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SCIENTIFIC LETTER

Aicardi-Goutieres Syndrome Presenting with Congenital Glaucoma

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To the Editor: Aicardi-Goutieres syndrome (AGS) is genetically determined encephalopathy [1]. The main features are progressive encephalopathy, failure to thrive, basal ganglia calcification, leukodystrophy, and cerebrospinal fluid (CSF) lymphocytosis, mimicking TORCH (Toxoplasmosis, Others, Rubella, Cytomegalovirus, Herpes) infections. Here we report a rare phenotype of AGS presenting as congenital glaucoma.

A 15-mo-old boy, born to consanguineously married couple with normal birth history presented with developmental delay and visual impairment since 4 mo of age. The child had achieved social smile and mother recognition by 3 mo of age. At 4 mo of age he lost eye to eye contact. Outside, the child was diagnosed as congenital glaucoma at 6 mo of age and underwent trabeculectomy at 1 year of age for both eyes. At 15 mo of age, the child had only partial head control, no eye to eye contact, no palmar grasp, and no cooing. The child had microcephaly, not following and fixing light, megalocornea and dystonia. CSF analysis showed 14 lymphocytes with normal sugar and protein. CT brain showed bilateral basal ganglia calcifications. MRI brain showed periventricular white matter signal changes. Family history of elder male sibling, who is currently 4 y of age, also had congenital glaucoma, developmental delay and seizures. Elder child's MRI brain showed cystic changes in the temporal lobe with white matter signal changes. TORCH infections were ruled out, based on positive family history and negative serology. We suspected AGS and testing by targeted next generation sequencing revealed homozygous *RNASEH2C* gene pathogenic variant chr11:65487856G > A c.205C > T p.Arg69Trp. Confirmation was done by Sanger sequencing for index case, sibling and also for both parents. It was in homozygous state in elder sibling and heterozygous state in both parents.

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We report two siblings with AGS who presented as global developmental delay and congenital glaucoma. AGS is a genetic encephalopathy which mimics TORCH infections [2]. This child was suspected to have AGS based on developmental delay, consanguineous marriage, family history of similar sibling, and cerebral calcifications. AGS has been divided into seven types based on 7 different genetic mutations [3]. As per our knowledge there are only two reports with congenital glaucoma: one report, with three children of two families, where genetic test was not done [4]; second case report of aniridia with glaucoma with *IFIH1* gene involvement [5]. This is the first case report from India with AGS presenting in two siblings with congenital glaucoma. AGS should be considered in TORCH like infections with familial recurrence and glaucoma.

Compliance with Ethical Standards

Conflict of Interest None.

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