

ORIGINAL RESEARCH

EAR SYRINGING - TRENDS FROM A YOUNG ENT PRACTICE IN NIGERIA

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ABSTRACT

Background: Ear syringing is a procedure by which the external auditory canal is irrigated with saline at body temperature. It is a common otorhinolaryngology clinic procedure. This study aims to find out the trends of ear syringing as seen in a tertiary health institution in Nigeria.

Methodology: The study was a retrospective review of all patients that were managed with ear syringing in the department of Otorhinolaryngology, Federal Medical Center Birnin Kebbi, Nigeria, over a four year period.

Results: A total of 557 patients consisting of 290 males and 267 females with M: F 1.1:1. The ages of the patients ranged from 1 – 86years. Syringing was done in 26.4% in the right ear, 30.2% in the left ear and 43.5% in both ears. Majority of the syringing were done by ENT trained nurses. About Ninety percent (90.7%) of the patients had successful syringing once and had subjective improvement in hearing. Complications were recorded in 5% of the patients. The complications were vertigo 0.7%, external auditory canal abrasion 2.2% and failure of procedure in 2.2%. Most (98.0%) complications occurred among the nurses while the remaining complications (2%) occurred with the resident ENT medical officers.

Conclusion: Trends of ear syringing have not changed. Ear syringing, though may appear simple should be performed with care. Proper training and re - training with particular attention to the technique of syringing as well as to contraindications to syringing to make the procedure safe and cost effective are advised.

Keywords: Ear syringing, Indications, Trends, Complications, Nigeria.

INTRODUCTION

Ear syringing, a procedure by which the external auditory canal is irrigated with a normal saline at body temperature, is a common otorhinolaryngologic procedure.¹ It is the act of removing earwax, dead skin or a foreign body or debris by way of gentle flushing with warm saline via a narrow nozzle/ cannula attached to a syringing device². Though syringing of the ear is a common procedure, adequate knowledge of anatomy and physiology of the ear as well as training is required for effective syringing to avoid complications. Although ear syringing has been ascribed to be one of the most common sources of iatrogenic otorhinolaryngologic problems³, in the experienced hand, it is efficient, easy to perform and non-traumatic on the patient.

Ear wax (cerumen auris) impaction is the most common reported indication for syringing of the ear.^{1,4,5} American Academy of Otolaryngology-Head and Neck Surgery Foundation defined wax impaction as accumulated cerumen that is symptomatic or prevents adequate examination of the external auditory canal, tympanic membrane, or both⁴. Prevalence of wax impaction in USA was found to be 10% among

children, 5% among healthy adult and up to 57% in older persons in nursing homes⁶ and it is found to be disproportionately more common in children and elderly Nigerians.^{6,7,8} Various methods used in the removal of ear wax include the use of ceruminolytic agents, curette method (using either a Jobson-Horne probe or St. Bartholomew wax hook) and lavage¹ but ear syringing is the most employed and efficient method for removing ear wax⁵. Foreign body removal from external auditory canal is another indication for ear syringing⁵. This is usually done for non vegetative and animate foreign bodies^{9,10}. Live insect is first drowned in alcohol or mineral oil before syringing⁹. Ear syringing for foreign body removal is contraindicated in cases of vegetative FB, button batteries or perforated tympanic membrane⁹. Other indication for ear syringing is for removal of debris accumulated in the external auditory canal secondary to canal infection⁵ (otitis externa). This can result from fungal infection (otomycosis) or bacterial infection. Syringing for this condition is done to clear the external auditory canal of this debris for effective treatment by antifungal / antibacterial agent.

Ear syringing can be done by the traditional method of irrigating the EAC using an ear syringe. However automatic syringes which are equally effective, less traumatic on the subject and associated with lesser complications are now available for use¹¹. Other contraindications to ear syringing include ear infection, presence of a grommet, history of ear surgery, young children who are uncooperative and only hearing ear. Complications can occur during syringing and these include otalgia, tympanic membrane perforations, external auditory canal lacerations, dizziness and failure to syringe wax/foreign bodies or debris out. The complications are more common when general duty doctors, or nurses perform ear syringing compared to when Otolaryngologists or ENT trained nurses perform the procedure^{1, 12, 13}. Approximately two-thirds of the complications with significant disability occurred with the nurses¹³ and about 25% of Medical negligence claims and complaints against GPs and their staff arise from ear syringing^{12, 13}.

The ORL dept of FMC, Birnin-Kebbi was established in the year 2002. It caters for patients in the north western part of Nigeria, especially Kebbi, Sokoto, Niger and Zamfara states. Health education programmes on the dangers of habitual cleaning of the ears predisposing to wax and other foreign bodies' impaction have been mounted in the communities.

