International Journal of Otorhinolaryngology and Head and Neck Surgery
Rameshkumar E et al. Int J Otorhinolaryngol Head Neck Surg. 2018 Jul;4(4):1057-1060
http://www.ijorl.com
pISSN 2454-5929 | eISSN 2454-5937

Original Research Article

DOI: http://dx.doi.org/10.18203/issn.2454-5929.ijohns20182713

Prevalence of self probing, clinical presentation and the causative organism among the patients presented with otitis externa in a tertiary care hospital

Edakkattil Rameshkumar*, Salini Ajitha

Department of Otorhinolaryngology, Jubilee Mission Medical College and Research Institute, Thrissur, Kerala,, India

Received: 24 April 2018
Accepted: 26 May 2018

***Correspondence:**
Dr. Edakkattil Rameshkumar,
E-mail: drerk@rediffmail.com

ABSTRACT

Background: Otitis externa, an inflammatory condition commonly reported in almost all age groups. But the prevalence and etiology are varying on different region. This study was aimed to find out the prevalence of self probing, clinical presentation and the causative organism among the patients presented with otitis externa in a tertiary care hospital.
Methods: All the patients presented with otitis externa in the outpatient department of ENT were included in the retrospective study. The history of self probing was identified using a questionnaire. The clinical presentation was noticed and organism was isolated from the swab taken from the external ear canal. The non-parametric data was expressed in numbers and percentage.
Results: Total 49 patients were included in the study. The average age of patient was 39.5±14.3 years with 24 males and remaining females. Among them, 85.7% (42/49) had a history of self probing ($p<0.05$). The most prevalent age group for the self probing associated otitis externa was 31 to 40 years. The discharge was the major clinical presentation (40/49) and the common organism isolated was *Pseudomonas aeruginosa* in 38% of incidence.
Conclusions: Self probing was major etiological factor for otitis externa in the age group of 31-40 years. Discharge was the major clinical presentation and the common organism isolated was *Pseudomonas aeruginosa*. This emphasized the need for a proper awareness programme in the society against self probing to reduce the incidence.

Keywords: Otitis externa, *Pseudomonas aeruginosa*, Coagulase negative *Staphylococcus*, *Aspergillus*, Inflammation

INTRODUCTION

Otitis externa was first described by Mayers.[1] It is defined in different ways – localized and diffuse, Acute and chronic, and also based on agents causing it-bacterial, fungal viral etc. Wax secreted by ceruminous glands and sebaceous glands actually has antimicrobial lysosomal activity and there is a lateral migration and expulsion by itself.[2] There have been many causes and predisposing factors leading to otitis externa- wet external canal due to swimming, discharge from middle ear, humid environment, narrow external canal, use of hearing aids, self cleaning and probing, decreased host immunity etc.[3] Alkaline pH of external auditory canal also thought to contribute to otitis externa.[4] The prevalence of the otitis externa was found to be varied based on the different region which is depending up on factors including geographical location. This study was aimed to evaluate the prevalence of self probing, clinical presentation and the causative organism among the patients presented with otitis externa in a tertiary care hospital.

METHODS

Study design and patients selection

All the patients presented with otitis externa in the outpatient department of ENT, Jubilee Mission Medical College and research centre during the period between March 2016 to August 2016 were included in this retrospective study. Age less than 7 and more than 79 years, patients with tympanic membrane perforation, history of swimming and comorbid conditions like diabetes were excluded from the study. The study was approved by the institutional ethics committee.

Procedure of the study

The history of self probing was identified using a questionnaire. The clinical presentation was noticed and organism was isolated from the swab taken from the external ear canal. The non-parametric data was expressed in numbers and percentage.

Statistical analysis

All the non-parametric data was expressed in numbers and percentage. The data was analyzed by Fischer's exact test using SPSS software package (version 16, IBM, NY, USA). P value less than 0.01 was considered as significant.

RESULTS

Total 49 patients presented with otitis externa were included in the study. The average age of patient was 39.5±14.3 years with 24 males and remaining females (Figure 1). Among the total patients 85.7% (42/49) had a history of self probing. The prevalent age group for the otitis externa incidence was 41-50 years (16/49) (Table 1). However, the most prevalent age group for self probing was 31 to 40 years. All the patients in this age group had a history of self probing (12/12). All the patients presented with otitis externa in age groups up to 40 years had history of self probing. Age group above 61 years was the least prevalent group for the incidence. The discharge was the major clinical presentation of otitis externa, which was observed in 40/49 cases. Followed by discharge, itching was reported in 75.5% (37/49) of the cases (Table 1). Canal wall pigmentation was the least (8/49) clinical presentation observed. The most common organism isolated was *Pseudomonas aeruginosa* in 38% of incidence ($p<0.05$) (Figure 3).

