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Etiopathogenesis and Management of Acute Otitis Externa in a Tertiary Care Center

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ABSTRACT
Certain climatic conditions tend to favor the development of some ear infections and inflammations especially of the external ear. Otitis externa denotes the inflammation of the external ear and tends to occur commonly. This study is aimed at determining the frequency of occurrence, the type of otitis externa and management of patients coming to Otorhinolaryngology OPD in Sree Mookambika Institute of Medical Sciences, kulasekharam. To know the sex predilection, age group most commonly affected, occurrence of symptoms and management outcome in patient presenting with otitis externa. All patients diagnosed with otitis externa within the period of January 2022 to July 2022 presented to Otorhinolaryngology OPD in Sree Mookambika Institute of Medical Sciences, kulasekharam are included in the study. The diagnosis was mainly clinical. analysed demographics, clinical features, types and management of otitis externa. There were a total number of 100 patients with otitis externa. There were 56% females and 44% males with a ratio of 1.3:1. The age group 21-30 years was the age group most affected., n= 31 (31%). Chronic otitis externa was the commonest form seen. Debris in the ear was found to be the commonest clinical feature followed by otalgia., 31% and 29% respectively. The treatment was mainly medical., comprising systemic and topical broad spectrum antibiotics, topical antifungal and steroidal drops and aural tilting with wick dressing and analgesics. There were no major complications noted. Otitis externa is common in the Otorhinolaryngology OPD and the diagnosis is often based on history and physical examination. The chronic form is the commonest type encountered and treatment is mainly empirical.

INTRODUCTION

Otitis externa (OE) can take acute or chronic forms. The acute form is primarily of bacterial origin and annually affects four in 1000 persons in the United States. The chronic form is commonly of a fungal or allergic origin or is the manifestation of dermatitis. It affects 3-5% of the population[1-4]. Acute OE is unilateral in 90% of patients., it peaks in persons seven to 12 years of age, declines after 50 years of age and often, is associated with high humidity, warmer temperatures, swimming, local trauma and hearing aid or hearing protector use[5]. The external ear is the part of our ears which is seen from outside. It is made up of the auricles (pinna) and external auditory canal and includes the outer wall of the middle ear, i.e. the eardrum. Together with the eardrum and the middle ear, the pinna plays a role to boost up the sound. The pinna behaves like a funnel to transfer the sound to the external meatus and the external meatus focuses sound onto the eardrum for further transferring[6]. The EAC is covered by hair follicles and ceruminous glands. The cerumen provides a protective barrier and an acidic environment that inhibits bacterial and fungal growth[5]. Therefore when there is disruption of the normal pH of the auditory canal and hence loss of the normal protective lipid/acid balance of the ear for any reason, otitis externa can result[6,7]. It is also known that excessive use of topical antibiotics drops can give rise to otitis externa because it tends to alter the normal flora of the external ear hence predisposing to fungal overgrowth and invasion by bacteria other than the normal commensals[7]. The two most characteristic presenting symptoms of otitis externa are otalgia (ear discomfort) and otorrhea (discharge in or coming from the external auditory canal)[7]. If inflammation causes sufficient swelling to occlude the external auditory canal, the patient may also complain of aural fullness and loss of hearing[8-10]. It is known that more than 75% of the cases is caused by bacteria and the commonest involved is Pseudomonas, which is responsible for approximately 60 percent of infections, Staphylococcus for 15 percent, fungi for 10 percent and other organisms for the remaining 15 percent of infections[11,12]. Otomycosis is found 1 in every 8 cases of otitis externa and some researchers postulate that 10% of patients with symptoms of otitis externa are fungal[12]. Complications of otitis externa include ear canal stenosis, myringitis and tympanic membrane perforation, regional dissemination of infection (auricular cellulitis, chondritis and parotitis) and progression to malignant otitis externa, which can be fatal[8]. Excessive moisture and trauma, both of which impair the canal's natural defenses, are the two most common precipitants of otitis externa and avoidance of these precipitants is the cornerstone of prevention. Diagnosis is often made by history and physical examination including otoscope and otomicroscopy[13]. Tragal tenderness is the diagnostic sign of otitis externa. Treatment for otitis externa can include cleaning the ear as well as topical creams, ointments, or drops containing antiseptics, antibiotics and steroids[14]. Cleaning is best done by suctioning under direct visualization. Alternatively, a cotton swab with the cotton fluffed out can be used to gently mop out thin secretions from the external auditory canal, again under direct visualization. If the secretions are thick, crusted or adherent, instillation of antibiotic drops or hydrogen peroxide may help to soften them for removal[8,9,14]. When the canal is quite swollen, a cotton wick specifically designed for this purpose should be placed to facilitate drainage and permit application of topical medications[8,15]. A thorough examination of the head and neck should be performed to rule out other diagnoses and to look for possible complications of otitis externa. The examination should include evaluation of the sinuses, nose, mastoids, temporomandibular joints, mouth, pharynx and neck.

