



CARPAL TUNNEL SYNDROME: AN ATYPICAL NEUROLOGICAL PRESENTATION OF DENGUE

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ABSTRACT Dengue is the most common mosquito-borne viral infection worldwide. There is increased evidence for dengue virus neurotropism, and neurological manifestations could make part of the clinical picture of dengue virus infection in at least 0.5%–20% of symptomatic cases[1]. In this case report we present such a patient diagnosed with Dengue Shock Syndrome, who was treated successfully in our hospital but after discharge later on presented with an atypical complication of Dengue infection in the form of Carpal Tunnel Syndrome.

KEYWORDS :

BACKGROUND:

Dengue fever is a mosquito-borne flaviviral infection endemic in the tropics and subtropics affecting up to 100 million people per year. The presentation of Dengue fever can be protean; infection with the dengue virus can be either asymptomatic, or can present solely as fever. A subset of patients can progress to involve hemorrhagic manifestations such as ecchymoses, gastrointestinal bleeding, or epistaxis. When hemorrhagic symptoms occur with plasma leakage the most lethal form of the disease, dengue hemorrhagic fever with Dengue Shock syndrome(DSS) can occur.

In recent years, the virological characteristics of dengue viruses have been changing, resulting in widespread neurological complications.

Here we present such a typical case of DSS but with an atypical complication.

CASE PRESENTATION:

This 56 years old man was brought to the Emergency of ESIC Hospital, Joka in a state of unresponsiveness of few hours duration. Quick examination revealed a narrow rapid pulse, non recordable BP and cold periphery. He was resuscitated aggressively with iv crystalloids and inotropes. Within a span of few hours the vitals got stabilised and the patient regained consciousness. Detailed history and examination revealed the patient had fever for 4 days with generalised purpuric rash and bleeding per rectum for 1 day. Wet purpura was present. Tourniquet test was found to be positive. Blood investigations revealed severe anemia with thrombocytopenia, mildly raised liver enzymes with positive Dengue IgM and IgG (ELISA) test. He was diagnosed with Dengue Shock Syndrome and was managed conservatively with supportive therapies. During the course of hospital stay for about 1 month he received 6 units of packed cells and 18 units of RDP.

On follow up visit 2 weeks after discharge the patient complained of tingling sensation and numbness of both hands. Examination revealed normal sensory and motor functions of intrinsic and extrinsic muscles of hand. NCV was advised and the test revealed prolonged distal latencies with normal CMAP amplitude and conduction velocities; and delayed latencies with normal SNAP amplitude of bilateral Median Nerve suggestive of B/L Median nerve entrapment neuropathy.

DISCUSSION:

Neurological signs were first reported in 1976 as atypical symptoms of dengue infection^[2]; their incidence rates varied from 0.5 to 20% in recent years^[1].

The neurological complication in dengue infection has been hypothesized through three pathogenic mechanisms: (1) concerned with neurotropism leading to encephalitis, meningitis, myositis and myelitis; (2) systemic complications resulting in encephalopathy, stroke and hypokalemic paralysis and; (3) postinfectious immune-mediated acute disseminated encephalomyelitis, Guillain Barre syndrome and optic neuritis^[3].

Reviews indicated that peripheral nervous system signs comprise 5% of neurological symptoms in dengue fever. They usually occur later than CNS manifestations^[4]. The associated peripheral syndromes mainly include Guillain-Barre syndrome, hypokalemic quadriplegia or plegia, mononeuritis multiplex, brachial plexitis, diaphragmatic paralysis, and myositis^[5].

Infact in our institution an observational study over a span of 2 years (2015-2016) was conducted with 202 Dengue virus infected patients comparing the clinical parameters of varied presentation of Dengue Virus. In this study most common neurological presentation of dengue virus infection was encephalopathy which was found in 30% of patients; also a rare presentation of reversible isolated orbicularis oculi weakness was mentioned^[6]. However in this case study no case of Carpal Tunnel Syndrome was observed as a complication of Dengue infection.

In a case series study of individuals who, after having a suspected arboviral disease during an epidemic outbreak in north-eastern Brazil, presented symptoms of acroparesthesia; 29 individuals were evaluated in two limbs with NCS Study, giving a total of 58 median nerves, of which 54 showed changes compatible with CTS^[7].

In this case report, we observed an atypical neurological complication of dengue fever in the form of Carpal Tunnel Syndrome (CTS).

Carpal tunnel syndrome (CTS) is the most prevalent compressive neuropathy, and usually presents with pain and paresthesia, especially in the middle and index fingers, which worsen during the night^[8].

CTS is a result of the narrowing of the carpal tunnel, anteriorly composed of the transverse ligament, medially by the pisiform and the hook of the hamate, and laterally by the scaphoid and medial trapezium. In addition to familial predisposition, clinical conditions such as diabetes, hypothyroidism, osteoarthritis, amyloidosis, post-trauma and obesity may be associated with CTS. Infectious diseases have also been implicated as the cause of CTS, including bacterial, fungal and viral causes⁽⁹⁾.

The case reported here clearly demonstrate that the symptoms of acroparesthesia started after the infectious condition in an early stage of the disease. The clinical features of acroparesthesia are quite similar to the clinical picture of median nerve compression in idiopathic carpal tunnel syndrome confirmed by nerve conduction studies.

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