

## An Uncommon Presentation of Common Disease at Tertiary Care Centre of Northern India

Rajni Sharma<sup>1</sup>, Arun Joshi<sup>2</sup>, Anuj Singhal<sup>3</sup>, Amit Katyal<sup>4</sup>, Naveen Kumar<sup>5\*</sup> 

<sup>1</sup>CMO, Composite Hospital CRPF, Rampur, Uttar Pradesh, India.

<sup>2</sup>Assistant Professor and Consultant Nephrology, Graphic Era Institute of Medical Sciences Hospital, Dehradun, Uttarakhand, India.

<sup>3</sup>Senior Advisor and Professor, Department of Internal Medicine, Army Hospital Research and Referral, New Delhi, India.

<sup>4</sup>Consultant Nephrology, Command Hospital, Mumbai, Maharashtra, India.

<sup>5</sup>Consultant Plastic Surgery, Kailash Hospital, Greater Noida, Uttar Pradesh, India.

**Correspondence to:** Naveen Kumar, Consultant Plastic Surgery, Kailash Hospital, Greater Noida, Uttar Pradesh, India.

**Received date:** April 04, 2023; **Accepted date:** April 25, 2023; **Published date:** May 02, 2023

**Citation:** Sharma R, Joshi A, Singhal A, et al. An Uncommon Presentation of Common Disease at Tertiary Care Centre of Northern India. *J Med Res Surg.* 2023;4(2):33-35. doi: 10.52916/jmrs234104

**Copyright:** ©2023 Sharma R, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

### ABSTRACT

Snake bite is often met emergency in Indian subcontinent especially in rural settings. We present a case of a 26-year-old male, residing in North India who presented with complaints of swelling over left leg along with breathlessness. He had gradually developed renal dysfunction along with respiratory failure. In view of various physical and laboratory findings, a diagnosis of vasculotoxic snake bite envenomation with acute kidney injury and pulmonary oedema was made. He was managed conservatively with IV fluids, parenteral antibiotics and haemodialysis. Acute kidney injury is an important complication in vasculotoxic snake bites and should be addressed early.

### Keywords:

Snake bite, Acute kidney injury, Vasculotoxic, Haemodialysis, Pulmonary edema

### Introduction

Snake bite is often met emergency in Indian subcontinent especially in rural settings. Vasculotoxic snakes are well known to cause local complications such as cellulitis and tissue necrosis along with systemic insults such as acute kidney injury and coagulopathy. Local infections as well as systemic complications are not seen, however unusual presentations are also not uncommon. Here we present uncommon case of snake bite in a young healthy individual.

### Case Report

A 26-year-old gentleman residing in hilly region of North India, presented to us with chief complaints of swelling over left leg along with breathlessness. He had rapidly progressive symptoms over the last 6-8 hours. Swelling on the left leg was sudden in onset, progressive, diffuse, up to knee associated with local pain. There was no history suggestive of trauma to leg, prolonged immobilization or similar history in the past. Few hours later he started having breathlessness which rapidly progressed to breathlessness on minimal exertion and getting aggravated on lying down with partial relief on sitting up. He also started having dry cough getting aggravated on lying down. There was no history of chest pain, sweating, retrosternal heaviness. His examination revealed tachypnoea, tachycardia and hypoxia with SpO<sub>2</sub> of 90% at room air. He had a blood pressure of 100/60 mmHg in right arm sitting position. In Systemic examination he had fine crepitations in bilateral infrascapular areas on chest auscultation. Local examination revealed a diffuse erythematous swelling of left lower limb. Fang marks were seen on the dorsal aspect of left foot (Figure 1).

It was a unilateral nonpitting edema. He had diffuse local tenderness and rise in temperature was present on palpation.



**Figure 1:** Diffuse erythematous swelling of left lower limb along with fang marks on the dorsal aspect of left foot.

All peripheral pulses were felt and there were no features suggestive of compartment syndrome. He did not have ptosis, diplopia, dysphagia, dysarthria or any other neurological deficit. Rest of the systemic examination was normal at this point. His complete hemogram showed Anemia with Hemoglobin of 9.6 g/dl along with neutrophilic leukocytosis. His renal parameters were deranged with blood urea nitrogen of 68 mg/dl and serum

creatinine of 2.6 mg/dl. His Whole Blood Clotting Time (WBCT) was more than 25 minutes. His urine routine and microscopy showed myoglobin and haemoglobinuria and blood activated Partial Thromboplastin Time (aPTT) was prolonged by two times of control. His liver function tests showed normal bilirubin and normal liver enzymes except mildly raised Aspartate Transaminase (AST) of 54 IU/ml. His D-dimer, Fibrin Degradation Products and Serum Creatine Phosphokinase (CPK) were negative and chest X-ray revealed bilateral lower zone non-homogenous opacities with serum procalcitonin of 24 ng/ml. His ECG showed sinus tachycardia and 2D-Echo did not show any regional wall motion abnormalities, signs of pulmonary thrombosis or valvular disorder. His non-contrast CT chest and abdomen revealed bilateral mild pleural effusion and patchy opacities in bilateral lower lung lobes along with mild ascites and normal sized kidneys. His left lower limb doppler did not show any evidence of deep vein thrombosis and showed subcutaneous edema. In view of the clinical, blood investigations and radiological findings, a diagnosis of vasculotoxic snake bite with lower respiratory tract infection with acute kidney injury and fluid overload was made. He was managed with polyvalent anti-snake venom as high dose intermittent bolus therapy along with intravenous fluids, parenteral antibiotics and other supportive. His WBCT and limb girth was monitored. His WBCT time started to improve however, his renal functions continued to worsen and rose to a serum creatinine of 5.1 gm/dl in next 72 hours. He also developed worsening of breathlessness, vomiting and urine output started declining gradually. Repeat imaging revealed bilateral mild pleural effusion along with non homogenous opacities bilateral lower lung zones. Final diagnosis made was vasculotoxic snake bite envenomation with lower respiratory tract infection with acute kidney injury and pulmonary edema.

