Rev. Inst. Med. trop. S. Paulo
40 (4): 241-243, July/August, 1998.

PULMONARY SCEDOSPORIOSIS

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SUMMARY

A case of a solitary pulmonary nodule due to *Scedosporium apiospermum* (*Pseudallescheria boydii*) is related. A review of the pertinent literature was done and, in addition, similar lesions caused by other opportunistic fungi are commented.

KEYWORDS: Solitary pulmonary nodule; Fungal pulmonary nodule; *Scedosporium apiospermum*. Scedosporiosis; Pseudallescheriosis.

INTRODUCTION

The pathogenic spectrum of pulmonary infection caused by *Scedosporium apiospermum* (*Pseudallescheria boydii*) may be roughly classified in three groups: allergic, intracavitary colonization and invasive disease[3,11,13]. Furthermore, the fungus can be a transient colonizer of the bronchial tree[13]. Invasive pulmonary infection can vary from an assymptomatic solitary nodule[6,13,18] to a deadly necrotizing pneumonia[3].

Herein is reported a case of a patient presenting a solitary pulmonary nodule due to *S. apiospermum* , disclosed by chance at the radiological control of a previous fungus ball by *Aspergillus flavus*. A review of literature, encompassing similar lesion caused by other opportunistic fungi is also commented .

CASE REPORT

Prior to admission (Feb., 1986) the patient, a 41-year-old white woman had a long history of diseases. Twenty years ago, she had pulmonary tuberculosis, cured with antituberculous drugs; 4-years ago, carcinoma of the left breast, treated by mastectomy, radiation and chemotherapy; and, 2 years ago, polyomiositis, treated with azathioprin and high doses of steroids. In consequence of this last treatment she acquired diabetes.

At admission, the patient complained of ten-months fever, cough with purulent expectoration. A chest roentgenogram revealed atelectasis and a cavitation filled by homogeneous material in the left upper lobe (Fig. 1). Small clumps were observed in her sputum. These clumps dissected and mounted in potassium hydroxide revealed to be composed of a tangled mass of hyaline, branched, septate hyphae. Similar hyphae were observed in the sediment of the bronchial washing. No acid fast bacilli or neoplastic cells were disclosed in sputum and bronchial washing sediment. Culture of sputum in Sabouraud-chloramphenicol yielded colonies of *Aspergillus flavus*. No precipitin bands were observed in the immunodiffusion test with aspergilli (*A. fumigatus, A. flavus,* and *A. niger*). No specific treatment was appointed, but insulin and prednisone were maintained from Feb. 1986 to Oct. 1986.

In October 1986 a chest X-ray revealed that spontaneous lysis of the intracavitary ball had occurred, but a juxta hilar nodule and a mass (3 x 4 cm) had appeared in the right lower lung (Fig. 2). A transthoracic needle aspiration biopsy was performed. The specimen was examined unstained (Fig. 3) and also planted onto Sabouraud-chloramphenicol. Hyaline septate, branched hyphae were observed and *S. apiospermum* was isolated. No bands were seen in immunodiffusion test with *S. apiospermum* antigen. The patient was treated with ketoconazole (400 mg/day), prednisone (20 mg/day) and insulin (NPH 15 mg/day), and was maintained in ambulatorial control.

During 1987 the clinical condition of the patient deteriorated and she died at home. No autopsy was performed.

COMMENTS

Three cases of *S. apiospermum* infection of the lung presenting as a solitary pulmonary nodule were reported[6,13,18]. The patients, two males and one female, 50 to 70 years-old,were assymptomatic

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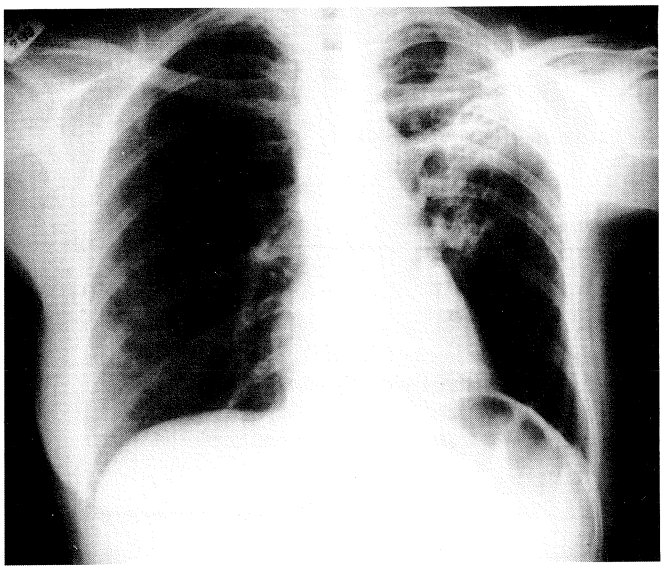

Fig. 1 - Chest roentgenogram in February 1986. A irregular cavity (2.5 cm) surrounded by opacification and containing mass or liquid, may by seen in the left upper lobe.

