

OTOMYCOSIS IN SÃO PAULO⁽¹⁾

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SUMMARY

In view of the lack of researches on otomycoses in Brazil, we have tried to study their incidence, their clinical characteristics and the predisponent factors.

During one year, 22 suspected cases were seen, 20 of them corresponded to otomycosis infections.

The most frequent species were *Aspergillus niger* (35%) and *Candida albicans* (20%). The genus *Aspergillus* represented 75% of the isolates.

Itching and hyperaemia (70%), otalgia (65%), hipoacusia (50%) were the commonest signs. Lack of cerumen (70%) chronic otitis (30%) previous antibiotic therapy and eczema (25%) were the most outstanding predisponent factors.

KEY WORDS: Otomycosis: *Aspergillus* spp.; *Candida albicans*

INTRODUCTION

Mycotic diseases of the external auditory meatus (EAM) are commonly produced by opportunistic fungi^{2, 5, 10, 13, 15, 23, 24, 25, 29, 30, 32}. Some authors refer to them as rare diseases, others as very frequent ones²² representing 13 to 21.3% of the external otitis^{2, 14, 17}. *Aspergillus* specially *A. niger*, *A. fumigatus*, *A. flavus* and *Candida albicans* are the main isolated species.

Although otomycosis infection presents some characteristic signs and symptoms^{2, 5, 9, 13, 15, 18, 24, 25, 29, 30, 32} it can be wrongly diagnosed as bacterial otitis, dermatitis or chronic eczema. Pruritus, shooting pain, local feverish and buzzing have been related. Under examination typical images are observed^{1, 2, 12, 12, 15, 25, 29, 30, 32}.

Although otomycosis infections are very common in tropical area, this subject has received little attention in Brazil, where only a few cases have been reported^{4, 6, 16, 20, 21, 28}.

This paper relates one year survey of otomycosis cases in São Paulo, Brazil.

MATERIALS AND METHODS

Twenty two patients with clinical diagnosis of otomycosis were studied. Samples were collected from the posterior third of the EAM with a sterile swab.

The samples were processed under direct microscopic examination in KOH 20% plus blue or black Parker 51 permanent ink 3:1, according to the technique described by COHEN⁸ which permits to visualize the various fungi and to colour selectively *Malassezia furfur*. Cultures on dextrose Sabouraud agar with chloramphenicol and dextrose Sabouraud agar-chloramphenicol with olive oil 10% to isolate *M. furfur* according to BAPTISTA³ were tried. The isolated fungi were

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classified according to RAPER & FRENEL²⁶, RAPER & THOM²⁷ and LODDER¹⁹.

The personal data of each patient as well as the clinical signs, the predisposing factor, the EAM appearance were registered.

RESULTS

Of the 22 suspicious cases, 20 of them (90%) corresponded to otomycosis infection, confirmed by direct microscopic examination and culture.

In table 1 the isolated fungi species of otomycosis cases according to the sex, race, age and affected ear of the patients are presented. The *Aspergillus* species represented 75% of the isolates, *A. niger* was the most frequent one followed by *C. albicans* (20%). Women white people represented more than 50% of the patients. The right ear was affected in 80% of the cases.

Table 2 summarizes the fungi structures in relation to the aspect of EAM. The morphological characteristics of the organisms established the genera of the fungi in 75% of the preparations. In 60% of the cases the presence of mycelial fungi was related to pseudomembrane formation.

DISCUSSION

The lack of trained mycologists on clinical laboratories, the mistaken diagnosis in many cases may be the cause of the few reports on otomycoses in Brazil. Only occasional cases prior to 1981 have been published^{4, 6, 16, 20, 28}.

In the present investigation and in previous experiences³² bilateral otomycoses have not been found very frequently, which does not agree with many authors^{13, 25}. The presence of fungi propagules without any clinical symptoms should not be confused with otomycosis infection. In 55.5% of the cases, the same fungus of the infected ear was isolated from the healthy one. Only two cases of bilateral otomycoses were studied. One of them was caused by *C. albicans*. The diagnosis for a period of 10 years was dermatitis and eczema. The other one, a more rare case was produced by two different *Aspergillus* species: *A. flavus* and *A. terreus*. CIVILA et al.⁷ reported a case of bilat-

eral otomycosis by *A. niger*, with like eczema lesion treated unsuccessfully for years with antibacterial therapy.

The characteristic morphologic structures of *Aspergillus* spp., *Penicillium* spp. and *Candida* spp. made possible the identification of the genera by microscopic direct preparations in the majority of the cases.

