

# Hypersensitivity Pneumonitis Associated with a Home Humidifier

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Hypersensitivity pneumonitis (HP) is an immunological inflammatory disease of the lungs that occurs when a susceptible host repeatedly inhales various antigens. Nonspecific clinical manifestations and the absence of universally accepted diagnostic criteria may lead to the under-diagnosis of HP, especially in the case induced by uncommon causes. A 79-year-old man was admitted because of dyspnea, fever, and cough for 1 week. He was treated with antibiotics with suspicion of an atypical pneumonia (Figure 1A, I). Multiplex reverse-transcription PCR test revealed positive for human coronavirus HKU1. On bronchoscopy, the results of bronchoalveolar lavage cellular analysis were nonspecific and cultures were negative. His signs and symptoms were relieved and the findings of chest X-ray were improved (Figure 1B). However, his symptoms recurred and he was re-admitted 10 days after the first discharge. Chest X-ray and HRCT showed ground-glass opacities (GGO), reticular shadow, and consolidation in the both lungs (Figure 1C, J). He was suspected of having HP, but denied exposures to common offending antigens. He was admitted again due to relapsing respiratory symptoms and high fever 4 days after the second discharge. Chest X-ray and HRCT showed bilateral GGO and reticular shadows which were aggravated compared with the findings at the second hospitalization (Figure 1E, K). Repeated careful history taking revealed that his symptoms developed after using a humidifier. He was treated with corticosteroid and his symptoms and radiologic findings were improved. After being instructed not to use the humidifier, he has not suffered from recurrence for more than 2 months (Figure 1 G, H, L). This is an interesting case of humidifier-associated HP (humidifier lung) diagnosed by a detailed history taking. HP should be considered in a patient in whom respiratory symptoms and fever relapse. In addition, the most important step in the diagnosis of HP is taking a careful clinical history to find an offending antigen in spite of a rare cause.

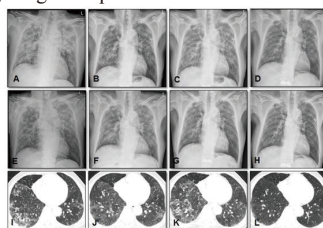


Figure 1  
Chest X-ray images during three hospitalizations (A: at the first admission; B: at the first discharge; C: at the second admission; D: at the second discharge; E: at the third admission; F: at the third discharge) and 1 month (G) and 2 months (H) after the last hospitalization; HRCT showing bilateral GGOs, reticular shadows, and consolidation at the first admission (I), at the second admission (J), and the third admission (K) and marked improvement 2 months after the third discharge (L).