These Guidelines Expire May 27th, 2022

North Carolina Poison Control (NCPC) 1-800-222-1222

Guidelines for Treatment of Snake Bites

Do not use
Ice
Tourniquet
Prophylactic Antibiotics
Steroids
Prophylactic Fasciotomy

A. **Initial Treatment**
   1) Local wound care and tetanus immunization if indicated.
   2) Wound measurement: see Page 2 for further details.
   3) Elevate and extend arm or leg. Remove jewelry.
   4) Do not apply tourniquet, constrictive clothing or wrap.
   5) Consider 20cc/kg LR bolus with possible maintenance infusion.
   6) Observe at least 6 hrs for upper, 8 hrs for lower extremity bites.

B. **Laboratories**
   1) Copperhead bites with only mild swelling and no clinical evidence of coagulopathy (no bleeding/excessive bruising): no routine labs
   2) For all other including unknown pit viper bites in NC: PT/INR, fibrinogen (if it is not a send out) and CBC at least 6 hrs after bite (unless critically ill)
   3) *Some* patients require recheck of PT, fibrinogen and platelets 72 hours after last antivenom dose.

C. **Antivenom (Caution: Potential for Allergic Reaction)**
   1) Used in patients with moderate or worse swelling, pain and/or significant systemic symptoms.
   2) CroFab®
      a) Use cautiously in patients who have previously received sheep serum products; are hypersensitive to pineapples, papayas, papain, or latex; have asthma, or are on β-blockers.
      b) Dissolve **4** vials (18ml NS each) of **CroFab®** in 250cc NS; use 125cc NS for pts wt <15kg.
   3) Anavip®
      a) Caution in pts who have previously received horse serum products; have asthma or are on β -blockers.
      b) Dissolve **10** vials (10ml NS each) of **Anavip®** in 250 cc NS; use 125cc NS for pts wt <15kg.
   4) Start infusion at 10 cc/hr, tripling the rate every 3 minutes if patient tolerating infusion; goal is to give entire dose over 1 hour if patient tolerates infusion.
   5) Halt infusion for hypotension, bronchospasm, or rash. Stabilize and then call NCPC. Most CroFab® patients (90+%) can tolerate antivenom at a lower infusion rate after steroids & antihistamines.
   6) Progressive swelling usually requires treatment with more antivenom; abnormal labs *may* require tx.
   7) Strongly recommend observing at least 4 hours after antivenom finishes; longer (6+ hours) for rattlesnake bites and any patients with laboratory abnormalities

D. Examine for possible compartment syndrome (rarely develops); if capillary refill normal, distal sensation good and pain proportional to physical findings then compartment syndrome not likely.
   1) If compartment syndrome <u>not</u> present, elevate extremity above heart:
      a) Arm elevator using posterior mold splint elevated using <u>very loose</u> stockinette from IV pole
      b) Leg elevator using posterior mold splint elevated with orthopedic elevator.
   2) Keep extremity above heart in <u>relative extension</u> (minimal flexion; <45°).
   3) <u>Avoid anything constricting around the extremity.</u>
   4) If compartment syndrome (very rare) is a possibility:
      a) We recommend **immediately** discussing with a NCPC toxicologist.
      b) Patient will need antivenom administration emergently.
      c) Compartment pressures should be measured emergently.

E. **Inpatient Treatment** and **Follow up** information
   1) Record how far swelling has progressed and circumferential measurements hourly for the first 3 hours and thereafter every 2-4 hours at these sites (see illustrations).
   2) Additional doses of antivenom <u>may</u> be required based on swelling/clinical findings.
   3) Scheduled maintenance antivenom vials not usually necessary; PRN dosing preferred.
   4) Rare patients treated with antivenom require PT/INR, fibrinogen and platelets 72 hrs after treatment.
   5) Patient home phone number is required for home follow up by NCPC.
   6) A discharge instructional sheet (English and Spanish) is available for your use upon request.

F. Prior to discharge, review amount of swelling. Consider calling NCPC to discuss esp. if whole hand or foot.

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Guideline for Monitoring of Snake Bites-Foot/Leg

G. Wound Measurement

1) Mark edema edge to monitor for progression
2) Assess ability to move toes/ankle
3) Groin tenderness should be noted.
4) The lower extremity should also be marked with ink as indicated in the diagram below
5) The tape measure should be wrapped loosely around the marked site to measure.
6) Circumferential measurements in centimeters (cm) should be recorded (see example right).

Area	Time			
	Arrival	:	:	:
Foot				
Ankle				
Calf				
Thigh				
Groin tenderness? Yes/No				

H. Frequency of Measurement

1) Mark any erythema or edema edge to monitor progression; monitor swelling tightness.
2) Circumferential measurements and assessment of edema amount/progression should be made:
   a) Upon presentation and hourly for the first 3 hours.
   b) If antivenom administered, one hour after administration and then every 2 to 3 hours.
   c) After swelling appears to stop, measure every 3 to 4 hours.
3) Circumferential measurements are a *guide* to determining progression; no metric is 100% accurate.

I. Expected course of swelling following envenomation

1) For a Foot bite, the patient might have an increase in swelling of thigh but should have a decrease in the swelling of foot and ankle if properly elevated above the heart in relative extension (<45 degrees flexion).
2) If swelling continues to increase in the extremity, contact North Carolina Poison Control.
   a) Treatment with more antivenom may be required.
   b) The extremity may need additional elevation or re-positioning.
3) Erythema, bruising and mild skin discoloration near the bite is occasionally seen.
4) Although rare, compartment syndrome does occur -- symptoms include:
   a) Severe pain not well controlled by medication.
   b) Poor capillary refill of envenomed extremity.
   c) Severe ecchymosis/cyanosis of envenomed extremity.
   d) Loss of peripheral sensation of envenomed extremity.
   e) Call NCPC immediately to discuss with a Toxicologist if this is suspected.
5) Lower extremity envenomations may benefit from additional observation time and pediatric lower extremity envenomations should be considered for overnight observation.