Aspergillus species represented 75% of the isolates. *A. niger* (35%) was the most frequent isolated fungi followed by *C. albicans* (20%) which is in agreement with many reports^{2, 5, 9, 15, 31, 32}. *P. citrinum* was isolated from one patient (Table 1). No other report was found in the Brazilian literature about this agent on mycoses of the ear. MAHER et al. in 1982 isolated this organism in four patients²³, GRIGORIU et al.¹⁵, BAMBULE et al.² referred the identification of *Penicillium* spp. in three times.

The clinical aspects of the EAM and the microscopic findings present some correlations^{2, 15, 32}. When a pseudomembrane with or without black, brown or yellow-brown dots is seen, the aetiological agent is a filamentous fungus which was observed in 55% of our cases.

The most common predisposing factors were lack of cerumen (70%) chronic or acute otitis (60%) eczema (25%) previous antibiotic therapy (25%). Pruritus (70%), hyperemia or erythema (70%), otalgia (65%) and hypoacusia (50%) were important signs.

Great part of the patients were adults (Table 1) which is in accordance with other reports^{9, 21, 30}. Profession was not related to otomycosis cases.

White women were found to be the most commonly attained (65%) while other researches did not find any influence according to the sex¹⁵. FEINMESSER¹¹ reported an important difference on the incidence of cases among black and white people (1:99) explained by the less susceptibility of the black ones due to their shorter and wider EAM.

More studies should be carried on otomycoses in order to know their real incidence in Brazil and their prevalence on otoringolaryngology clinics.

TABLE 1:

Isolated fungi species of otomycosis cases according to the sex, race, age and affected ear of the patients.

Isolated fungi species	Number of cases %	Sex		Race		Age (Years)	Affected ear	
		M*	F*	W*	B*		right	left
A. flavus	2 (10.0)	0	2	1	1	16-18	2	0
A. nidulans	2 (10.0)	2	0	1	1	13-47	2	0
A. niger	7 (35.0)	2	5	3	4	16-18-18 21-21-33-64	7	0
A. versicolor	2 (10.0)	1	1	1	1	11-22	2	0
A. flavus #								
A. terreus	1 (5.0)	0	1	1	0	37	1	0
Aspergillus sp.	1 (5.0)	1	0	1	0	8	0	1
C. albicans	4 (20.0)	1	3	4	0	19-24-27-46	2	2
P. citrinum	1 (5.0)	0	1	1	0	58	0	1
TOTAL:	Number %	20 100,0	7 35.0	13 65.0	13 65.0	7 35.0	16 80.0	4 20.0

* M = Male; F = Female; W = White; B = Black.

= Bilateral otomycosis cases; one of them was caused by **C. albicans**; the other patient presented a different organism in each ear: **A. flavus** and **A. terreus**.

TABLE 2:

Morphological fungi structures observed in direct microscopic preparations related to the appearance of external auditory meatus in otomycosis cases.

Morphological fungi structures	Appearance of Eam					Examined patients Number%
	White pseudomembrane with black-brown dots	Pseudomembrane with yellow brown dots	White pseudomembrane	Appearance of bread crumbs	Desquamation	
Conidia, hyphae, and Aspergillus type conidiation	2	0	3	4	1	10 (50.0)
Conidia and hyphae	1	0	2	1	1	5 (25.0)
Yeasts and pseudohyphae	1	1	0	2	0	4 (20.0)
Conidia, hyphae and Penicillium type conidiation	1	0	0	0	0	1 (5.0)

χ^2 obs. = 10.200 with degrees of freedom; P value 0.5984 $p \leq 0.05$

RESUMO

Otomiose em São Paulo (Brasil)

Em vista da escassez de publicações sobre otomicoses no Brasil, foi projetada uma pesquisa para conhecer a incidência, características clínicas, fatores predisponentes e agentes etiológicos da micose.

Durante um ano, 22 casos suspeitos foram estudados, 20 dos quais corresponderam à otomicoses.

As espécies mais freqüentemente isoladas foram *Aspergillus niger* (35%) e *Candida albicans* (20%). O gênero *Aspergillus* representou 75% dos isolamentos.

Os sinais clínicos mais comuns foram prurido e hiperemia (70%), otalgia (65%), hipoacusia (50%). Falta de cerumen (70%), otite crônica (30%), antibioticoterapia prévia e eczema (25%) foram os fatores predisponentes mais relevantes.

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