

# An Interesting Case of Eosinophilic Meningitis

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## ABSTRACT

*Angiostrongylus cantonensis* is one of the causative agents of eosinophilic meningitis. Humans get infected when they ingest raw or partially cooked snails or monitor lizards (*Varanus bengalensis*). There is a popular belief that the tongue and the liver of the monitor lizard has aphrodisiac properties. A 20-year-old man was admitted to our hospital with a history of fever, headache and vomiting.

His cerebrospinal fluid revealed eosinophilia. He gave a history of the ingestion of a monitor lizard, ten days prior to the onset of the symptoms. So, a diagnosis of eosinophilic meningitis due to *Angiostrongylus cantonensis* was made. He was treated with oral albendazole and prednisolone. His symptoms improved gradually within two weeks from his admission.

**Key Words:** Eosinophilic meningitis, *Angiostrongylus cantonensis*, Monitor lizard

## INTRODUCTION

Eosinophilic meningitis is defined as the presence of  $\geq 10$  eosinophils/mL in the CSF or at least 10% eosinophils in the total CSF leukocyte count [1]. *Angiostrongyliasis*, *gnathostomiasis*, *neurocysticercosis*, malignancies and medications can produce eosinophils in the CSF [2]. We are describing a case of eosinophilic meningitis which was caused by *Angiostrongylus cantonensis* (rat lung worm) following the ingestion of a monitor lizard. Panackel et al., [3] reported five cases of eosinophilic meningitis from India. All their patients developed meningitis after the ingestion of monitor lizards.

## CASE REPORT

A 20 year old gentleman presented with the complaints of fever, frontal headache and vomiting of 7 days duration. On examination, he was found to be febrile. His central nervous examination showed neck stiffness.

His lab investigations showed Hb-14.9g/dl, total white blood cell count-7210 cells/cu.mm, differential count-N-62, L-17, E-16, M-5, platelet count-2,53,000 cells/cu.mm and ESR- 29mm/1st hour.

His serum LDH was 395 U/L. His peripheral smear showed eosinophilia. His bone marrow aspiration did not show any evidence of malignancy. Serology for Dengue virus, *Leptospira* and HIV was negative.

Computed tomography scan of his brain was normal. His CSF analysis showed cell counts of 1200 (per  $\mu$ l), DC - (of 100 cells which were counted); Lymphocytes-29(%), Monocytes-10(%), Eosinophils-61 (%), CSF protein - 118 (mg %), CSF glucose - 60 (mg %) and the corresponding blood sugar-98 mg/dL. Gram staining, Ziehl Nielsen staining, India ink staining and culture of the CSF were negative. He gave history of consumption of raw meat of a monitor lizard (as he thought it had aphrodisiac properties), 10 days before the onset of the symptoms. From the history of ingestion of the monitor lizard and the cerebrospinal fluid study findings

of eosinophilia, we came to the diagnosis of eosinophilic meningitis due to *Angiostrongylus cantonensis*. He was treated with oral Albendazole 400 mg twice daily, along with Prednisolone 40 mg daily for 2 weeks. His symptoms improved gradually within two weeks from his admission.

## DISCUSSION

Human cases of *Angiostrongyliasis* have been reported from Asia. The adult worms are found in the branches of the pulmonary artery of rats. Rats excrete the first stage larvae in their faeces. The snail and slug species ingest the first-stage larvae and there are two molts to the infective, third-stage larva. Humans become infected by ingesting raw or undercooked snails. The infective larval stages are also found in monitor lizards (*Varanus bengalensis*) [4]. The third-stage larvae then reach the Central Nervous System (CNS).

Monitor lizards are eaten in parts of southern India where their meat is considered as an aphrodisiac. In a case series (10 cases) of eosinophilic meningitis from southern India [5], all the male patients developed the illness after the consumption of the uncooked meat of monitor lizards.

The clinical manifestations of *Angiostrongyliasis* usually occur 1 week to 1 month after exposure. The clinical spectrum can range from a mild disease to meningitis or encephalitis [6]. The most common clinical manifestations in a case series of 17 patients was headache (in 100% of the patients), stiff neck and fever (65%) [6]. Our patient presented with fever, headache and vomiting. The natural course of the disease often involves the spontaneous resolution of the symptoms after 1-2 weeks. The case fatality rate, when it is determined for large cohort studies, is generally low; one in 484 cases in Thailand [7].

The diagnosis of *Angiostrongyliasis* is based on the history of a possible exposure, the clinical presentation, and CSF eosinophilia [2]. Peripheral eosinophilia can be present. The serological testing for its diagnosis is available only in endemic areas. *Angiostrongylin-*

sis does not usually produce focal lesions on CT or MRI. The parasite is rarely detected in CSF [8].

The treatment options consist of symptomatic interventions, anti-helminthic therapy, steroid therapy, or a combination of these. The symptomatic treatment includes serial lumbar punctures and analgesics. Chotmongkol et al., [9] used a combination of albendazole and prednisolone for 2 weeks to treat eosinophilic meningitis.

## CONCLUSION

Eosinophilic meningitis due to *Angiostrongylus cantonensis* should be suspected in all the patients who present with headache and vomiting after eating monitor lizards.

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