This study aims to assess the success of the programmes indirectly through evaluation of the trends in the syringing which remains the most common method of management of impacted wax. Furthermore increasing awareness of the population on complications of medical procedures and their medico-legal rights were additional stimuli to conduction of this study.

MATERIALS AND METHODS

The study was a retrospective review of all patients that were managed for ear syringing in the department of Otorhinolaryngology, Federal Medical Center Birnin Kebbi, Nigeria, over a four year period between 2008 and 2012. The case notes of the patients were retrieved from the medical records department of the hospital. Information retrieved by the investigator included patients' age, sex, indication for syringing, side of the ear syringed, outcome and any associated complication with the procedure. Patients with similar pathologies managed by methods other than syringing, those whose case records could not be located and those with incomplete information were excluded. Information obtained was entered into a spreadsheet and analysed with SPSS version 14 (Illinois, USA). The results were presented in descriptive forms as tables and graphs.

RESULTS

A total of 4,162 patients were managed at the ORL dept during the period of study for ear nose and throat

conditions, among whom 557 (13.4 %) had syringing of their ears. Ear syringing constituted 42.3% of our ENT clinic procedures (1317) and 46.6% of all otologic (1195) procedures.

Fifty two percent of the patients were males M:F ratio was 1.1:1. The ages of the patients ranged from 1–86years. Age distribution of the patients according to sex is shown in Table I.

Table 1: Age distribution of the patients according to sex

Age in years	Male (%)	Female (%)	Total (%)
1 – 15	213 (38.2)	176 (31.6)	389 (69.8)
16 – 30	34 (6.1)	52 (9.3)	86 (15.4)
31 - 45	30 (5.4)	22 (3.9)	52 (9.3)
46 – 60	13 (2.3)	9 (1.6)	22 (3.9)
61 and above	1 (0.2)	7 (1.3)	8 (1.4)
Total	291(52.2)	266 (47.8)	557 (100)

Syringing was done 147 (26.4%) times in the right ear, 168 (30.2%) times in the left ear and 242 (43.5%) times bilaterally.

The indications for ear syringing are shown in table II.

Table 2: indications for syringing

Indication for syringing	No of syringing (%)
Wax impaction	469 (84.2)
Ear foreign body	29 (5.2)
Otomycosis	57 (10.2)
Otitis externa (bacterial)	02 (0.4)
Total	557 (100.0)

Table 3: Laterality of the ear syringed.

Side involved	Total (%)
Right Ear	147 (26.4)
Left Ear	168 (30.2)
Both Ears	242 (43.4)
Total	557 (100.0)

Majority (96%) of the syringing were done by ENT trained nurses, 2% were done by ENT medical officers and 2% were done by ENT specialists. About Ninety percent (90.7%) of the patients had successful syringing once and had subjective improvement in hearing.

Complications were recorded in (5%) of the patients. Four patients (0.7%) had vertigo, 12 (2.2%) had external auditory canal abrasion and failure of removal occurred in 12 (2.2%) patients. There was no reported case of tympanic membrane perforation or hearing loss from the procedure.

Most (98%) of the complications occurred with the nurses while the remaining complications (2%) occurred with the resident ENT medical officers.

DISCUSSION

In this study, 13.4% of the patients attended to at the out-patients had ear syringing and this constituted 42.3% of all ear, nose and throat procedures performed during the study period. This finding corroborates the assertion that ear syringing is one of the common otorhinolaryngologic procedures¹². In the UK, approximately 4 million ears are syringed annually⁶. Ogunleye in Ibadan reported syringing as the most common otologic procedure⁵. Adoga in Kaduna reported that ear syringing is the most common mode of treating ear wax which is one of the most common otorhinolaryngologic lesions causing reversible hearing loss¹.

Males were marginally more than females in this study, in agreement with the Ibadan study. Adoga et al¹ however reported a reversal of this trend. Although it appeared that wax impaction was a major indication for ear syringing in both sexes, males may be more predisposed to this due to the presence of larger and coarser hairs in their external auditory meatus which may disturb natural dislodgement of wax or debris⁶. Incidentally, male children are also more prone to insert foreign bodies into their external auditory canals¹⁰.

Larger proportions (65.6%) of ear syringing were done in children below 10 years and in particular, those below five years. Children and the elderly have been reported to be more predisposed to wax impaction^{6, 8} and ear foreign bodies¹⁰ which are common reasons for ear syringing. It is estimated that 10% of children have cerumen impaction and syringing is the first procedure to manage it¹⁴. There were however fewer elderly people in this study.

