

SHORT COMMUNICATION

Isolated optic neuritis from an identified *Gnathostoma spinigerum*

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PURPOSE. To describe a patient with isolated monocular optic neuritis caused by an identified *Gnathostoma spinigerum* infestation.

CASE REPORT. A 21-year-old man developed a swollen eyelid and painful monocular visual loss of his left eye which did not improve after treatment by intravenous steroid and albendazole. A remarkable eosinophilia in his peripheral blood count was demonstrated. The patient subsequently found a live parasite emerged from his lower eyelid and it was successfully removed by himself. Gross and histopathology examinations of the obtained parasite was undertaken. The parasite was identified as *Gnathostoma spinigerum*. His blood test for *Gnathostoma* antibody was positive.

DISCUSSION. The etiology of isolated optic neuritis in this patient was *Gnathostoma spinigerum* which was confirmed by the histopathology of the obtained parasite and the positive serologic test.

CONCLUSIONS. We could identify the exact parasite that was proven to cause an isolated optic neuritis. The immediate removal of a causative parasite may not result in an improvement of the injured tissue but is beneficial in preventing further destruction as well as future complications. (*Eur J Ophthalmol* 2007; 17: 130-2)

KEY WORDS. Isolated optic neuritis, *Gnathostoma spinigerum*, Cutaneous larva migrans

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INTRODUCTION

Isolated optic neuritis from parasitic infestation is very uncommon, particularly from *Gnathostoma*, which often causes a cutaneous larva migrans. Due to its rapid movement when it lodges within the ocular tissue, it is difficult to capture. Some authors have demonstrated a patient with optic neuritis and a history of migrating larva but have not been able to identify any exact causative parasite. (1).

We describe a rare patient with isolated monocular optic neuritis caused by an identified *Gnathostoma spinigerum* infestation.

Case report

A 21-year-old healthy man, who lived in the North-eastern part of Thailand, complained of headache and

blurred vision with a coexisting swollen lower eyelid of his left eye for 10 days. He had a habit of raw fish intake and also a history of smoking and alcohol abuse. Approximately 1 week prior to presenting to us, he was accidentally able to remove a live parasite from his left swollen lower eyelid. He was then examined by an ophthalmologist who found a visual acuity of light perception, an edematous lower eyelid, and an afferent pupillary defect in his left eye. He was treated with intravenous dexamethasone for 3 days and a concurrent course of oral albendazole due to the diagnosis of optic neuritis with a parasitic infestation but his vision did not improve. When he was referred to our hospital, he had a visual acuity of hand motion, minimal anterior chamber reaction, and a slightly pale disc in the left eye without swollen eyelids. Systemic examination did not reveal any cutaneous larva migrans. Neurological examination was otherwise normal.



Fig. 1 - Shows a head bulb (arrow) with spine of *Gnathostoma spinigerum*.

His peripheral blood count showed hemoglobin of 13.7 g/dL, platelet count of $306 \times 10^3/\mu\text{L}$, and a white blood cell count of $5.04 \times 10^3/\mu\text{L}$ (6% eosinophils). Further investigations including blood immunological titers for syphilis and connective tissue diseases, stool examination, cerebrospinal fluid obtained by lumbar puncture, and CT scan of his brain were normal but his visual evoked potential (VEP) showed a decrease in amplitude and a delay in latency of the left eye. Gross examination of the parasite, which was successfully removed from the patient's lower eyelid, showed an 8 mm white parasite. It was subsequently sent for histopathology examination and showed a head bulb portion and a body portion. The head bulb was covered with several rows of spine (Fig. 1). It was carefully identified as a young adult male parasite of *Gnathostoma spinigerum*. The patient's serological test for *Gnathostoma* antibody was positive.

The presumed diagnosis was isolated optic neuritis from *Gnathostoma* infestation and the patient he was subsequently treated by intravenous methylprednisolone for 3 days, followed by oral prednisolone, but his vision remained the same. He had no evidence of further parasitic infestation for a follow-up period of 2 years.

DISCUSSION

We reported a young healthy man who presented with a clinical manifestation of isolated monocular op-

tic neuritis. Demyelinating, autoimmune, and infectious diseases are the most common causes of isolated optic neuritis. Some parasites have been described as the causes of intraocular infections, particularly uveitis and retinochoroiditis. (2-6). However, optic neuritis caused by parasitic infestation is relatively rare.

Gnathostoma spinigerum, intestinal nematodes of felines and canines, is a common parasite found in patients who habitually intake raw meat or food. The most common endemic region is the South-east Asia area. It frequently causes a cutaneous larva migrans which occurs along the migration route. Ocular manifestations are directly caused by parasitic invasion of the ocular as well as the surrounding tissues. Unfortunately, unlike other parasites, it often lodges within the tissue and is difficult to identify. Although some authors have previously found a patient with optic neuritis and a previous remote history of the migrating larva around the ocular structures, they could not however prove the specific causative parasite. (1).

In this patient, we could identify the exact parasite that caused isolated optic neuritis, possibly by direct invasion of the optic nerve. Moreover, a positive blood titer for *Gnathostoma* antibody was the serological confirmation of the parasitic infestation in our patient.

Corticosteroid has been proven to be beneficial in anti-inflammation of injured tissue. However, oral albendazole, an effective antihelminthic drug, has recently raised controversy for the treatment of tissue parasite infestation due to its concurrent destruction of surrounding tissues.

In spite of early recognition and prompt treatment in this patient, his visual outcome has still remained the same. However, immediate removal of a causative parasite may not result in an improvement of damage lesion, but is beneficial in a prevention of further destruction as well as future complications.

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