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Original article

Chronic pulmonary aspergillosis: A frequent and potentially severe disease

L'aspergillose pulmonaire chronique : une pathologie fréquente et potentiellement grave

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Abstract

Introduction. – Chronic pulmonary aspergillosis is a pulmonary fungal infection with various presentations that can occur on a pre-existing cavity, often a sequel of tuberculosis. The objective of our study was to report the diagnostic and therapeutic management of pulmonary aspergilloma in our structure.

Patients and methods. – We retrospectively studied 81 cases of pulmonary aspergilloma having occurred in the respiratory diseases unit of the Casablanca Ibn Rochd hospital, over 11 years.

Results. – We included 48 male and 33 female non-immunocompromised patients, with an average age of 51 years (27–75). A history of tuberculosis was recorded in 78 cases. Hemoptysis was the revealing symptom in 73 cases. A characteristic “bell-like” image was observed in 25 cases. The serological results were positive for aspergillus in 54 cases. The treatment was surgical in 50 cases and medical in 24 cases. Five patients died.

Discussion. – A significant number of pulmonary aspergilloma cases were recorded in our study, occurring most frequently on sequels of tuberculosis. This disease is currently common in countries highly endemic for tuberculosis; early and adequate management is required.

Conclusion. – Aspergillosis is a frequent and potentially severe disease occurring on pre-existing lesions, most often in our context sequels of tuberculosis. Surgical resection is the reference treatment but is the cause of a significant morbidity and mortality. Preventive measures are mandatory.

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Keywords: Aspergilloma; Mycosis; Sequel of tuberculosis; Hemoptysis

Résumé

Introduction. – L'aspergillose pulmonaire chronique est une infection mycosique pulmonaire qui peut prendre différents aspects et survenir sur une cavité préexistante, le plus souvent séquellaire d'une tuberculose. L'objectif de ce travail est de rapporter la prise en charge diagnostique et thérapeutique des aspergillomes pulmonaires chez des patients non immunodéprimés dans notre structure.

Patients et méthodes. – Nous rapportons une étude rétrospective portant sur 81 cas d'aspergillome pulmonaire colligés au service des maladies respiratoires du centre hospitalier universitaire Ibn Rochd de Casablanca, sur une période de 11 ans.

Résultats. – Il s'agissait de 48 hommes et 33 femmes non immunodéprimés. La moyenne d'âge était de 51 ans (27–75). L'antécédent de tuberculose était noté dans 78 cas. L'hémoptysie était le symptôme révélateur dans 73 cas. L'image caractéristique en grelot était relevée dans 25 cas. La sérologie aspergillaire était positive dans 54 cas. Le traitement était chirurgical dans 50 cas et médical dans 24 cas. Cinq décès étaient rapportés.

Discussion. – À travers cette étude, un nombre important d'aspergillome pulmonaire était recensé, survenant pour la plupart sur des séquelles de tuberculose. Cette affection est, à ce jour, fréquente dans les pays à forte endémie tuberculeuse d'où la nécessité d'une prise en charge précoce et bien adaptée.

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Conclusion. – La greffe aspergillaire est une pathologie fréquente et potentiellement grave survenant sur des lésions préexistantes le plus souvent tuberculeuse. La chirurgie d'exérèse demeure la thérapeutique de référence mais la cause d'une morbidité non négligeable. Les mesures préventives restent indispensables.

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Mots clés : Aspergillome ; Mycose ; Séquelles de tuberculose ; Hémoptysie

1. Introduction

Pulmonary aspergillosis is an opportunistic pulmonary mycosis pulmonary fungal infection with various presentations depending on the underlying condition and the patient's immune status. Pulmonary aspergilloma is the development of *Aspergillus* hyphae in pre-existing cavities, usually sequels of tuberculosis [1–3]. It can present as simple pulmonary aspergilloma or chronic cavitary pulmonary aspergillosis (CCPA) [4]. Surgical resection is the only truly curative treatment and should be planned as soon as possible to prevent sometimes-fatal infectious and hemorrhagic complications. The severity of the disease is related to its morbidity and mortality [5]. The objective of this study is to describe the epidemiological, clinical, diagnostic and treatment of this fungus.

