Eosinophilia with pulmonary infiltrates

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Abstract
Lymphoma is hard to be diagnosed without an exact pathologic evidence. Eosinophilia might be one of its signs. However, some other clinical characteristics such as special contact history, pulmonary infiltrates, and the effectiveness of prednisone treatment could mislead our diagnosis. Here we report a case of lymphoma accompanied with pulmonary infiltrates and clinical feature of eosinophilia.

Introduction
Eosinophilia with pulmonary infiltrates is an uncommon clinical characteristic of diffuse lung disease, in particular if the hypothetical cause is lymphoma accompanied with infection of Epstein–Barr (EB) virus. Here we report a case of lymphoma accompanied with pulmonary infiltrates and clinical feature of eosinophilia.

Case Report
A 59-year-old man presented with cough for 3 months and fever for 1 month. The patient did not have any contact with wheat bran for the previous 6 months. He reported exposure for 2 days and not repeated. His temperature kept fluctuating around 38°C, usually at night. Physical examination revealed nothing in particular except a slight decrease of breath sound. Routine blood test showed white blood cell was 5.55 × 10⁹/L, neutrophil was 2.66 × 10⁹/L (48%) and eosinophil granulocyte was 1.61 × 10⁹/L (29%). Multiple sputum smears/cultures, parasitic antibodies, and tumor biomarker tests were negative. Chest computed tomography (CT) revealed patchy shadow and multi-node, which seemed to be distributed along with the bronchi without hilum of lung and mediastinal lymphadenectasis (Fig. 1A). The patient’s symptoms did not improve after 5 days of treatment with ceftriaxone. Hence, transbronchoscopic and percutaneous lung biopsy were conducted, which identified the nonspecific pathologic changes of chronic inflammatory necrosis and mild eosinophil infiltration. Voriconazole was administered for 8 days. However, the pulmonary infiltration increased (Fig. 1B). Considering the patient’s contact history, we finally stopped the anti-infection treatment and began to use prednisone (40 mg/day). Surprisingly, it was quite helpful to lighten cough and normalize the patient’s temperature. Seven days later, another CT confirmed visually the resorption of lung patchy shadow (Fig. 1C). The patient was asked to continue taking prednisone and extrinsic allergic alveolitis was hypothesized at that stage. One month later, the patient returned with persistent fever. Two masses in the lower lobe and softer tissues infiltrates in bilateral hilar and subcarina were revealed by CT (Fig. 1D). Percutaneous lung biopsy detected tumor cells involved (Fig. 2A) with CD20+ (Fig. 2B) and EBER1/2+ (Fig. 2C), which suggested large B-cell non-Hodgkin’s lymphoma accompanied with infection of EB virus.
Discussion

Special contact history, eosinophilia, pulmonary infiltrates, and the effectiveness of prednisone, all misled our diagnosis. Although we have known eosinophilia may appear in different diseases such as parasite infection, anaphylactic disease, and tumor [1, 2], this case characterized by eosinophilia and lung patchy shadow without any findings such as lymphadenectasis and pulmonary mass at the early stage has rarely been reported. Especially, the first two
transbronchoscopic and percutaneous lung biopsies both suggested chronic inflammatory necrosis and the effectiveness of treatment with prednisone misled our diagnosis ulteriorly. Hence, was there no way to distinguish such case until the masses emerged in CT? Perhaps the imaging feature could show something. As to acute extrinsic allergic alveolitis, the patchy consolidation or ground-glass opacity usually progressed within 1 week after wheat bran contact and the migratory (repetitive contact) or reversible (after disengagement) trait was suggestive. On the contrary, this patient stayed stable for 3 months after contact and the pulmonary infiltrates unexpectedly developed 6 months later. Pay attention to Fig. 1C, although the infiltrates were obviously absorbed due to administration with prednisone, a mass loomed in the right lower lobe.

Disclosure Statements
No conflict of interest was declared.
Appropriate written informed consent was obtained for publication of this case report and accompanying images.

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