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Case Report

Scorpion sting bite with intracerebral bleed: a case report

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ABSTRACT

Scorpion sting can present with multiple clinical presentations ranging from local swelling to cardiogenic shock. Scorpion sting affects many organ which can cause myocarditis, cardiogenic shock, acute renal dysfunction and respiratory collapse. Central nervous system involvement can cause encephalopathy, seizures, subarachnoid haemorrhage, and ischemic stroke. Cerebral bleed is a rare presentation of scorpion sting. Here we present a case of scorpion sting with unusual central nervous system (CNS) presentation of gangliocapsular bleed.

Keywords: Scorpion sting bite, Intracerebral bleed

INTRODUCTION

Scorpion sting is one of the common toxicological emergency in India. The most common scorpion species which is responsible for its toxic effect is *Mesobuthus tamlus*. Scorpion toxin contains several toxins such as serotonin, hyaluronidase, mucopolysaccharides, phospholipase which are responsible for its effect on different organs in humans.[1]

Scorpion sting patient presents to hospital with swelling of the sting site with local reaction to a variety of presentation such as pain, palpitation, sweating, and priapism. Cardiovascular involvement can cause tachycardia, hypertension, arrhythmias, myocarditis, left ventricular failure and cardiogenic shock. Respiratory system involvement can present with pulmonary edema, respiratory failure due to medullary respiratory depression.[2]

Cerebrovascular events are an uncommon presentation.[3] Rarely central nervous involvement can cause encephalopathy, subarachnoid haemorrhage, non-hemorrhagic infarct, cranial nerve palsies, ataxia.[4] Our patient here presents with gangliocapsular bleed which is rarer in literature.

CASE REPORT

A 31-year old male presented to the emergency department with a history of scorpion sting in the left index finger 2 hours ago, followed by frontal headache for 1 hour. History of palpitation and sweating was also present for 30 minutes. No history of vomiting, loss of consciousness, seizure, bleeding tendencies chest pain, or breathlessness. Patient was not a known case of systemic hypertension. On general examination, blood pressure was 130/80 mmHg on the right arm, pulse rate 78/min, regular in rhythm. Oxygen saturation was 98% at room air, Glasgow coma scale (GCS) – 15/15. On central nervous system examination – power of right upper limb and lower limbs was 3/5. Hypotonia was noted in right upper and lower limbs. Right-sided plantar reflex was extensor response. Sensory examination/cranial nerve examination/fundus examination were normal. Pupils were 3 mm equal in size on both sides and reactive to light. Other system examinations were normal. Electrocardiography (ECG) showed normal sinus rhythm. Computed tomography (CT) brain imaging showed acute

parenchymal haemorrhage (47×37×25 mm) (AP×TR×CC dimension) in the left gangliocapsular, left sublentiform nucleus, and left basifrontal lobe with mass effect (Figure 1). The patient was treated with anti edema measures by intravenous 3% NaCl and intravenous mannitol. Blood investigation showed coagulation profile, D-dimer were normal. Hemogram/liver function test/renal function test/urine complete analysis were normal. Patient repeat imaging was done after 72 hours which showed a reduction in density and size (28×20×15 mm) (Figure 2). The patient's power improved to 5/5 on the right upper limb and lower limbs on the 7th day of admission and eventually he was discharged.

Figure 1: CT brain shows on day 1- acute parenchymal hemorrhage of 47×37×25 mm size in left ganglio capsular region, left sub lentiform nucleus and left basi frontal lobe with mild to moderate compression of frontal horn of ipsilateral lateral ventricle and midline shift to contralateral side of 6 mm.

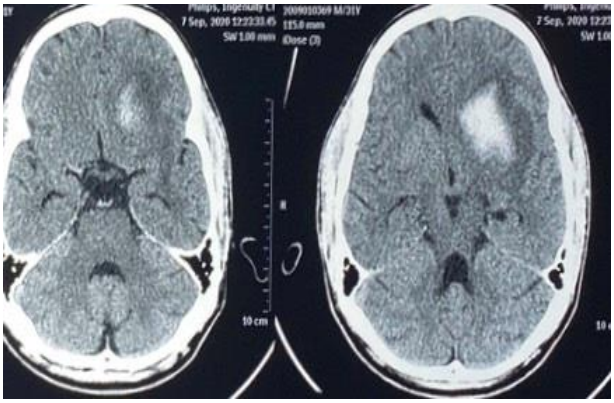

Figure 2: CT brain on day 4 - interval changes – mild reduction in density and size (28×20×15 mm) of left ganglio capsular haemorrhage.

DISCUSSION

Scorpion toxin contains chemicals that are usually water-soluble, low molecular weight basic proteins, amino acids, nephrotoxins, neurotoxins, hemolytic toxins and it can affect multiple organs.[1] CNS manifestation of scorpion sting varies from encephalopathy, seizures, stroke. CNS injury is due to varied mechanisms: direct neurotoxic effect on the brain causing encephalopathy; blood pressure fluctuations can produce abnormal autonomic bursts leading to stroke; toxin-induced vasculitis due to direct damage to endothelium by toxins; myocarditis leads to abnormal arrhythmias leading to embolic stroke; disseminated intravascular coagulation (DIC) by toxin can produce ischemic or hemorrhagic stroke; and catecholamine excess, with the firing of alpha receptors, which enhances endothelin secretion resulting in severe vasoconstriction of the cerebral vessel.[5,6] Cerebrovascular involvement is seen in approximately 8% of the cases.[3,7] Few cases have been reported with hemorrhagic stroke which are secondary to scorpion sting and the site of location for haemorrhage usually are thalamic, cerebellar, subarachnoid, basal ganglia, or lobar.[3-6,8] Our case was a young male presenting with headache and weakness suspected stroke and CT brain was done and revealed acute parenchymal hemorrhage in left ganglio capsular region, sub lentiform, basi frontal with compression of the frontal horn of ipsilateral lateral ventricle with midline shift to the contralateral side was immediately managed with anti edema measures . Cause for hemorrhagic stroke in our patient might be due to direct toxin effect on endothelium or due to catechoclamine. Prognosis is usually grave for patients presenting with hemorrhagic stroke.[4,7,8]

CONCLUSION

Headache after scorpion sting must not only think of autonomic storm and catecholamine excess. Cerebrovascular insult in a state of hemorrhage or infarction must be suspected early. Our patient presented with headache and sudden onset off weakness gave us clue towards stroke and starting anti edema early gave good recovery in terms of improvement of power of limbs and headache.

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