In view of rapid worsening in the renal parameters, he was given 3 sessions of haemodialysis via double lumen internal jugular dialysis catheter. Gradually his urine output started to improve and his renal parameters stabilised hence he was taken off dialysis. In a matter of 3 weeks as his clinical condition improved with reduction in leg swelling, normalisation of urine output, his serum creatinine also got normalised to 1.2 mg/dl. His chest infection improved as his breathlessness and cough improved and his serum procalcitonin became normal. His antibiotics were gradually tapered and he was off all drugs by the end of third week. He was discharged with advice of regular weight and intake-output charting at home. He will be reviewed after a period of 6 weeks.

## Discussion

Snakebite is an acute life threatening time limiting medical emergency. It is a preventable public health hazard often faced by rural population in tropical and subtropical countries with heavy rainfall and humid climate. There are more than 2000 species of snakes in the world and about 300 species are found in India out of which 52 are venomous. The venomous snakes found in India belong to three families elapidae, viperidae and hydrophidae (SeaSnakes). The most common Indian elapids are *Naja naja* (IndianCobra) and *Bungarus caeruleus* (Indian Krait), *Daboia russalae* (Russells' Viper) and *Echis carinatus* (Saw scaled viper). Saw scaled vipers and Russel vipers are known to cause

vasculotoxic injury. Neurotoxic injury are associated mainly with kraits and cobras [1].

Vasculotoxic snake bites are characterised by presence of intense local reaction in the form of swelling, redness, pain and local tenderness. There is always a risk of compartmental syndrome and peripheral pulses should be regularly monitored. Systemic effects of envenomation lead to clotting defect cardiotoxicity and nephrotoxicity. Prolonged bite to hospital increases the chances of such injury [2].

Despite early administration of envenomation, patient may develop complications such as acute renal failure, Disseminated Intravascular Coagulation (DIC) and sepsis [3]. Lower respiratory tract infections have not been reported commonly. However with high index of suspicion, LRTI can be diagnosed when pulmonary edema can have overlapping findings and has been reported among the pulmonary complications of viper snake bite. Hence based on the radiological findings and clinical parameters underlying Lower Respiratory Tract Infection (LRTI) can be diagnosed and managed with early detection [4].

Deranged coagulation parameters are important predictor of renal injury and renal failure is usually secondary to ischemic injury. Urine for myoglobin and haemoglobinuria should be screened along renal functions such as urine output, blood urea nitrogen and creatinine which should be closely monitored for early intervention in the event of renal dysfunction. Coagulation profile should also be monitored 6 hourly along with fibrin degradation products and D dimer [5].

Local effects can be managed conservatively with splintage, dressing, parenteral or oral antibiotics depending on the extent of necrosis. Surgical debridement or fasciotomy may be needed in severe necrosis or compartment syndrome [5]. If needed, expert advice should be sought from specialist like plastic surgeons or general surgeons. A timely action can save the limbs of the patient with early control of sepsis and related complications.

## Conclusion

Vasculotoxic snake bites can have varying systemic involvement along with the local effects. Acute kidney injury is an important complication in vasculotoxic snake bites and should be addressed early. Pulmonary edema can be seen either secondary to AKI or cardiotoxicity and a strong index of suspicion of lower respiratory tract infection should be maintained in the presence of neutrophilic leukocytosis, raised serum procalcitonin, radiological findings and persistent signs and symptoms despite fluid management, diuretics and hemodialysis.

## Conflict of Interest

We have no known conflict of interest to disclose.

## Funding

No.

## References

1. Singhal AAR, Marwaha V, Mohanty CS. Neurotoxic Krait Envenomation : A Case Report. *J Mar Med Soc.* 2014;16.
2. Dharod MV, Patil TB, Deshpande AS, et al. Clinical predictors of acute kidney injury following snake bite envenomation. *N Am*

*J Med Sci*. 2013;5(10):594-599.

3. Vikhe V, Gupta A, Shende P, et al. Vasculotoxic snake bite presenting with sepsis, acute renal failure, disseminated intravascular coagulation, and acute respiratory distress syndrome. *Med J Dr DY Patil Univer*. 2013;6(2):197-199.

4. Gnanathasan A, Rodrigo C. Pulmonary Effects and Complications of Snakebites. *Chest*. 2014;146(5):1403-1412.

5. Mehta SR, Sashindran VK. Clinical Features And Management Of Snake Bite. *Med J Armed Forces India*. 2002;58(3):247-249.