2. Patients and methods

We conducted a retrospective descriptive study of 81 cases of pulmonary aspergilloma collected from August 2003 to September 2014, in the respiratory diseases unit, at the Casablanca Ibn Rochd Teaching hospital. We selected the records of all HIV-negative non-immunocompromised patients who were diagnosed with pulmonary aspergilloma according to radiological, clinical, and/or biological, and/or histological data.

An information sheet was studied for each patient. It included epidemiological (age, gender), clinical (underlying condition or clinical history), and laboratory (chest imaging, bronchoscopy, aspergillus serology) data. The hospital morbidity and mortality, as well as the short and long-term outcome were also considered.

The definition of aspergillus infection is not clearly defined and many entities have been described with various names. The classification of the Infectious Diseases Society of America (IDSA) distinguishes simple pulmonary aspergilloma (SPA) from chronic pulmonary aspergillosis (CPA) [6].

The latter is classified as: chronic cavitary pulmonary aspergillosis (CCPA), former complex aspergilloma; chronic necrotizing pulmonary aspergillosis (CNPA); and chronic fibrosing pulmonary aspergillosis (CFPA), with specific diagnostic criteria.

This classification divides aspergilloma into 2 categories: SPA and CCPA. [6] SPA is a parenchymal cavity with well defined edges evolving without associated pleural parenchymal abnormalities [2]. CCPA is defined as the occurrence of multiple cavities that may or may not contain an aspergilloma, associated with pulmonary and systemic symptoms, and elevated inflammatory markers [6–8].

Table 1

Clinical presentation of pulmonary aspergilloma cases.
Présentation clinique des cas d'aspergillomes pulmonaires.

	Number	Percentage (%)
<i>History of tuberculosis</i>	78	96.3
<i>Delay between onset of tuberculosis and aspergillosis</i>		
2–10	32	39.5
10–20	43	53.1
20–23	6	7.4
<i>Hemoptysis</i>	73	90
<i>Dyspnea</i>	56	69.1
<i>Chronic bronchorrhea</i>	27	33.3
<i>Thoracic pain</i>	30	37
<i>Wasting</i>	19	23.4
<i>Fever</i>	12	14.8

Our series is an illustration and a description of APCC in a non-immunocompromised population with a high prevalence of tuberculosis.

3. Results

Forty-eight male and 33 female patients were diagnosed with pulmonary aspergilloma during the study period. The average age was 51 years (27 to 75 years). Seventy-eight (96.3%) patients had a history of treated pulmonary tuberculosis. The average delay between the onset of tuberculosis and aspergillosis was 12.87 years (2 to 23 years). Eighteen (22.2%) patients were smokers and 4 of these presented with chronic obstructive pulmonary disease (COPD), and 4 (5%) patients presented with well-controlled non-insulin dependent diabetes. No short or long-term oral or inhaled corticosteroid therapy was documented. The reasons for consulting were: hemoptysis in 73 (90%) cases (Table 1), with an average delay since the onset of symptoms of 3 months (2 days to 7 months). The clinical examination revealed a retracted hemithorax in 11 (13.6%), stertorous breathing in 72 (89%) patients, and wheezing in 28 (34.5%) patients.

Thoracic imaging (Table 2), including X-rays and CT scan performed in every cases, revealed pleural thickening in 38 (47%) patients, cavitary image in 26 (32%) patients, and a characteristic “bell-like” image in 25 (31%) patients. The lesions were predominant in the upper lobes, 74 (91.3%) patients.

Laboratory tests results revealed an accelerated sedimentation rate in 28 (34.5%) patients, hypochromic microcytic anemia in 17 (21%) patients with a range of 6.4 to 11.1 g/dL, and leukocytosis with a predominance of PNN in 13 (16%) patients with

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