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SCIENTIFIC LETTER

Alternating Hemiplegia of Childhood with Novel Features

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To the Editor : Alternating hemiplegia of childhood (AHC) is a distinct clinical phenotype, characterized by infantile onset recurrent hemiplegic episodes, developmental delay, epilepsy, and childhood onset extrapyramidal movements [1]. We report a 7-y-old girl, the first genetically confirmed case of AHC from India with few novel features.

A 7-y-old girl presented with recurrent episodes of transient weakness of alternating sides of the body noticed from 9 mo of age. Episodes occurred weekly, lasted between two hours to fifteen days, and were sometimes provoked by fasting. She remained conscious during episodes. She was delayed in all milestones, with the present developmental age of 3–4 y. Seizures were noted since 2 y, with frequency of once every 3–6 mo. She also had abnormal, semi-purposeful limb movements from 4 y. Family and birth history were unremarkable. Examination showed normal head circumference, hypo-pigmented hair and iris (Fig. 1a), joint laxity, appendicular hypotonia, preserved muscle stretch reflexes and choreiform movements. Examination of parents and siblings showed no hypopigmented hair or iris. A clinical diagnosis of Alternating hemiplegia of childhood (AHC) was considered. Therapeutically, child showed poor clinical response to both flunarizine and topiramate with persistent plegic attacks. Hemogram, biochemistry, electrocardiogram and electroencephalogram were normal. Brain MRI revealed right temporal lobe arachnoid cyst (Fig. 1b). Sequencing of common hot spot regions for AHC *i.e.*, exons 17, 18 and 21 and adjacent intronic regions in *ATP1A3* identified a heterozygous mutation in exon 18 c.2443G > A, p. Glu815Lys, confirming the diagnosis.

Our case deserves attention for multiple reasons. This is the first genetically confirmed case of AHC being reported from India. The mutation described in index child, p. Glu815Lys; is the second most common mutation reported in two large series and is known to be associated with a severe phenotype [2, 3]. Inconsistent with previous reports, index child had severe manifestations, with an earlier age of onset, significant motor impairment, persistent plegic attacks, and also had poor pharmacological response to flunarizine and topiramate. Distinct physical and facial phenotypes have recently been described by Gurrieri et al., in 30 genetically confirmed cases of AHC [4]. Nonetheless, the novel features in our child like hypopigmented iris and hairs, joint laxity and plegic attacks being trigerred by fasting have

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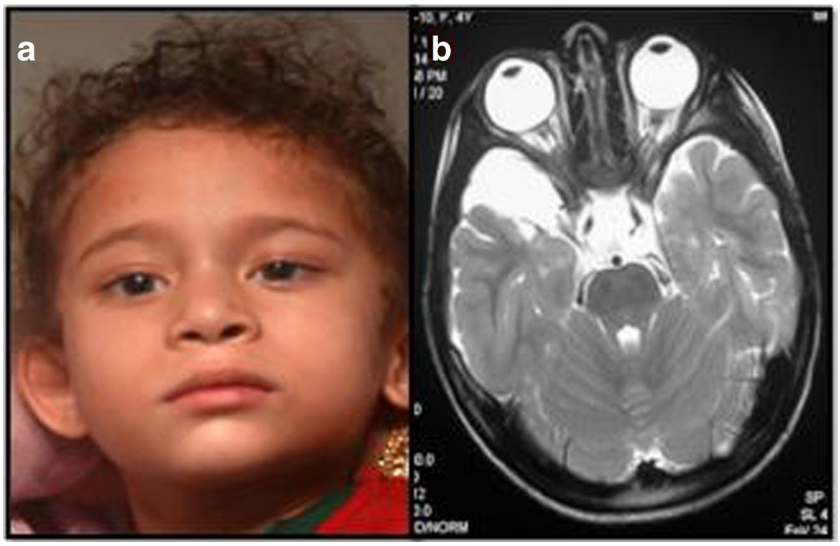

Fig. 1 **a** Clinical photograph of the patient showing hypopigmented hair and iris. **b** MRI Brain Axial T2 sequence showing right temporal arachnoid cyst

not been described. In conclusion, our case would expand the phenotypic spectrum of p. Glu815Lys mutation.

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Compliance with Ethical Standards

Conflict of Interest None.

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