



Allergic bronchopulmonary aspergillosis with chest pain as atypical symptoms

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For more on the Asano criteria see [https://www.jacionline.org/article/S0091-6749\(20\)31240-9/fulltext](https://www.jacionline.org/article/S0091-6749(20)31240-9/fulltext)

A 43-year-old man with a 1-month history of chest pain was admitted to West China Hospital (Chengdu, China) without cough, fever, or viscous sputum. He had a 36-year history of asthma, treated with inhaled 50 µg salmeterol xinafoate and 250 µg fluticasone propionate (Seretide;

GlaxoSmithKline, Brentford, UK), without relapsing for nearly a year. A CT scan showed multiple mucus plugs (figure A). Blood tests showed the peripheral eosinophil count was 1380 cells per uL (normal range, 20–520 cells per uL), the total IgE concentration was 1640 IU/mL (normal range, 5–150 IU/mL), and the results from an Xpert MTB/RIF test, a galactomannan antigen, and a 1,3-β-D glucan antigen test were negative. No sputum pathogenic test was done as the patient had no sputum. According to the Asano criteria, these results suggested a diagnosis of allergic bronchopulmonary aspergillosis. 2 days after admission, a painless fibrobronchoscopy examination was done to obtain mucus plugs for mycology and histopathology tests. Mucus and mucus plugs were detected in the bilateral pulmonary bronchi by bronchoscopy (figure B). Galactomannan antigen test, microscopy, and fungal culture results were negative, but metagenomics next-generation sequencing (mNGS) testing of bronchial lavage and puncture tissue of the endobronchial membrane rapidly detected *Aspergillus fumigatus*. 4 days after admission, the concentration of specific IgE for filamentous fungi in the blood was 5.67 IU/mL. A pathological test of the puncture tissue of the endobronchial membrane showed infiltration of eosinophils and fungal mycelia and Charcot–Leyden crystals. Thus, the diagnosis was allergic bronchopulmonary aspergillosis and the treatment was intravenous voriconazole (0.4 g twice daily on day 1, then 0.2 g twice daily for 4 days). 8 days after admission, the chest pain eased after therapy. The patient was discharged and the treatment plan switched to oral voriconazole (0.2 g twice daily for 1 month) and prednisone (40 mg once daily for 2 weeks, then 30 mg once daily for 1 week, and 25 mg once daily for another week) for continued treatment. 1 month after being discharged from hospital, the patient received a CT scan review, showing the multiple mucus plugs had almost disappeared (figure C).

Despite being recognised as a distinct type of asthma nearly 70 years ago, allergic bronchopulmonary aspergillosis remains a difficult and often long-delayed diagnosis. The Asano criteria are flexible enough to allow for diagnosis with or without direct pathogenic evaluation of mucus plugs, but the identification of the fungal filaments highlights the importance of mycology in linking infection to allergic inflammation.

Contributors

ZZY and TTC wrote the manuscript. PZ, LN, DL, and YL analysed the clinical records. The authors read and approved the final manuscript. Consent for publication was obtained from the patient.

Declaration of interests

We declare no competing interests.

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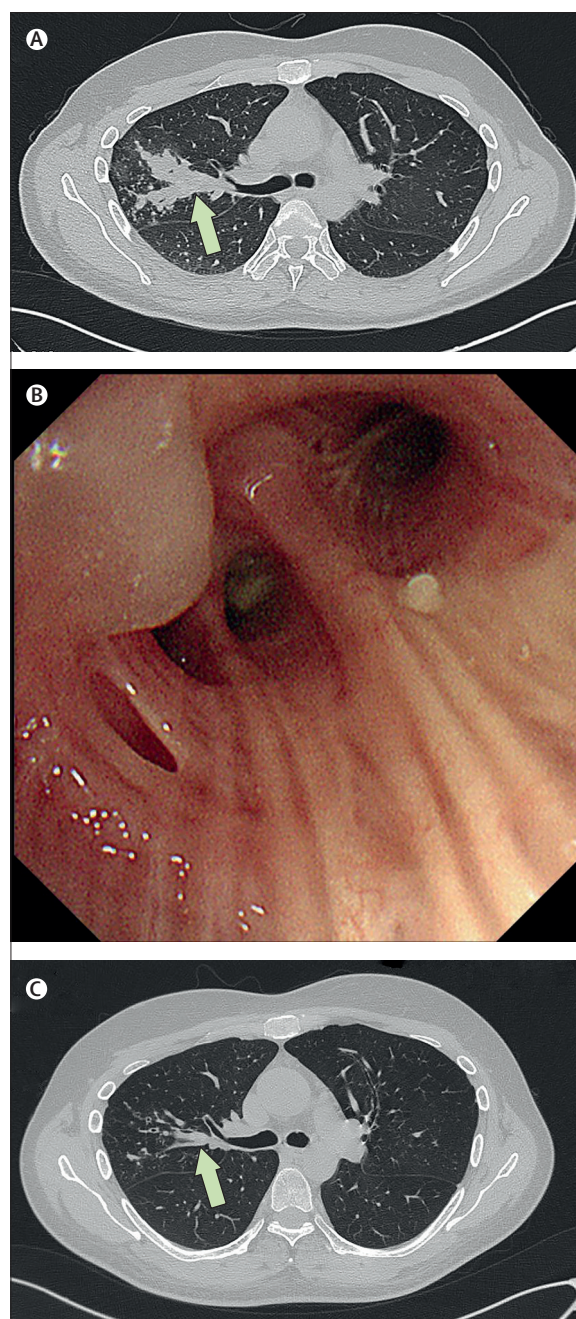


Figure: Multiple mucus plugs on CT scan and fibrobronchoscopy examination
(A) Multiple mucus plugs shown on a CT scan (arrow).
(B) Mucus and mucus plugs were detected by bronchoscopy. (C) The mucus plugs had almost disappeared on a CT scan (arrow).