Ear Syringing

CURRENT PRACTICE OF EAR SYRINGING: AN OVERVIEW

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Introduction

E ar syringing is the simplest and least traumatic way to clean out the ear canal. It is a procedure which every health care worker should learn and perform proficiently in a primary health care setting. Other methods of ear cleaning make use of suction, ear hooks and ear micro-forceps. These methods require advanced training in ear care.

Abstract

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

The main indications for ear syringing are ear wax, ear debris and pus, foreign body and otomycosis. The contra-indications are perforated eardrum, scarred and thin eardrum, organic foreign objects, middle ear ventilation tube in-situ, cerebro spinal fluid-otorrhoea and uncooperative children.

Ear syringing has a low incidence of complications and is a safe procedure in trained hands.

Indications

The usual indications for ear syringing include wax removal, debris (especially from otomycosis) and foreign bodies.

(a) Wax

Wax in the ear is secreted by glands situated in the skin of the ear canal and is nature's provision for the removal of dust and other foreign materials from the ear canal. The quantity of wax produced varies greatly from one individual to another. Its composition varies in different racial groups. Excess wax may reflect local systemic disease.¹ Wax is usually expelled by migration, a process that is aided by jaw movement.² Sometimes excessive wax may be formed or may be of abnormal consistency that blocks the ear canal. Impacted wax is also caused by the use of cotton wool buds in a misguided attempt to clean the ears. Wax needs to be removed when it blocks the ear canal causing hearing impairment or when it blocks the view for otoscopy.

In a recent study by Ogunleye and Awobem, of 622 patients requiring ear syringing, cerumen (99%) remained the commonest indication for ear syringing.³ The procedure is easy when the wax is soft and flaky, but when the wax is hard and impacted it might require softening. The following cerumenolytic agents can be used to soften the wax:

- Vegetable oil and 5% sodium bicarbonate drops, usually applied two times a day for about 5-7 days before syringing.⁴
- 2. A recipe of 5% sodium carbonate with 30% glycerine in purified water.
- A 3% hydrogen peroxide solution can be instilled and allowed to remain for a few minutes.⁴

Proprietary cerumenolytic preparations are better not used as they may cause irritation and even an allergic skin reaction.

(b) Debris

Epithelial desquamation of the canal skin resulting in debris formation in the ear canal can be removed by ear syringing.

(c) Foreign body

Foreign bodies in the external auditory meatus are common. They are usually seen in children and a large variety of objects may be encountered in the ear canal, most often seeds and beads.⁵⁻⁷ These can be removed by syringing, however, organic foreign bodies such as seeds should not be syringed out because, if unsuccessful, the seeds imbibe water, 'swell up' and become impacted and difficult to remove afterwards.

(d) Otomycosis

Fungal infection is found in the external meatus as primary disease or complicating otitis externa. The usual organisms are *Aspergillus* and *Candida albicans*. The presence of masses of material, like wet blotting paper, in the meatus upon which the mycelia can be seen is characteristic. The colour of the mass may be white, through yellow, brown to black. *Candida* has a less specific appearance. The mainstay of treatment is meticulous cleaning out of the ear canal followed by instillation or application of a topical antiseptic or antimycotic solution, cream or gel.

(e) Mucopurulent ear discharge

Chronic discharging ears are still common problems in the community in the developing world and are main features of chronic suppurative otitis media. An important part of the treatment of this condition is cleansing of the ear (aural toileting), either by ear syringing or mopping with cotton wool swabs, followed by aural wick dressing with antibiotic ear drops. Antibiotic or antiseptic applications into the ear canal have no chance of getting where they are required if the meatus is still full of pus. This is a frequent cause of failure of treatment if the aural toileting is not done prior to commencement of treatment.



Fig. 1: Disposable syringes

Photo: A Ogunleye

Ear Syringing

Contraindications

Contraindications to ear syringing include perforated ear drum because of the risk of reactivation of infection; a scarred, thin eardrum since this may rupture; organic objects as they swell up from imbibed water and thus become impacted and difficult to remove afterwards; presence of a grommet; prior to ear surgery; cerebrospinal fluid otorrhoea; and young un-cooperative children.

Materials

The following materials would be needed for an ear syringing procedure:

(a) Syringe: A 20 ml or 50 ml disposable syringe (Figures 1, 2) with an attached intravenous plastic cannula with the tip cut short to a few centimetres.³

A more sophisticated instrument is an electrically driven water pump with a set of nozzles to fit all ages and a foot-operated control named PROPULSE II (Figure 3). This instrument regulates the force by which water is driven into the ear canal, thereby reducing complications that may be associated with ear syringing.

