AFRICAN JOURNAL OF MEDICINE and medical sciences

VOLUME 33 NUMBER 1 MARCH 2004

ISSN 1116—4077

Afr J Med. med. Sci (2004) **33**, 35-37

Trends of ear syringing at Ibadan, Nigeria

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Summary

Ear syringing is a procedure by which the external auditory canal is irrigated with a normal saline at body temperature. It is a procedure which every doctor or nurse should be able to perform proficiently. A study of 622 patients that needed ear syringing was done between December 1999 and June 2001 to determine its trend. There were 341(55%) males and 281(45%) females with age ranged from 3.5months to 89 years: 44.4% were in the first decade of life. Cerumen auris 99% remained the commonest indication for syringing in this study with bilateral cerumen auris constituting 53.1% while right and left cerumen auris constituted 24.4% and 21.5% respectively. Cerumen auris constituted 66% of total 933 Otologic cases seen during the study period. Other indications were otitis externa 0.7% (otomycosis 0.5%; bacterial 0.2%) and foreign body 0.3%. The majority of patients (86%) required between 500mls and 1000mls of fluid for irrigation and 94.9% required not more than one attempt at syringing. The complications recorded were mainly vertigo 0.2% and tympanic membrane perforation 0.2% respectively. Thus ear syringing, though simple and sometimes taken for granted may be fraught with dangers; it is a very safe procedure in trained hands and that after at least three attempts of ear syringing for cerumen auris and if it persists despite effective applications of cerumenolytic agents prior to irrigation, the procedure should be discontinued and other methods of imparted cerumen auris removal should be employed.

Keywords: *Syringing; ear; trends; Nigeria.*

Résumé

Le nettoyage des oreilles est une procédure par laquelle le canal auditif extérieure est irrigué avec une solution salée a la température normale et faite par une infirmiére ou un docteur. Cette technique est simple aux connaisseurs et quelque fois plein de dangers et demande dans l'application des agents cirumenolytiques a l'irrigation et d'autres méthodes d'enlevement de l'auris cerumen employées. Un total de 622 patients(341(55%) males et 281(45%) femeles) étaient recruiés entre la période de 1999 a Juin 2001 pour déterminer l'incidence . L'age variait entre 3.5 mois a 89 ans . 44.4% était dans leur dizaine d'années. L'auris cerumen a 99% demeurait l'indication la plus commune pour le nettoyage avec l'auris cerumen bilatéral constitueant 53.1% , unilatéral droite et gauche 24.4% et 21.5% respectivement. L'auris cerumen constituait 66% des 933 cas d'otologie consultée Durant cette période avec l'otité externe 0.7% et corps étranger 0.3%. la majorité des patients avaient besion de 500-1000 mls pour l'irrigation et 94.4% n'avaient besion que d'un simple essaie. Les complications étaient les vertiges 0.2% et la perforation de la membrane tympanique 0.2%également.

Introduction

Ear syringing is a procedure by which the external auditory canal or meatus is irrigated with a normal saline fluid at body temperature. It is a procedure which every doctor or nurse should be able to perform proficiently.

Usual indications for ear syringing include removal of wax, debris, and foreign body and as adjunct treatment in mucopurulent ear discharge and in otomycosis. Ear syringing has also been shown to improve hearing threshold in a substantial proportion of patients by 15-36 dB [1]. Ear syringing is contraindicated in conditions such as perforated eardrum or scarred eardrum.

This procedure, though simple and sometime taken for granted, may be fraught with various complications. These include perforation of the tympanic membrane, canal laceration, vertigo and even very rarely death and estimation of complications have been put at 0.1% of ears syringed [2].

Syringing claims account for about 25% of the total claims received by the Accident Compensation Corporation (ACC) ENT medical misadventure committee over a one and half year period in New Zealand [3].

This study aims to determine the trends of ear syringing in Ibadan, Nigeria.

Materials and methods

This is a prospective study. All patients who required ear syringing in the Ear, Nose and Throat clinic of the University College Hospital, Ibadan between December 1999 and June 2001 were included in the study after obtaining informed consents.

