The diagnosis of cutaneous paragonimiasis after the external migration of the parasite from a punch biopsy site

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Key words: cutaneous paragonimiasis; live parasite.

INTRODUCTION

Paragonimiasis, caused by the lung fluke of the genus Paragonimus, affects an estimated 22 million people yearly worldwide. Humans acquire these parasites mostly by ingestion of raw or poorly cooked freshwater crustaceans (second intermediate hosts), or by eating raw meat from wild animals. Paragonimiasis is closely associated with some special eating habits or incomplete sanitary systems in developing countries. Cutaneous features are reported rarely and may occur without pleuropulmonary involvement. Certain microenvironmental stressors of the host are likely the main triggers that lead to the migration of parasites. Here we report a case in which a migratory parasite was found to exit from the patient’s body. This was most likely triggered by regional anesthesia or a surgical procedure.

CASE REPORT

In 2013, a woman from the western city of Chongqing, China in her 30s complained of a subcutaneous edematous plaque of the right vulvar region. The edematous plaque initially appeared as 4 cm x 6 cm in diameter on her right lower abdominal wall. The patient denied any pain, although there was slight tenderness on palpation. The following day, the edematous plaque had migrated to the right labia majora (Fig 1). Laboratory examination found eosinophilia (white blood cell count, 9.95 x 10^9/L; neutrophils, 59.6%; and eosinophils, 16.3%). Results of chest x-ray and abdominal ultrasonography examinations were normal. A punch biopsy of the right labia majora was performed, and histologic examination found massive eosinophil infiltration in the dermis extending into the subcutaneous fat.

Five days after her biopsy, the patient noticed what appeared to be a parasite crawling out from the biopsy site. The parasite measured 0.5 cm in length (Fig 2). The patient reported that 2 weeks before her presentation, she had consumed undercooked freshwater crabs and shrimp. Cutaneous paragonimiasis was considered a diagnosis, and an enzyme-linked immunosorbent assay and dot immunogold filtration assay were positive for Paragonimus westermani (Figs 3-5). She received praziquantel, 75 mg/kg for about 10 days, and 1 month later the cutaneous lesions had completely resolved.

DISCUSSION

Paragonimiasis accounts for few helminthic diseases in human and carnivorous mammals (definitive hosts). More than 10 species of Paragonimus infect humans around the world. The most common species, P. westermani, is distributed mainly in East Asia,
including China. The parasite reproduces through a complex lifecycle involving snails, crustaceans, and mammals. The larvae typically migrate to the lung where they become adult worms that cause a constellation of pulmonary symptoms (cough, rusty-colored hemosputum, pulmonary infiltrate, or cavities) often mimicking those of tuberculosis, or to ectopic sites including the central nervous system or skin. Cutaneous paragonimiasis often represents the typical ectopic infection, especially in its earlier phase. Cutaneous features may occur without pleuropulmonary involvement. They often manifest as nontender migratory subcutaneous nodules or subcutaneous edematous plaques. It is often difficult to diagnose cutaneous paragonimiasis, especially when the parasite or ova are absent in the biopsy tissue, and serologic tests are not available. However, physicians should consider a diagnosis of paragonimiasis when patients present with symptoms including subcutaneous nodule(s), hemoptysis, eosinophilia, and a history of eating raw or undercooked crayfish or crabs.

The fact that the parasite exited after the biopsy suggests the regional anesthesia or surgical operation created a stressful microenvironment. Fortunately, the stress caused the parasite to migrate from her body, not into vital visceral organs. Our case suggests that it was better not to disturb the parasites before treating them with parasiticidal medications.

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