

" FIRES IN THE BRAIN : A BATTLE LOST IN FLAMES "



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INTRODUCTION

Febrile infection-related epilepsy syndrome (FIRES) is an extremely rare epileptic encephalopathy of unknown etiology, affecting previously healthy children following a nonspecific febrile illness.

CASE DESCRIPTION

An 11-year-old Malay boy with no prior medical history presented to the Emergency and Trauma Department (ETD) with a two-day history of abdominal pain and upper respiratory tract infection (URTI) symptoms. During his evaluation in the ETD, he developed multiple episodes of generalized tonic-clonic seizures consistent with status epilepticus (SE). Physical examination was unremarkable. Initial computed tomography (CT) of the brain revealed no intracranial hemorrhage or structural abnormalities. He was administered an intravenous loading dose of phenytoin (20 mg/kg) and subsequently admitted to the pediatric ward with a working diagnosis of meningoencephalitis. In ward, the patient experienced recurrent seizures, necessitating endotracheal intubation for cerebral protection. Electroencephalogram (EEG) demonstrated frequent bilateral hemispheric epileptic discharges and multiple focal seizures, indicating ongoing seizure activity. Magnetic resonance angiography (MRA) with time-of-flight (TOF) imaging showed no vascular abnormalities. Despite escalation of anti-seizure medications, initiation of immunomodulatory therapy, and commencement of the ketogenic diet, the patient continued to experience intractable seizures. His neurological condition progressively deteriorated, and he unfortunately succumbed to the illness after two months of hospitalization.

DISCUSSION

FIRES is a subcategory of new-onset refractory status epilepticus (NORSE). It is considered as "one in a million" disorder in children with male predominance, although no definitive hereditary or familial factors have been identified. The diagnosis of FIRES is primarily clinical, typically made in children with a history of preceding fever who subsequently develop refractory SE, after excluding other potential etiologies of SE. While the pathophysiology of FIRES remains an area of active research, the treatment of FIRES is complex requiring a multidisciplinary approach. Early and aggressive seizure control using high-dose anesthetics and anti-seizure medications is essential. Immunomodulatory Therapy and ketogenic diet has shown promise in reducing seizure frequency. Supportive care in an intensive care setting, along with continuous EEG monitoring and early rehabilitation, is critical for optimizing outcomes, though long-term neurological sequelae remain common.

CONCLUSION

To date, the treatment of FIRES represents a significant challenge for clinicians with low success rates. Early recognition of FIRES is crucial for multidisciplinary consultations with other centres to coordinate therapeutic strategies and facilitating timely transfer to a specialized tertiary centre.

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KEYWORDS

FIRES, ultrasound