The parameters documented during history taking, clinical examinations and syringing were the indications, side of ear involved, amount of fluids used, sex and age of patients. Complications were also noted. Frequency distribution and percentages were then generated from the data obtained.

Certain points should be noted before performing ear syringing. The history, which is essential to rule out previous ear discharge, as the possibilities of a dry perforation exists. For the impacted wax, the strategy using olive oil instilled for 5-7 days were employed to soften the wax before irrigation. The temperature of the solution should be between 37°C –38°C. Any departure of more than a few degrees could precipitate severe vertigo. Sodium bicarbonate 4 –5gm

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500mls of water or normal saline is ideal, however clean tap water is also satisfactory.

An electrically driven water pump with a set of nozzles to fit all ages and a foot operated control named PROPULSE II is now the latest instrument for ear syringing This instrument regulates the force by which water is driven into the externa canal there by reducing complications that may be associated with ear syringing. The metal and bacon syringes are capable of applying high pressure and the nozzles may do damage thus are becoming obsolete. However where the above named pump is not available a 20ml or 50ml plastic syringe with an attached intravenous plastic cannular with the tip cut short to a size improvised could be used and this has been found very easy, convenient and comfortable to use, cost much less to the patients.

The direction of stream is towards and along the roof of the external auditory canal while the pinna must be maintained in an upward and outward position. After completion of the procedure, the external auditory canal should be inspected and excess solution should be mopped from the canal as stagnation of fluids predisposes to otitis externa.

Among the children taking them into confidence makes the procedure easier. A co-operative child can be syringe without difficulty. However if the child is scared, he/she can be made to sit on the lap of the mother and the legs of the child are held firmly between those of the mother. One hand of the mother holds the hands of the child in front of his/her chest, while her other hand fixes the head by holding the forehead of the child.

Results

Six hundred and twenty two (622) patients were studied in all. There were 341(55%)males and 281(45%)females with a sex ratio of 1.2:1 (M:F).

The age ranged from 3.5months to 89years. 276(44.4%) were aged 10years and below; 75(12%) were aged 11-20years while 74(11.9%) were aged 60years and above as shown in Table1.

Table 1: Age distribution of patients

Age range (years)	No. of patients
0 - 10	276 (44.4%)
11 - 20	75 (12%)
21 - 30	59 (9.5%)
31 - 40	56 (9%)
41 - 50	40 (6.4%)
51 - 60	42 (6.8%)
Above 60	74 (11.9%)

Cerumen auris 616(99%) constituted the main indication for ear syringing with bilateral cerumen auris constituting 330(53.1%); right cerumen auris constituting 152(24.4%) while left cerumen auris constituting 134(21.5%).

Cerumen auris constituted 66% of total 933 Otologic cases seen during the study period between December 1999 and June 2001. Other indications found included otitis externa 4(0.7%) and foreign body 2(0.3%) as shown in Table2 .The otitis externa is of otomycosis in 3(0.5%) cases and bacterial in 1(0.2%) case.

Table 2: Indications for syringing

Indications	No. of patients
Wax both ears	330 (53.1%)
Wax right ear	152 (24.4%)
Wax left ear	134 (21.5%)
Otitis externa	4 (0.7%)
Foreign body	2 (0.3%)

Five hundred (500) mls of normal saline was used for syringing in each of the 301(48.4%) patients while 500-1000mls of fluid was used in each of the 234(37.6%)cases as shown in Table 3.

Table 3: Amount of fluid used

Amount of fluid (mls)	No of patients
Less than 500mls	60 (9.7%)
Exactly 500mls	301 (48.4%)
Above 500mls and 100mls	234 (37.6%)
Above 1000mls and 1500mls	25 (4%)
Exactly 1500mls	2 (0.3%)

The ear irrigations were done once in 590(94.9%) patients while 31(5%) had irrigations twice and one patient had it done thrice Table 4.

Table 4: Frequency of syringing

Frequency	No. of patients
Once	590 (94.9%)
Twice	31 (5%)
Thrice	1 (0.1%)

The complications recorded were mainly vertigo 1(0.2%) and tympanic membrane perforation 1(0.2%) respectively.

