MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.59218/makrjms.2015.549.552

OPEN ACCESS

Key Words
Otomycosis, ENT, frequency, symptoms, modalities

Corresponding Author
Narendra Singh Waldia
Department of ENT ICARE Institute of Medical Sciences and Research and Dr. Bidhan Chandra Roy Hospital, Haldia

Author Designation
Assistant Professor

Received: 30 October 2015
Accepted: 25 November 2015
Published: 30 November 2015

Citation: Narendra Singh Waldia, 2015. Determine the Frequency, Common Presenting Symptoms, Predisposing Factors and Outcome of Different Treatment Modalities of Otomycosis. Res. J. Med. Sci., 9: 549-552, doi: 10.59218/makrjms. 2015.549.552

Determine the Frequency, Common Presenting Symptoms, Predisposing Factors and Outcome of Different Treatment Modalities of Otomycosis

Narendra Singh Waldia
Department of ENT ICARE Institute of Medical Sciences and Research and Dr. Bidhan Chandra Roy Hospital, Haldia

ABSTRACT
The aim of the present was to determine the frequency, common presenting symptoms, predisposing factors and outcome of different treatment modalities of Otomycosis. The diagnosis of otomycosis was made on the basis of the recognizable and characteristic appearance of fungal debris and fruiting bodies under microscopy. Cultures are not routinely obtained because there is generally a rapid response to treatment in most of the cases. A total of 200 patients with documented diagnosis of otomycosis were included in the analysis. The group consisted of 117 (58.5%) males 83 (41.5%) females. The age at diagnosis ranged from 1½ to 75 years with a mean age of 38. Fifty five years and a median age of 30 years. Mean follow up time was 2 years, bilateral disease was observed in 45 (22.5%) patients on initial presentation. This study demonstrates that the diagnosis of otomycosis requires vigilance from clinicians given its nonspecific symptoms.

INTRODUCTION

It is almost in accordance with other studies[1]. It is a pathologic entity, with can-dida and aspergillus the most common fungal species[2,3]. It is not clear that the fungi are the true infective agents or mere colonization species as a result of compromised local host immunity secondary to bacterial infection. Various predisposing factors include a humid climate, presence of cerumen, instrumentation of the ear, increased use of topical antibiotics/steroid preparations[4], immuno-compromised host, patients who have undergone open cavity mastoidectomy and those who wear hearing aids with occlusive ear mold. The infection is usually unilateral and characterized by inflammatory pruritis, scaling and otalgia[5].

In recent years, opportunistic fungal infections have gained greater importance in human medicine, perhaps because of the increasing number of immuno-compromised patients[6]. However, such fungi may also produce infection in immuno-competent hosts[7]. In immuno-compromised patients, treatment of otomycosis should be vigorous to prevent complications such as hearing loss and invasive temporal bone infection[8,9]. Its prevalence is greatest in hot humid and dusty areas of the tropics and subtropics. Andrall and Gaverret were the first to describe fungal infections of the ear, although a wide spectrum of fungi are involved, Aspergillus and Candida are the most common species encountered. In 1960's studies by Geaney and by Laksh-mipathi and Murthy revealed that all cases observed by them had been caused by either Aspergillus or Candida species[6,10]. 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%. We conducted this study with the aim to determine the frequency, common presenting symptoms, predisposing factors and outcome of differ-rent treatment modalities.

MATERIALS AND METHODS

It was observational study conducted over two years from March 2013 to April 2015 in ENT Department of ICARE Institute of Medical Sciences and Research and Dr. Bidhan Chandra Roy Hospital, Haldia. Patients were prospectively recruited via non-probability convenience sampling. It composed of 200 patients of both sexes and all age groups with documented diagnosis of otomycosis. Statistical analysis was carried out. The diagnosis of otomycosis was made on the basis of the recognizable and characteristic appearance of fungal debris and fruiting bodies under microscopy. Cultures are not routinely obtained because there is generally a rapid response to treatment in most of the cases. The treatments offered to most of patients are as follow. Clotrimazole 1% lotion or cream was used after cleaning the canal with the use of microscopy and gauze impregnated in clotrimazole cream. Most of the cases settled in one week. The treatment was continued for three weeks in resistant cases. Residual disease was defined as a condition that failed to respond to our initial choice of treatment. Recurrent disease was defined as a condition that occurred in patients who had resolution of disease after initial treatment but recurred in the same ear at a later date. Data was collected regarding presenting frequency of the disease, response to differ-rent treatment regimens, common symp-toms, and history of prior otological procedures, treatment outcomes and follow up duration.