- (b) Light source to inspect the ear: For example, a head-mirror to reflect light, electric otoscope, or headlight.
- (c) Solution in litre measure: Normal saline or sodium bicarbonate, 4-5 gm to 500 ml of water is ideal. However, clean tap water is also satisfactory. The temperature of the solution should be between 37°C (99°F) and 38°C (100°F). Any departure of more than a few degrees could cause severe vertigo.



Photo: A Ogunleye

Fig. 2: Using a disposable cannula

- (d) Aural forceps.
- (e) Gallipot containing cotton wool swabs.
- (f) Receiver for the solution: e.g., kidney dish
- (g) Towels and Mackintosh cape for draping during the procedure to prevent the patient's dress / covering becoming soaked.

(h) Dust bin to receive used swabs.

Technique of Ear Syringing

- 1. The procedure is first explained to the patient who is also advised that as fluid passes into the ear, he/she may feel more deaf and feel uncomfortable.
- 2. The patient sits with the ear to be syringed towards the operator, after being draped.
- 3. Then, the patient holds the receiver close against the cheek, under the ear (Figure 2).
- 4. The operator then uses a head-mirror or headlamp, or the electric otoscope, to examine the ear.
- 5. The operator washes and dries his/her hands, takes a syringe, fills it with appropriate solution and expels air.
- 6. With one hand the operator straightens the ear canal by drawing the pinna upwards and slightly backwards. In young children, the pinna has to be pulled downwards and backwards.

7. With the other hand, the operator holds the syringe and directs the nozzle and the stream of solution towards and along the roof or posterior wall of the external auditory canal (to prevent rupture of the tympanic membrane from direct impingement of the jet of fluids).

8. After completion of the procedure, the external auditory canal should



Fig. 3: Using an electric ear syringe Photo: Theodore Randrianarisoa

be inspected and excess solution mopped from the canal, as stagnation of fluids predisposes to otitis externa.

Among children, taking them into the confidence of the operator makes the procedure easier. A co-operative child can be syringed without difficulty. However, if the child is scared, he can be made to sit on the lap of the mother, with the legs of the child 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.

Complications

This procedure, though simple, may be fraught with various complications. These include tympanic membrane perforation, canal laceration, canal scalding, vertigo and even, rarely, death. Estimation of complications has been put at 0.1% of ears syringed.8 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.9 In the study of 622 patients needing ear syringing, by Ogunleye and Awobem, the complications recorded were mainly vertigo (0.2%) and tympanic membrane perforation (0.2%).3

The low incidence of complications observed in this aforementioned recent study and the study of Sharp et al shows that ear syringing is a very safe procedure in trained hands. ^{3, 8}

Ear Syringing

Lately, 'malignant' external otitis has been reported as a potential complication that can follow ear syringing. Rubin and Yu 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 the onset of malignant external otitis in high-risk populations.¹⁰

Similarly, Ford and Courtney-Harris reported a case of malignant external otitis, which occurred in a healthy 72year-old non-diabetic, non-immunocompromised man after ear syringing.¹¹ The infection was treated with oral ciprofloxacin for eight weeks with complete resolution.

The incidence of complications could be reduced by greater awareness of the potential hazards, and increased numbers of personnel receiving instruction and training.

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Audiological Rehabilitation in Brazil AN AUDIOLOGICAL REHABILITATION PROGRAMME FOR THE ELDERLY IN BRAZIL

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Introduction

f all the disabilities that affect the aged, the inability to communicate with others due to hearing impairment can be one of the most frustrating and can result in other psychosocial problems. The sensorineural hearing loss experienced by older adults is the third major cause of disability among the elderly population in Brazil, and has dramatic effects on communication, often being associated with hearing disability, which restricts the quality of life.¹

Hearing aids alone are not the total solution to the communication problems caused by hearing loss. According to the American Speech-Language-Hearing Association (ASHA), it is very important to assist elderly individuals with auditory disabilities to realise their optimal potential in communication, which is possible through an audiological rehabilitation (AR) programme.²

Audiological Rehabilitation Programme

The AR programme consists of five items including:

- 1. Holistic evaluation.
- 2. Hearing aid and assistive listening devices fitting and orientation.
- 3. A detailed explanation of the hearing process, the audiogram and a review of the auditory and visual nature of speech.
- 4. Counselling.
- 5. Teaching communication strategies.

Holistic Evaluation

The AR process begins at the diagnostic evaluation. As hearing impairment in the elderly is not a single disorder, Kricos and Lerner, have developed an holistic assessment mode, including the following aspects:³

