



## Ischemic stroke after multiple bee stings- A rare case report

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### Abstract:

Bee stings are common accidents in day to day life .They can cause local and systemic allergic reactions, rarely vasculitis, serum sickness, neuritis and encephalitis have been described which generally develop days to weeks after a sting, neurological complications are rare. There are few reports of ischemic stroke following bee stings. We report a 60-year-old healthy man developed a focal neurologic deficit 3 hours after multiple bee stings, which was confirmed to be an acute ischemic stroke on computed tomography (CT) scan and magnetic resonance imaging (MRI) scan.

**Key words:** Bee sting; Computed Tomography; Ischemic stroke; Magnetic Resonance Imaging

### Introduction

In spite of common occurrence of bee stings in day to day life, only local complications and anaphylaxis are frequent. Local and generalized allergic reactions at the site of stings such as edema, erythema, burn-like sensation, pruritus, urticaria, and angio-edema are the most common manifestations of bee venom poisoning [1]. Neurological manifestations in bee stings is a rare phenomenon [2-6] and we present a case of 60 year healthy male who developed ischemic stroke after a bee sting.

### Case Report

A 60 year old male farmer who had multiple bee stings over the head (figure 1), face, chest and back presented to us with angioedema of face, weakness of left upper limb, deviation of angle of mouth to the right. Prior to this patient had an episode of loss of consciousness that lasted for one hour, without any seizures. Past medical and surgical history were insignificant. He is not a smoker or alcoholic. He is not a diabetic or hypertensive.

Physical examination revealed left upper limb weakness with a power of 2/5. Fundus

examination revealed normal study in both the eyes. CT brain was taken and showed acute infarct in bilateral capsulo ganglionic region. MRI brain showed bilateral deep white matter ischemic changes, bilateral lacunar infarct noted in both thalami. T2, flair hyper intensities noted in right parieto occipital lobe and right corona radiata s/o acute infarct (figure 2). Carotid and Vertebral Doppler were in normal limits (figure 5). Electro cardiogram (figure 4) and Two Dimensional (2D) Echo (figure 3) were with in normal limits. Patient's serum Homocysteine, lipid profile, antinuclear antibodies were normal.

Patient was treated with antioedema measures, antiplatelets, physiotherapy. His angioedema subsided with treatment in 2 days, and weakness improved to power of 3/5. Based on above manifestations we confirm it as a bee sting with ischemic stroke. Patient is discharged and is under follow up.

### Discussion:

In literature review, seven cases of wasp and bee sting associated with cerebral infarction were found in literature [7-13]. Following bee sting complications like seizures, hemiparesis, aphasia, ataxia, apraxia, dysarthria and coma were reported. Maltzman et al [14] described common characteristics such as acute to subacute onset of symptoms, visual loss followed by significant recovery.

The patho physiology associated with stroke is unknown. Hypotension caused by anaphylaxis, vasoconstriction secondary to mediators released after sting associated with exogenous adrenaline and platelet aggregation contributed to cerebral ischemia [11]. Bee venom contains histamine, thromboxane, leucotrienes and other inflammatory mediators. In our case systemic immune mediated reaction to bee sting leading to vasoconstriction and pro thrombotic state might have lead to ischemic stroke [9-10].

### Conclusion:

Hereby we suggest to do a neurological examination to potentially rule out the ischemic or hemorrhagic manifestations after multiple bee stings.

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Figure 1: Multiple bee stings over the head

