OTITIS MEDIA: FACTS AND FALLACIES
Session A 3113

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In the past 12 months, I have not had a significant financial interest or other relationship with the manufacturer(s) of the product(s) or provider(s) of the service(s) that will be discussed in my presentation.
This presentation will not include discussion of pharmaceuticals that have not been approved by the FDA.

I will most likely discuss “off-label” use of pharmaceuticals.
PRACTICE MANAGEMENT

OBJECTIVES

- Commit 100% to use of pneumatic bulb for otoscopy in office
- Learn to distinguish perforation from retraction
- Learn to distinguish myringosclerosis from keratoma
- Learn when fluid in the mastoid equals mastoiditis
PRACTICE MANAGEMENT

OBJECTIVES

- Learn management of common and uncommon ear problems.
- Identify appropriate time for referral.
- When should you refer to the office and when to the emergency department?
EARDRUM POSITION

1) Eardrum position + color
2) Ossicles
3) Nature of fluid
PE OF NORMAL EAR

- Eardrum position + color
- Ossicles
- Nature of fluid
What causes a Type B tympanogram?

- A) Obstructing wax
- B) Middle ear fluid
- C) Plate – like myringosclerosis
- D) All of the above
TYMPANOMETRY

A - normal
A_s - stiffened
A_d - disarticulation
C - neg pressure
B - effusion, perforation, cerumen
PE FINDINGS OF AOM

- Bulging TM
- Purulence
- Loss of TM landmarks
Human milk provides infants with antimicrobial and anti-inflammatory agents for optimal immune system function.

Introducing formula 1st 6 mo of life associated with slight increase in AOM.

No studies on length of time, not the main factor for AOM / OME.

( Abrahams SW, Labbok MH. *Curr Allergy Asthma Rep* 2011; 11 (6): 508–12 )
PNEUMATIC OTOSCOPY + TYMPANOMETRY

Pneumatic Otoscopy:
- Movement of TM
- Distinguish perforation v. retraction

Tympanometry:
- Confirm PE
- Checks your clinical impression
TREATMENT FOR AOM

- Amox 80 – 90 mg / kg / d for 7 – 10 d
- Amox / Clav for 7 – 10 d
- Ceftriaxone 50 mg / kg / d IM for 3 d
Clinical resolution in 7 – 10 d

60 – 70 % MEE after 2 weeks

10 % MEE after 3 months
Has PCV 7 decreased *S. pneumo* AOM?

- A) Yes, by 15 – 20 %
- B) Yes, by 30 – 40 %
- C) Yes, by 55 – 65 %
- D) No
Oh my goodness! Vinnie's mutating!

Embarrassing moments at gene parties
WHY INSERT TUBES?

- Decrease number of AOM episodes
- Persistent ME fluid (> 3 mo) with conductive hearing loss (CHL)
- Worsening retraction with CHL
- Acute mastoiditis
- AOM with facial nerve weakness
TYPICAL SCENARIO

3 yo with persistent MEE for 4 months, speech delay for both vocabulary and clarity of speech
Resolution of conductive hearing impairment
Glasgow Institute of Hearing Research:
- 10 trials met criteria
- Can demonstrate improved hearing levels after PET (grommet) insertion
- NO study has been performed that demonstrates long–term benefit of PET insertion on speech/language skills

( Browning et al. Cochrane Database Syst Rev 2010 Oct 6; (10) : CD001801 )
TYPES OF TUBES

- Metal, Plastic, Titanium, Bone
- Short-term = 3 to 6 months
- Standard = 8 to 12 months
- Longer-term = 2 years
- Very-long term = ?
FLUOROPLASTIC TUBES

- May be soft or hard
- Many types
- Short and long term
Tubes do not cause:

- A) Hearing loss
- B) Eardrum perforation
- C) Focal myringosclerosis
- D) Focal weakness of eardrum
TYMPANOSTOMY TUBE PROBLEMS
METAL TUBES

- Plug easily
- Fallen out of favor
V - VENT TUBE

- Long – term tube
- Long narrow shaft plugs easily
- High retention rate
- High perforation rate
TUBE OTORRHEA

- Antibiotic drop
  (fluoroquinolone - NO ototoxicity)
- If not dry by 1 week, add oral antibiotic +/- culture
TUBE OTORRHEA

- ofloxacin otic solution (0.3%): 
  - FDA approval > 1 yo 
  - 4 - 5 drops 2 x / day for 7 - 10 days 

- ciprofloxacin (0.3%) / dexamethasone (0.1%) 
  - FDA approval > 6 mo 
  - 4 – 5 drops 2 x / day for 7 – 10 days
MASTOIDITIS PEARLS

- Draining ears rarely develop surgical mastoiditis
- No need for urgent CT scan (remember that what is present in the middle ear is probably also in the mastoid)
- Warning signs:
  - Facial nerve weakness
  - Acute vertigo
  - Redness and swelling over mastoid
OTORRHEA WITH GRANULATION

- Develops more after 2 years
- May bleed
- Drops: antibiotic + steroid
- May require tube removal if GT not controlled
WHEN REFER FOR OTORRHEA?

