ACUTE DISSEMINATED ENCEPHALOMYELITIS AFTER WASP BITE: A RARE PRESENTATION

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INTRODUCTION

Wasp (Hymenoptera) stings are common especially during summer and rainy season and can cause severe allergic reactions ranging from local reactions to anaphylactic shock or even death. However, neurological complications like acute disseminated encephalomyelitis (ADEM) after single or multiple stings are uncommon. ADEM is an immune-mediated inflammatory demyelinating condition that predominately affects the white matter of the brain and spinal cord. The disorder manifests as an acute-onset encephalopathy associated with multi-focal neurologic deficit and is typically self-limiting. [1, 2, 3] Most cases of ADEM possibly occur as the result of an inflammatory response provoked by pre-pubertal infection with a virus, vaccine, or other infectious agent.

CASE REPORT

A 24 year old male, of average socioeconomic status presented in medical emergency with chief complaints of severe headache for seven days and difficulty in walking for five days. Two days prior to onset of these symptoms, had a bite of wasp on his right neck. The headache was holocranial, moderate to severe, bursting character, occasionally associated with nausea. After that became ataxic and there was slurring of speech. There was no history of impairment of consciousness, diplopia/ loss of vision/ dizziness/ vertigo, convulsion/ seizure, bladder & bowel involvement. On general examination pulse – 80 / min, blood pressure of 120/70 mmHg. Central nervous system examination was normal except brisk reflexes and presence of cerebellar ataxia. On investigation complete blood count, C-reactive protein, electrolytes, renal and hepatic function tests, urinanalysis, serum vitamin B12 and folic acid was within normal limit. Examination of the cerebrospinal fluid (CSF) showed normal protein and glucose without pleocytosis and oligoclonal bands. Serological studies for HIV, herpes simplex virus (HSV), hepatitis viruses were negative. Magnetic resonance imaging (MRI) of the brain revealed multiple bilateral subcortical and periventricular white matter hyperintense lesions on T2-weighted images and hypointense in T1-weighted images with no enhancement of the lesions after administration of gadolinium. Based on the clinical and MRI findings, the diagnosis of ADEM was suggested. Patient started on intravenous Methylprednisolone 1000 mg / day for 5 days, which resulted in clinical improvement. At time of discharge patient was put on oral prednisolone for 14 days. The clinical follow up after two months showed no neurological abnormalities.
DISCUSSION

Wasps belong to the order of Hymenoptera and also include ants, apids (bees and bumble bees), vespids (wasps, hornets and yellow jackets). Usually the symptoms are mild and vary from local reactions to more generalised systemic reaction causing discomfort and morbidity. Even death attributed to hypersensitivity anaphylactic reaction is reported. Next to cutaneous reactions (pruritus, urticaria and angioedema), systemic symptoms such as gastro-intestinal discomfort with nausea, vomiting and diarrhoea, cardiopulmonary signs with bronchospasm, hypotension and arrhythmias and neurological symptoms like light headedness and dizziness are seen. Although rare, several serious neurological manifestations and cerebral lesions of hymenoptera stings have been reported. Encephalitis, peripheral neuritis, optic neuropathy, myasthenia gravis, cerebral infarction, acute inflammatory polyradiculopathy, acute disseminated encephalomyelitis, and encephalomyeloradiculo neuritis have all been reported. Mostly, patients with neurological complications significantly improved or completely recovered after corticosteroid treatment, however permanent neurological deficits were also reported.

ADEM is an immune-mediated inflammatory demyelinating condition usually occurring after certain infection or vaccination, with clinical evolution over 1 week to 3 months, including focal-multifocal demyelinating syndromes and subacute encephalopathy. Radiological investigation shows multiple white matter lesions (rarely a single large lesion), located supra- or infra-tentorial or both, generally including at least one large (1 - 2 cm diameter) lesion, variably enhanced with gadolinium. Spinal cord lesions may or may not be present, tend to be longitudinal. Pathophysiology of ADEM is still completely unknown. Ridolo E, et al. showed a patient with acute polyradiculoneuropathy after hymenoptera stings. Boz, et al. described a case of ADEM after bee sting. Our patient experienced complex neurological symptoms including ataxia, facial sensational changes, and headache seven days after wasp bite. In addition to radiological findings and exclusion of other pathologies, the diagnosis of ADEM was made. Positive response to corticosteroid therapy supports this hypothesis.

We suggest that ADEM could be delayed neurological, immune mediated, complication of wasp bite. Intravenous immunoglobulins or even plasmapheresis should be tried in the treatment.
CONFLICT OF INTEREST: Nil.

REFERENCES