

Case Report

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Anaphylactic Reactions due to Snakebite Vipera and Administration of Antivenom

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INTRODUCTION

A venomous snakebite is the single most important global cause of human injury from venomous and poisonous animals of all types.¹ The viper family (*Viperaberus*, *Viperaammodites*, *Viperaursine*)² is the 2nd most important venomous snake family of major medical importance globally and they are found in Albania. All have mobile fangs in the front of the mouth on hinged maxillae, allowing the fangs to fold away against the roof of the mouth when not in use. These long fangs are often coupled with large venom glands, allowing large quantities of venom to be injected, but "dry bites" can also occur.² Snake venom contains toxins designed to kill or immobilize the snake's prey. There are four main types of snake venom: Hemotoxins, neurotoxins, cytotoxins, and myotoxins.

Bites from *Vipera* lead to local tissue damage and systemic signs such as generalized edema, hypotension, gastrointestinal symptoms, hemolysis, and renal dysfunction. Rarely a patient bitten by vipers may experience anaphylaxis from the venom itself. This can complicate the evaluation or mimic a severe systemic reaction to the venom. The presence of pruritis and urticaria, wheezing, edema of oropharynx which is uncommon with the envenomation, suggests anaphylaxis. These signs respond to standard treatment for anaphylaxis (epinephrine, antihistamines and corticosteroids).³

A fifty-eight-year old female patient, accompanied by a health center nurse presented to the Emergency Department (ED), Tertiary University Hospital with pain of her right leg with a history of snakebite at the level of talocrural articulation two hours prior. She was working in the garden and was bitten by a viper snake which she saw and recognized. She was admitted within the first hour to the village health center. The nurse who accompanied her stated that the patient lost consciousness after the bite. On presentation to the ED, the patient was conscious and oriented. The vital signs were blood pressure=90/50 mmHg, SpO₂=95%. The area around the bite was swollen, painful and local edema occurred. Hypotension and tremor wheezing were also reported. The patient noted this was the first time that she had been bitten by a viper; however, she was allergic to bee stings.

Saline perfusion, prednisolone 50 mg and 1 ampoule of adrenaline 0.1%-1 ml were given subcutaneously and local treatment of the wound with potassium permanganate occurred at the village health center.

She was admitted to a Monitored Unit, (cardiac, hemodynamic, respiratory and body temperature monitoring, blood analysis). Two intravenous lines were opened with a saline intravenous perfusion (500 ml) and 50 mg of prednisolone in one of the lines. The patient was conscious. Vital signs were stabilized and she was monitored for blood pressure, cardiac rate,

and blood oxygen (SpO₂). The patient was administered intramuscularly 1 ml of Viper Venom Antiserum (equine). The patient developed severe hypotension, tremors, wheezing edema of the tongue, cyanosis of the extremities but she did not lose consciousness. In pulmonary auscultation there were rhonchi. In the other intravenous line the following were administered: saline perfusion 500 ml, calcium chloride 10%-10 ml, potassium chloride 8.4%-10 ml, magnesium sulfate 25%-5 ml, and epinephrine 0.1%-1 ml ½ of ampule sub cutis.

The first blood analysis revealed White Blood Cell of $14.6 \times 10^3/\text{mm}^3$ (Lymphocytes 3.7%, Monocytes 1.4%, Granulocytes' 94.9%), Red Blood Cell $4.30 \times 10^6/\text{mm}^3$, and Hemoglobin 10.5 g/dL, International Normalized Ratio (INR) 1.403.

After four hours in the Monitored Unit her blood pressure was 100/70 mmHg, SpO₂=95%, heart rate 100', body temperature 36.7 °C, sweating and local sign were pain, edema and ecchymosis up to her right knee. After 48 hours she developed edema and ecchymosis of the right leg up to sacroiliac joint, a painful and immobilized right leg, bilateral ptosis, blurred vision, sweating and vomiting. Blood analysis revealed a White Blood Cell of $21.2 \times 10^3/\text{mm}^3$, Red Blood Cell $3.5 \times 10^6/\text{mm}^3$, and Hemoglobin 10.5 g/dl. After 10 days of hospitalization, systematic and local treatment, the blood analyses were within the normal level.⁴ The patient had only local signs, edema and ecchymosis. She was discharged from the hospital.

During the hospitalization period she did not have another anaphylactic reaction. The rehabilitation period took more than six months.

CONCLUSION

The literature contains case reports of allergic reactions as a result of snakebites, which are life-threatening for the patient if they have serious and massive edema of the oropharynx. Antivenom is also an immunoglobulin and during its application, the patient can have allergic reaction. Before antivenom is administered, the patient should be asked about their history of asthma, atopy, and previous antivenom exposure. Not always all the anaphylaxis symptoms from snakebites are present but antivenom should be administered in a monitored unit where resuscitation can be performed and airways supplies can be quickly accessed.⁵

There are no studies in our country about the percentage of patients who develop anaphylactic reactions due to snake bite.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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