ASCARIASIS ENCEPHALOPATHY

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HOW TO CITE THIS ARTICLE: Kumari M, Bhalke S. Ascariasis encephalopathy. J. Evolution Med. Dent. Sci. 2018;7(47):5139-5140, DOI: 10.14260/jemds/2018/1140

PRESENTATION OF CASE

A 5-year-old girl presented with complaints of fever for 2 days, no documentation, no diurnal variation, not associated with chills and rigors. Complaints of seizure for 1 day, 3 episodes, in the form of tonic posturing of all 4 limbs lasting for approximately 2-3 minutes with up rolling of eyeballs with clenching of teeth without any urinary or stool incontinence followed by altered sensorium since then. The child was developmentally normal, with no history of ear discharge, fall, trauma, contact with tuberculosis, vomiting, loose stool, no history of seizure in the past.

On the day of admission, the GCS was 12/15 (E4 V2 M6), tone was normal, deep tendon reflexes could not be elicited bilaterally, bilateral planter was flexor, pupils were normal reacting to light bilaterally and the fundus was normal, with no signs of meningeal irritation. Other systems were within normal limits. On 2nd day of admission, GCS of the child was 9/15 (E2V2M5). Patient had a bout of vomiting, non-projectile, non-bilious, containing Ascaris worm 4 in number on 3rd day of admission. There was no improvement in sensorium. The patient was treated with pyrantel pamoate and showed a dramatic recovery within 72 hours of antihelminthic treatment.

CLINICAL DIAGNOSIS

Ascariasis Encephalopathy

DIFFERENTIAL DIAGNOSIS

1. Ascariasis Encephalopathy.
2. Cerebral Malaria.
3. Enteric Encephalopathy.
4. Viral Encephalitis.

PATHOLOGICAL DISCUSSION

On investigation, all the blood and cerebrospinal fluid analysis were normal. LFT, RFT, serum electrolytes, calcium, random blood sugar levels were normal. Malaria and typhoid were negative. MRI brain could not be done due to financial issue.

Ascariasis is caused by round worm, *Ascaris lumbricoides*. Ascariasis is the most prevalent human helminthiasis with affecting approximately 1 billion persons globally.

'Financial or Other Competing Interest': None.

Submission 11-10-2018, Peer Review 03-11-2018,

Acceptance 10-11-2018, Published 19-11-2018.

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DOI: 10.14260/jemds/2018/1140

The presentation of ascariasis depends on the involvement of the organ ex lungs, hepatobiliary system, renal, central nervous system.^[1]

Usually, the presentation of *Ascaris* infestation is asymptomatic, but some of them may present with abdominal pain, abdominal distension, intestinal obstruction.

Ascariasis encephalopathy is a very unusual presentation which responds to antihelminthic treatment very dramatically with complete recovery approximately within 2 days of treatment.

Encephalopathy due to infestation with *Ascaris lumbricoides* is a very rare presentation in children which responds dramatically to antihelminthic treatment.

This is a case report of a 5-year-old girl who was admitted with complaints of fever, seizure, altered sensorium. She had 1 episode of vomiting on 3rd day of admission with 4 worms in it. All other investigation including cerebrospinal fluid analysis was within normal limits. The patient was treated with pyrantel pamoate and showed a dramatic recovery within 72 hours of antihelminthic treatment.

Though a very rare cause, but worm encephalopathy must be considered as a differential diagnosis for encephalopathy. *Ascaris lumbricoides* infestation may be asymptomatic or it may present as its intestinal and extraintestinal complications or both.^[1]

Encephalopathy as a presenting feature of ascariasis manifestation is very unusual and rarely mentioned in the literature.

Selimoglu et al reported a case of 3.5 year old girl a case of encephalopathy with a history of passage of *Ascaris* worm in the vomitus 2 days prior to admission and was treated with pyrantel pamoate and recovered completely following treatment.^[2]

Jat et al reported a similar case of ascariasis encephalopathy, a 18 months old boy who had a history of worms in vomiting for 2 days. Patient was treated with pyrantel pamoate at the rate of 10 mg/kg/day for 2 days with rapid improvement with a normal sensorium in the 2 days period of time without any other antibiotic.^[3]

The diagnosis of ascariasis encephalopathy was established by the drastic response to the antihelminthic drugs.

The present case encephalopathy also responded to the antihelminthic treatment very dramatically.

Although, the exact pathophysiology of ascariasis encephalopathy is unclear, various hypotheses postulated attributed it to the immune mechanism involving an antigen-antibody type of reaction in hypersensitive nervous system and to the adverse effects of the acetaldehyde, a toxic product of larval and adult worms.^[2-3]

DISCUSSION OF MANAGEMENT

Ascariasis encephalopathy is managed with the supportive treatment and the anti-helminthic drugs. She was started on pyrantel pamoate at the rate of 11 mg/kg/day for 3 days.

There was dramatic improvement in the child within the 72 hours of period with GCS 15/15, with no cranial nerve deficit, with no focal deficit, with intact HMF. Patient was discharged after 4 days of completion of antihelminthic course.

Albendazole, mebendazole, piperazine citrate and pyrantel pamoate are the anthelmintic drugs which can be used for the treatment of ascariasis.

As ascariasis is prevalent globally and is a common problem occurring in children in tropics. Treating physician should consider ascariasis encephalopathy as a differential diagnosis in unexplained encephalopathy and should be aware of the unusual presentation of ascariasis which has a dramatic improvement with the use of antihelminthic drugs.

FINAL DIAGNOSIS

Ascariasis Encephalopathy

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