Earache

Schmitt-Thompson Clinical Content

DEFINITION

- Pain or discomfort in or around the ear
- Older child reports an earache
- Younger child acts like he did with a previous ear infection
- **Also Included:** recently FINISHED antibiotics for ear infection and recurrent earache
- **Excluded:** Ear pain caused by ear trauma/injury, see that protocol

INITIAL ASSESSMENT QUESTIONS

1. LOCATION: "Which ear is involved?"
2. ONSET: "When did the ear start hurting?"
3. SEVERITY: "How bad is the pain?" (Dull earache vs screaming with pain)
   - MILD: doesn't interfere with normal activities
   - MODERATE: interferes with normal activities or awakens from sleep
   - SEVERE: excruciating pain, can't do any normal activities
4. URI SYMPTOMS: "Does your child have a runny nose or cough?"
5. FEVER: "Does your child have a fever?" If so, ask: "What is it, how was it measured and when did it start?"
6. CHILD'S APPEARANCE: "How sick is your child acting?" " What are they doing right now?" If asleep, ask: "How were they acting before they went to sleep?"
7. PAST EAR INFECTIONS: "Has your child had frequent ear infections in the past?" If yes, "When was the last one?"

- Author's note: IAQ's are intended for training purposes and not meant to be required on every call.

TRIAGE ASSESSMENT QUESTIONS

Call EMS 911 Now

Sounds like a life-threatening emergency to the triager

See More Appropriate Protocol

Painful ear canal and has been swimming

Go to Protocol: Ear - Swimmer's (Pediatric)

Full or muffled sensation in the ear, but no pain

Go to Protocol: Ear - Congestion (Pediatric)

Airplane or mountain travel prior to earache

Go to Protocol: Ear - Congestion (Pediatric)

Pierced ear symptoms

Go to Protocol: Ear Piercing Questions (Pediatric)

Crying and cause is unclear

Go to Protocol: Crying - 3 Months and Older (Pediatric)

Injury to the ear

Go to Protocol: Ear Injury (Pediatric)

Go to ED Now

Fever and weak immune system (sickle cell disease, HIV, chemotherapy, organ transplant, adrenal insufficiency, chronic steroids, etc)

R/O: serious bacterial infection. Note: if available, refer to established specialist.

Go to ED/UCC Now (or to Office Now per Practice Policy)

Pointed object was inserted into the ear canal (e.g., a pencil, stick, or wire)

R/O: perforated eardrum, damaged ossicles

Child sounds very sick or weak to triager

R/O: sepsis

Go to Office Now

Can't move neck normally

Balance problem (such as walking is very unsteady or falling) and new-onset

Fever > 105° F (40.6° C)

R/O: serious bacterial infection

Earache is SEVERE 2 hours after taking pain medicine

Pink or red swelling on bone behind ear

R/O: mastoiditis

See in Office Today

Outer ear is red, swollen and painful

R/O: cellulitis and risk for ear cartilage damage

Pus or cloudy discharge from ear canal

R/O ruptured eardrum

Pus on eyelids/eyelashes

R/O: otitis-conjunctivitis syndrome with amoxicillin resistant organism

Child with cochlear implant

R/O: ear infection

See in Office Today or Tomorrow

Earache (Exception: MILD ear pain that resolved)

R/O: otitis media

Age < 2 years and ear infection suspected by triager

Reason: recognizes child too young to report earache

See in Office Within 3 Days

Triager thinks child needs to be seen for non-urgent problem

Caller wants child seen for non-urgent problem

Home Care

Transient (or resolved) MILD ear pain

Reason: transient eustachian tube blockage

Home Care Advice

Suspected Ear Infection (Treatment Pending Office Visit)

1. **Reassurance and Education - Suspected Ear Infection:**
   • Your child may have an ear infection, but it doesn't sound serious.
   • The only way to be sure is to examine the eardrum.
   • Diagnosis and treatment can safely wait until morning if the earache begins after office hours.
2. **Pain Medicine:**
   • Give acetaminophen (e.g., Tylenol) or ibuprofen for pain relief.
3. **Cold Pack for Pain:**
   • Apply a cold pack or a cold wet wash cloth to the outer ear for 20 minutes to reduce pain while the pain medicine takes effect.
   • Note: Some children prefer local heat for 20 minutes.
4. **Olive Oil Eardrops for Persistent Pain:**
   • Note to Triager: We recommend acetaminophen and/or ibuprofen for ear pain. However, if pain is very severe despite adequate dosing and unable to be seen urgently, can try olive oil ear drops.
   • Exception: Avoid ear drops if ear discharge, ear tubes, any concern for perforation in eardrum, or concern for otitis externa (swimmer's ear). Also, during the day, do not use any eardrops if the child will be seen later that day.
   • Reason: Will make it difficult to visualize the eardrums. It is okay to use at night to help the child get back to sleep.
   • For severe earache unresponsive to oral pain medicine, recommend 3 drops of plain olive oil into the ear canal. Another option is plain mineral oil (baby oil).
   • Reason ear drops work: They cover the raw, painful surface of the eardrum.
5. **Fever Medicine:**
   • For fever above 102 F (39 C), give acetaminophen every 4 hours OR ibuprofen every 6 hours as needed. (See Dosage table)
   • For fevers 100-102 F (37.8 to 39 C), fever medicines are not needed. Reason: Fever turns on your body's immune system. Fever helps fight the infection.
6. **Avoid Earplugs:**
   • If pus or cloudy fluid is draining from the ear canal, the eardrum has ruptured from an ear infection.
   • Wipe the pus away as it appears.
   • Avoid plugging with cotton (Reason: Retained pus causes irritation or infection of the ear canal).
7. **Contagiousness:**
   • Ear infections are not contagious.
8. **Call Back If:**

- Your child develops severe pain
- Your child becomes worse

9. **Extra Advice - Request for Antibiotics by Phone:**
   - Inform caller that PCPs rarely call in antibiotics without examining the ear.
   - Reassure that ear pain can be controlled with analgesics and eardrops.
   - Reassure that examining child within 24 hours is quite safe.

