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NHS

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Ear Irrigation & Cleaning of Equipment Standard operating procedure

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Introduction

Cerumen (Wax) Management

Cerumen, or wax as it is commonly known, is a normal secretion of the ceruminous glands in the outer meatus. It is slightly acidic, giving bactericidal qualities in both its wet, sticky form (as secreted by Caucasians and African-Caribbeans) or dry, flaky form (as, for example, secreted by S.E. Asian people). In addition to epithelial migration, jaw movement assists the movement of wax to the entrance of the External Auditory Meatus (EAM) where it emerges onto the skin. A small amount of wax is normally found in the EAM and its absence may be a sign that dry skin conditions, infection or excessive cleaning have interfered with the normal production of wax. It is only when there is an accumulation of wax that removal may be necessary. A build-up of wax is more likely to occur in older adults and patients with learning difficulties, hearing aid users, people who insert implements into the ear or have a narrow EAM. A build-up of wax may also occur as a result of anxiety, stress and dietary or hereditary factors. Excessive wax should be removed before it becomes impacted, which can give rise to tinnitus, hearing loss, vertigo, pain and discharge.

The experienced practitioner can use his or her clinical judgement on the best method for wax management and removal. Olive oil may be advised in favour of other cerumenolytics. The practitioner may decide that extended use of olive oil is preferable to wax removal procedures.

These recommendations have been developed to assist practitioners in gaining experience and knowledge in the provision of ear care. They do not replace the need for education, recognised training and supervision in order to perform these procedures.

Evidence

In order to reduce litigation in ear irrigation and provide the patient with effective and safer ear care the content of this document was originally produced by the 'Action On ENT' Steering Board (2002) and endorsed by the Royal College of General Practitioners, The Royal College of Nursing, The Primary Ear Care Centre and the Medical Devices Agency. It has subsequently been revised by the Primary Ear Care Trainers (2017).

Purpose

The Purpose of this SOP is to enable:

- Correct treatment of otitis externa where the meatus is obscured by debris
- Improve conduction of sound to the tympanic membrane when it is blocked by wax

- Remove discharge, keratin or debris to allow examination of the EAM and the tympanic membrane
- Remove wax in order to facilitate hearing aid mould impressions
- Facilitate the removal of wax and foreign bodies, which are not hygroscopic, from the EAM. Hygroscopic matter (such as peas and lentils) will absorb the water and expand, making removal more difficult

Scope

This procedure is only to be carried out by an experienced healthcare worker who has received recognised training in ear care and the use of ear care equipment. This training is available UK-wide from Primary Ear Care Centre trainers.

An individual assessment should be made of every patient to ensure that it is appropriate for ear irrigation to be carried out.

Eligibility

Only those with the following are eligible for ear irrigation via the practice.

- Hearing aids and need wax removal
- Learning difficulties
- Dementia
- In advance of an audiology referral
- Any other sensory impairment such as blindness when hearing is crucial

Exclusions

Irrigation should NOT be carried out if:

- the patient has previously experienced complications following this procedure
- the patient has undergone any form of ear surgery (only exception is grommets that have extruded at least 18months previously and it is documented that tympanic membrane is intact)
- there is a history of a middle ear infection in the last six weeks
- active dermatitis or infection of the ear canal
- there is a history of mucous discharge in last 12months
- abnormalities of the ear canal (e.g. exostoses or rear canal stenosis)
- a foreign body in the ear; hygroscopic matter such as peas or lentils will swell
- grommets in place

- the patient has a perforation or a previous healed perforation
- there is evidence of acute otitis externa with pain and tenderness of the pinna
- Cleft palate repaired or not
- Hearing in only one ear if it is the ear to be treated; there is a remote chance that irrigation could cause permanent deafness
- Confusion or an inability to cooperate

This list is not exhaustive and the practitioner must use his or her own judgement for each individual.

Precautions:

In these cases, ear irrigation should be carried out on a low setting.

- Tinnitus
- Dizziness
- Patient taking anti-coagulants or high dose steroids
- Head/neck radiotherapy
- Immunocompromised patients
- Recurrent otitis media
- Recurrent otitis externa or tinnitus

Children

Irrigation can be carried out on children as long as the child has no contraindications and is happy to co-operate with the procedure. They must fall in line with the eligibility category. It may be advisable to instil olive oil for a longer period of time in children to avoid the need for irrigation.

When carrying out otoscopy, gently pull the pinna down and backwards to straighten the external auditory meatus (EAM).

Guidance

Guidance on irrigation equipment

The metal syringe is obsolescent for use in the EAM. The syringe design is inherently dangerous. Combined with the danger of the syringe itself and the pressure of water it creates within the EAM, there is the difficulty of disinfecting the syringe after each use. The Medical Devices Agency (MDA) also has reservations about the use of the metal syringe for wax removal. There are issues around the poor manufacture of some syringes, allowing them to

break and cause injury during use, and the pressure of water that can be exerted manually on the tympanic membrane.

Electronic irrigators such as the "Propulse" allow irrigation of the EAM rather than wax removal under pressure. The MDA issued Safety Notice SN 9807 in February 1998 which advised users that the original Propulse electronic irrigator required an isolation transformer for electrical safety. Subsequently, the manufacturer designed and marketed the Propulse II to replace the original machine, followed by the Propulse III and the NG. The Propulse G5 is now available which is both mains and battery operated.

This guidance document does not recommend the use of manual syringes or the Propulse 1, even with an isolation transformer, but recommends that practitioners should use the Propulse II, III, NG or G5 irrigators and refer to the procedure as ear irrigation.

The Propulse II III NG and G5 irrigators have a pressure-variable control, allowing the flow of water to be easily controlled by commencing irrigation on the minimum setting. For patient safety, the manufacturer has limited the maximum pressure available. This limit is stated in the user instructions. The Propulse III, NG and G5 irrigators have specific disinfecting guidelines.