Fig. 1: Acute Otitis Externa with Otomycotic Debris

Fig. 2: Otitis Externa with Aspergillus Niger Growth

Objectives:

- To know the most commonly affected sex and age group.
- To known the different types of otitis externa.
- To compare the occurrence of symptoms.
- Management outcomes of otitis externa.

MATERIALS AND METHODS

All patients diagnosed with otitis externa within the period of January 2022 to July 2022 presented to Otorhinolaryngology OPD in Sree Mookambika Institute of Medical Sciences, kulasekharam are included in the study. The diagnosis was mainly clinical. Presence of discharge or debris in the ear of a patient with complaints of earache, itching with or without ear blockage with an intact tympanic membrane is taken as otitis externa with or without laboratory

confirmation. Demographics, clinical features, forms and management of otitis externa. Patients with perforated tympanic membrane in the absence of ear itching and otalgia were excluded.

RESULTS AND DISCUSSIONS

There were a total number of 100 patients with otitis externa that met the inclusion criteria seen within the period under study. The females comprised 56% of this population while the males were 44% with a female to male ratio of 1.3:1. The age group 21-30 years was the age group most affected., n=31(31%). The least affected was the age 80+with 1% (Table 1).

Debris in the ear was found to be the commonest clinical feature followed by ear pain., 31% and 29% respectively. Otalgia was the commonest feature seen in acute otitis externa while debris in the ear was seen more in chronic form and otomycosis (Table 2).

Majority of the patients were treated empirically and resolved on the average of 2 weeks. About 52% of the patients` had resolution in 2 weeks, 17% resolved in 3 weeks, While 27% resolved in 4 weeks and 4% was lost to follow up. In acute otitis externa, 63% resolved in 2 weeks and 6% was lost to follow up. While in chronic, 44% were resolved by 2 weeks and 2% was lost to follow up. In otomycosis, 65% was treated within 2 weeks. Malignant otitis had 100% resolution within 2 to 3 weeks. The 2 cases of malignant otitis were also found to have diabetes mellitus (Table 3). Ear swab of the ear discharge was not routinely done, it was carried out only in 13 patients and yielded pseudomonas species and staphylococcus species, the patients were treated empirically. The treatment was mainly medical., comprising systemic and topical broad-spectrum antibiotics, topical antifungal and steroidal drops and aural toileting with wick dressing and analgesics. Majority of the patients were treated with aural toileting, systemic and topical drugs combination. Ear syringing was the commonest method of aural toileting employed in these patients. There were no major complications noted.

Table 1: Sociodemographic Distribution of Subjects (n=100).

Sociodemographic	Frequency	Percentage
Sex		
Male	44	44
Female	56	56
Age groups (years)		
<1	4	4
1-10	6	6
11-20	10	10
21-30	32	32
31-40	16	16
41-50	15	15
51-60	11	11
61-70	3	3
71-80	2	2
>80	1	1

Table 2: Presenting Symptoms of Otitis Externa.

	Pain	Otomycotic debris in the ear	Itching	Blockage	Discharge
Acute	18(62)	4(13)	1(7)	3(16)	1(17)
Chronic	7 (24)	19(61)	8 (62)	11(58)	3(50)
Malignant	1(3)	1(3)	-	-	-
Otomycosis	3(11)	7(23)	4(31)	5(26)	2 (33)
Total	29(100)	31(100)	13(100)	19 (100)	6 (100)

Table 3: Duration of Treatment for Otitis Externa.

