Clinical Brief

Relapse of Herpes Simplex Encephalitis Presenting as Choreoathetosis

Narendra Rathi and Akanksha Rathi[1]

Rathi Children's Hospital and Maternity Home, Civil Lines, Akola, M.S. and [1]Department of Pediatrics, Seth G.S. Medical College and KEM, Hospital, Mumbai, India

ABSTRACT

We report a case of herpes simplex virus (HSV) encephalitis (HSE) in an 11-year-old boy who recovered with acyclovir therapy but developed relapse after 2 weeks. Choreoathetosis was the presenting feature of relapse. Response to antiinflammatory treatment was excellent. To the best of our knowledge, this is the first case of HSE relapse presenting with choreoathetosis reported from India. We describe the patient and review the literature on HSE and HSE relapse. **[Indian J Pediatr 2010; 77 (8) : 901-902]** *E-mail : drnbrathi@ hotmail.com*

***Key words** : HSV encephalitis; Relapse; Choreoathetosis*

HSV is the most common cause of fatal sporadic encephalitis in children. Early treatment with acyclovir helps in reducing morbidity and mortality. Relapses of HSE are known to occur even in adequately treated patients.

REPORT OF CASE

An 11-year-old previously healthy boy presented with fever, headache, vomiting and focal convulsions involving left upper limb since 3 days and progressive drowsiness for last 24 hours. There was no history of rash or ear discharge. On admission, he was febrile (104° F) with pulse rate of 140/min. and his Glassgow coma scale score was 6. There were no signs of meningeal irritation and fundus was normal. With a provisional diagnosis of encephalitis, he was started on oxygen, intravenous (IV) fluids, IV mannitol and IV phosphenytoin. Hematological and biochemical investigations done were unremarkable. CSF examination revealed clear fluid, protein 70mg/dL, glucose 30mg/dL (parallel blood glucose was 98 mg/dL) with pleocytosis (150 lymphocytes/cumm) and noncrenated RBCs 400/cumm. In view of sporadic illness, focal neurological involvemernt and RBCs in nontraumatic CSF, IV acyclovir was started in dose of 20 mg/kg 8 hourly. Magnetic resonance imaging (MRI) scan revealed patchy areas of abnormal hyperintensity within the postero-medial part of both the temporal lobes including the hippocampus, anterior part of right thalamus and corpus callosal splenium on FLAIR images (Fig. 1 and 2). His CSF was sent for HSV DNA PCR, which revealed presence of HSV-1. He received 14 days of IV acyclovir therapy. He recovered well and was asymptomatic on discharge. He was taking phenytoin tablets at home.

This boy came back after 2 weeks with history of involuntary movements involving face, arms and legs. There was no history of fever. He was afebrile, fully conscious and had choreoathetosis. CSF examination was

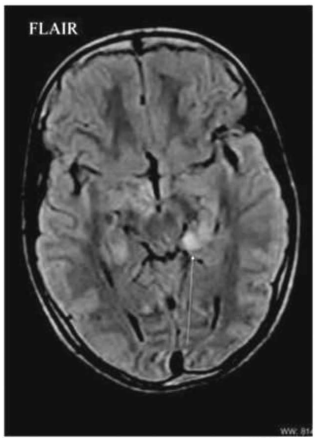

Fig. 1

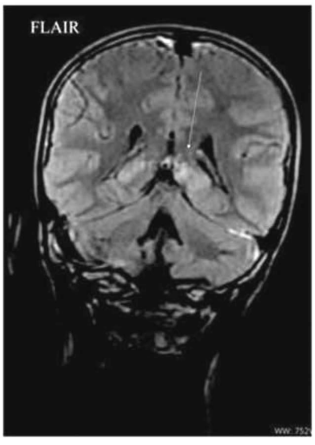

Fig. 2

Figs. 1 and 2. MRI FLAIR images showing patchy hyperintensity in both temporal lobes.

Correspondence and Reprint requests : Dr. Narendra Rathi, Rathi Children Hospital and Maternity Home, Civil Lines, Akola-444001, M.S., India.

