A SURVEY OF THE MANAGEMENT OF CERUMEN IMPACTION IN A NIGERIAN UNIVERSITY TEACHING HOSPITAL

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ABSTRACT

Background: Cerumen impaction is a common and frequent otologic finding to both the otolaryngologist and general practitioners. Its management by some general practitioners and inexperienced ENT trained personnel is sometimes bedeviled with complications. This study determined the prevalence and management outcomes of cerumen impaction in the University of Port Harcourt Teaching Hospital (UPTH).

Methods: This was a prospective study of 756 patients who presented with cerumen impaction to the Ear Nose and Throat (ENT) clinics of UPTH Port-Harcourt, Nigeria. This study was done over a 2 year period from October 2010 through September 2012. Demographic and clinical data were documented and simple statistical tables were used to illustrate the data.

Results: A total of 756 patients had cerumen impaction out of 10,891 patients who attended the ENT clinic during the study period giving a prevalence of 6.94%. The age range of the patients was 6 months to 105 years with a mean of 20.15 (SD ± 14.28) years. There were 315 males and 441females (M: F ratio of 1: 1.4). Symptoms were present in most patients **(n=700, 92.59%).** Bilateral cerumen impaction occurred in most patients **(n=529, 69.97%).** Gentle ear syringing with warm normal saline at body temperature was the commonest **(n=690, 91.27%)** method of removal and otalgia was found to be the commonest **(n=19, 2.51%)** complication of treatment in our series.

Conclusion: Cerumen impaction occurs commonly in our center and gentle ear syringing with warm normal saline was the commonest mode of treatment. It was cost effective despite its associated complications.

Key words: Cerumen, Impaction, Syringing, External auditory canal, Ceruminolytic agents.

INTRODUCTION

Cerumen impaction suggests that the ear canal is completely obstructed with cerumen. However; our definition of cerumen impaction in this context does not require a complete obstruction of the whole external auditory canal (EAC). The term is consistently used in clinical practice and in the published literature to describe symptomatic cerumen or cerumen that prevents otoscopic assessment of the ear [1,2]. Cerumen is a normal finding in the EAC. It is usually a mixture of secretions from the ceruminous and pilosebaceous glands found in the proximal one third of the EAC together with squamous epithelium, dust and sometimes foreign bodies.

In nature, cerumen protects the tympanic membrane and lubricates the EAC [1,3,4] and it spontaneously clears from the EAC [5]. However; there are some risk factors for its accumulation; they include the frequent use of cotton buds to clean cerumen from the EAC, hearing aids and bony growths such as osteoma. It becomes impacted in the EAC when the self-cleaning mechanism of the ear fails [6].

Cerumen impaction is a very common otologic problem worldwide [7]. In the United States of America (USA), approximately 150,000 cerumen removals take place each week [8]. Besides, in a study carried out in Ibadan Nigeria, it accounted for 99% of the ear syringing performed over a 16 months period [9].

Nevertheless, the mere presence of cerumen in the EAC of some patients may not cause any discomfort to them. Some researchers have found that some patients were asymptomatic and cerumen impaction was only revealed during routine medical

examinations [10]. However, most patients present with hearing loss, tinnitus, pain, itching or dizziness. These symptoms are particularly distressing to elderly patients who may already have compromised hearing. Besides, in children hearing loss can retard their educational and psychosocial development [11].

Treatment options include manual removal using various instruments and techniques and the use of ceruminolytic agents and irrigation with or without ceruminolytic pretreatment [12]. Complications of treatment such as tympanic membrane (TM) perforation, ossicular chain dislocation and lacerations of the walls of the EAC have been reported by some researchers to be associated with poor management of cerumen impaction [8,9].

In our center we have observed that most of our patients particularly the children and young adults present to us with impacted cerumen. Besides, no research work has been done on cerumen auris. These prompted a prospective survey to determine the prevalence and management outcomes of cerumen impaction in the University of Port Harcourt Teaching Hospital.

PATIENTS AND METHODS

This was a prospective study of 756 patients who presented with cerumen impaction to the Ear, Nose and Throat (ENT) clinics of UPTH Port-Harcourt, Nigeria. This study was done over a 2 year period from October 2010 through September 2012. The total clinic attendance for the study period was 10,891. The patients' bio-data (age, gender), ear cleaning habit, presenting complaints, otoscopic findings, method of removal and the complications encountered during treatment were collected and entered into a proforma. Ceruminolytic drugs/olive oil was recommended to the patients booked for ear syringing for a minimum of 1 week in other to soften the cerumen. Data was expressed in texts and tables. Analysis was done using SPSS for windows 15.

