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Original Research Article

An Unusual Case of Encephalopathy

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Abstract:

Melioidosis is caused by a gram-negative bacterium called Burkholderia pseudomallei which can be contracted through contaminated soil and water. Mostly prevalent in Southeast Asia and south India, northeast India. It has varied presentations like pneumonia, septicaemia, abscess, encephalopathy, arthritis and so also fulminant and chronic courses of illness. A 40 year old, diabetic male presented with high grade fever for 10 days, burning micturition for 10 days and hiccups for 2 days and next day developed altered sensorium, irrelevant talks. Patient was febrile (temp. 101.4°F), oriented to time, place and person but the next day he was disoriented euphoric. Lab investigations showed pancytopenia, Hyponatremia (Na+ 126), deranged KFT (creatinine -2), deranged LFT, raised CRP (58). CSF culture was negative. MRI brain was showing Grade 1 Fazekas white matter changes. Blood CST showed Burkholderia pseudomallei. Gram negative bacilli were seen on Gram stain. He was treated with inj Meropenem, inj Doxycycline, inj Ceftazidime Avibactam, oral Amoxicillin and clavulanic acid. Eventually his sensorium improved, was conscious oriented, fever subsided. The patient was discharged with oral Cotrimoxazole DS (800/160) as maintenance therapy for 6 months and is currently doing well.

Keywords: Burkholderia pseudomallei, Melioidosis, Encephalopathy.

Introduction

Melioidosis, also known as Whitmore's disease, is caused by a gram-negative bacterium called Burkholderia pseudomallei. It can be contracted through contaminated soil and water. Mostly prevalent in south East Asia [1] and south India [2,3].Some isolated cases also been reported from northeast India[2,4]. It has varied presentations like pneumonia, septicaemia, abscess, encephalopathy, arthritis and so also fulminant and chronic course of illness. Early suspicion and diagnosis and proper antimicrobial therapy is required to reduce mortality and morbidity.

Here we report a case of Melioidosis presented as Encephalopathy.

Case report:

A 40-year-old, diabetic male from Badharghat, Agartala who is a farmer presented at casualty with high grade fever with chills, rigor and burning micturition for 10 days and hiccups for 2 days. Next day the patient develops altered sensorium, irrelevant talks. He was admitted to a state hospital and was treated with antibiotics for UTI, but fever didn't subside, and his sensorium deteriorated along with hiccups. He was admitted to our hospital. On examination, the patient was febrile (temp. 101.4^0 F), disoriented to time, place and person but was euphoric. BP was 120/90, PR- 90 / minutes, RR-30/ min. Neck rigidity and Brudzinski sign were absent. Per abdomen examination revealed hepatomegaly. All other systemic examination was within normal limits.

Lab investigations showed pancytopenia, Hyponatremia (Na+ 126mmol/ L), deranged KFT (creatinine -2.0 mg/dl), deranged LFT, raised CRP (58). All the fever panels (Malaria QBC, antigen kit, Typhoid IgM ELISA, Scrub typhus IgM ELISA, Dengue NS1, Mac ELISA) were negative. CSF analysis showed cells 3-4 / cu.mm, protein 70 mg/dl, sugar of 112 mg/ dl (with corresponding blood sugar 182 mg/dl), ADA and culture were negative. USG of abdomen revealed-hepatosplenomegaly and raise renal cortical echotexture. MRI brain showed Grade 1 Fazekas

white matter changes (Fig.1) Urine CST showed no growth. Blood CST showed Gram negative bacilli on Gram stain with bipolar staining (safety pin appearance). Culture on Ashdown media grew Burkholderia pseudomallei (Fig.2) sensitive to Meropenem, Doxycycline, Amoxicillin and clavulanic acid. The patient was treated with inj Meropenem, and inj Doxycycline for three weeks. Four unit of platelet concentrate was transfused in view of thrombocytopenia (platelet -25000/cu. mm). After day six of antibiotics, his sensorium improved, was conscious oriented, fever subsided. Eventually lab parameters like TLC increased, creatinine reduced, LFT improved, and hyponatremia was corrected. He was discharged on day 24 with oral Cotrimoxazole DS (800/160) as maintenance therapy for 6 months.

Table 1: Laboratory findings

	24-7-24	**26-7-24**	**27-7-24**	**28-7-24**	**29-7-24**	**30-7-24**	**3-8-24**	**6-8-24**
Hb		11.3	12.4			10.3	7.9	
TC		2600	2850			2000	3100	
DC		78/16/4/1.5/1.6					65/29/4/0/2	
ESR		45				58	62	
Platelet count		45000		25000	35000	60000	96000	
Urea		84.5	76		112.7	85.1	81.2	74.1
Creatinine		2	2.4		1.8	1.5	1.5	1.3
Sodium	126	135			142	147		139
Potassium	4	3.2			3.7			4.7
Magnesium	1	1.9					1.5	
T. Protein		5.1						
Alb/ Glb		2.5/2.6						
T.Bilirubin		1.36						
Urine RE		Sug3+, pro-3+, PC-1-2, RBC- 20-25						
CRP		197.4					58.6	
Dengue NS1		NR						
Malaria		NR						
Scrub typhus IGM		NR						
Typhidot IGM		NR						
Dengue MAC elisa		NR						
Urine CST		Polybacterial						
Blood CST							B. pseudomallei	