RESULTS AND DISCUSSIONS

A total of 200 patients with documented diagnosis of otomycosis were included in the analysis. The group consisted of 117 (58.5%) males 83 (41.5%) females. The age at diagnosis ranged from 1½ to 75 years with a mean age of 38.25 years and a me-dian age of 30 years. Mean follow up time was 2 years, bilateral disease was observed in 45 (22.5%) patients on initial presen-tation.

As shown, hearing loss and pruritis were the most common symptoms at the time of diagnosis, followed by otalgia, otorrhoea and tinnitus. Physical examination findings that suggest otomycosis include a thick fibrinous accumulation of debris, small well circumscribed areas of granulation tissue within the external canal or on the tympanic membrane and watery discharge. Treatment received before diagnosis is listed in Table No.1. The duration of treatment ranged from days to years. Nearly 60% patients have been using ototopical antibiotic drops, neomycin, polymyxin-B hydrocortisone and ciprofloxacin and oral antimicrobial for treatment of presumed otitis media before diagnosis.

Among the 158 patients that responded to initial treatment 74 (37%) patients had recurrent disease. The efficacies of the two most common treatment modalities are shown in the (Table 2).

Table 1: Therapeutic Agent

	No. of patients	Percentage
Ototopical antibiotic drops	112	56
Pain killer	135	67.5
Antihistamine	118	59
Systemic antibiotic	93	46.5
Soda Glycerin E/D (others)	84	42

Table 2: Efficacy of different treatment modalities

No. of patients 160	%	No. of patients 60	%
Resolution	90	56.2	52	86.6
Residual disease	25	15.6	12	20
Recurrent disease	55	34.3	16	26.6

The infection may be either sub-acute or acute and is characterized by inflammation, pruritis, scaling and severe discomfort. The mycosis results in inflammation, superficial epithelial masses of debris containing hyp-hae, suppuration and pain. In addition, symptoms of hearing loss and aural fullness are as a result of accumulation of fungal debris in the canal. Pruritis has been freq-uently cited as one of the hall mark sym-ptoms up to 93% in one study[11,12]. It was reported among the chief complaints in 108 (77%) of the current study population. Aspergillus and Candida species are the most commonly identified fungal pathogens in otomycosis[13,14]. Infections with Candida can be more difficult to detect clinically because of its lack of a characteristic appe-arance like aspergillus and can present as otorrhoea not responding to aural antimicrobial[14]. Otomycosis attributed to Candida is often identified by culture data. Although multiple in vitro studies have examined the efficacy of various antifungal agents, there is no consensus on the most effective agent[15]. Various agents have also been used clinically with variable rate of success[16,10]. Nevertheless, application of appropriate topical antifungal agents coupled with frequent mechanical debridement usually results in prompt resolution of symptoms, although recurrent or residual disease can be com-mon. In this series more than 70% of the patients had resolution of the infection with initial treatment, often in less than two weeks. Tympanic membrane perforation may occur as a complication of otomycosis that starts in an ear with an intact ear drum[8]. In the study by Kumar[8], the incidence of tympanic perforation in otomycosis was found to be 11%. He also stated that perforations were more common with otomycosis caused by Candida albicans. Most of the perforations were behind the handle of malleus. The mechanism of perfo-ration was attributed to mycotic thrombosis of the tympanic membrane blood vessels, resulting in vascular necrosis of the tympanic membrane. Six patients in our immuno-compromised group experienced tympanic membrane perforation. The perforations were small and situated in the posterior quadrant of the tympanic memb-rane. They healed spontaneously with medical treatment. Rarely, fungi can cause invasive otitis externa, especially in immune-compromised patients. Aggressive systemic antifungal therapy is required in these patients and a high rate of mortality is associated with this condition[9].

