



A Rare Case of Expanded Dengue Syndrome with Hypokalemic Paralysis: A Case Report

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Abstract

Dengue is a mosquito-borne viral disease that has rapidly spread in all regions of WHO in recent years. The World Health Organization estimates the number of infections across the globe to be 50 million per year. Dengue fever has mostly an uncomplicated course of illness; but few develop complications and unusual manifestations. The World Health Organization (WHO) has coined the term expanded dengue to describe cases which do not fall into either dengue shock syndrome or dengue hemorrhagic fever. We report a case of hypokalemic paralysis with dengue fever.

Introduction

Dengue has interminable number of symptoms and complications. Expanded dengue is a terminology developed in the WHO guidelines of year 2012^[1]. The spectrum of end organ damage ranges from hyper coaguable state to hemorrhagic state and is life threatening. Neurological involvement in dengue fever is heterogeneous. It can occur acutely within the first two days of infection^[2]. Hypokalemic paralysis is a rare manifestation and probably relates to redistribution of potassium in the cells. Paralysis responds promptly to potassium replacement^[3].

Case Report

A 36 year old male presented to us with complaints of fever since 2 days and weakness of

both the lower limbs since a day. Patient had no other comorbidities and was otherwise normal. He was pursuing his daily activity without any complaints prior the presenting symptoms. No significant past and family history. On examination, Patient was conscious and oriented, vitals were stable. General physical examination showed no bleeding manifestations. Central nervous system examination showed motor component involvement with hypotonia and both proximal and distal muscle weakness with grade 2/5; Deep tendon reflexes were absent and plantar reflex were bilateral no response. Bilateral upper limb tone and power were normal and Deep tendon reflexes were ++. Sensory system was normal and there were no signs of meningeal irritation. Other system examination was

unremarkable. Laboratory investigations showed stable haematocrit, leucopenia and thrombocytopenia with Hypokalemia with Potassium of 2.6 and ECG showed Flattened T waves. Dengue serology showed NS1Ag and IGM Positive status.

MRI Brain with spine screening was normal and CSF fluid analysis was unremarkable and showed no evidence of meningitis.

A diagnosis of Expanded dengue syndrome with hypokalemic paralysis was done and Potassium was corrected and was treated conservatively. Platelet and haematocrit were monitored and Patient improved gradually with normal muscle tone and power and platelet improved to normal limits. Recovery was uneventful and at discharge, patient's vitals were stable.

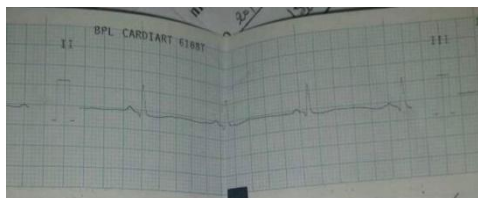


Figure 1 ECG showing flattened T waves

Results:	Quesno+	Units	High	Low
pO2	7.418	mmHg		Low
pCO2	31.7	mmHg	High	
pH	7.38			
CHCO3-	23.5	mmol/L	Low	
BE(ecf)	-4.0	mmol/L	Low	
sSO2	99.0	%	High	

Results:	Chem+	Units	High	Low
Na+	144	mmol/L		Low
K+	2.2	mmol/L		Low
Ca++	1.10	mmol/L		Low
Cl-	109	mmol/L	High	
ctCO2	21.4	mmol/L	Low	
AGapK	17	mmol/L		
Hct	37	%		Low
Hgb	12.5	g/dL		
BE(b)	-3.2	mmol/L	Low	

Results:	Meta+	Units	High	Low
Glu	205	mg/dL	High	
Lac	2.14	mg/dL	High	
Crea	1.02	mg/dL		