RESULTS

A total of 756 patients presented with impacted cerumen auris out of 10,891 patients who attended the ENT clinic during the study period giving a prevalence of 6.94%. The age range of the patients was 6 months to 105 years with a mean of 20.15 (SD ± 14.28) years. There were 315 males and 441females (M: F ratio of 1: 1.4). **Age group 21-30 years accounted for majority (n=178, 23.54%) of the cases** (Table I). Symptoms were present in most patients **(n=700, 92.59%) with** hearing loss found to be the commonest (n=406, 58%) symptom (Table II).

Bilateral cerumen impaction occurred in most (**n**=529, 69.97%) patients (Table III). Gentle ear syringing with warm normal saline at body temperature was the commonest **(n=690, 91.27%)** method of removal. Few (n=66, 8.73%) patients had their impacted cerumen removed by the use of wax hooks and scoops and these were carried out by the consultants and resident doctors. The trained ENT nurses carried out most of the ear syringing procedure (n=650, 85.98%). Otalgia was found to be the commonest **(n=19, 2.51%)** complication of treatment in our series (Table IV). There was failed removal of cerumen in a few (n=45, 5.95%) uncooperative patients at first attempt during ear syringing. Most (n=508, 67.19%) adult patients admitted to the injudicious use of cotton bud in cleaning of their ears.

TABLE I: Age distribution of patients with cerumen impaction N=756

Age group (yrs)	Number	Percentage (%)
< 10	125	16.53
10-20	109	14.42
21-30	178	23.54
31-40	106	14.02
41-50	84	11.11
51-60	44	05.82
61-70	62	08.20
71-80	28	03.70
81-90	15	01.98
91-100	4	0053
>100	1	00.13

Table II: Symptoms of patients with cerumen impaction N=700

Symptoms	Number	Percentage (%)
Hearing loss	462	58.00
Tinnitus	59	8.43
Vertigo	60	8.57
Otalgia	50	7.14
Itching	125	17.86

TABLE III: Site of occurrence of impacted cerumen N=756

SITE	MALE	PERCENTAGE (%)	FEMALE	PERCENTAGE (%)	TOTAL
BILATERAL	218	28.83	311	41.14	529
LEFT	46	6.08	64	8.47	110
RIGHT	51	6.75	66	8.73	117

Tale IV: Complications of treatment N=756

Complication	Frequency	Percentage
Otalgia	19	2.51
Bleeding from the wall of EAC	16	2.11
Vertigo	12	1.59
Tympanic Membrane perforation		0.40
No complications	706	93.38

DISCUSSION

This study revealed that cerumen impaction has a prevalence of 6.94%

which implies that it is a common clinical finding during our routine otolaryngological consultations. Afolabi and Ijaduola in 2010 in Ibadan found a prevalence of 9.2% which was slightly higher than our finding [13]. Besides, **age group 21-30 years accounted for majority of the cases** which was followed by children less than 10 years of age in our series. In a study carried out by Adoga et al., in Kaduna found children less than 10 years of age to have the highest incidence of cerumen impaction in their series [14].

We encountered a slight female preponderance in our study which agrees with the findings of Adoga et al., in Kaduna [14] but differs from the findings of Zeba et al., in Karachi [15]. However, Jabor and Amadee in their study in 1997 observed that no significant gender differences exist concerning impaction of ear wax [16].

Most of our patients had bilateral cerumen impaction and their commonest symptom was hearing impairment. Other studies have reported the role of impacted cerumen in causing hearing impairment in children and in adults [9, 14, 17, 18-20]. Gentle ear syringing with normal saline at body temperature after softening the cerumen with either ceruminolytic drugs or olive oil for 7 days was the commonest method of removal of impacted cerumen [9]. The average cost for the procedure was one thousand five hundred naira which appears inexpensive.

The procedure of ear syringing was mostly carried out by our trained ENT nurses. This practice was not different from what is obtainable elsewhere in Nigeria. The management of cerumen

impaction in our series was not without its complications. Notable complications of treatment we encountered were otalgia, laceration of EAC, vertigo and TM perforations. The TM perforations occurred in 3 children who were uncooperative during ear syringing. However, appropriate treatment for traumatic TM perforation was immediately commenced to avoid further complications. Other researchers have documented a similar experience in their series [9,10,13].

Meanwhile, one could argue that the complications associated with the management of cerumen impaction in our series would have been reduced to the barest minimum if the consultants and experienced resident doctors were more involved in the management of these patients. Well, this can be substantiated by conducting further research in the near future to compare with the results of our current practice.

Nevertheless, some centers in the developed world use a rigid endoscope in conjunction with a Jobson-Horne probe, suctioning by using the standard suction machine with appropriate suction nozzles, electronic irrigator and operating microscope for dewaxing patients [8, 21-23] and these mode of treatment have been associated with less complications.

