

Bee stings an unusual cause of severe rhabdomyolysis: A case report and literature review

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Abstract

Wasp and bee stings are common among the rural population of Sri Lanka. It is known to cause local reaction and rarely anaphylaxis. Bee sting associated rhabdomyolysis leading to acute kidney injury (AKI) is a rare complication and was not reported from Northern Sri Lanka.

This case report illustrates a patient who developed rhabdomyolysis following multiple bee stings and made a complete clinical recovery with prompt and optimal supportive care.

Key words

Rhabdomyolysis, Bee Sting, Acute Kidney Injury

Introduction

Apis dorsata or the “rock bee” (Figure 1) of the order Hymenoptera, is found in South and South-East Asia. They are known for their aggressive behavior and defense strategies (1). Usual stings are accidental following the unintentional intrusion of the area around the beehive or the nest by the victim (2).

Figure 1: The Rock Bee



Although the wasp and bee stings could cause life threatening anaphylaxis immediately, rhabdomyolysis has an insidious progression and need clinical anticipation and vigilance to be identified by appropriate timely laboratory evaluation (3). Rhabdomyolysis or “crush syndrome” is the occurrence of acute tubular

nephritis as an effect of myoglobin released into the circulation following skeletal muscle injury (4). In addition to Acute Kidney Injury (AKI) it can result in electrolyte abnormalities, hypoalbuminemia, hyperuricemia and disseminated intravascular coagulation (DIC). The common causes include trauma, compartment syndrome, status epilepticus and muscle toxins such as statins, antimalarial medications and snake and insect venom (4).

Case History

A 76-year-old man, with an uneventful past medical history from a suburb of Jaffna, was transferred from a primary health care center for further management of multiple bee stings. He was stung by more than 50 bees on the scalp, face, neck, chest, upper back and bilateral upper limbs. He had generalized itching, difficulty in breathing and dizziness on admission. However, he was conscious, rational and was hemodynamically stable with no evidence of anaphylactic shock during the admission to the local hospital. He was initially treated with parenteral hydrocortisone 200mg, chlorpheniramine 10mg and a bolus of normal saline 500ml and was subsequently transferred to Teaching Hospital Jaffna, the only tertiary care center of the region.

On admission to the teaching hospital Jaffna he was asymptomatic. However, on day one of the admission he complained of generalized myalgia. Basic laboratory investigations revealed elevated aspartate aminotransferase (AST) from 921U/l to 1587 U/l (16-63) and serum creatinine 87µmol/l to 117µmol/l raising the possibility of an ongoing rhabdomyolysis and was subsequently confirmed by a creatinine phosphokinase (CPK) level of 40,110U/l.

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He was treated with intravenous normal saline and encouraged to take oral fluid to maintain an input of more than 2ml/kg/hr. From day two onwards the AST and creatinine levels started to improve and he was discharged from hospital on day 5. The review on day 12 following the event revealed normalization of AST and serum creatinine levels.

Discussion

Hymenoptera is a large order of insects comprising over 150,000 of living species. The Hymenoptera are divided into Symphita and Apocrita (5). The wasps and bees are classified under the sub order Apocrita (5). The common sequel of the wasp and bee stings is a mild local reaction. However rare and serious complications include, angioedema, vasculitis, encephalitis, intravascular hemolysis, rhabdomyolysis, acute tubular injury and acute myocardial infarction (6). The venom contains serotonin, histamine, kinin, and mastoparans causing systemic reactions (3). Patients with more than 50 stings at a time are more susceptible to systemic reactions (7). Mechanisms by which acute kidney injury could be precipitated are hypotension, anaphylaxis or secondary to rhabdomyolysis (2). Forced alkaline diuresis and hemodialysis are the important treatment modalities recommended to prevent acute kidney injury following rhabdomyolysis (2). The patient mentioned in this case report was ensured with adequate hydration to prevent pre renal failure and as a consequence he made a complete clinical recovery.

There is always a high possibility to overlook rhabdomyolysis in a patient with multiple bee stings in a busy medical ward in the absence of any obvious risk predictors like hypotension as this is an insidious and delayed complication. Hence it is of utmost importance to anticipate and follow them up with laboratory markers to detect this life threatening complication early in the course and

intervene appropriately to prevent progression to acute renal failure and its devastating sequelae by simple supportive measures.

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