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CASE REPORT

ASPERGILLOMA IN A PATIENT WITH NO PREVIOUS HISTORY OF CHRONIC LUNG DISEASE

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Patients with aspergilloma should undergo surgical treatment, because there is a risk of sudden life threatening hemoptysis and because there is no effective alternate medical therapy. We report a case of aspergilloma in a 47 year old man with no past history of tuberculosis presented with the complaint of hemoptysis for two weeks. It was diagnosed radiologically and treated with left upper lobectomy. Post operative course was complicated by cardiorythmic disorder.

Keywords: Aspergilloma, Surgical resection, Cystic lesion

INTRODUCTION

Since the original pathologic description of human aspergillosis, by Virchow in 1856, the most unusual form of *Aspergillus* infection recognized is aspergilloma. Although more than 1,000 species of *Aspergillus* organisms have been identified, very few species may cause human disease, *Aspergillus fumigatus* being the most common type.¹ Usually, the spores are of low virulence in an immunocompetent host but can produce aspergilloma that results from saprophytic colonization of an existing lung or pleural cavity producing a fungus ball. The spore can also be a source of necrotizing bronchopneumonia in immunocompromised patients, leading to an invasive form with dissemination.² As demonstrated by many studies,³ the diagnostics is based on various signs. Among those, the presence of radiological opacity with air crescent sign is of specific importance. This air crescent sign reflects the presence of a fungus ball in a parenchymal cavity. The presence of *Aspergilli* on cultures must be interpreted by the physician, who may decide whether they are of pathological significance, knowing that spores of *Aspergilli* are easily inhaled and then identified in sputum and secretions. The serodiagnosis may be negative or doubtful. Histological examination identified hyphae of *Aspergillus* in the resected specimen. Saprophytic colonization of pre-existing pulmonary cavities predominantly in the upper lobes leads to the formation of a fungus ball, aspergilloma. The cavitory disease results from previous chronic lung diseases such as tuberculosis, sarcoidosis, histoplasmosis, bronchiectasis, bronchogenic cyst, chronic lung abscess, or cavitating carcinoma. We report the case of a patient with no previous history of any chronic lung disease. The presenting picture mimics other common conditions and as a result crucial intervention is likely to be delayed. Surgical resection offers the only realistic chance of a permanent cure for aspergilloma.¹ Early surgical resection of symptomatic aspergilloma and even asymptomatic

cases with reasonable complication is recommended. Post operative complications include hemorrhage, prolonged air leak, incomplete re-expansion, empyema, bronchial fistula and severe cardiac disorder.¹

CASE REPORT

A 47 year old tall lean executive male presented to the Cardiothoracic Surgery Clinic at The Aga Khan University Hospital with a history of hemoptysis for two weeks. He neither had a past history of tuberculosis or any chronic lung disease nor any family history of it. He had a history of cervical spondylitis not restricting him to perform his daily chores. On physical examination, chest auscultation revealed decreased air entry on left upper lung field. Chest radiographs and computed tomographic scan showed a cavitory lesion in left upper lobe, right at the apex. Aspergilloma was diagnosed radiologically, however in view of no past history of tuberculosis, malignancy could not be ruled out. His preoperative laboratory investigations showed negative AFB smear and culture and the pulmonary function test showed FEV1 55% of predicted. Bronchoscopy showed no intrabronchial mass with evidence of bleeding from the posterior segment of left upper lobe lung. We performed left posterolateral thoracotomy and left upper lobe was resected along with the aspergilloma (Fig.1). The mass comprised of brownish manure like fungal ball very suggestive of aspergilloma (Fig.2). Rest of the post operative course was unremarkable except that he developed supraventricular tachycardia which was treated by Beta-blockers and digoxin. Histopathology showed cystic lesion containing aspergillus like fungal organism confined to the cavity not invading the surrounding structures. There was no evidence of malignancy. This case is unusual because of the aspergilloma occurred in a patient who was neither immunocompromised nor had any history of tuberculosis. In endemic areas such as South East Asia, aspergilloma should be suspected even in the

patients who have no history of Tuberculosis and in those patients presented with hemoptysis

Fig-1: Resected left upper lobe with aspergilloma

Fig-2: The mass comprised of brownish manure like fungal ball very suggestive of aspergilloma

DISCUSSION

Pulmonary aspergilloma is a potentially life-threatening disease resulting from the colonization of lung cavities by the ubiquitous fungus *Aspergillus fumigatus*. The most frequent symptom indicating surgery is hemoptysis, because of the risk of massive and fatal hemoptysis.⁴ If delayed, cause torrential bleeding as it can erode the bronchus. In the series of Karas and associates,⁵ of 10 patients with hemoptysis who were not treated surgically, mainly because they were poor operative risks, 4 died. Surgical resection of aspergilloma is effective in preventing recurrence of hemoptysis. It has low risk in asymptomatic patients and in the absence of underlying pulmonary disease. Long term prognosis is mainly dependent on the general condition of patients. Some authors⁶ have estimated that major hemoptysis may occur with a rate incidence of 20%, surgery is also indicated to prevent hemoptysis in such patients. Operation was more and more often indicated to determine the etiology of a lung lesion, most often incidentally discovered, in asymptomatic patients, without past history of tuberculous disease.⁷ Intervention is

necessary not only to treat symptoms and prevent fatal hemoptysis, but also to prevent deterioration of patients' condition with profound cachexia.⁸ When patients have limited respiratory function or poor general condition, the risk for major complications after lung resection is obvious. Consequently, we think surgery remains, to date, the mainstay of treatment of aspergillomas, being more effective than antifungal medical treatments, which are often not satisfactory, even when recent drugs such as itraconazole are administered or when intracavitary injections of drugs is attempted,⁹ the intracavitary diffusion of drugs being hampered by fibrosis. In patients who seem able to tolerate lung resection, key questions remain to determine are the amount of lung parenchyma that is necessary to safely resect the lesion and whether the patient will be able to tolerate the surgery. The most frequent symptom indicating surgery is hemoptysis, because of the risk of massive and fatal hemoptysis. Surgical resection of aspergilloma is effective in preventing recurrence of hemoptysis. It has low risk in asymptomatic patients and in the absence of underlying pulmonary disease. Long term prognosis is mainly dependent on the general condition of patients. Patients with poor general condition and those with pulmonary insufficiency related to extended underlying lung disease are especially at risk for post operative complications.

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