

## Case Report

**Lower limb ischemia and multiple organ dysfunction syndrome following wasp sting**Jeyakanth T<sup>1\*</sup>, Mayurathan P<sup>1</sup>, Sivansuthan S<sup>1</sup><sup>1</sup>Medical unit 4 & 8, Teaching Hospital Jaffna, Sri Lanka**Abstract**

Wasp stings are commonly encountered in tropical countries. Various manifestations after wasp sting have been described. We report 66-years old healthy female developed lower limb ischemia, myocardial infarction, renal, liver and hematological involvement following multiple wasp stings. She was fully recovered after two weeks of treatment.

**Key words:** Wasp sting; Jaffna; Lower limb ischemia**Copyright:**© 2015 Jeyakanth T *et al*. This is an open access article distributed under the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.**\*Correspondence:** tjeyakanth3@yahoo.com**Cite this article as:** Jeyakanth T, Mayurathan P, Sivansuthan S. Lower limb ischemia and multiple organ dysfunction syndrome following wasp sting. *Anuradhapura Medical Journal* 2015;9(1):12-14**DOI:** <http://dx.doi.org/10.4038/amj.v9i1.7530>

## Introduction

Wasp sting can cause local and systemic allergic reactions (1). Local reactions are common. But more serious complications like intravascular hemolysis, rhabdomyolysis, thrombocytopenia, acute renal failure, liver impairment and myocardial infarction are less common (1,2,3). Here we report a case with multiple organ dysfunctions and ischemia in lower limb following wasp sting which, to the best of our knowledge, would be the first reported case published for lower limb ischemia following wasp sting in Srilanka. This is a second case reported regarding wasp sting in northern province; it indicates about one million people in Jaffna peninsula is in a risk of stinging and its effects (4).

## Case presentation

A 66-year old previously healthy female farmer had been stung with a swarm of wasps on her entire body while worked in the paddy field at around 10 o'clock in the morning. She developed severe pain at the site of stings and swelling of the body within minutes. She was admitted about 40 minutes after bee sting with itching, urticarial rash, headache and vomiting to district hospital Thellipalai where she developed severe ischemic type of chest pain, reduced urine output and left lower limb pain and discoloration about 36 hours after wasp sting and she was transferred to teaching hospital, Jaffna.

On admission, her GCS was 15/15 and she had a swollen face and limbs with urticarial rash. Her Pulse rate was 104beats/min, blood pressure was 110/70 mmHg and her temperature was 99.4 °F. She had multiple stings marks in all over the body and the stung areas were edematous and erythematous. She had gangrenous toes in left foot. (Figure 1)



Figure 1 Gangrenous toes of left foot

The laboratory results are shown in Table 1. Her peripheral blood smear showed reactive neutrophil with mild thrombocytopenia without any evidence of microangiopathic hemolytic anemia and slightly high activated partial thrombin time (APTT). She had acute coronary syndrome as evidenced by chest pain with anterior ST/T changes in ECG with high troponin I and 2D Echocardiogram revealed left ventricular ejection fraction (LVEF): 50%, with mild anterior regional wall motion defect. She developed acute kidney injury and deranged liver function test (LFT). She had left lower limb ischemia as evidenced by gangrene of toes and duplex scan revealed left femoral, popliteal and posterior tibial arteries colour flow were seen with normal velocity but left dorsalis pedis artery colour flow was seen but low velocity.

She was managed with IV Hydrocortisone 100mg 6hourly for 3days then oral prednisolone 10mg tds for 4dys, IV Chlorpheniramine 10mg stat then oral Chlorpheniramine 4mg bd for 7days, iv co-amoxycylav 0.6mg tds (Does reduced due to renal impairment) with IV cloxacillin 500mg 6 hourly for 10days, Paracetamol 1g tds for 5 days then sos and subcutaneous Enoxaparin 40mg bd for 7 days with aspirin 150mg noct, clopidogrel 75mg noct and atrovastatin 20mg noct.

Fourth day onwards she started to improve. Her haemological, liver and renal functions were improved. Coronary angiogram was done after renal recovery; it revealed 60% stenosis in left anterior descending artery. But her gangrenous toes got infected and wound toilet was done.

She was discharged from the hospital on day 13. During the review in two weeks, she was perfectly well with normal blood investigation and healing wound.

Table 1 Laboratory results

Parameter	Values (normal)
White Blood Cell	38500 (4000-10,000 / $\mu$ l)
Hemoglobin	12.5 (11- 16g/dl)
Platelets	1.10 (1.5-4.0 X 10 <sup>5</sup> / $\mu$ l)
Neutrophils	86% (50-80%)
Prothrombin Time	11 (11 – 13sec)
Activated Partial Thrombin Time	41 (28-31)
Serum Protein	6.2 (6.0-8.5g/dl)
Serum Albumin	3.3 (3.5-5.0g/dl)
Serum Bilirubin Total	1.4 (0.2-1.0mg/dl)
Aspartate Transaminase	477 (5-40 U/L)
Alanine Transaminase	129 (5-40 U/L)
Alkaline Phosphate	314 (110-310U/L)
Serum Creatinine	2.9 (0.6-1.4mg/dl)
Blood Urea	116 (15-45 mg/dl)
Serum Sodium	139 (135-145mEq/l)
Serum Potassium	4.7 (3.5-5.0 mEq/l)
Troponin-I	16.1 (<0.15ng/ml)
FBS	105 (< 126mg/dl)

## Discussion

Wasp venom contains many pharmacologically active constituents including histamine, serotonin, dopamine, noradrenaline, hyaluronidase and phospholipase A (5). Wasp stings can cause allergic reactions and venom induced direct toxic effect in human body (5). Massive envenomation can lead to direct toxin-mediated cellular damage with severe complications including rhabdomyolysis, intravascular hemolysis, disseminated intravascular coagulopathy, cardiovascular abnormalities, hepatic damage, acute kidney injury, stroke, and acute hemorrhagic pancreatitis (5).

She had neutrophil leucocytosis. It may be due to the effect of toxins or due to the steroid treatment (5).

The possible mechanisms for renal damage due to bee sting are direct nephrotoxicity of the toxin, hypotension leading to ischemic tubular necrosis and nephropathy due to hemoglobinuria and myoglobinuria (3,6). Wasp venom-induced hepatic dysfunction has only rarely been reported and the pathogenesis was not clear. The pathophysiology associated with limb ischemia and myocardial ischemia are hypotension caused by anaphylaxis, vasoconstriction secondary to mediators released after sting associated with exogenous adrenaline and platelet aggregation contributed to limb and

myocardial ischemia in normal or pre-existing arthromatous disease patient (1,7). Unilateral limb ischemia may be due to generalize vasoconstriction causing more damage in pre existing arthromatous artery distribution area. In our case we observed arthrosclerosis narrowing of left anterior descending artery (Coronary angiogram was done after renal recovery; it revealed 60% stenosis in left anterior descending artery) supplying area was damaged (ECG showed anterior ischemia) more than other area.

## Conclusion

Wasp sting can cause multiple organ dysfunction and ischemia of limbs and heart in addition to local and general allergic reaction and it is a common scenario in northern part as well as other part of srilanka also so we need to increase awareness among health personals in proper management of it's squeal is crucial for patient survival.

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## Competing Interests

None

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