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CERUMEN MANAGEMENT

Strategies, procedures & tools applied for purposes of removing cerumen and/or managing patients with impacted cerumen

- Stop! Cerumen suddenly dry - proceed
- Stop and refer
- Change removal strategy
- Use drops
- Proceed with removal
- Stop! Something weird - Otoscopy
- Proceed with removal
- Change removal strategy
- Proceed with removal in removal
- Stop! EAC looks strange - Otoscopy
- Refer?
- Proceed with removal
- Stop and refer
Cerumen Removal Procedures

• **Mechanical Removal**
  • Suction
  • Irrigation

**Mechanical removal**

• Minimal equipment investment
• Offers portability
• Most patient-friendly technique
OBJECTIVES

- Instrumentation
- Mechanical Technique
- Light & Magnification Source Considerations
- Infection Control
- Cost analysis

Mechanical Removal

- Removal of cerumen using sterile or disposable hand-held instruments
Buck Curette

Shapleigh Curette
Billeau Loop

Lucae & Day Hooks
(right angle hooks)
Forceps

Alligator Forceps  Hartman Forceps

Lucae Bayonett Forceps
Disposable Instruments

Mechanical Instruments

which instrument should I use to remove cerumen mechanically?
Objectives

- Instrumentation
- Mechanical Technique
- Light & Magnification Source Considerations
- Infection Control
- Cost analysis

Mechanical Instrument Selection

- Matter of preference
- Influenced by
  - Cerumen consistency
Mechanical Instrument Selection

- Matter of preference
- Influenced by
  - Cerumen consistency
    - Moist: curette
    - Dry: forceps
  - Degree of cerumen impaction
    - > occlusion, < surface area of tip

Mechanical Instrument Starter Kit

- User preference

Day Hook

Shapleigh Curette

Billeau Loop
CERUMEN REMOVAL TECHNIQUE

- WEAKEST LINK
- PARTIAL LEVERAGING
  - Occlusion
- COMPLETE Occlusion

Mechanical Removal: Strategy

- Partial/Ring Occlusion
  - Approach cerumen over top/bottom
  - Place instrument behind cerumen accumulation
CERUMEN REMOVAL TECHNIQUE

- **WEAKEST LINK**
- **COMPLETE OCCLUSION**

Afferent innervation by:
- auriculotemporal branch of the Trigeminal Nerve
Superior Wall (Ceiling)

Afferent innervation by:
• auriculotemporal branch of Trigeminal Nerve

Mechanical Removal: Strategy

• Complete Occlusion
  – Weakest link
  – Start at superior aspect
  – Orient toward posterior wall
CERUMEN REMOVAL TECHNIQUE

- WEAKEST LINK
- NO LEVERAGING

Posterior Wall

Inferior Wall (Floor)
Afferent innervation by:
- auricular branch of Vagus Nerve

Cough, cough
Posterior Wall
Afferent innervation by:
• auricular branch of Vagus Nerve

Inferior Wall (Floor)
Afferent innervation by:
• auricular branch of Vagus Nerve

No Leveraging
• No “sweeping”
• No scraping
• No application of pressure
PUTTING IT ALL TOGETHER

**PARTIAL**
Place instrument over top of cerumen & position tip behind plug

**COMPLETE**
Create hole at superior-posterior aspect w/Day Hook; Proceed with more substantial instrument

Do not leverage instruments along floor or wall of EAC

OBJECTIVES

- Instrumentation
- Mechanical Technique
- Light & Magnification Source Considerations
- Infection Control
- Cost analysis
BIONIX LIGHTED INSTRUMENTS

- Lighted curette
- 5 different styles
- Magnifier
- LED light source
- Disposable design
  - 50 tips, 1 light source, $80
- New lighted forceps
  - 10 tips, 1 light source, $100

Curette
Magnifier
Light source

OTOSCOPES

continued™
HEADLAMPS

Mommy, I am so, so scared!
PROPER BRACING

Dominant hand = RIGHT
Patient’s ear = RIGHT

continued
Dominant hand = **RIGHT**
Patient’s ear = **LEFT**

**OBJECTIVES**

- Instrumentation
- Mechanical Technique
- Light & Magnification Source Considerations
- Infection Control
- Cost analysis
Infection Control

conscious management of the clinical environment for purposes of minimizing or eliminating the potential spread of disease’

Bankaitis & Kemp, 2003, 2004

Standard Precautions

- Appropriate personal barriers (gloves, masks, eye protection, gowns) must be worn when performing procedures that may expose to infectious agents
- Hands must be washed before and after every patient contact and after glove removal
- “Touch” and “splash” surfaces must be pre-cleaned and disinfected
- Critical instruments must be sterilized
- Infectious waste must be disposed of appropriately
Critical Instruments

- Instruments introduced directly into bloodstream
- Non-invasive instruments that come in contact with mucous membranes or bodily substances
- Instruments that can potentially penetrate skin from use or misuse

Cerumen removal instruments
Reusable specula
Stock earmolds

TERMINOLOGY

CLEAN
- Remove gross contamination
- Germs not necessarily killed
- Important precursor to disinfecting & sterilizing

STERILIZE
- Process whereby ALL germs killed
- Specific product requirements
- Performed on all reusable critical instruments that have been cleaned prior to reuse
**TERMINOLOGY**

**DISINFECT**
- Process whereby germs killed
- Spectrum of kill depends

**STERILIZE**
- Process whereby ALL germs killed

**STERILIZATION**
- Autoclave
- Cold Sterilization
- Ingredients
  - Hydrogen Peroxide (>7.5%)
  - SPOROX
  - Glutaraldehyde solutions (>2%)
  - WAVICIDE
- Soak Time
  - 6 hrs
  - 10 hrs
- Use/Reuse
  - Up to 21 days
  - Up to 28 days
OBJECTIVES

- Instrumentation
- Mechanical Technique
- Light & Magnification Source Considerations
- Infection Control
- Cost analysis

Reusable or Disposable?

Assume: 250 business days, 2 removals/week = 50 patients annually

Reusable Cost

- 2 Buck Curettes = $40
- 2 Day Hooks = $80
- 2 Forceps = $100
- Soaking Tray = $30
- Sporox (3 gallons) = $100
  TOTAL YEAR ONE = $350

- Sporox (3 gallons) = $100
  TOTAL YEAR TWO = $100

Disposable Cost

- Curettes (100box @ $60) = $300
- Hook (100box @ $60) = $100
- Forceps (100box @ $100) = $200
  TOTAL YEAR ONE = $600

- Curettes (100box @ $60) = $300
- Hook (100box @ $60) = $100
- Forceps (100box @ $100) = $200
  TOTAL YEAR TWO = $600
Mechanical Removal

- Offers advantages over other techniques
- Invest in necessary instruments
- Weakest link & No leveraging
- Light & magnification source
- Brace properly
- Sterilize reusables
- Rely on resources