INTRODUCTION:

Eosinophilic meningitis by definition is the presence of 10 or more eosinophils/micro.l in CSF or a CSF eosinophilia of at least 10%(3). It is most commonly caused by Angiostrongylus cantonensis(4), a parasite which penetrates the brain. Angiostrongyliaisis is rare in India, including Chennai, where our hospital is located. In addition, since the larvae die shortly after they reach the central nervous system, it is very unlikely to find definitive evidence (namely the larvae) in CSF. An immunological diagnosis method has been developed but has not been widely adopted in the diagnosis. Therefore, we had limited experience with this disease. However, the patient gave history of eating raw snails, which are potential vectors of A. cantonensis. Based on this and the examinations, we diagnosed that the patient had angiostrongyliasis.

CASE REPORT:

19 yr old male patient was admitted with chief complain of Fever for one month which was low grade, continuous, not associated with chills and rigors, Headache - one month, diffuse in nature, associated with neck pain. Blurring of vision for 15 days with vomiting (non projectile), diplopia and Weakness of all four limbs -1 week which was acute in onset and static without any progression. General examination of the patient was normal

CNS Examination:
HMF- normal

Crani al nerve examination:
1st CN: Normal

IIInd CN:
visual acuity 20/40 20/25
field N N
colour N N
fundus clear clear

INVESTIGATION:

CBC:
Hb 12.6 gm;
TC: 6800;
DCP65L25E7M3;
ESR:12/26;
PLT 2.5 LAKHS

LFT:T.Bil : 0.2 mg/dl D.Bil : 0.1 mg/dl SGOT: 28mg/dl
SGPT: 36 mg/dl ALP: 37mg/dl Albumin:2.8mg/dl Globulin:1.2 mg/dl

CSF ANALYSIS:
Appearance: colourless & clear
Sugar: 53 mg/dl
Protein: 229.80 mg/dl (elevated)
Eosinophils: 14 cells/cumm
Globulins-positive Chloride: 119 mmol/L

Cell cytology: inflammatory changes

CSF culture: no pus, no organism

CSF AFB: smear negative for AFB

CSF ADA 0.7 U/L

FEVER WITH HEADACHE OF ONE MONTH DURATION

BIPYRAMIDAL SIGNS WITH SIXTH CRANIAL NERVE PALSY

Patient later gave history of ingestion of raw snail (seven in number) 45 days back followed by which he started developing all the complains and symptoms. His friend had similar history of raw snail consumption for which he was hospitalised immediately after the ingestion.

With the background history of raw snail consumption,
diagnosis strongly went in favour for EOSINOPHILIC MENINGITIS, most commonly caused by the parasite ANGIOSTRONGYLUS which is usually seen in snail ingestion.

![Figure 1: MRI BRAIN, flair showing hyperintensities in frontal & occipital lobes](image1)

**FINAL DIAGNOSIS:**

**ACUTE EOSINOPHILIC MENINGITIS - ANGIOSTRONGYLIASIS**

**COURSE OF STAY IN THE HOSPITAL:**

Patient was continued with injection dexamethasone 8mg iv tds, slowly tapered to 4mg and later maintained on tablet prednisolone 5mg/kg/day. Other supportive measures were given. Patient improved symptomatically with days. The intensity of the headache decreased, no fever episodes, diplopia reduced symptomatically, occasional hazy vision, weakness of limbs improved.

![Figure 2: Diplopia charting of patient at the time of presentation](image2)

![Figure 3: Diplopia chart after one week of steroids](image3)

**DISCUSSION:**

**ANGIOSTRONGYLIASIS:**

Angiostrongylus cantonensis, the rat lungworm is the most common cause of human eosinophilic meningitis Principally seen more common in the southeast asia and the pacific basin but have spread to the other parts of the world as well.
LIFE CYCLE:

The parasite eventually dies in the CNS, after initiating consequences resulting in permanent neurologic sequelae or death. Migrating larvae cause marked local eosinophilic inflammation and hemorrhage with necrosis and granuloma formation around the dying worms. Clinical symptoms usually develop 2 to 35 days after ingestion of larvae. Patients usually present with insidious or abrupt excruciating frontal, occipital or bitemporal headache. Other symptoms include neck stiffness, nausea, vomiting, paresthesias, fever, cranial & extraocular nerve palsies, seizures, lethargy.

CSF FINDINGS:

Findings: - WBC count 150 to 2000/ul
- eosinophilic pleocytosis > 20%
- protein conc elevated
- glucose levels normal
- larvae of A. Cantonensis rarely seen in CSF

Diagnosis generally based on clinical presentation with epidemiologic history. Specific drug therapy is of no benefit to the patients. Larvicidal agents may exacerbate inflammatory brain lesions. Management consists of analgesics, sedatives and glucocorticoids in severe cases. Repeated lumbar punctures with removal of CSF can relieve symptoms. The disease is usually self-limiting and recovery is usually complete. Symptoms at the acute stage may last from one week to 2 months or even longer. Recovery can last for several weeks, depending on the individual. Some measurements (such as eosinophils counts, CSF pressure, positive head MRI signals and lung shadow) and mildly abnormal sensations could last longer.

CONCLUSION:

(1) Eosinophilic meningitis due to Angiostrongylus cantonensis should be suspected in all the patients who present with headache and vomiting after eating snails. The permeability of geographic boundaries, facility of travel, increase in migrating populations, and various globalization phenomena have increased the movement of people and the transport of “exotic” foods. The definitive diagnosis of both angiostrongyliasis requires identification of the organism in host tissues. However, organism isolation in CNS is difficult and the investigations lack sensitivity. It is difficult to confirm the diagnosis in India, because the specific serological test for A. cantonensis is not available in India. Current methods of detecting specific antigens associated with A. cantonensis are also unreliable. Consequently, alternative approaches to detect antigen-antibody reactions are being explored, such as Immuno-PCR. (8). But the several pointers strongly suggest A. cantonensis as the etiology of the EM in this patient are s A) Very clear temporal relationship with the onset of disease and consumption of raw snails. B) Dramatic and prompt response to treatment with albendazole.
and steroids. C) Similarity with the clinical presentations of the published proven previous cases.(7).

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