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Letters to the editor

Unexpected complication of bee sting; left middle cerebral artery infarction



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1. Introduction

Local and systemic 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 [1,2]. Vasculitis, glomerulonephritis, nephrosis, serum disease, peripheral neuropathy and renal failure after bee stings are described in the literature [3]. Neurologic complications after bee sting are even rarer [4]. There are few cases of stroke related to bee stings reported in the literature [1–14]. We report a left middle cerebral artery (MCA) stroke in a 73-year-old right-handed woman following bee stings.

2. Case

A 73-year-old healthy woman was stung by a bee on the right arm. After an hour of bee sting the patient was admitted to our

hospital with generalized tonic clonic seizure, together with change in consciousness and right hemiplegia. In her medical history she had no chronic disease. On physical examination, her blood pressure was 140/80 mmHg and her fever was 37 degree. Her body developed edema, erythema at the venom stung sites. She was comatose, and she had right-sided hemiplegia and extensor right plantar reflexes. The cranial computed tomography scan of the patient was normal. However, diffusion magnetic resonance imaging (MRI) of the patient showed a left MCA infarction (Fig. 1). The patient was hospitalized in the intensive care unit. Electrocardiogram was normal. Hemoglobin rate was 9 g/dL. Patient's serum B12 level and lipid profile were within normal limits. Patient was treated with intravenous antihistamines, antiedema, antiseizure and antiplatelet drugs. Levetiracetam was used as antiseizure drug. Antibiotic was given for *Staphylococcus aureus* proliferation in the sputum. The patient was comatose for 18 days and at the end of 18 days follow-up, she had died.

3. Discussion

The clinical manifestations of bee sting can be divided into three groups: local reactions, immunological reactions usually leading to anaphylaxis and systemic toxic reactions caused by large doses of venom [13]. Although adults may endure more than 1000 bee bites, sensitive individuals may develop anaphylactic reaction after one bite. Even though it is variable, systemic vulnerability rises after every bite, and developing reactions are more severe [6]. Systemic toxic reactions may develop depending on the dose

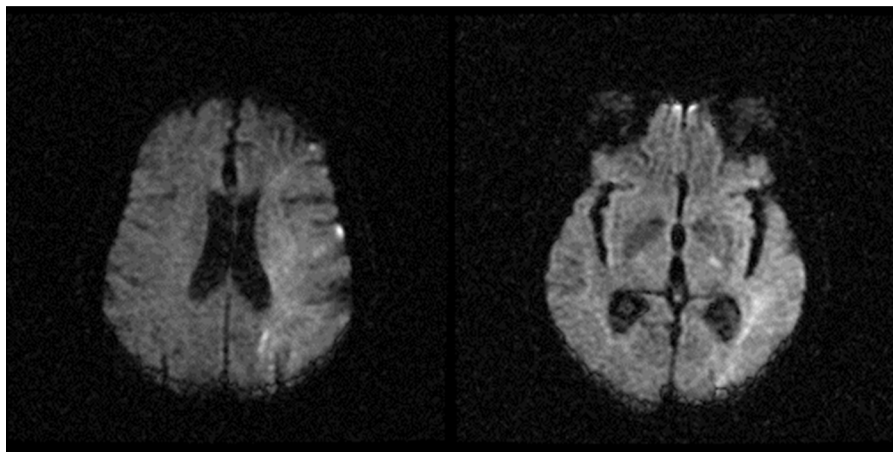


Fig. 1. The diffusion weighted MRI readily demonstrated the lesion in left temporoparietal.

Table 1
Reports of cerebral infarction following bee/wasp sting.