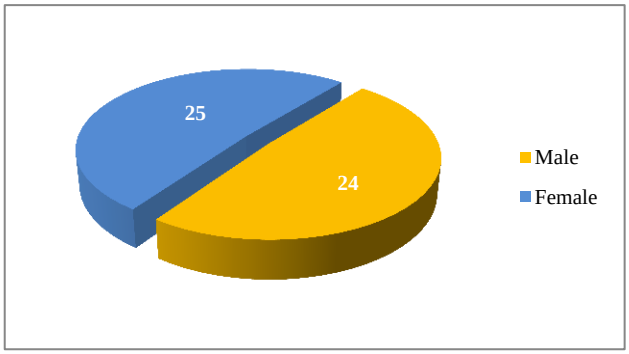

Figure 1: Distribution of gender.

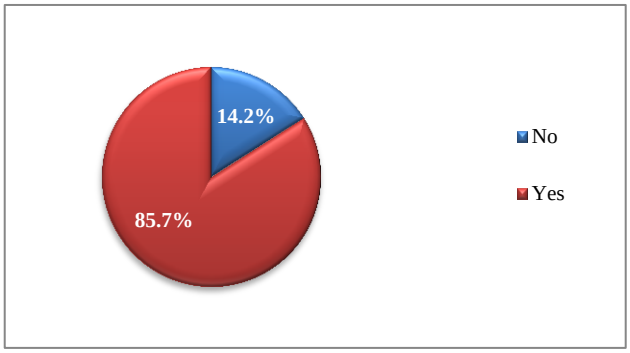

Figure 2: Incidence of self probing.

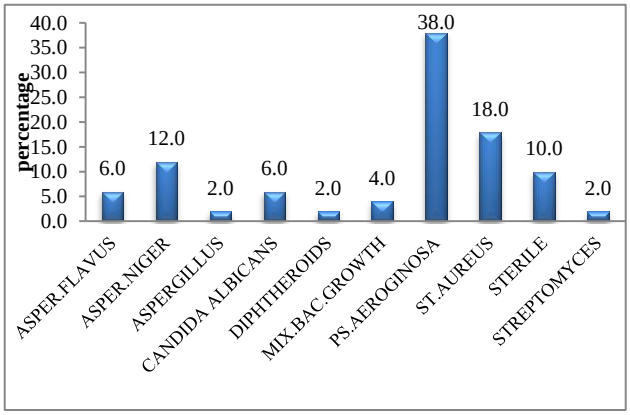

Figure 3: Distribution of organism isolated.

Table 1: Distribution of cases and clinical features of patients presented with otitis externa.

Age	Self probing	Pain	Itching	Discharge	Tragal tenderness	Canal wall edema	Canal wall thickening	Canal wall pigmentation
<20 (n=6)	6	6	6	4	5	5	2	0
21-30 (n=7)	7	6	3	7	4	3	2	0
31-40 (n=12)	12	8	9	12	5	7	4	3
41-50 (n=16)	11	8	13	11	7	10	9	5
51-60 (n=5)	4	2	4	4	1	3	2	0
>61 (n=3)	2	2	2	2	1	3	2	0
Total (n=49)	42	32	37	40	23	31	21	8

DISCUSSION

Results of this study revealed that self probing was major etiological factor for otitis externa in the age group of 31-40 years. Many people believe cleaning ear with cotton buds is a practice of hygiene and is necessary to remove wax. Somehow this habit of self cleaning is seen more in educated group than illiterate group. Self cleaning is seen as high as 93.4% in the study by Olaosum, 53% by Hobson and 90% by Afolabi.[5-7] Our study reiterates the above findings of previous studies, which had a prevalence of 85.7%. The present study also indicates that self probing has some compulsive nature and kind of habituation where they not only use cotton buds, but sometimes various other objects as well. Habit of self cleaning causes trauma to ear canal and sometimes to tympanic membrane. These minute trauma predisposes to bacterial and fungal invasion. They also act as carriers of these agents.[8-10] We used cotton wicks soaked in antibiotic and antifungal cream to plug the ear canal, in subjects who had difficulty to stop self probing, which according to them enabled breaking their compulsive habit to some extent. The longer duration of contact period also helped in faster healing of inflammation. However, plugging the ear canal caused some blocking sensation of hearing, hence we advised them to pack the ears in the evenings and leave it throughout night. They could remove the pack when they had to go for work.

