SASKATCHEWAN RN ASSOCIATION

SASKATCHEWAN REGISTERED NURSES' ASSOCIATION

RNs WITH ADDITIONAL AUTHORIZED PRACTICE
CLINICAL DECISION TOOL
DECEMBER 1, 2016

CERUMINOSIS (IMPACTED CERUMEN) ADULT & PEDIATRIC

DEFINITION

Ceruminosis is an occlusion of the ear canal with wax (cerumen).

IMMEDIATE CONSULTATION REQUIRED IN THE FOLLOWING SITUATIONS

- None

CAUSES

- Cerumen is produced naturally in the ear canal and is normally cleared by the body's own mechanisms.
- Occasionally cerumen is produced in excessive amounts and partially or totally occludes the ear canal.
- Cerumen impaction occurs when cerumen accumulates in the external auditory canal.
- Risk factors are poorly studied but may include age and ethnic background.
- Cotton swab use is controversial.

PREDISPOSING AND RISK FACTORS

- Narrow ear canals
- Hairy ear canals
- Individuals who use in-ear hearing aids
- Cotton swab use
- Osteomata: a benign bony growth in the external ear canal
- Use of ear protection
- Drier cerumen production or overproduction
- Recurrent otitis externa
- History of recurrent impacted wax
- Elderly. The prevalence of cerumen impaction among elderly clients is 35%.
- Client with cognitive impairments
- Skin disease of periauricular area or scalp

HISTORY

- Conductive hearing loss
- Ear pain/discomfort
- Sensation of fullness
- Itching

- Tinnitus
- Vertigo
- Cough

Enquire with the client/caregiver about their medication history (e.g., anticoagulant therapy, recurrence of ear wax impaction, otitis externa, diabetes mellitus, immunocompromised state, and keratosis obturans).

PHYSICAL FINDINGS

- Hardened wax in canal
- Complete or partial obstruction of canal
- Red and swollen canal
- Obscured tympanic membrane
- Decreased hearing

DIFFERENTIAL DIAGNOSIS

- Foreign body in the external ear canal
- Otitis externa
- Keratosis obturans is usually present with the following characteristics:
  - Accumulation of large plugs of desquamated keratin in the ear canal
  - Acute onset of severe pain
  - Conductive hearing loss
  - Otorrhea is rare
  - Younger age group commonly affected
  - Usually bilateral
  - Associated with sinusitis and bronchiectasis
  - Caused by chronic hyperemia of the ear canal skin

COMPLICATIONS

- Hearing loss
- Vertigo
- Otitis externa
- Perforation of tympanic membrane
- Acute cardiac depression may occur while irrigating the canal

- Chronic cough may result due to the irritation of the vagus nerve which innervates the external auditory canal
- Tinnitus
- Social withdrawal, poor work performance and mild paranoia can result

INVESTIGATIONS AND DIAGNOSTIC TESTS

- None

MAKING THE DIAGNOSIS

- Direct visualization of impacted cerumen
- Exclude otitis externa and foreign bodies, particularly in children

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- Remove wax
- Treat any underlying canal irritation
- Prevent recurrence

Appropriate Consultation

- Not usually necessary unless complications

Non-Pharmacological Interventions

- Soften wax with slightly warmed mineral oil or olive oil for 3-5 days before attempting irrigation unless there are bothersome symptoms such as pain or vertigo.
- After 3-5 days of oil use, evaluate the need for irrigation.
- Inject lukewarm water/saline upwards within ear canal with an ear syringe until wax is cleared after pre-soaking with saline for 15 minutes.
- Manual removal should be done by a physician/RN(NP), or RN where employer policy permits.
- Do not perform ear irrigation in young children with ear wax or uncooperative clients at any age.

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Note 1: Irrigation should not be performed if the tympanic membrane (TM) is known to be perforated; there is a history of ear surgery; the wax is not completely occluding the ear canal; if previous irrigations caused pain; or if the client is known to have anatomic abnormalities such as congenital malformations, exostosis, scar tissue, or chronic otitis externa.

Note 2: Clients who are immunocompromised or diabetic have a greater risk for otitis externa following irrigation and should be followed-up after the procedure.

Pharmacological Interventions

- Saline alone may be as effective as commonly used ceruminolytics for the removal of impacted cerumen.
- Ear candling is not recommended due to safety concerns and a lack of proven efficacy.
- Weekly instillation of emollient oil may decrease the recurrence of cerumen impaction.
- Pre-soaking with water or saline for 15 minutes is recommended before ear irrigation.
- The use of vegetable oils for wax removal may result in a foul smell.

Agents used for wax removal:

- Mineral oil
    - 3 drops in affected ear at hs for 3-4 days
- Almond oil
    - 3-4 drops tid-qid for 3-5 days
    - 3 drops in affected ear at hs for 3-4 days
- Olive oil (Earol)
    - 3-4 drops tid-qid for 3-5 days
    - 3 drops in affected ear at hs for 3-4 days
- Sodium chloride 0.9% (normal saline) 3-4 drops tid-qid for 3-5 days can be used to soften cerumen.
- Use of ceruminolytics may resolve some cerumen impactions in children but most will require subsequent irrigation.

- Pre-irrigation preparation with various ceruminolytics (Cerumenex, Murine, Otocerum, or Taponoto) does not appear superior to pre-irrigation saline for improving post-irrigation wax clearance rates.
- Cerumenex and Colace associated with similar need for subsequent irrigation and rate of wax clearing after one irrigation in children with partial or complete occlusion of tympanic membrane.

Contraindications to irrigation:

- Tympanic membrane perforation including myringotomy tube
- History of significant middle ear disease, ear surgery, radiation therapy to area, severe otitis externa, sharp foreign objects in external auditory canal, or vertigo

Client and Caregiver Education

- Explain disease course and expected outcome.
- If asymptomatic, cerumen does not need to be removed as it has protective, emollient, and bactericidal properties.
- Suggest avoiding the use of cotton swabs.
- Return for follow-up if no improvement.
- To prevent ceruminosis: one or two drops of mineral oil/vegetable oil or warm water instilled into the ear canal once or twice a week will help keep wax soft.
- Weekly instillation of emollient oil may decrease the recurrence of cerumen impaction.
- Counsel client/caregiver about the appropriate use of medications (dose, frequency, compliance, etc.).

Monitoring and Follow-Up

- Return to clinic in 3 days if symptoms persist or if immunocompromised (see above).

Referral

Consult with a physician/RN(NP) in the following situations:

- Client does not respond to treatment.
  - Pain persists after two removal attempts (with second attempt preceded by 2-3 days with oil preparation)
  - Unusual anatomy

  - History of tympanic membrane perforation, radiation, or surgery
- Vertigo or severe pain develops during irrigation with water at body temperature (perilymphatic fistula or perforation of oval window may be suspected).
- Hearing loss persists after removal of cerumen.
- Foreign body in the ear canal.
- Refer client with unilateral hearing loss in unaffected ear. Do not irrigate.

DOCUMENTATION

- As per employer policy
- Document the condition of the tympanic membrane following cerumen removal.

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