References	Age/sex	Type of stings	Other disease	Onset of deficit	Symptoms	Clinical finding	MR/BT finding	Authors' diagnosis	Treatment	Outcome
Br J Ophthalmol 2004 Schiffman et al. [7]	57/female	Multiple bees	None	2 days later	Headache, nausea vomiting, left homonymous, visual field loss	Left homonymous hemianopsia bilateral haemorrhagic disc edema	Right temporooccipital haemorrhagic infarct	Anterior ischemic optic neuropathy and stroke	Antihistamines antiemetics	A little recovery
Ann Indian Acad Neurol 2014 Wani et al. [8]	40/male	Multiple wasps	None	16–18 hours later	Redness, pain vomiting, urine incontinence consciousness	Coma	Occipital and right cerebellum hyperintense	Multi-organ dysfunction and stroke	Hydrocortisone chlorpheniramine steroid, antibiotic	Vegetative state
J Neurol Neurosurg Psychiatry 1999 Crawley et al. [9]	30/female	A wasp sting	None	45 minutes later	Swelling, pruritis, respiratory distress, hypoxia, hypotension	Right homonymous quadrantanopia Right upper visual field	Left occipital infarct	Cerebral infarction	Gelofusine Adrenaline Hydrocortisone Chlorpheniramine Aspirin	Full recovery from the quadrantanopia
Neurol India 2002 Sachdev et al. [10]	40/male	A wasp	None	10 hours later	Redness, pain weakness of left upper and lower limb	Left hemiplegia, right facial nerve palsy	Right pontocerebellar Infarction	Ischemic stroke	Aspirin	Showed further improvement
Am J Emerg Med 2014 An et al. [11]	50/male	Multiple bee stings	None	27 hours later	Syncope, dyspnea Involuntary movements of the left leg Hyperkinetic movement	Hemichorea	Right temporal lobe infarction	Stroke	Methylprednisolone chlorpheniramine maleate, adrenaline aspirin, haloperidol	Full recovery
Int J Cardiol 2011 Dechyapirom et al. [12]	64/male	Multiple bee	None	16 hours later	Substernal chest pain, left hemiplegia, facial nerve palsy	Left hemiplegia, facial nerve palsy, loss of pain and proprioception on the left	Ischemic infarction in the distribution of the right middle cerebral artery	Acute ischemic stroke and concurrent acute coronary syndrome	Steroid, opioid antiemetic tPA, aspirin	Full recovery
Am J med 2004 Chen et al. [13]	71/female	Multiple wasps	None	24 hours later	Right-sided mouth angle deviation, numbness, weakness	Left hemiplegia Paraplegia Hyporeflexia Bilateral dorsalis pedis weakness	Right middle cerebral artery infarction	Acute descending aortic thrombosis and cerebral infarction	Early angiography thrombectomy anticoagulants	Recovery
J Neurol Sci 2011 Vidhate et al. [14]	8/boy	A wasp	None	8 days later	Weakness of left side limb and right side limb	Left hemiplegia, right ophthalmoplegia Dilated and fixed pupil, left eye corneal ulcer and partial ptosis	Infarcts in left frontoparietal cortex, posterior limb of the left internal capsule and right subcortical region	Bilateral cavernous sinus syndrome and bilateral cerebral infarcts	Antibiotics anti-oagulants antibiotic antiinflammatory	Started moving the left upper and lower limbs, eye swelling and proptosis had reduced
Am J Emerg Med 2013 Bilir et al. [6]	35/male	A bee	None	6 hours later	A change in consciousness, dyspnea, respiratory distress, hyperemia, a loss of function in the right upper and lower limbs	Right-sided hemiparesis	Left parietooccipital infarct	Stroke	Adrenaline Pheniramine Methylprednisolone Salbutamol	A little recovery
J Stroke Cerebrovasc Dis 2012 Viswanathan et al. [5]	59/male	Multiple bee stings	None	2 hours later	Weakness of the left-sided	Left-sided upper motor neuron facial nerve palsy, left-sided hemiplegia, left conjugate gaze palsy, slurred speech	Perisylvian peri-insular and parietal cortices infarct	Stroke	Antihistamines Hydrocortisone Aspirin, atorvastatin Heparin Sodium valproate	Recovery

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