Aspergillus sydowii ISOLATED FROM TWO BRONCHIAL LAVAGE SAMPLES

(Aspergillus sydowii aislado de dos muestras de lavado bronquial)

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Key words: Aspergillus sydowii, bronquial lavage.

SUMMARY

Two samples of bronchial lavage of a patient hospitalized in the Pneumology Unit of the Otavio de Freitas General Hospital, Recife, PE, Brazil were tested. The direct examination of the two samples revealed the presence of small round hyaline conidia (isolated and grouped); in the second sample, apart from these findings, the presence of oval and oblong yeast cells with simple budding was determined. The pure cultures of Aspergillus obtained from the two samples of bronchial lavage were identified as A. sydowii and pure cultures of Candida were identified with C. albicans.

INTRODUCTION

Pulmonary aspergillosis is an opportunist disease, frequently occurring as a result of pre-existing lesions as in other etiologies. It presents distinct clinical forms, such as allergic bronchopulmonary, invasive and intracavitary (fungal ball or aspergilloma); the most commonly found etiological agents are the species Aspergillus fumigatus, A. flavus and A. niger (Conant et al., 1971; Rippon, 1982; Wanke, 1984; Lacaz et al., 1991).

According to Wanke (1982) in Brazil this mycosis has not been the subject of much study and it is seldom diagnosed.

Various studies show that there may be an association of pulmonary aspergillosis and pulmonary tuberculosis (Bust et al., 1985; Morozov et al., 1989; Gaeta et al., 1992) and the occurrence of post tuberculosis aspergillosis has been referred to by various authors (Gonzales et al., 1985; Stamatis & Greschuchina, 1988; Kreisel et al., 1990; Kohn et al., 1992; Maekaki et al., 1993; Wex et al., 1993).

Neoplastic processes bring in their wake alterations in the hosts which favour opportunistic fungal infections, amongst which are those caused by the species Aspergillus (Ferreira et al., 1983; Gefter et al., 1985; Salerno et al., 1986; Vidotto et al., 1986; Stokes et al., 1989, Pizzo & Walsh, 1990; Grillot et al., 1991; Smith & Beneck, 1991; Elias et al., 1993).

This paper has as the only objectives to detect, isolate and identify fungi of the respiratory systems of patients hospitalized in this hospital.

MATERIALS AND METHODS

Two samples of bronchial lavage, collected 3 months apart, were processed from a 39 year old, male patient, a native of Recife, hospitalized in the Pneumology Unit of the Otavio de Freitas (SANCHO) General Hospital, who had been diagnosed with diabetes mellitus and pulmonary tuberculosis with a non-realized resistant Bacillus-alcohol-acid (BAAR), with negative histopathological neoplastic cells, and positive for filamentous...
fungi. The two samples of bronchial lavage were obtained and supplied by bronchoscopy and had been sent to the Mycology Department where they were duly processed for direct examination and culture. The time between collection and manipulation of the clinical samples did not exceed 2 hours.

The direct examination of the bronchial lavage samples was undertaken on their native state (without colouring or clarifier).

The 2 samples of bronchial lavage were seeded in duplicate in Petri dishes with Sabouraud agar plus 0.5% of yeast extract (YE) and 50 mg of chlorophenicol, and incubated at room temperature (RT) 28-29°C and 37°C. The cultures which arose after being purified were maintained in the above-mentioned means of culture without antibiotics and held in a test tube.

For identification and classification Raper & Fennel (1965) were consulted for the Aspergillus strains as well Kreger-van Rij (1984) and Barnett et al. (1990) for the yeast strain.

RESULTS

The direct examination of the 2 bronchial lavage samples revealed the presence of small, round hyaline conidia, isolated and grouped; in the second sample, apart from the spores already mentioned, the presence of oval and oblong yeast cells with simple budding was noted.

The Aspergillus pure cultures obtained from the 2 samples of bronchial lavage in Sabouraud agar +YE +chlorophenicol, both at RT and 37°C, were identified in Czapek and Malt agar as A. sydowii. After being purified, the Candida cultures obtained from the second sample of bronchial lavage were identified as C. albicans.

The 2 samples of A. sydowii (3631 and 3632) and C. albicans (3620) are deposited in the URM-Mycotheca of the Mycology Department, Centre of Biological Sciences, Federal University of Pernambuco, Recife, PE, Brazil.

DISCUSSION

In the literature the association between pulmonary aspergillosis and pulmonary tuberculosis was reported by Tomlinson & Steven (1987), and Kumar et al. (1992) and with diabetes mellitus by Karen et al. (1988).

Through clinical, histopathological and microbiological examinations, as well as mycological examination of the sputum and bronchial secretion, pulmonary aspergillosis cases were diagnosed which have the species A. fumigatus, A. niger and A. flavus (Tomlinson & Steven, 1987; Kumar et al., 1992) as etiological agents. Bandele et al. (1993), however consider the presence of A. fumigatus, A. niger and Aspergillus sp. in the sputum of patients as pulmonary tuberculosis as an infection and not as pulmonary aspergillosis. The results obtained in this work showed the presence of A. sydowii (Section Versicoloris) (W. Gams et al. 1985) in the bronchial lavage samples.

The fungus A. sydowii was isolated from clinical samples of hands and ulcer (Raper & Fennel, 1965). As a saprophic it has been isolated from the soil, vegetables, bird excrement and foodstuffs (Raper & Fennel, 1965; Domsch et al., 1980; Pitt & Hocking, 1985).

There is no reference in the literature about the occurrence of A. sydowii in respiratory systems samples.

Thus we can conclude that A. sydowii is being mentioned for the first time as a fungi present in bronchial lavage samples detected from direct and culture examination.

It was not possible to get further clinical data on this case so we focused merely on this interesting isolation without considering possible derived pulmonary aspergillosis.

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