War**

**Sting Ray  
Lion Fish  
Urchin / Starfish**

**Large  
Organism**

|  |   |
|--|---|
|  | Immobilize injury   |
|  | Lift away tentacles<br>Do Not brush or rub  |
|  | Apply Vinegar Rinse<br><b>if available</b><br>Otherwise wash with clean seawater<br><b>DO NOT</b><br>use fresh water or ice |

|  |   |
|--|---|
|  | Immobilize injury   |
|  | Remove Barb or Spine<br>If large Barb in thorax or abdomen stabilize object |
|  | Immerse in Hot Water<br>110 – 114°F (43 - 46°C)<br><b>if available</b>      |

|  |   |
|--|---|
|  | Immobilize injury                                     |
|  | Multiple Trauma Protocol TB 6<br><b>if indicated</b>  |
|  | Extremity Trauma Protocol TB 4<br><b>if indicated</b> |

Monitor and Reassess

**Notify Destination or  
Contact Medical Control**

Toxic-Environmental Protocol Section



## Pearls

- \* **Ensure your safety: Avoid the organism or fragments of the organism as they may impart further sting / injury.**
- \* **Priority is removal of the patient from the water to prevent drowning.**
- \* **Coral:**
  - Coral is covered by various living organisms which are easily dislodged from the structure.
  - Victim may swim into coral causing small cuts and abrasions and the coral may enter to cuts causing little if any symptoms initially.
  - The next 24 – 48 hours may reveal an inflammatory reaction with swelling, redness, itching, tenderness and ulceration.
  - Treatment is flushing with large amounts of fresh water or soapy water then repeating
- \* **Jelly Fish / Anemone / Man-O-War:**
  - Wash the area with fresh seawater to remove tentacles and nematocysts.
  - Do not apply fresh water or ice as this will cause nematocysts firing as well.
  - Recent evidence does not demonstrate a clear choice of any solution that neutralizes nematocysts.
  - Vinegar (immersion for 30 seconds), 50:50 mixture of Baking Soda and Seawater, and even meat tenderizer may have similar effects.
  - Immersion in warm water for 20 minutes, 110 – 114°F (43 - 46°C), has recently been shown to be effective in pain control.
  - Shaving cream may be useful in removing the tentacles and nematocysts with a sharp edge (card).
  - Stimulation of the nematocysts by pressure or rubbing cause the nematocyst to fire even if detached from the jellyfish.
  - Lift away tentacles as scrapping or rubbing will cause nematocysts firing.
  - Typically symptoms are immediate stinging sensation on contact, intensity increases over 10 minutes.
  - Redness and itching usually occur.
  - Papules, vesicles and pustules may be noted and ulcers may form on the skin.
  - Increased oral secretions and gastrointestinal cramping, nausea, pain or vomiting may occur.
  - Muscle spasm, respiratory and cardiovascular collapse may follow.
- \* **Lionfish:**
  - In North Carolina this would typically occur in the home as they are often kept as pets in saltwater aquariums.
  - Remove any obvious protruding spines and irrigate area with copious amounts of saline.
  - The venom is heat labile so immersion in hot water, 110 – 114 degrees for 30 to 90 minutes is the treatment of choice but do not delay transport if indicated.
- \* **Stingrays:**
  - Typical injury is swimmer stepping on ray and muscular tail drives 1 – 4 barbs into victim.
  - Poison is released when barb is broken.
  - Typical symptoms are immediate pain which increases over 1 – 2 hours. Bleeding may be profuse due to deep puncture wound.
  - Nausea, vomiting, diarrhea, muscle cramping and increased urination and salivation may occur.
  - Seizures, hypotension and respiratory or cardiovascular collapse may occur.
  - Irrigate wound with saline. Extract the spine or barb unless in the abdomen or thorax, contact medical control for advise.
  - Immersion in hot water if available for 30 to 90 minutes but do not delay transport.
- \* Patients can suffer cardiovascular collapse from both the venom and / or anaphylaxis even in seemingly minor envenomation's.
- \* Sea creature stings and bites impart moderate to severe pain.
- \* Stop the envenomation by inactivation of the venom as appropriate.
- \* Ensure good wound care, immobilization and pain control.