



(RESEARCH ARTICLE)



A study on mycology spectrum with aetiopathological factors and its management in otomycosis

SRADHA ASOK *, RANJITHASHREE CML, VIDYASHREE KM and SUNI IQBAL

Department of E.N.T, Sri Siddhartha Medical College and Hospital Agalkote,, Tumkur, Karnataka, 572107, India.

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Abstract

Background: Otomycosis (fungal otitis externa), is a fungal infection of external auditory canal (EAC). It is a common challenging problem in the ENT clinic, because for the need for long term treatment and follow up. The present study was thus designed with the view to know the mycological pattern encountered in otomycosis along with the aetiopathological factors and its management.

Methodology: A prospective study was done in the Department of ENT, Sri Siddhartha Medical College & Hospital, Tumkur for a period of 12 months, total of 51 patients of both genders with clinical features of otomycosis were enrolled in the study. 2 swabs were taken from the EAC of all cases and after aural toileting under microscope, were treated with 1% clotrimazole and followed up for 2 months

Results: A total of 51 patients were examined in this study, of which 47 cases produced positive fungal isolates (92.1%). Females were more commonly affected than males. Most common pre-disposing factor was manipulation of the ear by unsterile material for cleaning the ear. Itching and pain were the most common symptoms, Aspergillus was the most common fungus isolated. Clotrimazole showed good response symptomatically and mycological clearance was seen within a week.

Conclusion: Otomycosis is still a common problem and is often misdiagnosed for other chronic otitic conditions. Fungi thrive on exfoliated dead epithelial cells along with humid environment in EAC. Thorough cleaning of fungi followed by topical antifungal agent is important in management of this condition. Clotrimazole is effective, safe and well tolerated topical antifungal agent.

Keywords: Otomycosis; Female; Aspergillus; External Auditory Canal; Clotrimazole

1. Introduction

Otomycosis, also known as fungal otitis externa is a fungal infection of external auditory canal (EAC). Over 1,00,000 species of fungi have been described, but only 100 are recognized as pathogens. Most of them cause opportunistic infections¹. Otomycosis has a worldwide distribution with a high prevalence in the hot, humid and dusty climates of tropical and subtropical regions. The incidence of otomycosis have increased due to increasing use of antibiotics, immunosuppressive conditions and various aural preparations and unhealthy aural hygienic factors. Otomycosis is not highly infectious but has a tendency to be confused with other chronic otitic conditions, unless manifested in a classical way, they tend to be misdiagnosed. The present study was thus designed with the view to know the mycological pattern encountered in otomycosis along with the aetiopathological factors and its management.

* Corresponding author: SRADHA ASOK

2. Material and method

A prospective study on 51 cases was done in the Department of Otorhinolaryngology, Sri Siddhartha Medical College & Hospital, Tumkur, during a period of 12 months, of both genders who were diagnosed with otomycosis clinically. Written informed consent was taken. All the cases were subjected to mycological examination after taking 2 swabs. One swab for wet mount preparation in 10% KOH solution and second swab was directly inoculated into Sabourad's dextrose agar medium. Under otomicroscopy EAC was cleaned thoroughly and all fungal debris was cleared following treatment with 1% Clotrimazole and was followed up for a minimum of 1 week-2 months for noting the clearance or recurrence of the disease.

3. Results

A total of 51 patients were enrolled in the study, of which 47 cases (92.1%) produced positive fungal isolates. Highest incidence was seen in age group 21-30years (25.5%) and least incidence in 0-10years (2.2%). Slight female predominance was seen in this study (53.2%). Common pre-disposing factor was cleaning the ear with unsterile material (55.3%). Itching in the ear was the most common symptom (93.6%). Aspergillus was the most common fungi isolated (38 cases) of which 59.5% were *A.niger*, 13% were *A.flavus* and 8.5% were *A.fumigatus*. Next common fungi isolated was *Candida* species (6 cases) and mixed growth was seen in 3 cases. Most of the cases were superficial infection. Clotrimazole showed good response symptomatically and mycological clearance was seen within a week 74.4% cases and persistence of disease upto 2-4 weeks was seen in 25.5% cases.

4. Discussion

The present study was conducted for a period of 12 months in the Department ENT, Sri Siddhartha Medical College & Hospital, Tumkur. Out of 51 cases clinically diagnosed to have otomycosis, 47 cases showed positive fungal isolates and were included in the study. Highest incidence of otomycosis was seen in the age group of 21-30years which co-relates with the studies done by Satish H.S et.al², Mohanty JC¹ et al and Paulose KO et al, where higher incidence was seen in the same age group.

