

# The Compass

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# Case Report

## Western Rattlesnake envenomation with Dr. Michael Shertz

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**Dr. Michael Shertz**  
18D/MD, DTM&H

A 23-year-old male presented to the Emergency Department after being bitten on his right thumb an hour before by a Western Rattlesnake (*Crotalus oreganus*) he picked up as a souvenir while hiking in Eastern Oregon.<sup>1</sup> He has normal vital signs, minimal bleeding from two parallel punctures, and thumb pain. The patient brought the snake to the ED as proof of the speciation.

Although his ED laboratory testing was normal, his thumb and hand quickly began to swell. Fifteen minutes later, the swelling had progressed to his forearm.



The venom from pit vipers is predominantly hemotoxic, causing decreased fibrinogen, decreased platelets, and increased platelet consumption at the bite site. Local and systemic effects can include tachycardia, tachypnea, hypotension, sweating, and vomiting. In severe envenomation, disseminated intravascular coagulopathy or rhabdomyolysis can also occur.

“Dry bites,” in which a venomous snake bites without injecting venom, occur in 20 - 30% of viper bites, 50% of elapid, and 75% of sea snake bites.<sup>2</sup>

**There is very little evidence base to make firm recommendations regarding the prehospital management of viper bites. There is research showing that incision / excision, venom extraction devices, tourniquets, chill methods, and electroshock have no efficacy. No currently recommended prehospital treatment has been shown to alter outcome.**



*Crotalus oreganus, the Western rattlesnake*





Immediate treatment of venomous snake bites - besides the typical ABCs - is the determination of envenomation. Local or systemic symptoms or abnormal laboratory results (new anemia, decreased platelet count, increased prothrombin time / PT) indicate envenomation.

Swelling, unless minimal, alone or progressive, is enough to warrant antivenom treatment.

Antivenoms are either monovalent, providing coverage for only one species of venomous snake, or polyvalent for multiple species. CroFab is one of the most common antivenoms in the US. It is polyvalent, provides coverage for all North American pit vipers, and possibly some protection for Central and South American species.<sup>2</sup>



Prophylactic antibiotics are not generally indicated in snake bites, although good wound care is. Splinting of the extremity, padding between fingers, and elevation can be helpful. Hemorrhagic or bullous vesicles should be debrided in 3 to 5 days.

The patient received four vials of CroFab antivenom and his swelling did not continue to progress. He was admitted for serial observations and pain control.

<sup>1</sup> The patient was initially rushed into the ED with a struggling life in a blanket; the nurses, assuming it was an infant who had also been bitten, were shocked to find the patient's dog, the individual first bitten by the snake when it got loose in the car coming home. The dog was rushed to an emergency vet and was successfully resuscitated. The ED doc would like it noted he offered to resuscitate the dog but was denied the privilege.

<sup>2</sup> Animal Poisons in the Tropics chapter in Tropical Infectious Disease, 2<sup>nd</sup> edition.