Duration of treatment	Acute	Chronic	Malignant	Otomycosis
2 weeks	10(63)	26 (44)	1(50)	15 (65)
3 weeks	2(12)	12 (20)	1 (50)	2(9)
4 weeks	3(18)	20 (34)	-	4 (17)
Lost to follow-up	1 (6)	1(2)	-	2 (9)
Total	16 (100)	59 (100)	2 (100)	23(100)

Otits externa is a commonly seen condition in the Otorhinolaryngology OPD. It is known that the condition is commonly found in areas of high humidity and it is a common condition in swimmers. The condition was found to be commoner among females similar to a study by Rowlands. Though otitis externa can affect all age groups, the adult age groups were more affected with the age group 21-30 years having the highest point prevalence similar to findings of other researchers. The prevalence was also noted to decrease after age 60 years. In the present study, chronic otitis externa was found to be the commonest form encountered. Malignant otitis was the least type. It was also noted in this study, that otomycosis second commonest and acute otits externa was the third commonest form. It is known that otomycosis is implicated in about 21% of all cases of otitis externa. Debris in the ear was the commonest clinical features noted in the study with otalgia being commoner in the acute forms and debris commoner in the chronic form. In this study, the diagnosis was clinically based using history and physical examination and only very minimal fraction of these patients had ear swab of the ear discharge carried out. Majority of the patients were also empirically treated. The common organisms found in the few that had laboratory investigation yielded pseudomonas and staphylococcus spp. Majority were treated medically using systemic and topical drugs. These were often administered after aural toileting. The commonly employed modality of treatment in these patients was aural toileting with both systemic and topical drugs. The second commonly used modality was the use of topical drugs only, after aural toileting while some had in addition to aural toileting, aural wick dressing done. These gave some good results since most, averagely resolved within two to three weeks of treatment. The 2 patients with malignant otitis were among the number that had laboratory investigation and both of them resolved with aural toileting, systemic and topical antibiotics and wick dressing. There were no complications noted in this study. Otitis externa therefore was found to be a common otologic condition seen in the Otorhinolaryngology OPD and chronic type was the commonest form encountered in our environment.

CONCLUSION

Otitis externa is commonly seen in the Otorhinolaryngology OPD. The diagnosis is often based on history and physical examination. The chronic form

is the commonest type encountered and treatment is mainly empirical with majority resolving within 2-3 weeks of such treatment. Appropriate treatment of localized otitis externa with topical antibiotics should eliminate the need for systemic medications. Addition of systemic medications can unnecessarily increase treatment costs and the likelihood of side effects and could reduce the likelihood of patient compliance.

REFERENCES

1. Sood, S., D.R. Strachan, A. Tsikoudas and G.I. Stables, 2002. Allergic otitis externa. Clin. Otolaryngology Allied Sci., 27: 233-236.
2. Daneshrad, D., J.C. Kim and R.G. Amedee., 2002. Acute otitis externa. J La State Med Soc., 154: 226-228.
3. Hannley, M.T., J.C. Denneny and S.S. Holzer, 2000. Use of Ototopical Antibiotics in Treating 3 Common Ear Diseases. Otolaryngology–Head Neck Surg., 122: 934-940.
4. AGIUS, A.M., J.M. PICKLES and K.L. BURCH, 1992. A prospective study of otitis externa. Clin. Otolaryngology, 17: 150-154.
5. Beers, S.L. and T.J. Abramo, 2004. Otitis Externa Review. Pediatr. Emergency Care, 20: 250-256.
6. Szymanski, A. and Z. Geiger., 2021. Anatomy, head and neck, ear. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.
7. Halpern, M.T., C.S. Palmer and M. Seidlin, 1999. Treatment Patterns for Otitis Externa. The J. Am. Board Family Med., 12: 1-7.
8. Bojrab, D.I., T. Bruderly and Y. Abdulrazzak., 1996. 1. Otitis externa. .Otolaryngol Clin North Am., 29: 761-782.
9. Mirza N., 1996. 1. Otitis externa. Management in the primary care office. Postgrad Med., 99: 157-158.
10. Weber, P.C. and A.J. Klein, 1999. HEARING LOSS. Med. Clin. North Am., 83: 125-137.
11. Farmer HS., 1992. 1. A guide for the treatIllent of external otitis. Am Fam Physician 21: 96-101.
12. Russell,].D., M. Donnelly, D.P. McShane, T. Allin-Jones. and M. Walsh., 1993. 1. What causes acute otitis externa? J LaryngoIOtoI 107: 898-901.
13. Hirsch, B.E., 1992. Infections of the external ear. Am. J. Otolaryngology, 13: 14-55.
14. Shohet, J.A. and J.E. Scherger, 1998. Which culprit is causing your patient's otorrhea? Postgraduate Med., 104: 59-60.
15. Biedlingmaier, J.F., 1994. Two ear problems you may not need to refer. Postgraduate Med., 96: 141-145.