Rattlesnake Bite To The Tongue

Kate McCarn MD; Marcus Monroe MD; Brian Downs MD
Oregon Health & Science University, Portland Oregon

ABSTRACT

Envenomation of the head and neck is relatively rare, occurring in less than five percent of poisonous bites and stings. The goal of this poster is to present information pertinent to otorhinolaryngologists as members of the multidisciplinary team required to treat these patients. Airway compromise, local tissue necrosis and shock are common in these patients and must be identified and managed appropriately so as to avoid disability and disfigurement.

REFERENCES

2. Lee MW, Klein-Schwartz W et al. 2005 Annual report of the American association of poison control centers’ national poisoning and exposure database
3. Norris RL, Bush SP. Bites by Venomous Reptiles in the Americas in Auerbach: Wilderness Medicine, 5th ed. 2007 Mosby
4. Special thanks to Richard Mullins MD, Marcus Monroe MD, Jess Mace MS for their kind assistance in taking these pictures

CASE PRESENTATION

The patient was a 23 year old male who while intoxicated was displaying his pet rattlesnakes to some friends in his home. In order to demonstrate that a young snake was tame he placed it’s head in his oral cavity and was bitten on the tongue. The patient required EMS transport after losing consciousness en route to the hospital. He arrived in the emergency department tachypneic with oxygen saturations in the 80’s and with significant edema of the tongue and bleeding from his oral cavity.

Attempts were made at nasal fiberoptic nasal intubation but due to bleeding and distortion of the oral cavity and pharynx from local edema, this strategy was unsuccessful. Oral intubation was attempted but unsuccessful. Emergent cricothyrotomy was performed by the trauma surgery staff and the patient admitted to the ICU. Admission labs demonstrated thrombocytopenia and an elevated prothrombin time.

Poison control center consultation was obtained and the patient was treated with CroFab (antivenom) 4 vials initially and then 2 vials every 6 hours for the ensuing 48 hours. He was hemodynamically unstable, requiring fluid and pressors. The patient’s coagulation parameters were monitored, clinically he continued to have bleeding from his cricothyrotomy wound and oral and nasal cavities. Revision of the cricothyrotomy was carried out on hospital day 1 after his platelet count had improved and his bleeding had clinically improved. Parenteral antibiotics (ampicillin-sulbactam) were administered during the hospitalization.

On hospital day 3, the patient’s edema began to improve. Necrosis of the ventral surface of the tongue and lingual frenulum was evident. He was decannulated on hospital day 6. His coagulopathy resolved, his INR and platelets normalized. Examination of the tongue on the day of discharge (hospital day 7) revealed that the lingual frenulum had necrosed but otherwise the tissue in the oral cavity appeared to be healing nicely.

DISCUSSION

-At the Time of Injury: The wound should be immobilized and the patient kept calm. No tight tourniquets, attempts to incise the wound or “draw poison from the wound” should be undertaken. Loosely applied pressure dressings proximal to the wound may allow perfusion of the tissue while preventing spread of the venom via lymphatic channels. Identification of the animal is helpful but is not worth risking injury. Dead snakes should not be approached or transported.

-Airway: The need for airway management by intubation or surgical means is obvious in patients with envenomations of the head and neck early intervention is key as swelling and hemorrhage can worsen an already bad situation. Patients with wounds on the extremities may develop systemic shock, anaphylaxis and ensuing airway edema, they warrant close observation and early intervention.

-Breathing: Should be supported as needed. Neuromuscular toxicity (as can happen with Mojave Rattlesnake bites) may require prolonged mechanical ventilation.

-Circulation: Hemorrhage, DIC, Venom-induced thrombocytopenia, systemic inflammatory response syndrome (SIRS) may all cause hemodynamic collapse.

-Disability: Some local tissue necrosis is common, often requiring only local wound care as was the case in our patient, tissue loss can progress to the point where function and limbs are compromised. Compartment syndrome is a possibility as is secondary infection. Venom spreads via lymphatic channels, local lymphadenopathy is common and may reflect local effects of the venom on the draining nodes and not necessarily secondary infection.

-Prophylaxis: Tetanus booster

-Consult Poison Control: regarding specialized treatments such as antivenom

CONCLUSIONS

-Envenomation of any body part can result in airway compromise, bites to the face, head and neck require special attention.

-Most snake bites in North America are not immediately fatal, local wound complications are the most common sequelae and can include significant tissue loss.

-The initial assessment of the wound can often give some idea as to the extent of injury (with the exception of some Mojave rattlesnakes).

-The use of antivenom is not without risk but may be lifesaving and is best used in expert consultation and with appropriate monitoring.

-A multidisciplinary team is best in managing these complex patients. Otorhinolaryngologists can offer significant expertise in airway and wound management.