Paragonimus westermani Found in the Tip of a Little Finger

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Abstract

Paragonimiasis is the infestation of lung flukes of the trematode genus Paragonimus. Because the symptoms and radiologic findings of paragonimiasis mimic those of tuberculosis, some patients with paragonimiasis are initially treated for tuberculosis. Although Paragonimus may also reach ectopic sites such as the peritoneum or brain, infection in the skin is rare. To our knowledge, paragonimiasis has not been found in the tip of a finger. We report a case of 39-year-old woman who was belatedly diagnosed as having paragonimiasis with a parasitic migration to the tip of the left little finger after initial misdiagnosis of tubercular serositis.

Key words: paragonimiasis, cutaneous infection, finger


Introduction

Paragonimiasis, the infestation of lung flukes of the trematode genus Paragonimus, is mainly endemic in Asia where culturally people eat raw or undercooked freshwater crab or crayfishes (1). However, there are patients of paragonimiasis currently worldwide, because of interest in the diet and well being concept and due to increases in immigrants and overseas travelers (2).

Since the symptoms and radiologic features of paragonimiasis mimic those of tuberculosis or lung cancer and the prevalence of paragonimiasis is very lower than those of tuberculosis or lung cancer, some patients with paragonimiasis are initially diagnosed as having lung cancer or treated for tuberculosis (1-3).

Although paragonimiasis may reach ectopic sites such as the peritoneum or brain, cutaneous infestation is a rather rare form of ectopic infection (4, 5). Here, we report a case of 39-year-old woman who was belatedly diagnosed as having paragonimiasis presenting with a nodule on the tip of the little finger after initial misdiagnosis of tubercular serositis.

Case Report

A 39-year-old woman, 4 pack-year smoker, visited our hospital due to persistent abdominal pain over six weeks. She had often eaten fresh water crabs. She had lost 20 kg of weight while being treated for tuberculous hydropleurisy and peritonitis during past three months. Tuberculosis serositis had been diagnosed based on loculated fluid collection and hypertrophy of terminal ileum wall demonstrated in the computed tomography (CT) of abdomen and high level of adenosine deaminase from lymphocyte-dominant pleural effusion. However, her abdominal discomfort and fever had not improved.

Her breathing sounds were diminished in both lower lungs. There were a palpable subcutaneous mass around navel and a painful swelling on the tip of her left 5th finger (Fig. 1).

Simple chest x-ray showed bilateral pleural effusion (Fig. 2A) and chest CT showed bilateral pleural effusion, pericardial effusion, heavy contrast on pleura and pericardium, and enlarged lymph nodes (Fig. 3A, 3B). Abdomen CT displayed mesenteric extravasations and hypertrophy of peritoneum and cecum (Fig. 3C, 3D).

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Biopsy taken from the abdominal wall showed panniculitis accompanying deposition of Charcot-Leyden crystals and eosinophilic infiltration, suggesting parasite infestation, even though no parasite was found in the sections (Fig. 4A). Acid-fast bacilli stain and polymerase chain reaction for Mycobacterium tuberculosis was negative in the biopsy. Under suspicion of neuropathy from sustaining pain on the fifth finger of left hand, a biopsy was taken and one larva of P. westermani was found (Fig. 4B). Also both immunoglobulin (Ig) M and IgG for P. westermani were detected in her serum by enzyme-linked immunosorbent assay.

Anti-tuberculous medication was discontinued and praziquantel, 75 mg/kg/day in three divided doses for 2 days, was given and she was discharged with improvement of symptoms and signs. Two months later, radiologic finding was improved (Fig. 2B).

**Discussion**

When humans or another host ingest parasitized crab or crayfish, the metacercaria excyst in the duodenum and migrate through the intestinal wall, reaching the abdominal cavity. The juvenile worms migrate into abdominal muscles and lodge there for 1-2 weeks and come back into the abdominal cavity. Then they migrate through the diaphragm and the pleural cavity and finally reach the lung where they become adult worms (4, 5) (Fig. 5).

Because of this migratory route from the intestine to the lungs, the worms may reach and develop in ectopic foci anywhere within the body, including subcutaneous tissues or brain (4, 5). The brain is the most common site of extrapulmonary involvement (6). On the other hand, cutaneous infections are not common and occur mostly in the abdomen, groin, or upper chest wall due to migrating route of Paragonimus. However, other cutaneous infections are very exceptional (4, 5). To our knowledge, this is the first presentation of biopsy-proven Paragonimus in a nodule on the tip of a finger.

Abdominal and cutaneous symptoms occurred prior to pleural or respiratory findings in majority of cutaneous paragonimiasis reported due to migrating sequence of paragonimiasis (5). But, in this case, abdominal pain worsened and the nodule on the tip of the finger was found after the pleural lesion had developed. It suggested a different step of Paragonimus at the same time because the patient ingested crabs with metacercaria many times and the burden of Paragonimus was high.

In this report, we present a case of paragonimiasis belatedly identified as a parasitic migration to the tip of a finger after an initial misdiagnosis of tubercular serositis. Parago-
Figure 3. (A and B) Chest CT showed bilateral pleural effusion (arrows), pericardial effusion (arrowheads), heavy contrast on pleura and pericardium, and enlarged lymph nodes. (C and D) Abdomen CT displayed mesenteric extravasations and hypertrophy of peritoneum and cecum (arrows).

Figure 4. (A) Biopsy taken from abdominal wall showed panniculitis with deposition of Charcot-Leyden crystals and eosinophilic infiltration (Hematoxylin and Eosin staining, ×400). (B) The biopsy of left fifth finger demonstrated the larva of *Paragonimus westermani* (arrow) (Hematoxylin and Eosin staining, ×100).

Figure 5. The life cycle of *Paragonimus*.

Paragonimiasis requires specific chemotherapy, resulting in immediate improvement. Therefore, paragonimiasis should be considered in the differential diagnosis of tuberculosis or lung cancer. Everywhere including the tip of a finger can be the affected site of *P. westermani* infection.

References

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