



UNCOMMON PRESENTATION OF COMMON STING: MYOCARDITIS BY SCORPION STING CASE REPORT

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ABSTRACT

Farming is a common occupation of Nepal. Among the various occupational hazards in farming, sting and bite of various animals is one of them. Among them, next common to bite by snakes is scorpion sting. This case report is authors' endeavor to highlight on the scorpion sting, a common sting in Terai region of Nepal, to leading unusual presentation of toxic myocarditis who recovers after treatment.

KEYWORDS: Scorpion sting, Myocarditis, Heart failure.

INTRODUCTION

Farming is a common occupation of Nepal. Among the various occupational hazards in farming, sting and bite of various animals is one of them. Among them, next common to bite by snakes is scorpion sting. Common scorpions found in Indian subcontinent which are of medical importance are *Mesobuthus tamulus* (Indian red scorpion) and *Heterometrus swammerdami*.^[1] Depending upon the type of scorpion and its toxin, the clinical features vary from local reaction of excruciating sting site pain, to cardiac, hematological and neurological symptoms. The cardiovascular toxic effects and acute pulmonary edema are the most life threatening complications of scorpion sting.^[2]

Sudden deterioration of left ventricular systolic function leading to pulmonary edema and shock in conjunction with raised cardiac enzymes in the case of stings suggest severe myocardial injury or myocarditis. This is due to the adrenergic storm that follows scorpion sting or direct effect of toxins on myocardium.^[3]

In Nepal in the year 2004, there has been a case series of seven young adult patients admitted in a span of two years with history of scorpion sting presenting with pulmonary edema requiring ICU care of PEEP ventilation and cardiac support with ionotropes, diuretics and fluid balance.^[3] Since then no further such cases have been reported in literature. We are reporting a case of scorpion sting who had recently presented to us with features of myocarditis.

CASE PRESENTATION

A 30 year old female from terai region of Nepal

presented with history of burning sensation of whole right lower limb, severe in intensity after the sting by scorpion on her right 3rd toe 6 hours prior presentation. She had history of recurrent vomiting and acute onset shortness of breath with orthopnea for 3 hours.

On admission to emergency room she was tachypneic, blood pressure was 80/60 mmHg with heart rate of 110/min, oxygen saturation was 92% with oxygen via face mask at 6L/min, jugular venous pressure was 12 cm and she had sting mark of scorpion on right 3rd toe. (Fig. 1) She has got no cyanosis. Examination of respiratory system showed bilateral crepitations on infrascapular, interscapular and axillary area. Other systemic examinations were unremarkable.



Figure 1: Bite Mark.

On basic blood investigation she had raised total

leucocyte counts of $25200/\text{mm}^3$, platelets count of $412000/\text{mm}^3$, prothombin time of 14 sec with INR of 1.08, arterial oxygen of 89.6 mmHg, and blood lactate level of 2.2. Her renal functions and serum electrolytes were normal. ECG showed sinus tachycardia. (Fig. 2) Suspecting myocardial injury, blood cardiac enzymes

were sent and were raised being creatinine kinase total 24 mg/dl and MB of 70 mg/dl and qualitative Troponin I was positive. Echocardiography showed global hypokinesia with severe left ventricular dysfunction with left ventricular ejection fraction of 30%. (Fig. 3)

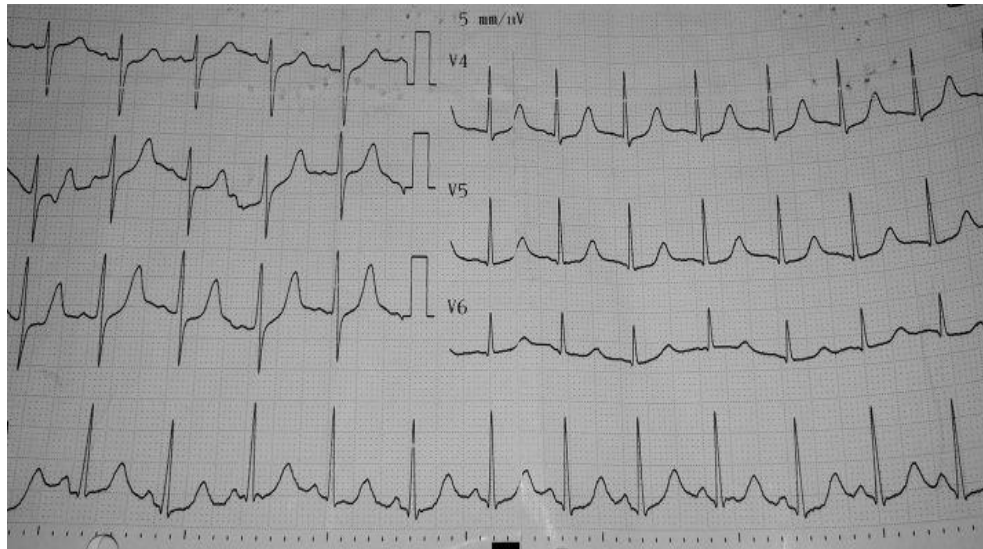


Figure 2: Electrocardiography of the patient.