CONCLUSIONS

This study demonstrates that the diagnosis of otomycosis requires vigilance from clinicians given its nonspecific symptoms. Treatment regimens such as clotrimazole and 2% salicylic acid coupled with mechanical debridement are generally effective. However recurrence is not uncommon and eradication of disease can be particularly difficult in post mastoidectomy patients and in immuno-compromised patients.

REFERENCES

1. Mugliston, T. and G. O'Donoghue, 1985. Otomycosis-a continuing problem. J. Laryngol. Otol., 99: 327-333.
2. Kaur, R., N. Mittal, M. Kakkar, A.K. Aggarwal and M.D. Mathur, 2000. Otomycosis: A clinicomycologic study. Ear Nose Throat J., 79: 606-609.
3. Vennewald, I., J. Schönlebe and E. Klemm, 2003. Mycological and histological investigations in humans with middle ear infections. Mycoses, 46: 12-18.
4. Miertusova, S. and M. Simaljakova, 2000. [Yeasts and fungi isolated at the mycology laboratory of the first dermatovenerology clinic of the medical faculty hospital of comenius University in Bratislava 1995-2000]. Epidemiol. Mikrobiol. Imunol., 52: 76-80.
5. Mahmoudabadi, A.Z., 2006. Mycological studies in 15 cases of Otomycosis. Pak. J. Med. Sci., 22: 486-488.
6. Viswanatha, B., D. Sumatha and M.S. Vijayashree, 2012. Otomycosis in immunocompetent and immunocompromised patients: Comparative study and literature review. Ear, Nose Throat. J., 91: 114-121.
7. Carney, A.S., 2008. Otitis externa and otomycosis. In: Scott-Brown's Otorhinolaryngology: Head and Neck Surgery., Gleeson, M., G.G. Browning, M.J. Burton, R. Clarke and J. Hibbert *et al*. (Eds.)., CRC Press/Balkema, Boca Raton, Florida, USA., ISBN-13: 9781444175905, pp: 3351-3357
8. Kumar, K.R., 1984. Silent perforation of tympanic membrane and otomycosis. Indian J. Otolaryngol., 36: 161-162.
9. Rutt, A.L. and R.T. Sataloff, 2008. Aspergillus Otomycosis in an immunocompromised patient. Ear Nose Throat. J., 87: 622-623.
10. Paulose, K.O., S.A. Khalifa, P. Shenoy and R.K. Sharma, 1989. Mycotic infection of the ear (otomycosis): A prospective study. J. Laryngol. Otol., 103: 30-35.
11. Stern, J.C. and F.E. Lucente, 1988. Otomycosis. Ear Nose Throat. J., 67: 804-810.
12. Pradhan, B., N.R. Tuladhar and R.M. Amatya, 2003. Prevalence of otomycosis in outpatient department of otolaryngology in tribhuvan university teaching hospital, kathmandu, Nepal. Ann. Otol. Rhinol. Laryngol., 112: 384-387.

13. Sood, V.P., A. Sinha and L.N. Mohapatra, 1967. Otomycosis: A clinical entity-clinical and experimental study. J. Laryngol. Otol., 81: 999-1004.
14. Youssef, Y.A. and M.H. Abdou, 1967. Studies on fungus infection of the external ear. J. Laryngol. Otol., 81: 401-412.
15. Stern, J.C., F.E. Lucente and M.K. Shah, 1988. In vitro effectiveness of 13 agents in otomycosis and review of the literature. Laryngoscope, 98: 1173-1177.
16. Kurnatowski, P. and A. Filipiak, 2001. Otomycosis: Prevalence, clinical symptoms, therapeutic procedure. Mycoses, 44: 472-479.