Table 1 Pre-disposing factors

Pre-disposing factors	Frequency	Percentage (%)
Cleaning with unsterile material	26	55.3
Eardrops	24	51.1
Water entering EAC	18	42.5
COM	10	21.3
Head cloth	10	21.3
Previous surgery	4	8.5

Table 2 Clinical presentation of Otomycosis

Presenting complaints	Frequency	Percentage (%)
Itching	44	93.6
Pain	40	85.1
Fullness	39	82.9
Discharge	7	14.8
Others	14	29.7

A slight higher incidence in females (53.2%) was noted in the present study which co-relates with the studies done by Barati B³ et al, Pradhan⁴ et al and Yehia MM et al. Though many studies have shown equal or slightly higher incidence in males or females, it is considered that gender has no influence in this disease. It is observed that majority of cases

used unsterile materials like safety pins, hairpins, matchsticks for cleaning the ear, followed by use of topical antibiotics/steroids. Similar observation was found in the study done by Xianhao Jia⁵ et al, Satish H.S² et al and Araiza J⁶ et al. Itching in the ear was the most common presenting complaint, followed by pain, feeling of blocked sensation in the ear, discharge from the ear. These symptoms were also observed in the studies done by Barati B³ et al, Mohanty JC¹ et al, Xianhao Jia⁵ et al and were comparable to the present study. Aspergillus was the most commonly isolated species followed by Candida. Studies done by Gokale SK⁷ et al, Xianhao Jia⁵ et al, observed the same pattern. In the present study, topical 1%Clotrimazole was used to treat after ear toileting under microscope. Efficacy was noted by disappearance of symptoms and mycological clearance. Treatment was effective in 35 cases at the end of 1 week, on further follow up 42 cases showed betterment and 5 cases had recurrence of disease. Studies by Hurst WB⁸ et al and Paulose KO et al have emphasized the effectiveness of Clotrimazole.

Table 3 Results of Topical Antifungal Agent in treating Otomycosis

Topical Anti-Fungal Drug	Number of Cases	Symptomatic and Mycological Clearance within 1 week (%)	Persistence of disease upto 2-4 weeks (%)	Failure or Recurrence of disease within 2 months (%)
1%Clotrimazole	47	74.4	25.5	10.6

5. Conclusion

Otomycosis is still a common problem and is often misdiagnosed for other chronic otitic conditions. No age act as barrier or sex as immunity. Cleaning of EAC with unsterile materials and use of topical antibiotic/steroid drops were commonest predisposing factors. Itching and pain in the ear were the commonest symptoms. Fungus isolated were Aspergillus and Candida and are to be considered as predominant fungus for otomycosis. Thorough and meticulous cleaning of the fungi and epithelial debris from the ear followed by antifungal agent is of paramount importance in management of this condition, along with the elimination of predisposing factors. Clotrimazole is effective, safe and well tolerated topical antifungal agent.

Compliance with ethical standards

Disclosure of Conflict of Interest

No conflict of interest to be disclosed.

Statement of ethical approval

This study was approved and ethical clearance taken from the ethics committee Sri Siddhartha Medical College, Tumkur, Karnataka.

References

- [1] Mohanty JC, Mohanty SK, Sahoo RC, Ghosh SK, Chayani Ni, Mallick B, Bar AK. Clinico-microbial profile of Otomycosis in Berhampur. Indian Journal of Otolaryngology. 1999;5(2):81-83.
- [2] Satish HS, Viswanatha B, Manjuladevi M. A Clinical Study of Otomycosis. IOSR-JDMS. 2013;5(2):57-62.
- [3] Barati B, S A R Okhovvat SAR, Goljanian A, Omrani MR. A Clinical and Mycological Study. Iran Red Crescent Med J. 2011;13(12):873-876.
- [4] Pradhan B, Ratna N, Amatya RM. Prevalence of Otomycosis in OPD of ENT in Tribhuvan University Teaching Hospital, Kathmandu, Nepal. Ann Otorhinolaryngol. 2002; 112:384-87.
- [5] Xianhao J, Qin L, Fanglu C, Wenjun C. Otomycosis in Shanghai: aetiology, clinical features and therapy. Mycoses. 2012;55(5):404-409.
- [6] Araiza J, Canseco P. Otomycosis: Clinical and mycological study of 97 cases. Rev Laryngol Otol Rhinol (Bord). 2006;127(4):251-4.
- [7] Gokale SK, Shashidhar S, Suligavi, Mahesh B, Anushka D, et al. Otomycosis: A Clinico-Mycological Study. International Journal of Medical and Health Sciences. 2013;2(2):218-223.
- [8] Hurst WB. Outcome of 22 cases of perforated tympanic membrane. The Journal of Laryngology and Otolaryngology. 2001;115:879-80.