Equipment Requirements

- Otoscope and single-use specula
- Head mirror and light or headlight and spare batteries
- Electronic irrigator
- Tap water at 37°C or temperature comfortable for the patient avoiding cool water
- Noots trough/receiver - receiver used to collect water
- Jobson Horne probe/carbon curette or an appropriate cotton wool carrier and good quality cotton wool
- Tissues and receivers for dirty swabs and instruments
- Disposable waterproof cape and paper towels
- Disposable apron and gloves

Procedure

Adults must have been reviewed by a clinician and confirmation of ears being blocked with wax prior to booking for irrigation – they must have been advised to apply Olive oil to effected ear daily for 1 week prior to irrigation.

This procedure should be carried out with both participants seated and under direct vision, using a headlight or head mirror and light source.

Irrigation should never cause pain. If the patient complains of pain, stop immediately.

1. The patient's presenting complaints and the result of the initial examination should be

documented. Valid consent should be obtained and documented prior to proceeding

2. Examine both ears by first inspecting the pinna and adjacent scalp using direct light. Check for previous surgery incision scars or skin defects, and then inspect the EAM with the otoscope.
3. Check whether the patient has had his/her ears irrigated previously, or if there are any contraindications why irrigation should not be performed.
4. Explain the procedure to the patient and ask the patient to sit in an examination chair (a child could sit on an adult's knee with the child's head held steady).
5. Check that the headlight/light source is in place and is working correctly.
6. Place the protective cape and paper towel on the patient's shoulder and under the ear to be irrigated. Ask the patient to hold the receiver under the same ear.
7. Check that the temperature of the water is approximately 37°C and fill the reservoir of the irrigator. Set the pressure at minimum.
8. Connect a new tip applicator to the tubing of the machine with a firm 'push/twist' action. Push until a "click" is felt.
9. Direct the irrigator tip into the Noots receiver and switch on the machine for 10-20 seconds in order to circulate the water through the system and eliminate any trapped air or cold water. This offers the opportunity for the patient to become accustomed to the noise of the machine. The initial flow of water is discarded, thus removing any static water remaining in the tube. Check the temperature of the water again.
10. Twist the tip so that the water can be aimed along the posterior wall of the EAM (towards the back of the patient's head).
11. Gently pull the pinna upwards and outwards to straighten the EAM (directly backwards in children).
12. Warn the patient that you are about to start irrigating and that the procedure will be stopped if he/she feels dizzy and/or experiences any pain. Ensure that the light is directed down the EAM. Place the tip of the nozzle into the EAM entrance and, using the foot control, direct a stream of water along the roof of the EAM and towards the posterior wall (direct towards the back of the patient's head). Increase the pressure control gradually if there is difficulty removing the wax. It is advisable that a maximum of one reservoir of water per ear is used in any one irrigation procedure.
13. There is evidence to suggest that leaving water in the canal for 15 minutes will increase the chance of success. You may find it beneficial to instil water into both ears (if both require irrigation with water) and return to the procedure after a rest of 15 minutes. (Eekhof J et al 2001)
14. Periodically inspect the EAM with the otoscope and inspect the solution running into the receiver.
15. After removal of wax or debris, dry mop excess water from the meatus under direct vision using the Jobson Horne probe /carbon curette or an appropriate cotton wool carrier and good quality cotton wool. Stagnation of water and any abrasion of skin during the procedure predispose to infection. Removing the water with the cotton wool tipped probe reduces the risk of infection.
16. Examine the ear, both meatus and tympanic membrane, and treat as required following specific guidelines, or refer to a doctor if necessary.
17. Give advice regarding ear care and any relevant information. Advise the patient to return if ear starts to discharge or become painful. If the presenting complaint was hearing loss and the hearing doesn't improve following wax removal advise patient to seek further

advice as per local policy.

18. Document what was observed in both ears, the procedure carried out, the condition of the tympanic membrane and external auditory meatus and treatment given. Findings should be documented, nurses following the NMC guidelines on record keeping and accountability. If any abnormality is found a referral should be made to the ENT Outpatient Department following local policy.

It is recommended that you follow the manufacturer's guidelines and local policy for cleaning, disinfecting and calibrating the irrigator and its components

Potential complications following procedure:

- Trauma
- Infection
- Dizziness
- Tinnitus

Cleaning of Equipment

Ensure the unit has been cleaned prior to first use and every morning before use.

1. The irrigator must be cleaned each day before use by an appropriately trained health professional
2. Personal protective clothing should be worn: apron, gloves and visor and the procedure should be carried out in a well-ventilated area.
3. The irrigator must be disinfected using a solution of sodium Dichloroisocyanurate 0.1% (NADCC) (CHLOR CLEAN) to make a solution which provides 1000 parts NADCC per million (0.1%) according to the manufacturer's instructions.
    a. Solution can be mixed and stored in a lidded litre container for up to 8 hours
4. Fill the water tank with the mixed NADCC CHLOR CEAN solution
5. Run the irrigator for a few seconds to allow the solution to fill the pump and flexible tubing
6. After 10 minutes remove the reservoir with the remaining cleaning solution and discard.
7. Rinse the system through with well-run cold tap water to ensure that all the NADCC solution has been flushed through by running the irrigator again for a few seconds.
8. Do not attempt to clean the irrigator tips. These are single use only.
9. Dry the unit thoroughly with paper towels prior to storage.

External cleaning of the Propulse Ear Irrigator should be done by hand, wiping with a damp cloth only. Apply liquids to the cloth not the unit. Do not immerse the unit in water. Mild detergents and disinfectants may be used externally

Version Control

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