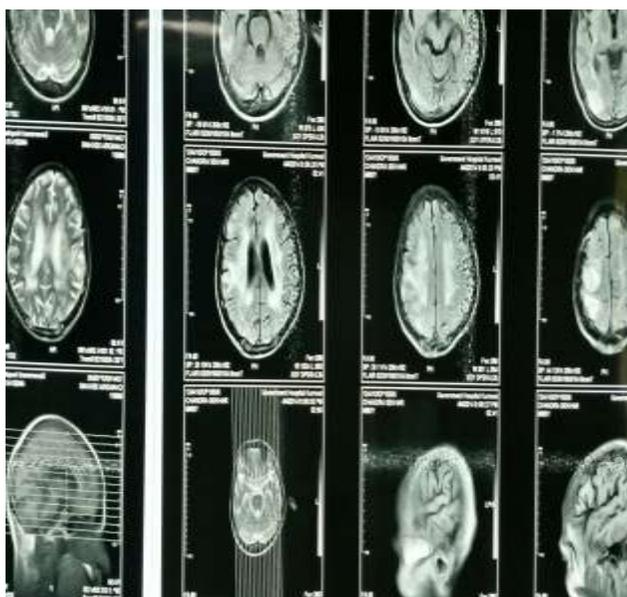


Figure 2: MRI brain showing bilateral deep white matter ischemic changes, bilateral lacunar infarct in both thalami, T2, flair hyper intensities noted in right parieto occipital lobe and right corona radiata s/o acute infarct

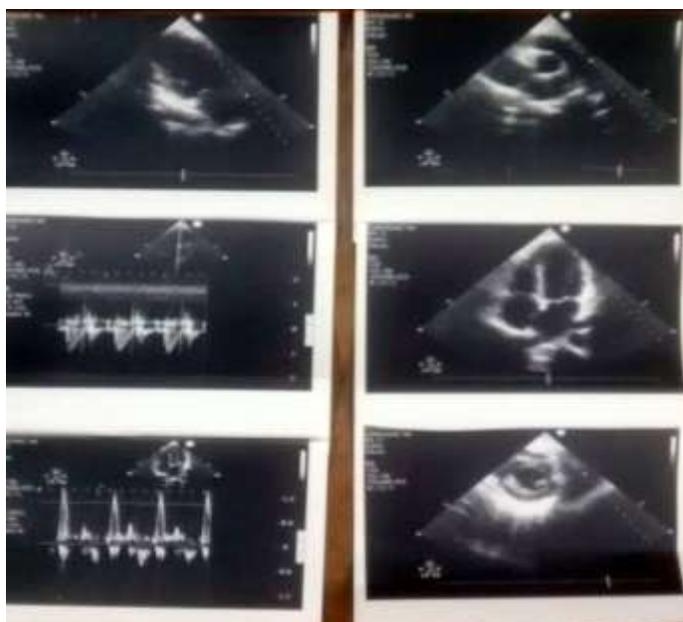


Figure 3: 2D Echo showing normal study

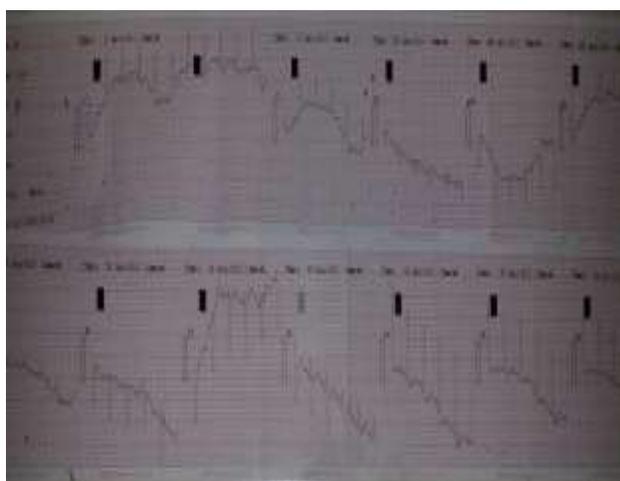


Figure 4: ECG showing normal study

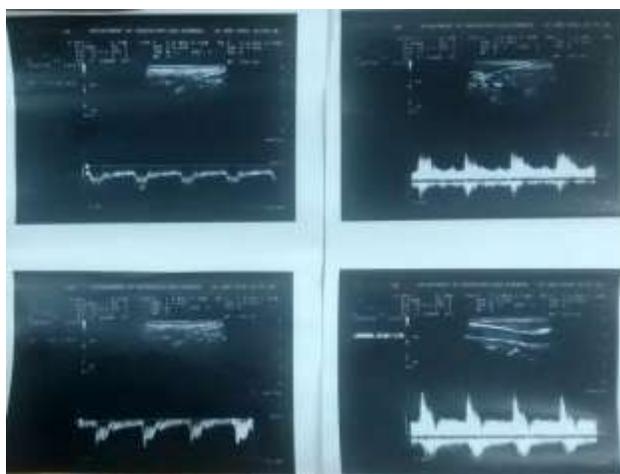


Figure 5: Carotid Doppler showing normal study