

# Acute ischemic stroke following viper bite

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## Abstract

Reporting a case of snake bite. Viper bites are important venomous snakes in srilanka and south India. We report a 55 year old male bitten by viper on right dorsum of foot later he developed severe pain and swelling at the site of bite and he was shifted to our hospital 6 hours after the bite. His leg was swollen, having severe pain and tenderness at bitten site, anxious with tachycardia tachypnea with normal neurological examination and other systems being normal. Blood investigation showed deranged coagulation which was corrected after giving 40 vials of antsnake venom. He developed right sided hemiparesis 36 hours of bite even after giving antivenom treatment and his CT brain showed acute infarct in left frontal lobe (anterior division of MCA). His wound started healing by seventh day and his hemiparesis completely recovered by 6 weeks.

**Key words:** Envenomation, Infarct, Hemiparesis, Antivenom.

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## INTRODUCTION

Approximately 2.5 million people worldwide are bitten by snakes every year resulting in one death per 1,20,000 cases.<sup>1</sup> Viper bites most often and commonly males are affected with the usual site being upperlimbs.<sup>2</sup> The clinical presentation varies with species of snakes involved and severity of envenomation.<sup>3</sup> We report a case of uncommon cause of cerebrovascular disease (CVD), which is most commonly seen in tropical countries.

## CASE REPORT

A 55 year old male patient was brought to emergency room with history of snake bite 6 hours before on the dorsum of right foot while working in the fields. He developed severe pain and giddiness soon after the bite and slowly the redness and swelling increasing. After 3 to 4 hours the condition started worsening in terms of pain, sweating, vomiting and palpitation. He had no

surgical or medical problems previously. At admission in the hospital he was found anxious, tachycardia, sweating, and tender swelling noted at the site of bite along with echymosis and discolouration. Patient was conscious pulse rate 106/minute respiratory rate 26/minute blood pressure 110/70mmhg spo<sub>2</sub> >90% in room air. Systemic examination was normal. Intravenous line was secured blood was drawn for various investigations; test dose of antivenom was given. Bleeding time was 10 minutes and clotting time was >15 minutes in view of this 20 vials of ASV given over 6 hours also noticed hematuria and urine output was monitored every 30 minutes once BT and CT was monitored. His ECG was normal throughout hospital stay except that initially had tachycardia. Hematological investigations reports were Hb 11.6 gm, TLC 12300, N 49% L 42% Others 9% platelets 2.5 lakhs. PT 32 sec (Normal 11-15 sec, Control 15 sec), INR 2, APTT 50 sec (Normal 25-30 sec) showing coagulation abnormality. Serum creatinine was 1.3 mg/dl, blood urea 60 mg/dl and serum potassium 5.5 meq/L. Since there was continued bleeding tendency along with hematuria ASV infusion was continued till 24 hours total of 40 vials given after that BT, CT, APTT and PT came normal. Along with antivenom intravenous antibiotics, crystalloids, tetanus toxoid injection and the affected limb was kept elevated. Since there were elevated renal parameters and hematuria renal output was monitored, injectable furosemide was given as there was decreased urine output in first 24 hours of hospitalization. After 36 hours of bite we observed that patient was not able to move right upper and lower limbs

and on examination there was hemiparesis on right side of the body with intact speech. CT brain was taken revealed acute infarct at left frontal lobe (anterior division of MCA territory). The patients overall condition remained stable. The coagulopathies regressed in 30hours and renal function improved in 48hours. His swollen limb improved over a period of 2weeks and complete recovery took 4weeks. His neurological deficits improved over a period of 2months and repeat CT showed resolution of infarction. After 3 months he was completely normal neurologically.

## DISCUSSION

Snake bite even though common but not all bites are poisonous. Snake venom contains more than one toxin mainly polypeptides and several enzymes. The venoms are described as either neurotoxic or hematotoxic. The main components of viperidae venom include proteolytic enzymes, polypeptidotoxins, proteases, phospholipases, collagenases and thrombin like enzymes. Most viper venom exhibit both anticoagulant and coagulant effects<sup>4</sup>. Which might be due to arginine esterase hydrolase an enzyme similar to thrombin which clots fibrinogen? Hypotension is a common and serious complication of viperidae envenomation and should be treated aggressively. Cerebrovascular impairment after snake bite is rare. In a series of 309 snake bite patients, Mosquera and others reported cerebrovascular complication in eight (2.6%) patients, seven of them was hemorrhagic nature and one of them was ischemic<sup>5</sup>. Bashir and jenkins reported a 13 year old girl bitten on hand developed hemiplegia and aphasia which was consistent with an infraction in the middle cerebral artery<sup>6</sup>. In our case he developed right sided hemiparesis 36hour after the bite. Study reported by Thomas and others that thrombotic complications occurred an average of 36hours after being bitten and their proportion increases with the degree of envenomation<sup>7</sup>. The neurological manifestations of viper snake bites includes cranial and peripheral nerve symptoms, blurred vision, dizziness, weakness, confusion, convulsions and fainting. Recognition of snake bites usually early, but species involved in bite is very rarely recognized or caught. This poses some clinical problems regarding severity of envenomation and early administration of antivenom. In our case the snake was

killed and brought to hospital and it was viper, since they have come after 6 hours of bite clinical and biochemical parameters were well suggestive of envenomation. Thomas and others reported that in 70 patients who received antivenom treatment within 6 hours of being bitten no thrombotic complications observed<sup>7</sup>. In our case we gave antivenom after 6 hours of bite as he was brought late and in spite of treatment he progressed to develop hemiparesis. As compared to previous study early introduction of treatment might have prevented hemiparesis. So snake bites patients if there are signs of envenomation should be treated early and aggressively.



Image 1: Showing picture of Viper Snake

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