- 3 weeks of unremitting drainage despite drops and oral antibiotic
- Culture + for MRSA or MR *Strep pneumo*
- Infectious disease consult
- Tip: unremitting itchy, white drainage with no pain -> FUNGAL
Fig. 28-7  Fungal otitis media and externa. Color photography by Eiji Yanagisawa, M.D.
FUNGAL OTORRHEA

- Topical antifungal drops very effective:
  (off label use)

- clotrimazole 1% solution - 5 drops 3x a day for 7 days
WHAT IS CHRONIC SUPPURATIVE OTITIS MEDIA?

- A) Persistent drainage for 3 weeks
- B) Persistent drainage for 3 months
- C) Intermittent drainage for 3 months
- D) Persistent drainage for 6 months
PERFORATIONS v. RETRACTIONS
PERFORATIONS

- If small (residual hole from tube), usually causes little to no conductive hearing loss
- NO hurry to close hole
- Monitor every 6 months
- May surgically close by 7 y.o. if other side OK (except cleft palate population)
HEMOTYMPANUM
RETRACTIONS

- More concerning than perforations:
  - may evolve with ossicle erosion
  - may become “unsafe”
- Monitor every 6 mo for a few years
- Baseline hearing test
Is it clean?
Is it dry?
Is the hearing acceptable?
- No debris
- If good hearing, can only make WORSE with an operation
SEVERE FOCAL (not global) RETRACTIONS

- Have child blow with nose and mouth closed (Valsalva) to see if “crinkles”
- May develop into keratomas
- What turns a “safe” retraction into an “unsafe” retraction pocket?
MYRINGOSCLEROSIS v. KERATOMA (CHOLESTEATOMA)
MYRINGOSCLEROSIS

- Chalky – white irregular deposits within substance of eardrum
- From:
  (1) Middle ear infections
  (2) Tymanostomy tubes
- The sclerotic plaque moves with the eardrum
MYRINGOSCLEROSIS
ACQUIRED KERATOMA

- From retraction pocket
- Implantation of skin after perforation
- Implantation of skin after ear surgery
WHEN DOES FLUID IN THE MASTOID EQUAL MASTOIDITIS?
ACUTE MASTOIDITIS (AM)

- Mastoid air system is continuous with ME space via the attic of middle ear
- By definition AOM has fluid in the mastoid radiographically
- Continuum of disease severity from an uncomplicated AOM to AM with intracranial complication
What is the most reliable indicator of dural involvement in mastoiditis?

- A) Ear drainage
- B) Deep seated unremitting pain
- C) Fever
- D) Vertigo
COMMON SCENARIO

- 1 1/2 yo with ear pain, crying, ear hurts when pulled
- No redness or swelling behind ear over mastoid, but has pain when pushed
- CT scan ordered to “r/o mastoiditis”
AOM or AM ???
CLINICAL FEATURES OF AM

- **Attic blockade:**
  - Purulence in mastoid leads to venous congestion
  - Diffuse erythema and edema over mastoid
  - Ear protrusion out and down
ACUTE MASTOIDITIS
ACUTE MASTOIDITIS
ACUTE MASTOIDITIS WITH EXTENSION
TREATMENT

- IV antibiotics

- Surgery:
  - Myringotomy + tube
  - Mastoidectomy
  - Drainage of subperiosteal abscess
  - Drainage of epidural abscess
  - Drainage of sigmoid sinus thrombosis
SUMMARY

ña Timely ORL consultation helpful
ña CT scan WITH CONTRAST helpful in distinguishing between early swelling v. external / internal abscess (MRI instead to decrease x-ray exposure ?)
WHEN DOES FLUID IN THE MASTOID EQUAL MASTOIDITIS?

It depends on the clinical scenario.
ACUTE MASTOIDITIS

- Continuum of AOM
- A clinical NOT a radiographic diagnosis
DIAGNOSTIC OBJECTIVES

- Commit to using the pneumatic bulb.
- Practice using the pneumatic bulb to distinguish myringosclerosis from keratoma.
- Use tympanometry to confirm your impression of MEE and improve your accuracy of physical exam.
OTOSSCOPY WORKSHOPS

- W 4024  Tues, Oct 23  8:30 – 10:00 pm
- W 4084  Tues, Oct 23  2:00 – 3:30 pm
CHECK OUT THIS WEBSITE !!!

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