Case Report

**Viper Bite with Continuous Defibrination Despite Adequate Treatment with Antivenom**

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**Abstract**

A case of envenomation due to viperine snakebite poisoning is presented. Patient showed continuous defibrination, without any other signs of poisoning, which could not be reversed with more than double the usual dose of polyvalent antivenom. This phenomenon could be due to envenomation caused by a snake, probably from *Viperidae* family, which is not covered by the polyvalent antivenom available in India.

**INTRODUCTION**

Snake envenomation can be broadly divided into haemotoxic and neurotoxic variety. It is relatively easy to monitor haemotoxic poisoning by following the coagulation profile of the patient such as bleeding time, clotting time, prothrombin time and activated thromboplastin time. The management of haemotoxic, viperine bites is determined by monitoring the response of these parameters to antivenom and other supportive treatment. Occasionally the coagulant profile does not respond as expected despite adequate treatment with antivenom. A case is presented to illustrate this rare phenomenon, and a possible explanation is offered.

**CASE REPORT**

A male labourer aged 27 years who was bitten by a snake at around 8:00 pm was brought to our hospital around 11:30 pm. Soon after the bite the patient experienced pain at the site, and felt faint. He was taken to a local ‘Vaidya’ (Ayurveda Doctor) but as time passed, the pain in the leg became severe and he was brought to our hospital.

On admission he was alert and oriented. BP 120/80, Pulse 80/min, Resp. 16/min. On general examination there was no bleeding from any site including the site of bite (dorsum of the right foot). There were two bite marks and there was some clotted blood over the site. There was 2+ oedema extending upto the middle of the leg. On examination all systems appeared normal, except for bilateral renal angle tenderness.

Laboratory data (28.11.2003) : Hb - 16.8 gm%, PCV - 46%, WBC T - 15,000 /cmm, Poly - 77%, Lym - 23%, Platelet Count - 1.2 Lakhs, Clotting Time > 30 minutes, Blood Urea - 37 mg/dl, Creatinine - 1.5 mg/dl, Serum Sodium 140, Potassium 3.8, Blood Group - O Rh+. Urine Alb - 3+, Sug. – Nil, Granular Casts - 3+ RBC - 0-1, WBC - 1-2 /HPF.

Treatment was started, without any delay, with polyvalent antivenom as per the protocol of our hospital.

The supportive treatment consisted of analgesics (morphine sulphate), mannitol along with adequate intravenous fluid and 10 mg of frusemide to ensure a urine output of more than 80 ml per hour.

By the following morning, his urine was totally clear, and he had received over 8 hours, 8 ampoules of antivenom (80 ml) as continuous intravenous drip. In spite of this his clotting time remained over 30 minutes.

The antivenom was continued as intravenous drip. By the 3rd day he had received 22 units of antivenom. He was fine symptomatically, though there was still some swelling in the right leg. The pain had completely disappeared. His vital signs were stable, urine was clear (Urea 15 mg) and his appetite was good. He was moving around and was ready to go home, but his clotting time was still over 30 minutes. Haematological consultation was sought. It was their opinion that continuous defibrination was still taking place. It was suggested to continue the antivenom and to use cryoprecipitate 4 to 5 pints, if there was any bleeding. Patient did not have any sign of bleeding from any site.

By the 6th day the patient had received 30 units of antivenom (300 ml). His clotting time continued to be more than 30 mins and his prothrombin time more than 1 min (control 13 sec). The next day his clotting time was found to be normal, and from then on it remained normal. Patient was subsequently discharged fully recovered.

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DISCUSSION

This case presents a rare situation in the management of snake envenomation. The author, 1 having the experience of looking after over 1500 patients with snake venom poisoning, does not recall a similar situation. The cause of continued coagulopathy or defibrination could be due to unneutralized venom components. Doctors Barry Gold and R Barish2 presented a case of “refractory thrombocytopenia despite treatment of rattlesnake envenomation in a 38 yr old man bitten by timber rattlesnake. They concluded that the available crotalidae polyvalent immune Fab-ovine failed to reverse the thrombocytopenia though it corrected all the other signs of coagulopathy. The same conclusion was made by Dr. Bond and Dr. Burkhart3 after their study of 18 timber rattlesnake bite cases.

Another possibility for this phenomenon is that the antivenom was not specific for the species of the snake that had bitten this patient. The polyvalent antivenom that is used in India should cover the venom constituents of Naja naja (Cobra), Bungarus caeruleus (Common krait), Daboia russelii (Russells viper) and Echis carinatus (Saw scaled viper). It is very possible that the snake which bit this patient, while belonging to the Viperidae family, was different from Russell’s viper or Saw scaled viper, and was probably a Bamboo viper (Trimeresurus gramineus)

This case reveals the rare phenomenon of prolonged clotting time without any other abnormality of envenomation which did not respond to the polyvalent antivenom that is commonly used in India. The treatment strategy for such patients, who do not appear to respond well to appropriate antivenom treatment, is observation, and supportive treatment, (in particular adequate hydration) to prevent renal complication. The study of the literature reveals that many such patients while having coagulopathy do not have problem of overt bleeding. All patients, like this patient, had normal bleeding parameters after 7 to 10 days, of the snake bite. Continuing with antivenom till the haematological parameters become normal is unnecessary and very expensive. Many studies4,5 have now come out showing the need of antivenom to be less than 60 ml in managing moderate to severe snake venom poisoning. Expertise is a major factor in managing snake venom poisoning, therefore, efforts to reduce the quantum of antivenom is very relevant in the Indian context.

Antivenom used in the case

SII Polyvalent Anti-Snake Venom Serum manufactured by Serum Institute of India Ltd.

REFERENCES


Announcement

XVII Annual Conference of Rajasthan Chapter of Association of Physicians of India (RAJ APICON, 2006) Organized by Ajmer Chapter of Association of Physicians of India and Department of Medicine, JLN Medical College, Ajmer. 16th and 17th September, 2006 at Mount Abu.

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