Case Reports

Juvenile Parkinsonism in a 4 year old boy

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Introduction

When Parkinson's disease (PD) presents prior to 21 years of age it is called Juvenile Parkinsonism (JP)[1]. We report a 4 year old boy with PD who responded well to levodopa therapy.

Case report

A 4 year old boy presented with the complaint of fever for 12 days. He developed vomiting which was non bilious and non-projectile. On the third day of illness he was seen by a doctor. He was then started on intravenous ceftriaxone for 4 days. On around day eight of the illness, fever became high grade as per parents (undocumented), intermittent and was associated with chills. On day 10 of the illness he developed weakness in all 4 limbs. During the next two days, general activity of the patient decreased and the patient developed head nodding and tremors in hands, stiffness in all 4 limbs, and locked jaw.

He presented on day twelve of the illness to our hospital. He was unable to sit or stand or open the mouth. Examination showed presence of spontaneous eye opening, response to voice with rigidity of all four limbs. He was afebrile and haemodynamically stable. Neurological examination showed involuntary movements, head nodding, fine intentional tremors and horizontal nystagmus with rigidity of the jaw. There was hypertonia in all 4 limbs with cogwheel rigidity, Knee jerk was not elicitable but ankle jerks were brisk. Plantar reflexes were flexor.

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Ophthalmic examination did not show Kayser Fleischer (KF) rings in the patient as well as in family members. Fundus was normal. Magnetic resonance imaging of brain was normal. Cerebrospinal fluid (CSF) showed a total leucocyte count of 8 cells, mostly lymphocytes, with a protein level of 32 mg/dl (normal range 10-40 mg/dl) and sugar was 70 mg/dl (normal range 45-80 mg/dl). Widal test was negative.

A provisional diagnosis of JP was made. Levodopa (1 mg/kg/day) and trihexyphenidyl (0.2 mg/kg/day) were started. Improvement of symptoms was noted within 3-4 days of treatment. Muscle power gradually improved and he was able to talk. He was discharged 9 days after treatment. He was able to walk, talk and eat without support on discharge. Neurological examination was normal on discharge. He was discharged on syndopa and trihexyphenidyl.

Child was doing well following discharge. Response to Levodopa clinically confirmed the diagnosis of JP.

Discussion

Parkinsonism in childhood is very rare[2]. Aetiologies include hypoxic-ischaemic encephalopathy, treatment with haloperidol, cytosine arabinoside, cyclophosphamide, amphotericin B, and methotrexate, encephalitis and a pineal tumor with hydrocephalus[3]. Early-onset Parkinsonism can be caused by PTEN-induced putative kinase 1 (*PINK1*) gene defects[4]. Juvenile Parkinsonism responds favourably to levodopa[5]. Our patient responded to levodopa therapy within 3-4 days.

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