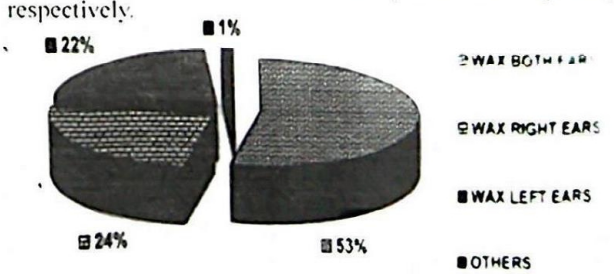

FIGURE 1:
INDICATIONS FOR EAR SYRINGING
OTHERS 1% (otitis external 0.7%; foreign body 0.3%)

Fig. 1: Indications for ear syringing.

Discussion

The study showed majority of patients, presenting in our centre for ear syringing, were found to be in the first decade of life. A gradual decline with age was observed until sixth de-

cade of life when the number of patients increased again as shown in Table1.

This implies impaction of wax is commoner at the extremes of life. This may be due to immature, or loss of the, self-cleansing migration mechanism of the outer ear. Wax is usually expelled by migration, a process that is aided by jaw movement [6].

More males were also encountered in the study with a sex ratio of 1.2:1 (M: F). The reason may be that males produced more wax than females.Cerumen auris (99%) remained the commonest indication for syringing in this study out of which bilateral ear wax impaction constituted 53.1% while right and left ear wax impaction is of 24.4% and 21.5% respectively (Table2). Cerumen auris constituted 66% of total 933 Otologic cases seen during the study period between December 1999 and June 2001. The quantity of wax produced varies greatly from an individual to another and its composition varies in different racial groups and excess wax may reflect local and systemic disease [5].

Most Caucasians and Negroes have the so-called 'wet' phenotype with moist honey-coloured cerumen; in contrast mongoloid races tend to have grey granular, brittle cerumen, the 'dry' phenotype.

The majority of patients (86%) required between 500mls and 1000mls of normal saline to syringe the ear, and 94.9% required not more than one attempt at syringing (Tables 3; 4). It emphasizes the effectiveness of the instructions and training received regarding ear syringing technique.

From this study one could infer that after at least three attempts of ear syringing for cerumen auris and if it persists despite effective applications of cerumenolytic agents prior to irrigation, the procedure should be discontinued and other methods of imparted cerumen auris removal should be employed. The complications of ear irrigation are common, varied, include ear drum perforation, otitis externa, meatal wall trauma, otalgia, hearing loss, vertigo, tinnitus, bradycardia which may lead to death and some of which have been known to lead to litigations [2-5].

Lately malignant external otitis has been reported as potential complications that could follow ear syringing. Rubie J. *et al* reported that the forceful syringing of an ear canal with non-sterile tap water, which may contain Pseudomonas aeruginosa might precipitate malignant external otitis concluding that aural irrigation may play a predisposing role in onset of malignant external otitis in high-risk populations [7].

Similarly Ford G R *et al* reported a case of malignant external otitis, which occurred in a healthy 72-year-old non-diabetic, non-immuno-compromised man after ear syringing [8]. The infection was treated with oral ciprofloxacin for eight weeks with complete resolution. The incidence of complications could be reduced by a greater awareness of the potential hazards, and increased personnel's instruction and training.

The complications recorded in this study were mainly vertigo (0.2%) and tympanic membrane perforation (0.2%) respectively. The low incidence of complications observed agrees with a previous figure of 0.1% of ears syringed and also shows that ear syringing is a very safe procedure in trained hands [2].

Contra-indications to ear syringing include perforated ear drum, scarred drum, organic objects, presence of grommet, prior ear surgery and young un-cooperative children.

Conclusion

In conclusion ear syringing, though simple and sometimes taken for granted may be fraught with dangers; it is a very safe procedure in trained hands.

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Received: 21 January 2003
Accepted: 1 March 2004