[DOI-10.1007/s12098-010-0138-6]

[Received October 9, 2009; Accepted December 18, 2009]

normal except for proteins of 230mg/dL. A repeat MRI scan was normal. A diagnosis of relapse of HSE was kept. In view of absence of fever, presentation within a month of initial episode, raised CSF proteins and normal MRI scan, immunoinflammatory mechanism was postulated and he was put on IV methylprednisone 30mg/kg/day for 3 days followed by oral prednisone 2mg/kg/day for 2 weeks. His involuntary movements started improving from 5th day of antiinflammatory therapy and subsided completely in 2 weeks time. He is normal on follow-up.

DISCUSSION

Incidence of relapse of HSE is variably described as 5%[2] to 26%[1,2] of treated patients. Chorea has been described as an initial sign of relapse in children with HSE. Movement disorders associated with post-herpes virus encephalitis have been infrequently reported in the literature; scattered case reports exist, and the most recent reviews of the topic date back nearly a decade. On literature search, no case of HSE relapse presenting with choreoathetosis has been described from India. Few cases which presented with Kluver Bucy syndrome (comprising of psychic blindness, hypersexuality, altered emotional behaviour, increased oral exploratory behaviour, hypermetamorphosis and memory deficits) are described from India[3] and abroad.[4] In a series of 5 children from France, HSE relapse was characterized clinically by severe ballismic movement disorder associated with fever, impairment of consciousness, and seizures.[5]

Two distinct neurological entities are postulated to present as HSE relapse and differentiating between them is of utmost therapeutic importance. The first entity postulated to be due to immunoinflammatory mechanism presents with choreoathetosis, without fever, within first month of initial HSE, without any evidence of viral replication in brain biopsy, movement disorder persisting for weeks to months, structural neuroimaging showing no lesion in basal ganglia, acyclovir therapy of no use and to be treated with immunosuppressive therapy like steroids or intravenous immunoglobulin.

The second entity is due to resumption of viral replication, presents with fever, several neurodeficits without extrapyramidal involvement, few days to years after initial HSE, with presence of virus in brain biopsy, showing new necrotic hemorrhagic lesions on neuroimaging and showing improvement with acyclovir therapy. Our case, having normal MRI, raised CSF proteins and no pleocytosis, clearly fits in earlier entity, secondary to immunoinflammatory mechanism. CSF DNA PCR was not done during relapse in our case. Peculiar feature in our case was prompt response to antiinflammatory therapy with remission of choreoathetosis in 2 weeks time. Two studies showed that duration and total dosage of acyclovir were significantly shorter in children with early recurrent HSE than in the nonrecurrent group.[6,7] But in our case the child received acyclovir in proper dose and duration. Tiege X De *et al*[6] recommend a minimum of 15 days course of acyclovir, 45 mg/kg/day, to prevent such episodes while recent textbook recommendation is to use 60mg/kg/day as opposed to ageold recommendation of 30mg/kg/day.

CONCLUSIONS

Relapse of HSE can occur even in adequately treated case. As the management issues are entirely different, clinician should differentiate between two distinct mechanisms underlying HSE relapse *i.e.*, immunoinflammatory and viral replication.

Contributions: NR; conceived and designed the study and revised the manuscript for important intellectual content; AR; helped in acquisition of data, in drafting the manuscript and microbiological aspects; NR; will serve as guarantor.

Conflict of Interest : None.

Role of Funding Source: None.

REFERENCES

1. Kimura H, Aso K, Kuzushima K, Hanada N, Shibata M, Morishima T. Relapse of herpes simplex encephalitis in children. *Pediatrics* 1992; 89: 891-894.
2. Ito Y, Kimura H, Yabuta Y *et al*. Exacerbation of herpes simplex encephalitis after successful treatment with acyclovir. *Clin Infect Dis* 2000; 30: 185-187.
3. Pradhan S, Singh MN, Pandey N. Kluver Bucy syndrome in young children. *Clin Neurol Neurosurg* 1998; 100: 254-258.
4. Tiege X De, Laet C, Mazoin N, Christophe C *et al*. Postinfectious immune-mediated encephalitis after pediatric herpes simplex encephalitis. *Brain Dev* 2005; 27: 304-307.
5. Carpentier MAB, Rozenberg F, Dussaix E *et al*. Relapse of Herpes simplex encephalitis. *J Child Neurol* 1995; 10: 363-367.
6. Tiege X De, Rozenberg F, Portes VD *et al*. Herpes simplex encephalitis relapses in children : Differentiation of two neurologic entities. *Neurology* 2003; 61: 241-243.