Furthermore, our study revealed that most of our patients admitted to the injudicious use of cotton bud in the cleaning of their ears. This act has been reported by some researchers to commonly cause impacted cerumen [24]. Therefore, there is an urgent need for health care practitioners and other stake holders to carry out public enlightenment campaigns to educate the general population on the dangers of using cotton buds and other objects such as feathers and biro covers in cleaning their ears.

CONCLUSION

Cerumen impaction occurs commonly in our center and gentle ear syringing with warm normal saline was the commonest mode of treatment. It was cost effective despite its associated complications. The practice in UPTH was not different from what is obtainable elsewhere in Nigeria. However, to reduce the morbidity associated with cerumen impaction consultants and experienced resident doctors should be more involved in the management of the patients with cerumen impaction.

REFERENCES

1. McCarter DF, Courtney AU, Pollart SM. Cerumen impaction. Am Fam Physician. 2007; 75(10): 1523-8.
2. Guest JF, Greener MJ, Robinson AC, Smith AF. Impacted cerumen: composition, production, epidemiology and management. QJM 2004; 97: 477- 88.
3. Raman R. Impacted ear wax- a cause for unexplained cough? Arch Otolaryngol Head Neck Surg. 1986; 112(6): 679.
4. Roeser RJ, Ballachanda BB. Physiology, pathophysiology, and anthropology/epidemiology of human ear canal secretions. J Am Acad Audiol. 1997; 8(6): 391-400
5. Alberti PW. Epithelial migration on the tympanic membrane. J Laryngol Otol 1964;78: 808 –30.
6. Sharp JF, Wilson JA, Ross L, Barr-Hamilton RM. Ear wax removal: a survey of current practice. BMJ 1990;301:1251–3.
7. Mitka M. Cerumen removal guidelines wax practical. *JAMA* 2008; 300(13):1506.
8. Grossan M.Cerumen removal—current challenges. Ear Nose Throat J 1998; 77(7):541-6, 548.
9. Ogunleye AO, Awobem AA. Trends of ear syringing at Ibadan, Nigeria. Afr J Med Med Sci. 2004; 33(1): 35-7.
10. McCarter DF, Courtney AU, Pollart SM. Cerumen impaction. Am Fam Physician. 2007; 75(10): 1523-8.
11. Olusanya BO, Okolo AA, Aderemi AA. Predictors of hearing loss in school entrants in a developing country. J Postgrad Med 2004;50:173-9.
12. Hand C, Harvey I. The effectiveness of topical preparations for the treatment of earwax: a systematic review. Br J Gen Pract 2004;54:862–7.
13. Afolabi, O.A, Ijaduola GTA. Management of aural wax in Western Nigeria. Savannah Medical Journal 2010;7(1):8-11
14. Adoga AA, Bakari, AA, Kodiya,AM, Ahmad BM. Cerumen auris: a survey of its management at the National Ear Care Center, Kaduna, Nigeria.. *The Internet Journal of Otorhinolaryngology*. 2010; 2 (1). DOI: 10.5580/1976
15. Zeba A, Salman N, Muhammad SM. Impacted cerumen auris management. Medical Channel 2009, 15 (2): 58-60
16. Jabor MA, Amadee RG. Cerumen impaction J Los Angeles State Med Soc 1997; 149:358-62.
17. Eziyi JAE, Amusa YB, Nwawolo CC, Ezeanolue BC. Wax Impaction in Nigerian School Children. East and Central African Journal of Surgery 2011; 16 (2): 40-45
18. Lecris-Cullinan C, Janker JK. Effect of cerumen removal on hearing ability of geriatric patients. J Advanced Nur 1990; 15:594-600.
19. Olusanya BO. Hearing impairment in children with impacted cerumen.: Ann Trop Paediatr. 2003; 23(2):121-8.
20. Lecris-Cullinan C, Janker JK. Effect of cerumen removal on hearing ability of geriatric patients. J Advanced Nur 1990; 15:594-600.
21. Pothier DD. How we do it: technical note: endoscopic removal of cerumen. Clin Otolaryngol. 2006; 31(2): 153-5.

22. Bapat U, Nia J, Bance M. Severe audiovestibular loss following ear syringing for wax removal: J Laryngol Otol. 2001;115(5):410-1
23. Browning GG. Wax in ear. *Clin Evidence* 2002; **7:** 490–497.
24. Macknin ML, Talo H, Medendrop SV .Effect of cotton-tipped swab use on ear-wax occlusion: Clin Pediatr (Phila). 1994; 33(1):14-8.