Transient (or Resolved) Mild Ear Pain Once

1. **Reassurance and Education - Transient (or Resolved) Mild Ear Pain:**
   - Transient ear pain once that goes away is harmless.
   - This kind of pain is sometimes caused by a blocked eustachian tube that opens up on its own.
   - Since the pain has gone away, no treatment is necessary.
2. **No Pain Medicines**:
   - Don't give pain medicines.
   - Reason: If earache recurs, your child will need to be seen in the office.
3. **Call Back If:**
   - Pain recurs

FIRST AID

N/A

BACKGROUND INFORMATION

Matching Pediatric Care Advice (PCA) Handouts for Callers

Detailed home care advice instructions have been written for this protocol. If your software contains them, they can be sent to the caller at the end of your call. Here are the names of the pediatric handouts that are intended for use with this protocol:

- Earache - From Air Travel
- Earache - Symptom
- Fever - How to Take the Temperature
- Fever - Myths Versus Facts
- Acetaminophen (Tylenol) Dosage Table - Children
- Ibuprofen (Advil, Motrin) Dosage Table - Children

Pain Severity Scale

- **Mild:** doesn’t interfere with normal activities
- **Moderate:** interferes with normal activities or awakens from sleep
- **Severe:** excruciating pain, unable to do any normal activities, incapacitated by pain
- Triager Tip - Assessment of Pain Severity: Base it on the child's current behavior. Ask: "What does the pain keep your child from doing?" Do not ask: "Is the pain Mild, Moderate or Severe?" Reason: Many parents and teens will choose "Severe".

Causes of Earaches

- **Ear Infection.** An infection of the middle ear (space behind the eardrum) is the most common

cause. Ear infections can be caused by viruses or bacteria. Usually, a doctor can tell the difference by looking at the eardrum. Most ear infections with mild symptoms are caused by viruses. Antibiotics are not helpful.
• **Swimmer's Ear.** An infection or irritation of the skin that lines the ear canal. Main symptom is itchy ear canal. If the canal becomes infected, it also becomes painful. Mainly occurs in swimmers and in the summertime.
• **Ear Canal Injury.** A cotton swab or fingernail can cause a scrape in the canal.
• **Ear Canal Abscess.** An infection of a hair follicle in the ear canal can be very painful. It looks like a small red bump. Sometimes, it turns into a pimple. It needs to be drained.
• **Earwax.** A big piece of hard earwax can cause mild ear pain. If the wax has been pushed in by Q-tips, the ear canal can become blocked. This pain will be worse.
• **Ear Canal Foreign Body (Object).** Young children may put small objects in their ear canal. It will cause pain if object is sharp or pushed in very far.
• **Airplane Ear.** If the ear tube is blocked, sudden increases in air pressure can cause the eardrum to stretch. The main symptom is severe ear pain. It usually starts when coming down for a landing. It can also occur during mountain driving.
• **Pierced Ear Infections.** These are common. If not treated early, they can become very painful.
• **Mastoiditis.** A bacterial infection of the air cells in the mastoid bone behind the ear. The mastoid area becomes pink, swollen and tender. Uncommon complication of an ear infection.
• **Referred Pain.** Ear pain can also be referred from diseases not in the ear. Tonsil infections are a common example. Tooth decay in a back molar can seem like ear pain. Mumps can be reported as ear pain. Reason: the mumps parotid gland is in front of the ear. Jaw pain (TMJ syndrome) can masquerade as ear pain.

Auralgan and Aurodex Analgesic Eardrops - No Longer Available

• As of July 2015, benzocaine-antipyrine ear drops are no longer available in U.S. pharmacies. Reason the FDA gives for this enforcement: Unproven effectiveness, safety concerns, and challenge to new drug approval system.
• This product is also no longer available in Canada, where it used to be OTC.

Over-the-counter (OTC) Drops for Ear Pain - Not FDA Approved

• There are several OTC drops available for ear pain. None of them are FDA approved and are NOT recommended in this protocol.
• Most contain homeopathic plant/herbal ingredients, such as Calcarea Carbonica, Chamomilla, Lycopodium, Pulsatilla, Sulphur, Belladonna, Mercurius solubilis.
• An additional OTC product contains 4% lidocaine. Despite containing a known pharmaceutical ingredient, this product has also not been FDA approved.

Efficacy of Olive Oil or Herbal Ear Drops

• The evidence for the benefit of olive oil or herbal ear drops is weak.
• Olive oil ear drops were used as a placebo to evaluate the efficacy of Auralgan in improving pain. Auralgan had better improvements in pain; olive oil also showed some reduction in pain scores. However, all patients were also given acetaminophen prior to treatment. (Hoberman 1997).
• Another paper found that in both topical anesthetics and herbal extract topical drops, pain improved over the course of 3 days with and without oral antibiotics. The findings indicated that the pain was mostly (80%) self-limited and could be explained simply by the time elapsed. (Sarrell 2003).
• From the AAP 2013 Clinical Practice Guideline page e973: Oil eardrops: "may have limited effectiveness, but no control studies"
• For most otalgia, acetaminophen and ibuprofen are sufficient. However, if pain is very severe without signs of perforation, a trial of olive oil drops (3 drops) can be considered.

Expert Reviewer

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