Unusual presentation of more common disease/injury

An atypical case of dengue haemorrhagic fever presenting as quadriparesis due to compressive myelopathy

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Summary

Dengue haemorrhagic fever is a serious presentation of dengue viral infection. Case reports of cerebral haemorrhage due to dengue are rare. The authors report a rare case of dengue haemorrhagic fever presenting with fever and acute onset progressive quadriparesis of the upper motor neuron type. Rare cases of quadriparesis in dengue fever have been reported in the literature due to myositis, Guillain–Barre syndrome, myelitis and hypokalaemia. This case on investigations was found to have extramedullary compression due to haematoma in the cervical region as the cause of quadriparesis.

BACKGROUND

This case is an unusual presentation of central nervous system involvement in dengue fever. We could not find any other case report of this. Early detection of such clinical symptoms may help in the management and cure of this disease as in our patient.

CASE PRESENTATION

A 40-year-old man presented in September 2010 with complaints of fever and myalgia for 5 days, neck pain and weakness in the left upper and lower limbs for 2 days. His illness overlapped a dengue outbreak that occurred from July to November in North India. At presentation, power in the left upper and lower limbs was 3/5. The next day his weakness progressed to involve all four limbs with power of 4/5 in the right upper and lower limbs and he also developed retention of urine. Superficial reflexes were absent; planters were equivocal on both sides. Deep reflexes, including biceps jerk, were exaggerated, indicating that the upper level of motor weakness was above C5. On sensory examination, there was loss of pain, temperature and posterior column sensations without dissociation. All cranial nerves were intact and higher cortical functions were maintained. Patient's vitals and laboratory investigations during hospital stay are summarised in table 1. Physical examination showed high fever (102°F) and mild conjunctival injection.

DIFFERENTIAL DIAGNOSIS

Transverse myelitis, Guillain–Barre syndrome, hypokalaemia and myositis.

TREATMENT

Three units of platelets were transfused at time of admission and the patient was asked to arrange two more units of single donor platelets prior to the evacuation of the haematoma in the neurosurgery department. Due to financial constraints and delay in relatives consent for surgery, procedure was done on the third post-admission day.

OUTCOME AND FOLLOW-UP

The weakness improved dramatically after the evacuation of the haematoma and there was no complication from the neurosurgical procedure. At the time of discharge, he was able to walk with support, feed himself and his bladder and bowel functions were under voluntary control, and limb strengthening exercises were advised without any specific medication. The weakness had completely improved during his follow-up after a month from discharge. The patient is still under our follow-up monthly and doing well.

DISCUSSION

The most severe sequelae of dengue infection are dengue haemorrhagic fever and dengue shock syndrome. Neurological manifestations as atypical manifestations in dengue infection were first reported in 1976. Neurological manifestations, such as headache, seizures, altered sensorium and behavioural disturbances as part of encephalitis or aseptic meningitis, in patients with dengue infection have been described. Cases of mononeuropathies, polyneuropathies, Guillain–Barre syndrome, myelitis, thrombosis and intracranial haemorrhage have been reported.^{1 2} However, there is a paucity of literature documenting quadriparesis; causes reported are myositis, Guillain–Barre syndrome^{3–5} and a few cases of hypokalaemia.⁶ A thorough search found no articles on compressive myelopathies in dengue fever due to spontaneous bleed; a case of focal subarachnoid haemorrhage in a patient with dengue with transient thrombocytopenia has been reported.⁷

In the present case, the patient presented with symptoms suggestive of a neurological involvement. A number of investigations were done. The patient presented during a dengue outbreak and he was a resident of a dengue endemic area. His symptoms and routine investigations suggested a clinical picture of dengue fever; the patient's blood was tested for IgM antibodies against dengue virus on admission and repeated on discharge. A positive serology on two occasions confirmed infection by dengue virus. To conclude, neurological manifestations during dengue

Table 1 Patients vitals and laboratory parameters during hospital stay

Clinical and laboratory parameters	At the time of admission	2nd day	3rd day*	4th day	At discharge (10th day)
Temperature (F)	102.2	100.4	99.2	100.5	98.2
Pulse rate (per min)	100	100	90	94	84
Blood pressure (mm Hg)	110/70	112/70	130/84	120/80	116/74
Total leucocytes count (per cc ³)	2800	3200	4400	7900	6700
Thrombocyte count (per mm ³)	9000	30 000	130 000	175 000	280 000
Haematocrit (%)	48.7	40	38	38	35
IgM dengue (qualitative by capture ELISA)	Positive	ND	ND	ND	Positive
Malaria parasite card and smear	Negative	Negative	ND	ND	ND
ALT (IU/l)	21	ND	ND	ND	30
AST (IU/l)	14	ND	ND	ND	18
Prothrombin time (in seconds, control 14 s)	14	15	13	ND	ND
Partial thromboplastin time	30	32	ND	ND	ND
International normalised ratio	1.1	1.16	1.1	ND	ND
ANA (by IFA Hep 2 method)	ND	ND	ND	Negative	ND
CT scan head and brain	Normal	ND	ND	ND	ND
MRI cervical region	ND	Done*	ND	ND	ND

*MRI cervical region showed an extradural isointense mass at C3-6 on T1WI (figure 1) and hypointense on T2WI suggestive of acute haematoma. ALT, alanine transaminase; ANA, antinuclear antibody; AST, aspartate transaminase; ND, not done.

Figure 1 Sagittal view of cervical MRI shows hypointense extradural mass compressing C3-6 (A); a transverse section through the C4 and C5-6 vertebrae shows an isointense mass compressing the left side of the cervical cord (B and C).

infection are not uncommon. Cases of quadriparesis are not only attributed to myositis, Guillain-Barré syndrome and hypokalaemia, but can also occur due to compressive myelopathy resulting from spontaneous haematoma as in our case (figure 1). Early intervention and prompt supportive care can reduce the morbidity and mortality of these cases.

Learning points

- ▶ A variety of neurological manifestations can occur in dengue fever.
- ▶ Compressive myelopathy due to haematoma in the cervical region can be a rare presentation of dengue haemorrhagic fever.
- ▶ Early diagnosis and intervention can prevent neurological disability.

Competing interests None.

Patient consent Obtained.

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