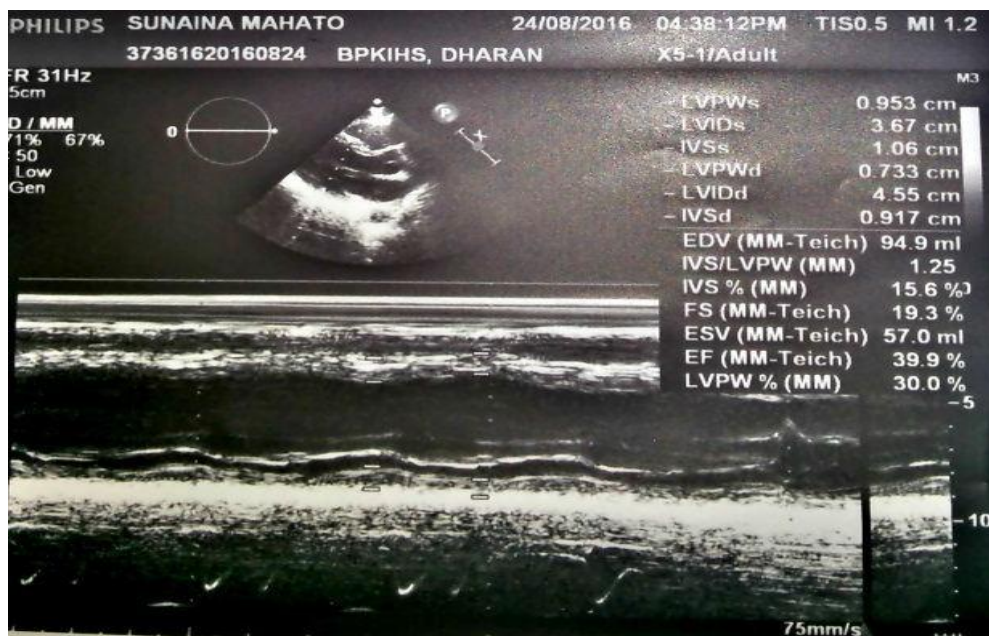


Figure 3: Echocardiography of the patient.

Patient was kept in propped up position, given oxygen via facemask at 6 L/min and inj. Noradrenaline was started to maintain her BP > 90/60 mmHg. Diuretics (Inj Furosemide) was also added for her pulmonary edema. Pain Killers were given for relieving her pain of right lower limb. She gradually improved with this treatment. After she stabilized, she was started with ACE inhibitors and spironolactone and was discharged with a plan of starting beta blocker on her first follow up.

DISCUSSION

Toxins found in scorpions, such as neurotoxin, haemolozine, aglutinine, leukocytoziline, coagulin, ferment, lecithin, and filoesterin, are responsible for local and systemic response after scorpion sting. In our context the direct toxic effect on cardiac fibrils of the toxin and the adrenergic expression triggered by the venom are held responsible for the cardiac dysfunction.^[3] Catecholamine discharge results in increased heart rate, coronary spasm, and vasoconstriction occurring in the microcirculation, thus causing myocardial hypoperfusion and hypoxemia.^[4] If a patient presents at this stage, they are managed with potent vasodilators like prazosin. When catecholamines are depleted in the late stage, hypotension, systolic function disorders, and pulmonary disorders will be observed.^[4] This stage requires treatment with ionotropes.

Pathologic study of heart revealed a mixed picture of toxic myocarditis and coagulative myocytolysis, similar to catecholamine-induced cardiotoxicity.^[5] But In the literature, it has been reported that majority of the cases presenting with cardiovascular system symptoms have temporarily impaired left ventricle functions and cardiac functions have returned to normal after medical treatment.^[6] Though in one study it was found that scorpion sting was a risk factor in the long-term for development of idiopathic dilated cardiomyopathy.^[7]

CONCLUSION

We report here the case of a 30 year-old female who developed life-threatening, acute toxic myocarditis and pulmonary edema, after a scorpion sting. Aggressive medical treatment with inotropic agents and diuretics resulted in rapid clinical resolution. Although cases of scorpion stings are generally seen with simple local findings, it must be remembered that serious cardiovascular impairments like this can occur which needs urgent recognition and lifesaving treatment.

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