ST elevation myocardial infarction presenting as complication of *Crotalus horridus* envenomation

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**Background**

- Myocardial infarction (MI) has been reported previously as a complication of snake envenomation¹-⁷,⁹
- ST elevation MI (STEMI) has not been previously reported as a complication of North American crotaline envenomation
- MI is typically a result of increased cardiac metabolic demand or decreased oxygen delivery via coronary arteries

**Hypothesis**

- *Crotalus horridus* (Figure 1) envenomation may cause MI by increasing the risk of thrombus formation along with increasing myocardial oxygen demand

**Case Report (continued)**

- Swelling and a single puncture wound were noted on the dorsal left hand
- Initial EKG demonstrated ST elevation in leads II, III, and aVF (Figure 2)
- Laboratory results included WBC 9.7, Hgb 13.2, Plt 524, PT/INR 12.3/0.9, PTT 28.9, fibrinogen 712 mg/dL, and troponin I 0.00
- Hypotension resolved after a 1000 cc bolus of 0.9% saline
- Rectal aspirin 300 mg, heparin 5000 units IV, and 6 vials of crotaline Fab antivenom were administered in the ED
- Eptifibatide was given as a 180 µg/kg bolus and 2 µg/kg/min infusion for 18 hours
- Intubated for acute respiratory failure and hypoxia
- Emergent cardiac catheterization revealed a circumflex artery with 70%-80% mid-vessel stenosis with thrombus formation with additional thrombus formation distally
- There was no residual obstruction after thrombectomy and stent implantation
- Troponin I peaked at 19.18 ng/mL
- In total, 14 vials of crotaline Fab antivenom were administered
- Started clopidogrel 75 mg daily on hospital day 2

**Discussion**

- Complex hematologic abnormalities such as platelet aggregation and coagulopathy are well described following crotaline envenomation, including recognized species-dependent effects
- In this patient with mild coronary atherosclerosis, thrombus formation could be a complication of the hemotoxic venom effect of *Crotalus horridus*³
- With the common use of anticoagulation and platelet-inhibiting medications in the setting of STEMI, management of STEMI in conjunction with crotaline envenomation presents unique challenges

**Conclusions**

- STEMI is a rare but potential life-threatening complication of North American crotaline envenomation

**References**

3. Daboia russelli - Jun;65(3):327
4. Daboia russelli - Jun;65(3):327
6. Daboia russelli - Jun;65(3):327
8. Daboia russelli - Jun;65(3):327

**Figure 1:** *Crotalus horridus,* canebrake rattlesnake, Photo courtesy of Scott Pfaff, Curator of Herpetology, Riverbanks Zoo and Garden, Columbia, SC

**Figure 2:** Electrocardiogram on admission to ED