Reference Ranges	Units	High	Low
pO2	85.0 - 108.0	mmHg	
pCO2	35.0 - 48.0	mmHg	
CHCO3-	21.0 - 28.0	mmol/L	
BE(ecf)	-2.0 - 3.0	mmol/L	
sSO2	94.0 - 99.0	%	
K+	3.5 - 4.5	mmol/L	
Ca++	1.15 - 1.33	mmol/L	
Cl-	98 - 107	mmol/L	
ctCO2	22.0 - 29.0	mmol/L	
Hct	38 - 51	%	
BE(b)	-2.0 - 3.0	mmol/L	
Glu	74 - 100	mg/dL	
Lac	0.56 - 1.39	mmol/L	

Figure 2 ABG Showing Hypokalemia

CLINICAL PATHOLOGY REPORT			
Specimen : Body Fluid-Pleural/Ascitic/CSF			
Lab Test	Value	Unit	Biological Reference Interval
Body Fluid Analysis			
Volume	1.0		
Colour	Colourless		
Appearance	Clear		
Cell Count	No cells		
Cell Type			
Polymorphs	-		
RBCs	-		
Lymphocytes	-		
Eosinophils	-		
Macrophages	-		
Others	No cells seen.		

*** End of the Report ***

Figure 3-Normal CSF Fluid Analysis

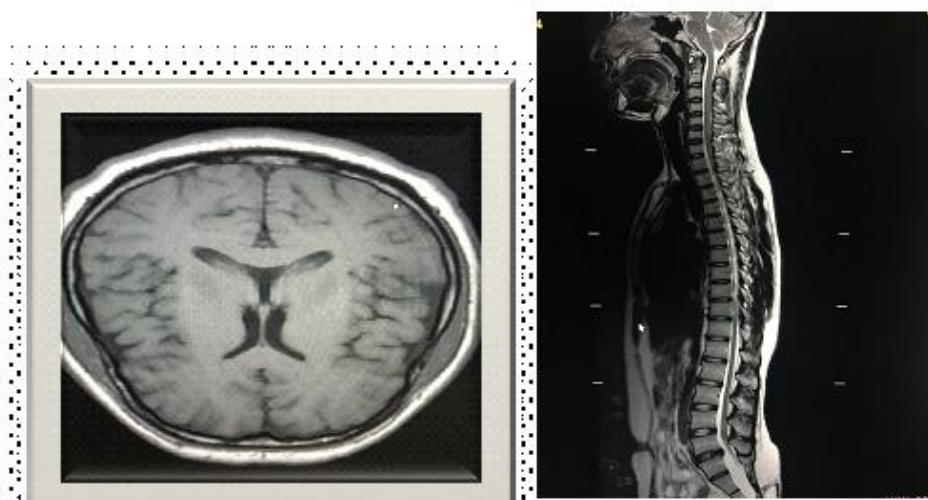


Figure 4 Normal MRI Brain with Spine Screening

Discussion

Neurological complications occur in 0.5-6% of the cases with dengue fever^[4]. Neurological manifestations of dengue include encephalitis, encephalopathy, aseptic meningitis, mononeuropathies, polyneuropathies, Guillain-Barre syndrome, myelitis, intracranial haemorrhage and thrombosis^[5].

Hypokalemia in association with infectious diseases, dengue fever in particular, have been reported and documented in up to 28% of serologically proven cases of dengue infection^[6,7]. Few literature suggest that the cause of hypokalemia maybe due to hypokalemia could be either due to redistribution of potassium in cells or transient renal tubular abnormalities leading to

increased urinary potassium wasting or increased catecholamine levels secondary to infections, secondary insulin resistance leading to intracellular shift of potassium^[3].

Conclusion

Dengue fever is emerging as a disease of momentous public health issue throughout the globe. Neurological complications of dengue infection are ubiquitous and may involve almost all parts of the nervous system through numerous pathogenetic mechanisms. In this case report, we have thrown light on a rare and atypical manifestation of dengue fever: Hypokalemic paralysis secondary to dengue fever. Prompt investigation and timely diagnosis and treatment is very essential in reducing the mortality and morbidity associated with such cases.

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