International Journal of Recent Advances in Multidisciplinary Topics
Volume 4, Issue 4, April 2023
https://www.ijramt.com | ISSN (Online): 2582-7839

An Interesting Case of ABPA Mimicking Pulmonary Tuberculosis

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***Abstract*: This paper presents a case study of ABPA mimicking pulmonary tuberculosis.**

***Keywords*: ABPA, tuberculosis, modified ISHAM criteria.**

1. Introduction

Allergic bronchopulmonary aspergillosis (ABPA) is an idiopathic inflammatory disease of the lung, characterized by an allergic inflammatory response to colonization of the airways by Aspergillus fumigatus or other fungi [1]. Diagnostic criteria for ABPA include the presence of asthma or cystic fibrosis, pulmonary infiltrates, peripheral blood eosinophilia, immediate type I skin reactivity, and serum precipitin antibodies to Aspergillus fumigatus, elevated total serum IgE, increased levels of Aspergillus-specific IgE and IgG, and central bronchiectasis [1], [2].

ABPA with varied clinical presentation has been reported to occur in 20% of asthmatic patients admitted to hospitals and 5% of all cases of rhinitis [3]. However, almost half of ABPA patients are initially misdiagnosed as having pulmonary tuberculosis due to overlapping symptoms and imaging findings [4].

2. Case Details

74 yrs old female, c/o

- Cough with copius sputum production since 5 months
- Breathlessness on exertion
- Mild grade fever mostly during evening
- Other constitutional symptoms of loss of weight and appetite and generalized weakness since 4 months.
- No history of chest pain, syncope, palpitation, trauma to chest, headache, nausea and vomiting.
- No c/o increased breathlessness while lying down.
- *Past History*: Bronchial asthma since 10yrs of age and she was taking IPRAVENT and BUDECORT NEBULISATION on as and when needed basis.
- PT was diagnosed as pulm tuberculosis on clinical and radiological grounds and was started on akt since 4 months. pt did not have any significant clinical improvement.

Physical examination: pt was tachypneic but other vitals were stable; no Pallor, Clubbing or Cyanosis.

- Chest examination was unremarkable on inspection, palpation and percussion.
- On Auscultation bilateral crepitations and ronchi were audible.
- Examination of other Systems was Unremarkable.

Routine investigations: Hb-12gm%, TLC-14.2k, Platelet-437k, Renal functions and Liver functions were on the normal side.

Radiological Investigations:

Chest Radiograph: s/o non-homogenous opacities present in b/l upper and midzones with bronchiectatic changes seen.

CT-CHEST[P+C]:

- s/o Extensive Traction Bronchiectasis in B/L Lung parenchyma with Multiple discrete as well as confluent centrilobular nodular opacities with tree in bud appearance.
- surrounding GGO's scattered in B/l Lung parenchyma and few of them conglomerates to form patchy areas of consolidation.
- Some bronchi filled with mucus with apical scarring involving b/l upper lobes with volume loss
- Compensatory hyperinflation of b/l lower lobes.

Thus, looking at the History and Radiological Findings, a possibility of ABPA was suspected.

Sputum studies. i.e., SPUTUM AFB and SPUTUM CBNAAT were found out to be NEGATIVE and Montaux test was also done which showed No Induration at all.

Modified ISHAM Criteria:

The modified ISHAM criteria are used to diagnose allergic bronchopulmonary aspergillosis (ABPA). The criteria consist of predisposing conditions, obligatory criteria, and supportive criteria. The predisposing conditions include asthma or cystic fibrosis. The obligatory criteria include IgE levels greater than 1000 IU/ml and a positive immediate skin test or increased IgE antibody to Aspergillus. The supportive criteria include an absolute eosinophil count greater than 500, precipitins or increased IgG antibody to Aspergillus, and consistent radiographic findings [5].

In a patient with a total serum IgE level of 4000 IU/ml and Aspergillus-specific IgE level of 17.50 KUA/L, as well as an absolute eosinophil count of 888, a diagnosis of ABPA was established based on the modified ISHAM criteria [6].

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Patient's Absolute Eosinophil Count-888, SR. Total IGE-4000IU/ML & Aspergillus SP.IGE-17.50KUA/L.

Thus, a diagnosis of ABPA was established.

Treatment of ABPA:

The treatment of ABPA involves systemic corticosteroids to reduce the allergic inflammatory response and antifungal medications to target the Aspergillus colonization. In this case, the patient was initially started on empirical antibiotics and supportive treatment with mucolytics. However, after sputum studies for pulmonary tuberculosis came out negative, the patient was diagnosed with ABPA based on the Modified ISHAM criteria. The patient was then started on systemic steroids (inj. hydrocortisone 100mg IV TDS for 5 days followed by tapering with oral steroids tab. prednisone 0.5mg/kg) and antifungal medication tab. itraconazole 200mg BD, while the AKT was stopped. The patient improved clinically and radiologically and was discharged on oral steroids and tab. itraconazole.

3. Discussion

ABPA is an inflammatory pulmonary disorder that often complicates the course of bronchial asthma and CF. The natural course of ABPA is not well-defined, but it is often indolent and may go undiagnosed for years. The diagnosis of ABPA is based on a combination of clinical, radiological, and immunological findings, using the Modified ISHAM's criteria [7]. A variety of chest radiographic changes are associated with ABPA, with consolidation being the most common abnormality [8]. Other radiographic features include pulmonary infiltrates, atelectasis, opacities, bronchiectasis, and fibrosis [8]. In this case, the diagnosis of ABPA was established using the Modified ISHAM's criteria. ABPA is frequently misdiagnosed as pulmonary tuberculosis, leading to delayed initiation of proper therapy. Almost half of the ABPA cases are initially misdiagnosed as pulmonary tuberculosis [9]. Symptoms such as hemoptysis, cough, and fever caused by ABPA are often attributed to active tuberculosis and managed incorrectly, as in this case [9].

Take home message:

India is a high burden country w.r.t Pulmonary Tuberculosis, therefore most of the patients with chronic respiratory complaints are being started on Anti-Tubercular Treatment without being investigated properly. The Patient should be investigated thoroughly for pulmonary tuberculosis before starting any patient on ATT. ABPA should also be kept in mind as a differential diagnosis especially if patient with Chronic Respiratory Complaints have associated Asthma or Allergic Rhinitis or CF.

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