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Acute Necrotizing Encephalitis- A Rare Entity

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Short Communication

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Abstract

Acute necrotizing encephalitis is a disease characterized fever and infection associated with with rapid alteration of consciousness. Exact etiology remains unknown. Though the disease is nearly exclusively seen in East Asian countries but sporadic cases have been reported from all around the world. Neuroimaging shows symmetric lesions involving the thalami, brainstem, cerebellum, and white matter. Management is only supportive. This condition accompanies a poor prognosis with high morbidity and mortality rates. We report a case of 20 year old female who presented with presented with acute necrotising encephalitis.

Keywords: Acute necrotizing encephalitis, consciousness, thalami, management

Short Communication

Acute necrotizing encephalitis is characterized by multiple, symmetrical lesions in the thalami, putamina, cerebral and cerebellar white matter, and brain stem tegmentum [1]. Sporadic cases have been reported worldwide and the etiology remains unknown. However, infections such as mycoplasma, influenza virus, herpes simplex virus, and human herpes virus-6 commonly intensify the disease. It is believed to metabolic and immune-mediated reactions. Cytokines such as tumor necrotizing factor-α and interleukins 1 and 6 can intensify the disease [2].

20 year old female presented to our emergency department with history of moderate fever seven days back followed by altered sensorium. On examination, patient was drowsy and no other neurological deficit. Vitals were maintained. Laboratory investigations revealed leukocytosis, thrombocytopenia and transaminitis with normal ammonia levels. Plain computed tomography brain (Figure 1) revealed symmetrical hypodensity in the thalami which appeared swollen. A centrally located hyperdense area was seen within the hypodensity on both sides resembling "owl's eye appearance". There was no post contrast parenchymal or leptomeningeal enhancement (Figure 2). The dural venous sinuses and deep veins were normally opacified with no evidence of any filling defect. Based on the clinical, imaging and laboratory findings a diagnosis of acute necrotizing encephalitis (ANE) was made. Patient was managed with supportive measures including intravenous antibiotics, antiepileptics and rehabilitative measures such as physiotherapy and speech therapy.

ANE is a rare but well recognized entity which usually follows viral infection. It is a clinicoradiologic diagnosis with supportive evidence from laboratory investigations. The sporadic form presents with a prodromal phase of viral infection followed by acute encephalopathy. There is

characteristically symmetrical involvement of the thalami which appear hypodense on CT images with foci of haemorrhage. MRI shows bilateral thalamic T2 hyperintensity with areas of necrosis and blooming suggestive of haemorrhage. In addition brainstem, cerebral and cerebellar involvements are also well known [3]. It is associated with transaminitis without hyperammonemia. Thrombocytopenia indicates a bad prognosis. Cytokine storm following viral infection is proposed as likely etiology. Prognosis varies from complete recovery in some cases to significant morbidity and mortality in others. In previous reports mortality rate was about 30% and less than 10% of patients recovered completely while the neurological sequelae were frequent in patients who survived [4,5].

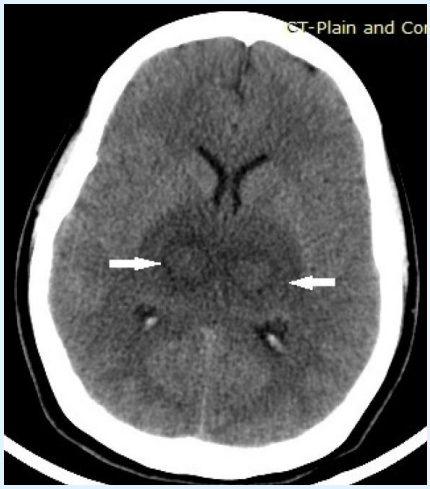

Figure 1: Plain computed tomography brain showing symmetrical hypodensity in the thalami which appeared swollen and centrally located hyperdense area within the hypodensity on both sides resembling "owl's eye appearance".

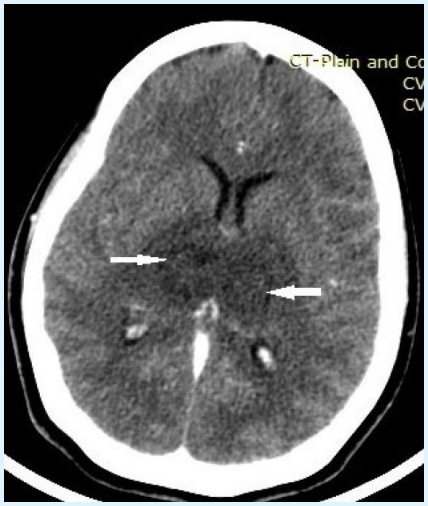

Figure 2: There was no post contrast parenchymal or leptomeningeal enhancement or filling defect in the sinuses.

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