The clinical presentation included pain, itching, discharge and hearing loss in most of the studies, including ours.[11] Some subjects in our study had canal wall oedema/thickening and canal wall pigmentation. These cases had long standing and recurring symptoms. The most common organism isolated is *Pseudomonas aerugenosa*. Coagulase negative *Staphylococcus* and *Corynebacterium* are the common isolates from healthy ear canals.[12,13] Our study, had highest isolates of *Pseudomonas* and accounted for 38%, followed by *S. aureus*. Most common fungal isolate was *Aspergillus* followed by *Candida*. Gokale had in her study highest isolates of *S. aureus* in 46% of the cases.[14]

Most studies describe treating this condition with topical medications, particularly a combination of antibacterial, anti fungal and steroid agents in the form of ear drops three to four applications per day for a week or ten days.[14] Some studies suggested adding acetic acid with beneficial results.[15,16] Study by Koch suggested use of medicated cotton wicks in severe cases of otitis externa and leaving them for three days in the ear canal. [17] We selected subjects having difficulty in stopping self probing and compulsive habits to apply medicated wicks and taught the bystanders to pack the ear canal and found useful in breaking the habit of self probing.

In conclusion, self probing was major etiological factor for otitis externa in the age group of 31-40 years. Discharge was the major clinical presentation and the common organism isolated was *Pseudomonas aeruginosa*. This emphasized the need for a proper awareness programme in the society against self probing to reduce the incidence.

ACKNOWLEDGMENTS

The authors acknowledge the valuable help of Dr. Ajith T.A., Professor of Biochemistry, Amala Institute of Medical Sciences, Amala Nagar, Thrissur, Kerala, India during the preparation of the paper and Mr. Unnikrishnan, Bio statistician, Jubilee Mission Medical College and Research centre for the statistical work.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Beers SL, Abramo TJ. Otitis Externa Review CME review article. Paediatr Emerg Care. 2004;20:250-6.
2. Osguthorpe JB, Nielsen BR. Otitis Externa Review and Clinical update. Am Family Physician. 2006;74:1510-6.
3. Hajioff D, MacKeith S. Otitis Externa. BMJ Clin Evid. 2015;2015:0510.
4. Martinez Devesa P, Willis CM, Capper JW. External Auditory canal pH in Chronic Otitis Externa. Clin Otolaryngol Allied Sci. 2003;28:320-4.
5. Olaosun AO. Self - Ear- Cleaning among educated young adults in Nigeria. J Family Med Prim care. 2014;3:17-21.
6. Hobson JC, Lavy JA. Use and Abuse of Cotton Buds. J Royal Soc Med. 2005;98:360-1.
7. Afolabi AO, Kodiya AM, Bakari A, Ahmad BM. Attitude of self ear cleaning in black African: any benefit? East Afr J Public Health. 2009;6:43-6.
8. Lee LM, Govindaraju R, Hon SK. Cotton Bud and Ear Cleaning - A Loose Tip Cotton Bud? Med J Malaysia. 2005;60:85-8.
9. Nussinovitch M, Rimon A, Velovitz B, Raveh E, Prais D, Amir J. Cotton-tip applicators as a leading cause of otitis externa. Int J Pediatr Otorhinolaryngol. 2004;68:433-5.
10. Sperling NM, Portnoy WM. To Swab or Not to Swab:Appropriate Medical Advise Regarding Self-Ear –Cleaning. Int J Head and Neck Surg. 2016;7:1-4
11. Hawke M, Wong J, Kradjen S. Clinical and Microbiological features of Otitis Externa. J Otolaryngol. 1984;13:289-95.
12. Llor C, McNulty CAM, Butler CC. Ordering and interpreting ear swabs in otitis externa. BMJ. 2014;349:5259.
13. Gokale SK, Anushka Devinkar A, Sonth S, Solabannavar SS. Bacteriological Study of Acute Otitis Externa in a Tertiary Care Hospital of a

District in North Karnataka, India. Int J Curr Microbiol App Sci. 2017;6:981-5.
14. Wipperman J. Otitis externa. Prim Care. 2014;41:1-9.
15. Rosenfeld RM, Schwartz SR, Cannon CR, Roland PS, Simon GR, Kumar KA, et al. Clinical Practice Guideline:Acute Otitis Externa. Otolaryngol Head Neck Surg. 2014;150:S1-S24.
16. van Balen FA, Smit WM, Zuithoff NP, Verheij TJ. Clinical efficacy of three common treatments in acute otitis externain primary care:randomized controlled trial. BMJ. 2003;327:1201-5.
17. Koch K. Managing otitis externa. S Afr Pharm J. 2012;79:17-22.

Cite this article as: Rameshkumar E, Ajitha S. Prevalence of self probing, clinical presentation and the causative organism among the patients presented with otitis externa in a tertiary care hospital. Int J Otorhinolaryngol Head Neck Surg 2018;4:1057-60.