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CLINICAL CASE

Allergic bronchopulmonary aspergillosis in teenager with bronchial asthma

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KEYWORDS
Allergic bronchopulmonary aspergillosis;
Hypersensitivity mechanisms;
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Bronchiectasis

Abstract Allergic bronchopulmonary aspergillosis (ABPA) is a pulmonary disorder caused by hypersensitivity mechanisms against antigens released by Aspergillus species, colonizing the airways.

We present the case of a 16-year-old male with a history of asthma and allergic rhinoconjunctivitis with a history of 15 months of cough with purulent sputum, intermittent fever and dyspnea. Thoracic tomography showed bronchiectasis accompanied by mucus impaction. He was treated with different antibiotics and steroid regimens, without a favorable clinical response. The presence of eosinophilia in the peripheral blood, immunoglobulin E Total, skin tests for Aspergillus positive guided the diagnosis of ABPA. Treatment with prednisone plus itraconazole was started, with remission of symptoms.

ABPA should be suspected in patients with asthma with poor response to treatment and alteration in radiologic studies. Treatment includes systemic steroids and avoiding exposure to Aspergillus.

PALABRAS CLAVE
Aspergilosis broncopulmonar alérgica;
Mecanismos de hipersensibilidad;
Asma;
Bronquiectasias

Aspergilosis broncopulmonar alérgica en adolescente con asma bronquial

Resumen La aspergilosis broncopulmonar alérgica (ABPA) es un trastorno pulmonar causado por mecanismos de hipersensibilidad contra antígenos liberados por especies de Aspergillus, que colonizan las vías respiratorias.

Presentamos el caso de un varón de 16 años con antecedentes de asma y rinoconjuntivitis alérgica con historia de 15 meses de tos con esputo purulento, fiebre intermitente y disnea. La tomografía torácica reporto bronquiectasias acompañadas de impactación de moco. Se le trató con diferentes regímenes de antibióticos y esteroides, sin tener una respuesta clínica favorable.

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La presencia de eosinófilia en la sangre periférica, inmunoglobulina E Total elevada y pruebas cutáneas para Aspergillus positivo guiaron el diagnóstico de ABPA. Se inició tratamiento con prednisona más itraconazol, con remisión de los síntomas.

Debe sospecharse ABPA en pacientes con asma con mala respuesta al tratamiento y alteración en los estudios radiológicos. El tratamiento incluye esteroides sistémicos y evitar la exposición a Aspergillus.

Introduction

Allergic bronchopulmonary aspergillosis (ABPA) is a pulmonary disorder caused by a hypersensitivity mechanisms type I, III and IV against antigens released by Aspergillus species, colonizing the airways of patients mainly with asthma and cystic fibrosis (CF).[1,2]

In predisposed individuals, disease occurs following colonization of the bronchi by Aspergillus conidia. The fungal hyphae extend, and allergens are released, leading to persistent airway inflammation resulting in excessive viscous mucous production and impaired mucociliary function. ABPA is clinically characterized by poorly controlled asthma, recurrent pulmonary infiltrates, and bronchiectasis, in some cases can leading to pulmonary fibrosis.[3]

In Mexico, its prevalence is unknown, however different case reports have been published.[4] It is estimated that ABPA affects 12.9% (2–32%) of the asthmatic population; in steroid-dependent asthmatics the prevalence is thought to be 7–14%.[5,6] It occurs with equal frequency in both sexes. Most patients are less than 35 years old at the time of diagnosis.[7]

Clinical case presentation

A 16 year old male patient with a previous diagnosis of asthma and allergic rhinoconjunctivitis since he was 6 years old, is evaluated in our department of allergy and immunology having history of 15 months of cough with purulent sputum, intermittent fever, progressive dyspnea and acrocianosis. Six months after onset of symptoms he was hospitalized in pediatric unit for 2 months with diagnosis of pneumonia, treated with different antibiotics. The chest X-rays showed a reticular pattern accompanied by images suggesting bronchiectasis, computed tomography of the lungs confirmed central bronchiectasis, accompanied by mucoid impaction and reticular infiltrates (see Figs. 1–3).

Due to poor response to treatment, were performed multiple studies among them: sputum smear microscopy in 3 determinations negative, tuberculin test negative, Chlorine test in the sweat (Chlorimetry and conductivity) two determinations negative, the flow cytometry and the nitroblue tetrazolium test were within normal limits, the immunoglobulins were not compatible with some pattern of Immunodeficiency, so it was ruled out that it was pulmonary tuberculosis, cystic fibrosis or some primary immunodeficiency.

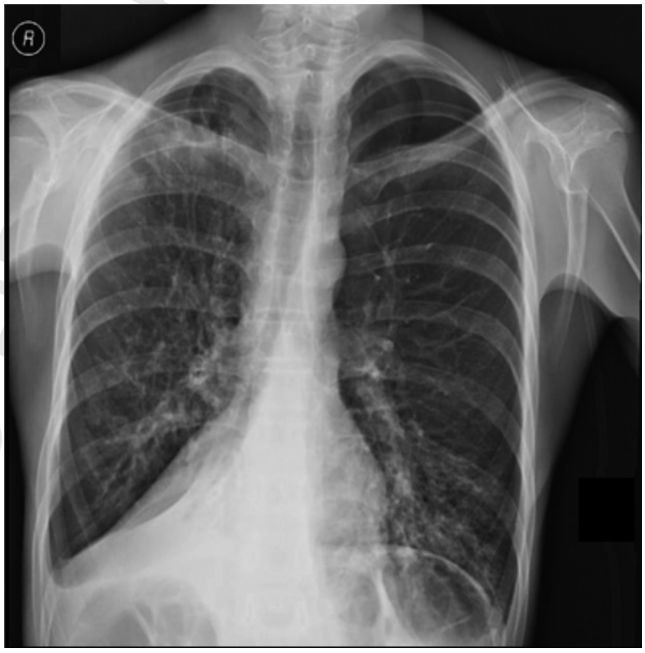

Figure 1 X-ray chest shows right posterior basal segmental atelectasis, the lungs present diffuse interstitial reticulum infiltrates, inflammatory infiltrates in the left lung base, bronchiectasis in principal and segmental bronchi, associated right pleural effusion. In addition, right subdiaphragmatic intestinal loops (Chilaiditi syndrome).

An attempt was made to perform fiberoptic bronchoscopy but patient presented significant desaturation during the procedure, which impeded the conclusion of the procedure and take samples.

He was discharged with mild clinical improvement and oxygen dependence, Nine months after discharge was evaluated in our service of allergy and immunology, were performed the following studies: Blood peripheral eosinophils 9.1% (absolut # 700), total IgE: 455 IU/mL (NV: <150), specific IgG for Aspergillus fumigatus 4.19 mgA/L (NV: <2.0), sputum cytology studies reported polymorphonuclear cells 3+, eosinophils 3+, negative sputum culture for fungi, positive skin prick tests for *Aspergillus fumigatus*,

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