

An unusual cause of pneumonia: *Strongyloides stercoralis* infection

Chun-Jing Lu¹, Jin-Yan Zhang^{2,3}, and Wei-Feng Huang^{2,3}

¹Department of Blood Transfusion, Women and Children's Hospital, School of Medicine, Xiamen University, Xiamen; ²Department of Gastroenterology and Hepatology, The First Affiliated Hospital of Xiamen University, School of Medicine, Xiamen University, Xiamen; ³The School of Clinical Medicine, Fujian Medical University, Fuzhou, China

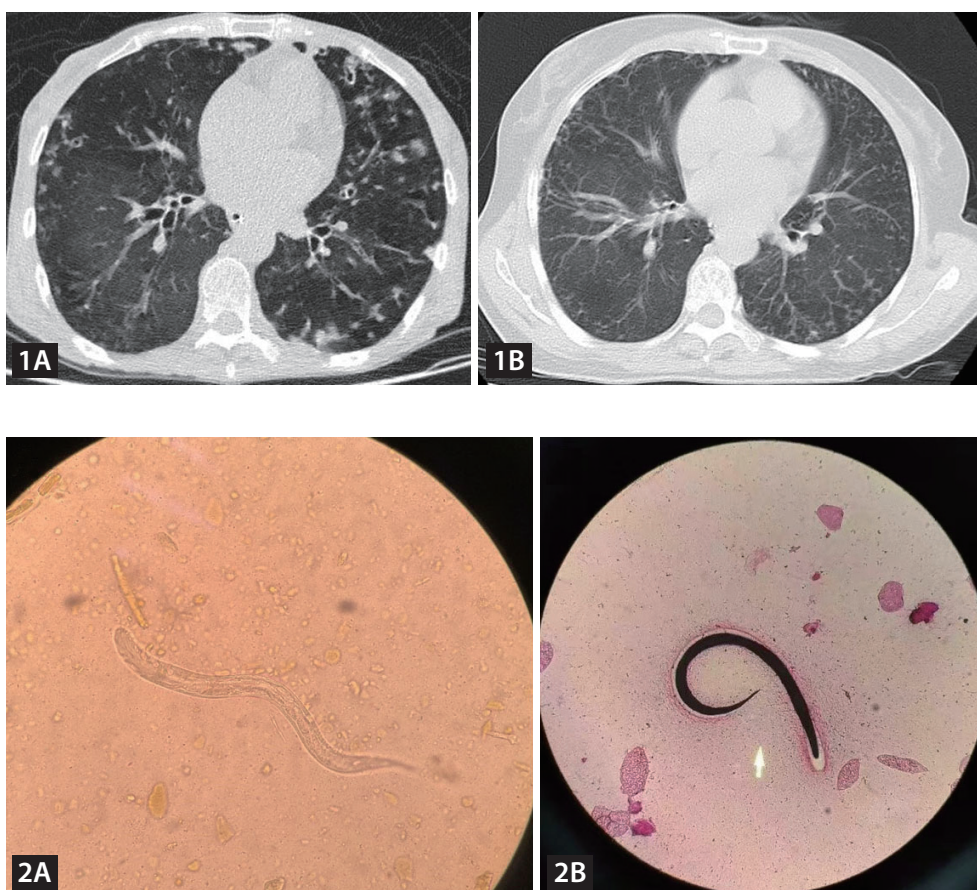


Figure 1. Chest computed tomography (CT) scan of the patient. (A) Chest CT indicated diffuse lung inflammation. (B) Follow-up chest CT scan showed significant improvement of the lesions.

Figure 2. (A, B) Stool and sputum parasite examinations revealing nematode larvae (400x, gram staining).

A 62-year-old woman presented with a 3-year history of recurrent wheezing, coughing, sputum production, and 10-kg weight loss. Before this hospitalization, she has had repeated hospital admissions due to the above-mentioned complaint. Skin examination revealed no abnormalities. Pulmonary

auscultation revealed bilateral wet rales in the lower lung fields. Laboratory values disclosed neutrophilia (10,610/ μ L), normocytic anemia (7.9 g/dL), hypoalbuminemia (27.4 g/L) and elevated inflammatory markers (C-reactive protein of 41.98 mg/L), without eosinophilia (390/ μ L). Chest comput-

ed tomography (CT) indicated diffuse lung inflammation (Fig. 1A). She was started on antibiotic therapy, but the condition didn't improve. Due to the history of recurrent unexplained pneumonia and poor response to antibiotic therapy, parasitic infections were suspected. Hence, multiple stool parasite examinations were performed and revealed nematode larvae (Fig. 2A). We also detected nematode larvae in sputum (Fig. 2B, Gram staining) and vomitus specimens (video). Subsequently, strongyloides ELISA blood test was executed and the result was positive. Based on the above findings, the patient was diagnosed with *Strongyloides stercoralis* hyperinfection syndrome. She was initiated on oral ivermectin at 200 µg/kg once daily for 6 weeks. Fortunately, her condition gradually improved over the following month. A follow-up chest CT scan showed significant improvement of the lesions (Fig. 1B). No recurrences have been observed during 2 years of follow-up.

Strongyloides stercoralis has the unique ability to replicate within the human host, resulting in a subclinical autoinfection cycle that can persist for decades after exposure [1]. Under some immunocompromised conditions including human immunodeficiency virus infection, immunosuppressive drug, renal transplantations and malnutrition, this can lead to hyperinfection that is characterized by marked increment in the number of worms as well as detection of worms in extraintestinal sites, especially the lungs—hyperinfection syndrome [2], as seen in our case.

REFERENCES

1. Siddiqui AA, Berk SL. Diagnosis of *Strongyloides stercoralis* infection. Clin Infect Dis 2001;33:1040-1047.
2. Puerta-Peña M, Calleja Algarra A. Larva currens in strongyloides hyperinfection syndrome. N Engl J Med 2022;386:1559.

Received : February 7, 2023

Revised : February 14, 2023

Accepted : March 3, 2023

Correspondence to

Wei-Feng Huang, Ph.D.

Department of Gastroenterology and Hepatology, The First Affiliated Hospital of Xiamen University, School of Medicine, Xiamen University, Zhenhai RD 55#, Xiamen 361003, China

Tel:+86-18150906129, Fax:+86-05922137708

E-mail: hwf0625@xmu.edu.cn

<https://orcid.org/0000-0002-9755-7299>

Credit authorship contributions

Chun-Jing Lu: writing - original draft; Jin-Yan Zhang: writing - review & editing; Wei-Feng Huang: writing - review & editing

Conflicts of interest

The authors disclose no conflicts.

Funding

This work was supported by the Medical and Health Guiding Project of Xiamen (3502Z20214ZD1028 and 3502Z20224ZD1009).