

Management of the Draining Ear

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Objectives

- 1 Review guidelines of acute otitis externa
- 2 Review guidelines of acute tympanostomy tube otorrhea
- 3 Recognize signs and symptoms of cholesteatoma



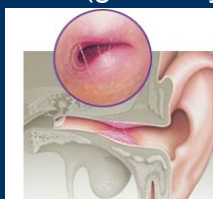
Differential Diagnosis of Otorrhea

- Acute otitis externa
- Acute otitis media with tubes or perforation
- Cholesteatoma

Acute Otitis Externa

1. Rapid onset (generally within 48 hours) in the past 3 weeks

AND...



AND...



2. Symptoms of ear canal inflammation:
 - Otalgia (often severe)
 - Itching
 - Fullness
 - WITH OR WITHOUT hearing loss or jaw pain

3. Signs of ear canal inflammation:
 - Tenderness of the tragus or pinna
 - Diffuse ear canal edema or erythema
 - WITH OR WITHOUT otorrhea, regional lymphadenitis, tympanic membrane erythema, or cellulitis of the pinna and adjacent skin

Pathogens: *P aeruginosa* or *S aureus*

Clinical Practice Guideline: Acute Otitis Externa 2014

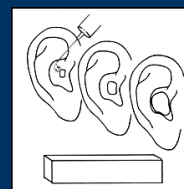
<http://fortworthearandsinus.com/swimmers-ear-facts/>
<http://entdocs.com/ear/>

Acute Otitis Externa: Treatment

- Pain control
 - Mild to moderate: APAP or NSAIDs
 - Severe: opioids for 48-72 hours
 - Benzocaine otic solution: 48 hours
- Clear ear canal of debris
 - Suction
 - Aural toilet: gentle lavage using water, saline, or hydrogen peroxide
- Wick to promote drug delivery if edema preventing topical delivery
- Keep ear dry during treatment
- Symptoms improvement within 72 hours
 - resolution within 2 weeks



<http://emedicine.medscape.com/article/994550-treatment>



Clinical Practice Guideline: Acute Otitis Externa 2014



Acute Otitis Externa: Treatment

No systemic antibiotics

- Topical therapy (>7 days): no consistent advantage of one over the other
 - acetic acid 5% (white vinegar) 1:1 with isopropyl alcohol or water ¢
 - acetic acid 2% (15mL) \$26
 - acetic acid 2% /hydrocortisone 1%(10mL) \$83
 - neomycin, polymyxin B, hydrocortisone (Cortisporin Otic 10mL) \$105/\$18
 - ofloxacin 0.3% (ophth 5mL) \$13
 - ciprofloxacin 0.2% (Cetraxal 3.5 mL) \$50
 - ciprofloxacin 0.3%/ dexamethasone 0.1% (Ciprodex 7.5mL) \$184
 - ciprofloxacin 0.2%/ hydrocortisone 1% (Cipro HC 10mL) \$245

Middle
Ear
Safe

Prices from GoodRx.com

Acute Tympanostomy Tube Otorrhea

- Young child: AOM Pathogens:
Step Pneumo, *H. influenza*, *M cat*
- Older child/ water exposure:
P aeruginosa or *S aureus*
- Wick away drainage
- Topical fluoroquinilone ± steroid otic drops
(7-10 days)
- May culture if no response
– sensitivities for systemic treatment

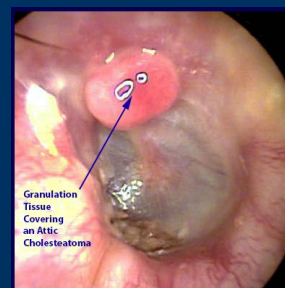
Systemic antibiotics **not recommended** except:¹

- High fever (38.5°C, 101.3°F)
- Concurrent illness requiring systematic antibiotics (eg, streptococcal pharyngitis, bacterial sinusitis)
- Cellulitis extending beyond the external ear canal to involve the pinna or adjacent skin

¹Clinical Practice Guideline: Tympanostomy Tubes in Children—Executive Summary 2013

Cholesteatoma

- Squamous epithelium in the middle ear loses ability for cell regulation; leading to bony destruction and infection
- Signs/symptoms: painless otorrhea, granulation tissue
- Granulation tissue or otorrhea does not resolve in 10 days of fluoroquinilone/ steroid otic drop



<http://www.entusa.com/JS-Slide-Shows-ENTUSA/Cholesteatoma-1/Cholesteatoma-1.htm>



http://www.entusa.com/eardrum_and_middle_ear.htm

Treating Fungal Otorrhea

Middle
Ear
Safe

- Acetic acid 2% (Vosol)
- White vinegar (5% acetic acid)
- Miconazole
- Clotrimazole
- Tolnaftate
- Nystatin
- Gentian violet



<https://nervemag.wordpress.com/2012/09/14/the-power-of-purple/>
<http://collopie.com/bear/index.html>



When to Refer...

- Lack of resolution in 2 weeks
- Frequent or persistent ear drainage
- Facial paralysis with ear infection



References

- Rosenfeld RM, Schwartz SR, Cannon CR, Roland PS, Simon GR, Kumar KA, Huang WW, Haskell HW, Robertson PJ. Clinical practice guideline: acute otitis externa. *Otolaryngol Head Neck Surg*. 2014 Feb;150(1 Suppl):S1-S24.
- Rosenfeld RM, Schwartz SR, Pynnonen MA, Tunkel DE, Hussey HM, Fichera JS, Grimes AM, Hackell JM, Harrison MF, Haskell H, Haynes DS, Kim TW, Lafreniere DC, LeBlanc K, Mackey WL, Netterville JL, Pipan ME, Raol NP, Schellhase KG. Clinical practice guideline: tympanostomy tubes in children. *Otolaryngol Head Neck Surg*. 2013 Jul;149(1 Suppl):S1-35.