

A Clinical Study of Otomycosis

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Abstract

Background: Otomycosis is fungal infection of the external auditory canal and its associated complications sometimes involving the middle ear.

Methods: A prospective study was conducted on 50 patients who were clinically diagnosed with otomycosis and presented to our OPD.

Results: *Aspergillus niger* 46.00% was the predominant species isolated. *Aspergillus flavus* 28.00% was the second most common species isolated. *Aspergillus fumigatus* 12.00% *Candida* species 8.00% and *Mucor* was 4% isolate.

Conclusion: Clinical suspicion of otomycosis can prevent unnecessary use of antibiotics.

Keywords: Otomycosis, *Aspergillus*, *Candida*.

Introduction

Otomycosis is fungal infection of the external auditory canal and its associated complications sometimes involving the middle ear. It occurs because the protective lipid/acid balance of the ear is lost¹. Fungi cause 10% of all cases of otitis externa. In recent years, opportunistic fungal infections have gained greater importance in human medicine, perhaps because of the increasing number of immunocompromised patients². However, such fungi may also produce infection in

immunocompetent hosts. In immunocompromised patients, treatment of otomycosis should be vigorous to prevent complications such as hearing loss and invasive temporal bone infection³. Its prevalence is greatest in hot humid and dusty areas of the tropics and subtropics.

Fungi are abundant in soil or sand that contains decomposing vegetable matter. This material is desiccated rapidly in tropical sun and blown in the wind as small dust particles. The airborne fungal spores are carried by water vapours, a fact that correlates the higher rates of infection with the monsoon, during which the relative humidity rises to 80%.⁴

Otomycosis presents with nonspecific symptoms like pruritis, discomfort and pain in the ear, aural fullness, tinnitus, hearing impairment, and sometimes discharge, and also recurrence is common⁵. Predisposing factors for otomycosis include habitual instrumentation, dermatitis, unhygienic habits, immunocompromised individuals, pre-existing ear disease etc⁶. Studies have revealed that there has been an increase in the prevalence of otomycosis in recent years that has been linked to the extensive use of antibiotic eardrops,^{9,10} widespread use of steroids, broadspectrum antibiotics, and chemotherapeutic agents. There is substantial variation with respect to clinical

features, presentation, and treatment outcome seen among immunocompetent and immunocompromised individuals.⁷

Material and Methods

A prospective study was conducted on 50 patients who were clinically diagnosed with otomycosis and presented to our OPD.

The study included patients of all age group and either sex with a clinical diagnosis of otomycosis.

Exclusion Criteria: Only new cases of otomycosis will be included in the study. The patients who were already on treatment for otomycosis were excluded from the study. A total of 50 cases of clinically diagnosed otomycosis presenting were subjected to a comprehensive history and clinical and laboratory investigation as per the proforma designed for this study.

The outer part of the patients' EAC was cleaned using sterile swabs, and material from the deeper portion of the EAC was taken using sterile aural swabs and sent to microbiology department for processing.

One swab was subjected to microscopic examination with 10% KOH and the other swab was inoculated over Sabouraud's dextrose agar media for culture.

Results

Our study included patients of age group ranging from 11-70 years. The youngest was an 11-year-old female patient and the eldest was a 70-year-old male patient. Maximum number of cases were between 21-30 years of age (42%). Mean age was 36.11±9.87 Yrs. 64% patients were male and 36% patients were female.

Table 1. Symptoms wise distribution of patients

| Symptom | No of patients | Percentage |
|-----------|----------------|------------|
| Itching | 45 | 90.00% |
| Pain | 28 | 56.00% |
| Discharge | 34 | 68.00% |

90.00% patients were present with itching.

Table 2. Fungal wise distribution

| Fungal isolates | No of patients | Percentage |
|-----------------------|----------------|------------|
| Aspergillus niger | 23 | 46.00% |
| Aspergillus flavus | 14 | 28.00% |
| Aspergillus fumigatus | 6 | 12.00% |
| Candida species | 4 | 8.00% |
| Mucor | 3 | 6.00% |

All specimens yielded single organism. Aspergillus niger 46.00% was the predominant species isolated. Aspergillus flavus 28.00% was the second most common species isolated. Aspergillus fumigatus 12.00% Candida species 8.00% and Mucor was 4% isolate.

Discussion

Otomycoses is frequent in tropical and subtropical climates because of heat and humidity.⁸ Diagnosis of otomycosis is usually made by clinical findings with pruritus being the most common symptom followed by ear discharge. In our study, presumed diagnosis of otomycosis was confirmed by laboratory findings .

The incidence of Otomycosis in our study was high in the age group of 21-30 years (42%) followed by 11-20 years. This may be due the fact that immune-compromised states are less common in younger age group.⁸

Aneja et al⁹ reported 78% of the patients positive for otomycosis, Kaur et al¹⁰ reported otomycosis in 74.7% patients, Ozcan et al.,¹¹ in 65% patients and Chin and Jegathesan¹² in 74.6% patients. Pontes et al¹³ reported otomycosis in 19.4% patients.

In this study, the species of Aspergillus were the largest taxon isolated from patients. A. flavus was the most common fungal pathogen followed by A. fumigates. Araiza et al.,¹⁴ also reported A. flavus to be the most common pathogen in Mexico City. This was different

from studies conducted in hot humid regions where *A. Niger* was the most common mycological pathogen.¹⁵

Conclusion

Clinical suspicion of otomycosis can prevent unnecessary use of antibiotics and potent steroids for prolonged periods, which might lead to the alteration of the local flora of the ear and leads to the morbidity like hearing loss.

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