Bilateral ear syringing was most frequently performed (43.5%) in this study; similar to 43% reported in Kaduna, but lower than 53.1% reported in Ibadan. Cerumen (wax) impaction was the most common indication for syringing in this study (84.2%). This trend has been reported^{1, 5, 12}. Ogunleye et al reported that cerumen impaction was responsible for 99% of ear syringing done in Ibadan⁵. Removal of cerumen (wax) from the ear forms a significant part of the workload of an otolaryngologist. Cerumen impaction predisposes the individual to hearing impairment and improvement in hearing acuity after ear syringing have been reported¹. Cerumen impaction is one of the leading causes of reversible hearing loss^{1, 6, 8, 14, 15}. Other problems associated with wax impaction are pain, tinnitus, itching and dizziness but wax impaction with conductive hearing impairment remains the most common indication for ear syringing^{1,14}. Among various other options, ear syringing remains the first line procedure in management of wax impaction because it is safe, non-traumatic and effective¹⁴. Most of the syringing in our centre was done by ear; nose and throat trained nurses. Patients usually have higher levels of satisfaction when their ear care is provided by the nurses¹⁵. Syringing is usually done with ceruminolytic pretreatment with olive oil for a week before syringing.

Otomycosis was the second indication for syringing (10.2%); this trend was reported over a decade ago in neighbouring town in Ibadan though there is a higher prevalence in this study than 0.7% seen in Ibadan⁵. Otomycosis is more prevalent in Sub Sahara Africa with warm, wet, humid climate and dusty environments^{15, 16}. The higher number of syringing for otomycosis seen in this study may also be attributable to the practice of women who cover their heads including their pinnae providing optimum environment for fungal growth in the EACs and subsequent higher prevalence of otomycosis¹⁶. Effective treatment for otomycosis involves syringing of fungal debris, aural toileting followed by aural antifungal dressing^{15, 16}. In this center, most cases with fungal balls had syringing first, followed by aural toileting and antifungal dressing for 2 – 6 weeks. Hearing loss associated with otomycosis¹⁵ due to fungal debris is another factor for syringing some of these patients.

Ear foreign body accounted for 5.2% of syringing in our study. This was done for non vegetative foreign bodies. Syringing is one of the treatment options for ear foreign bodies especially the non vegetative type^{5,9,10,17-19}.

Ninety six percent of the syringing was done by ENT trained nurses. This trend agrees with the previous report^{1,5,12,13,15}

The 5% complications rate reported from this study was similar to 6.7% reported in Kaduna¹ and this corroborate the fact that syringing is one of the most common sources of iatrogenic otorhinolaryngologic problems³. These complications included; vertigo, external auditory canal abrasion and failure of cerumen removal. Previous study reported similar findings^{1, 5}. Failure of ear wax removal accounted for 29% of the complications, Otitis externa 17%, eardrum perforation 15%, external auditory canal injury 12% and major complications occurred in approximately one in 1000 ears syringed¹². Most complications occurred in the hands of the nurses. This trend agrees with the previous report^{13, 15}. Though these nurses were ENT trained, complications can be encountered even with well-trained personnel¹. This can be avoided or minimised by re-education, and paying attention to the right technique as well as to the contraindications to syringing.^{12,13,15}

Two of the patients that developed vertigo had perforated tympanic membrane (TM), which was not discovered before syringing. Ear syringing is contraindicated in TM perforation as it may precipitate vertiginous attacks in these patients. Other mechanism of vertigo includes syringing with water in disparity with the body temperature which elicits convection currents in the endolymph in the vestibular apparatus, provoking vertigo. External auditory canal abrasion /laceration may result when patient especially children are restless and uncooperative or from wrong technique. Patients who had failure of cerumen evacuation after 3 attempts, syringing was abandoned and other method was

employed to manage their cerumen impaction. Though complications were fewer in Ogunleye's study, there were 0.2% cases of TM laceration⁵. Bapat et al reported severe audiovestibular loss following syringing for wax impaction¹⁹. Audiovestibular loss is however uncommon following syringing¹⁹. Published studies reported that major complication following ear syringing occurs in 1 out of 1000 cases of ears syringed and that adequate training about ear syringing is needed to minimize or prevent such complications^{2, 12, 13, 15}.

In conclusion, this study has revealed that ear syringing is one of the most common otorhinolaryngologic procedures, commonly performed by the nurses. Complications associated with syringing are still common and remains an issue to be addressed. Therefore syringing though may appear simple should not be taken for granted. Proper training and re - training with particular attention to the technique of syringing as well as contraindications to syringing to make the procedure safe and cost effective are advised.

Conflict of interests: The authors declare that they have no conflict of interests.

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