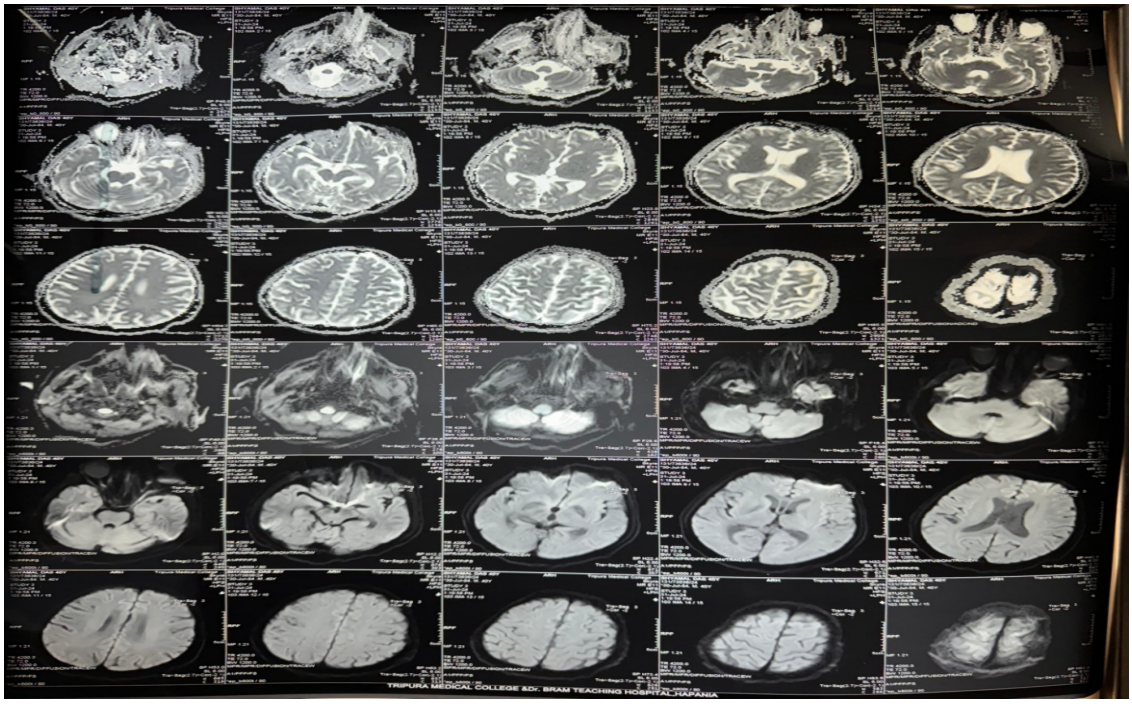

Figure 1: MRI brain shows Grade 1 Fazeki's white matter changes

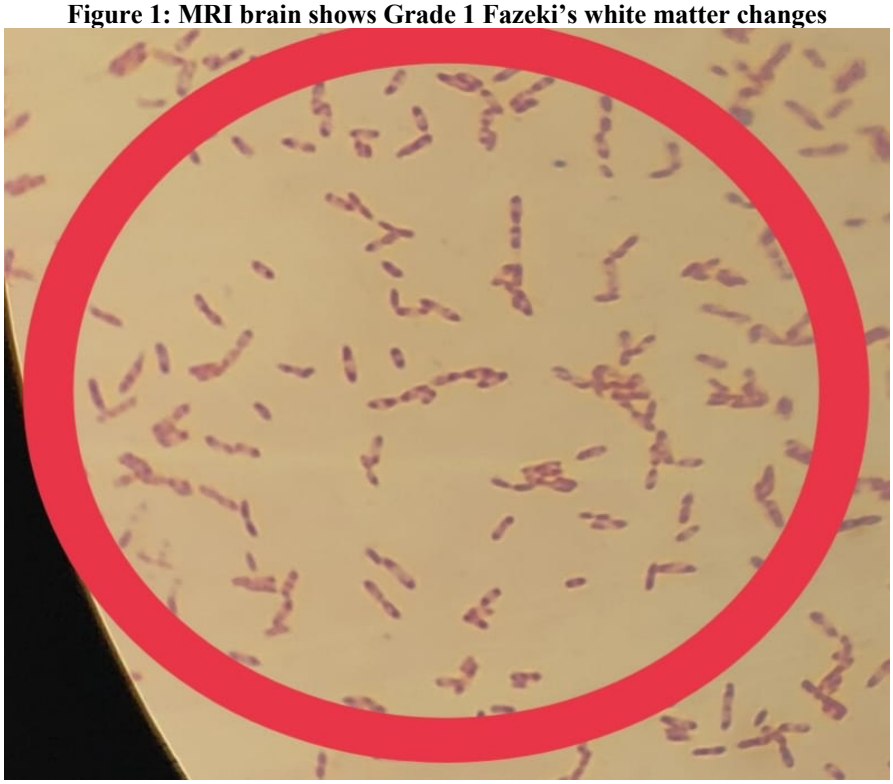

Figure 2: Gram negative bacilli with safety pin appearance

Discussion:

B. pseudomallei is an environmental inhabitant and widely disseminated in water, soil, and paddy fieids. Human infection occurs through direct inoculation through damaged skin. Our patient was a farmer, so exposure could be from paddy fields as he used to walk barefoot. Active infection have been predisposed in patients with underlying conditions like Diabetes mellitus, renal disease, [5] HIV positive cases [6].

Melioidosis is a systemic manifestation with pulmonary involvement being the commonest [7,8]. Bone involvement has reported in 16% cases [9] and only 5% has CNS involvement. Drug of choice is ceftazidime and carbapenems [10]. The patient was treated with the same and put on Triomethoprim – Sulphamethoxazole as maintenance therapy and is doing well.

Conclusion:

The case focuses on the need of early suspicion and evaluation for melioidosis in a patient of unexplained encephalopathy with underlying comorbidities like Diabetes mellitus and renal disease.

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