

CASE REPORT

UNUSUAL MANIFESTATION OF EOSINOPHILIC MENINGITIS

Verajit Chotmongkol and Somsak Tiamkao

Department of Medicine, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.

Eosinophilia of the cerebrospinal fluid (CSF) can be found in various parasitic infestations of the central nervous system. *Angiostrongylus cantonensis* is the most common etiologic agent of eosinophilic meningitis in Thailand and its intermediate host is Pila snails (Punyagupta *et al.*, 1970). Humans are infected by this parasite after ingesting raw Pila snails. The common presenting symptoms of eosinophilic meningitis are severe headache, neck stiffness, nausea and vomiting (Punyagupta *et al.*, 1975; Kuberski and Wallace, 1979; Panamonta, 1985; Chotmongkol, 1986; Jitpimolmard *et al.*, 1991). High fever (temperature > 38°C) and CSF abnormalities such as marked elevation of total leukocyte count and protein content, or low sugar profile rarely occur. We report a case of eosinophilic meningitis, probably caused by *A. cantonensis*, which had this rare presentation.

A 28-year-old male Thai farmer was admitted to Srinagarind Hospital on 8 December 1991 because of severe headache and high fever. He was healthy until about 5 days before admission when he experienced mild generalized headache, neck stiffness and low grade fever. His symptoms could be relieved by analgesic drugs but 1 day prior to admission he had severe headache, high fever and myalgia of both legs. He gave a history of having eaten raw Pila snails about 1 week before this illness.

On physical examination, he was a sthenic man and alert with body temperature of 38.5°C. He had a stiff neck. The rest of the general and neurological examination were normal.

Complete blood count revealed white blood cells 22,750 per mm³ with 76% polymorphonuclear cells, 1% band forms, 18% lymphocytes and 6% eosinophils. Blood urea nitrogen, creatinine, blood glucose, electrolytes, VDRL, urine and stool examination and chest x-ray were within normal limits.

The initial diagnosis was acute meningitis and lumbar puncture was performed. CSF analysis showed high initial opening pressure, marked pleocytosis with 72% eosinophils, marked elevation of protein and low sugar ratio profile (Table 1). Stains and cultures of the CSF for bacteria, acid fast bacilli and fungi were negative.

Eosinophilic meningitis from *A. cantonensis* was diagnosed. The patient was treated with paracetamol and repeated lumbar puncture to relieve intracranial pressure. Body temperature returned to normal on the next day and headache was disappeared 4 days later. On follow-up 2 weeks later, he was in a good condition.

The records of eosinophilic meningitis caused by *A. cantonensis* (Punyagupta *et al.*, 1975) revealed

Table 1
Cerebrospinal fluid analysis.

	Pressure (mmH ₂ O)	WBC (per cumm)	%PMN	%Lymphocyte	%Eosinophil	Protein	Glucose (CSF/blood)
December 8	300	7,840	4	24	72	780	26/109 (23.8%)
December 9	> 300	3,130	3	24	73	340	49/131 (37.4%)
December 10	100	2,000	0	35	65	200	92/128 (71.8%)
December 18	180	220	1	47	52	60	52/69 (89.8%)

that the patients usually had no fever. Only 5% had a temperature higher than 38°C. Of the CSF abnormalities more than half of cases had initial leukocyte counts in the range of 500 to 2,000 per mm³. Only 1.8% had a leukocyte count greater than 5,000 per mm³. Protein content was usually normal or slightly elevated. Marked elevation (> 200 mg/dl) found in 4%. Also, only 9% had low sugar content (< 40 mg/dl).

Symptoms and signs of eosinophilic meningitis are usually self-limited. Analgesics and repeated lumbar puncture to relieve the raised intracranial pressure, are useful to reduce headache. Recently Jitpimolmard *et al* (1991) demonstrated that albendazole, the antiparasite drug, did not shorten the duration of headache when compared to placebo.

Clinical presentation of our case with acute headache, high fever, marked elevation of CSF leukocyte count and protein and low sugar content resembled acute bacterial meningitis. The point for differentiation from each other is finding of eosinophils in CSF. Eosinophilia of the CSF has not been reported in acute bacterial meningitis (Fishman, 1980). Epidemiology, eating habits and accuracy of the differentiation of leukocyte in CSF are the important factors for diagnosis of this disease.

REFERENCES

- Chotmongkol V. Eosinophilic meningitis in adult. *Srinagarind Hosp Med J* 1986; 1 : 303-5.
- Fishman RA. Cerebrospinal fluid in diseases of the nervous system. London : WB Saunders, 1980.
- Jitpimolmard S, Chotmongkol V, Morakote N, *et al*. Albendazole therapy for eosinophilic meningitis caused by *Angiostrongylus cantonensis* : A double blind placebo-controlled study. Present at the anniversary academic meeting of Faculty of Medicine, Khon Kaen University, December 1991.
- Kuberski T, Wallace GD. Clinical manifestations of eosinophilic meningitis due to *Angiostrongylus cantonensis*. *Neurology* 1979; 29 : 1566-70.
- Panamonta O. Eosinophilic meningitis in children. *Bull Dept Med Serv* 1985; 10 : 265-9.
- Punyagupta S, Bunnag T, Juttijudata P, *et al*. Eosinophilic meningitis in Thailand. Epidemiologic studies of 484 typical cases and the etiologic role of *Angiostrongylus cantonensis*. *Am J Trop Med Hyg* 1970; 10 : 950-8.
- Punyagupta S, Juttijudata P, Bunnag T. Eosinophilic meningitis in Thailand. Clinical studies of 484 typical cases probably caused by *Angiostrongylus cantonensis*. *Am J Trop Med Hyg* 1975; 24 : 926-32.