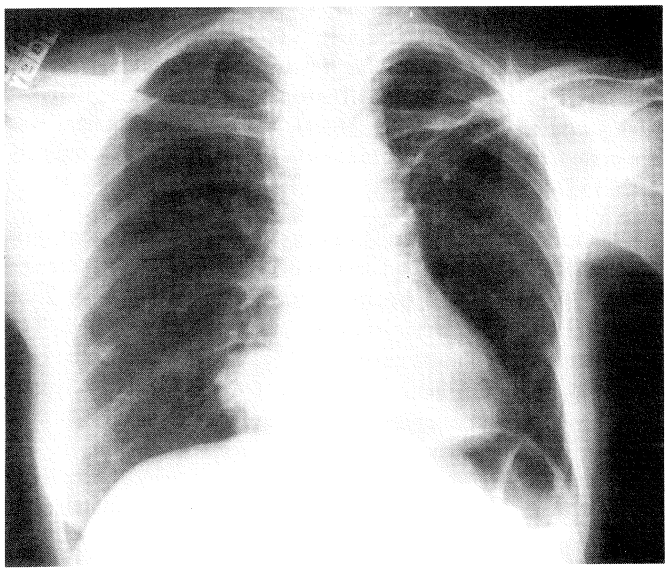

Fig. 2 - Chest X-ray in October 1986. Note spontaneous resolution of the upper lobe infiltrate. Appeared two nodular images in the right lung: perihilar mass (3 x 4 cm) and a nodule (0.8 cm) in the projection of the posterior arc of the eighth rib.

and their lesions disclosed by chance. Two of the patients presented no predisposing condition[13,18], the third, a cardiac transplant recipient, was under prednisone therapy[6]. Two patients[13,18], were submitted to a segmentectomy and the diagnosis was achieved by histological examination and culture[18] or only culture[13] of the excised lesion; in the third patient, a transthoracic needle aspiration was performed and the diagnosis obtained by examination of stained smeared specimen and culture[6].

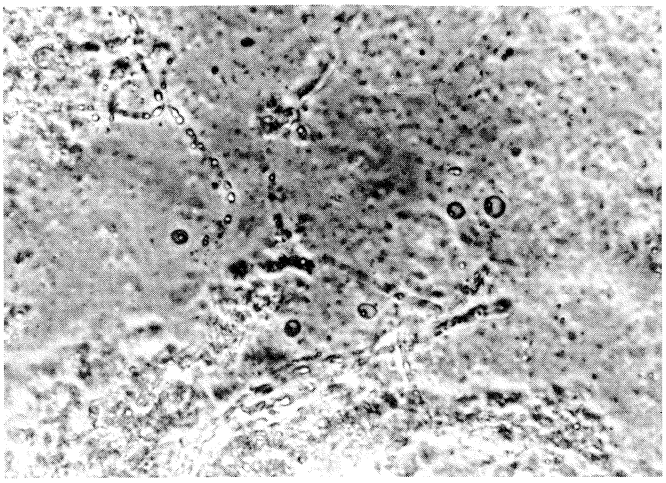

Fig. 3 - Hyaline septate hyphae and conidia in unstained aspirated specimen. Phase contrast, x 630.

Histopathological examination of the lesion of two patients[13,18] revealed: a fibrous encapsulated granulomatous nodule with central necrosis and gray granules in one[18] and a small abscess in the other[13].

It is interesting to quote that small intracavitary fungus ball (2.5 and 3 cm in diameter) by *S. apiospermum* can simulate a solitary nodule on X-ray, but they were recognized on the tomogram[1,8].

It is worth to remember that fungal solitary pulmonary nodules are usually caused by pathogenic dimorphic fungi[4,14,15,17] and usually are the result of a self-limited infection. But, the most important, pulmonary nodular lesion may be produced by opportunistic fungi. There are reports of solitary lung nodular lesions due to *Aspergillus fumigatus*[12,15], *A. flavus*[9], *Aspergillus* spp.[9,15,17,19], *Cladophialophora bantiana*[2], *Penicillium* spp.[7] and *Zygomycetes*[5,10,15]. These nodules were observed in patients with more than 45 years of age. One of these patients had diabetes[5], another one leukemia on chemotherapy and prednisone[19] and the remaining one had no predisposing conditions[2,5,7,10,12]. Histopathological study of the nodule was done in some patients, it revealed: a round pulmonary ischemic infartion due to arterial invasion of the fungus[5]; a partially calcified lesion[7]; fibrosis mixed with granuloma and microabscess[2]; or an abscess[19].

The main purpose of diagnostic evaluation and management of solitary pulmonary nodules is to avoid thoracotomy in non-malignant nodule. Needle aspiration biopsy is very useful to establish the diagnosis[17] and to guide the treatment, as it occurred in our patient. Obtained specimens can be cultured for specific identification of the agent. In this case, *S. apiospermum*, the treatment requires ketoconazole or itraconazole, because this fungus was not susceptible to amphotericin B.

RESUMO

Scedosporiose pulmonar

É relatado caso de nódulo solitário pulmonar por *Scedosporium apiospermum* (*Pseudallescheria boydii*). Foi feita uma revisão da literatura pertinente e, além disso, casos com lesões similares causadas por outros fungos oportunistas são comentados.

ACKNOWLEDGEMENTS

We wish to thank Dr. Leo Kaufman (CDC, Atlanta, GA, U.S.A.) for performing the immunodiffusion tests.

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Received: 06 May 1998
Accepted: 16 June 1998