Chapter 10
General Ear, Nose, and Throat Question and Answer Items

If a child has otorrhea from the myringotomy tubes, what should you do?	Topical antibiotic eardrops have high efficacy, although unusual organisms are more common for kids with tubes than for those without
How can you remember which test is the Rinne, and which is the Weber?	WEBER has two "Es" so it's between the ears (the tuning fork is held at the vertex of the forehead – should hear it equally)
How is the Rinne test performed?	Tuning fork on the mastoid, then beside the ear, in the air – Air should be heard better (still heard after the mastoid is silent)
"Sudden" hearing loss is defined as loss of hearing that occurs over 3 days or less. What are four conduction problems that can cause sudden hearing loss?	**1. Cerumen impaction (most common)** **2. Foreign body** **3. TM or ossicle problems** **4. Middle ear fluid**
When performing a hearing exam, how does bilateral sensorineural hearing loss present?	Bilaterally decreased hearing with normal Weber & Rinne `

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Which medical conditions predispose the patient to sudden sensorineural hearing loss? (4)	**1. DM** **2. Hyperlipidemia** **3. Vascular hypercoagulable states** **4. Meniere**
What is a typical environmental cause of sudden sensorineural hearing loss?	**Noise**
What is a likely infectious cause of sudden sensorineural hearing loss (general category)?	**Viruses (especially mumps, in unimmunized kids)**
What is a likely cause of sudden sensorineural hearing loss in a hospitalized patient?	**Medication**
Do tumors cause sudden sensorineural hearing loss?	Yes – Especially if there is a small associated hemorrhage
Which medications are most notorious for causing sensorineural hearing loss? (5 categories)	**1. Loop diuretics (especially ethacrynic acid)** **2. NSAIDs** **3. Salicylates** **4. Certain antibiotics (e.g., gentamicin)** **5. Chemo regimens**
It's sad if you lose your hearing. How can the mnemonic "SAD" help you remember the drugs most likely to cause this problem?	**SAD CHEMicals** **Salicylates (& NSAIDs)** **Antibiotics (& alcohol)** **Diuretics (loop)** **CHEMicals (reminds you of chemo regimens)**
When a patient complains of headache or ear pain, what source of the pain should always be considered?	**Tooth pain**
Why is perichondritis a worrisome infection?	**The infection rapidly damages the underlying cartilage – Cosmetic result is bad**

Where is perichondritis most often seen?	**Pinna of the ear**
What unusual infectious agents must you watch for perichondritis? (2)	**Pseudomonas & Proteus**
Which bacterium is most often identified in otitis externa?	**Pseudomonas (60 %)**
Is a TM perforation an ENT emergency?	**No – Follow-up with ENT later that week**
What percentage of TM perforations heals spontaneously?	**90 %**
What are the most typical or widely cited causes for TM perforation? (4)	1. Noise 2. Barotrauma 3. *Blunt* or penetrating trauma 4. Lightning strike (especially if the patient is found undressed or in arrest)
What is the hallmark of otitis externa on exam?	**Pain with movement of the pinna**
What is a feared complication of otitis externa?	**Malignant otitis externa**
Which patients are likely to develop malignant otitis externa?	**Diabetics – 90 % of patients are diabetic** **(other immunodeficient patients are also at increased risk)**
What is the "triad" of Meniere disease?	**1. Vertigo** **2. Tinnitus** **3. Sensorineural hearing loss** (to reduce recurrences low-salt diet & hydrochlorothiazide may be helpful)
What other patient group presents similarly to Meniere patients?	**CPA tumor (cerebellopontine angle)**

What is the natural history of Meniere disease?

Intermittent recurring attacks that last weeks to years (treatment doesn't work well, but is improving)

Most treatments for Meniere disease focus on what aspect of the auditory system?

Reducing pressure in the endolymphatic portion of the affected ear

What differentiates labyrinthitis from vestibular neuronitis?

Labyrinthitis includes *hearing loss!*

(not just vertigo or tinnitus)

What is the most common cause of peripheral vertigo?

Benign positional vertigo (BPV)

What are the typical features of BPV, in terms of the patients' movement or position?

- **Worse in certain positions**
- **Worse with head motion**

What is the typical onset for BPV?

Gradual

What is the natural course of BPV?

Spontaneous resolution

What "key" should you find on physical exam, if you are able to elicit the vertigo of BPV?

Fatiguing (horizontal) nystagmus

(fatiguing means that it decreases, then stops, on its own)

What are the most concerning complications of sinusitis? (4)

1. **Cavernous sinus thrombosis**
2. **Pott's puffy tumor (skull osteomyelitis on the forehead)**
3. **Orbital cellulitis**
4. **Brain abscess**

Sinusitis has the same typical bacterial pathogens as which other ENT infection?

What are the pathogens?

- **Otitis media**
- **Strep pneumo**
- ***H. flu* (non-typeable)**
- ***M. catarrhalis***
- **Anaerobes (especially with chronic infection)**

(*S. pyogenes* is also a common cause of otitis media, but not common in sinusitis)

What is "ring sign" supposed to tell you?	**Whether fluid dripping from the nose is snot or CSF** (a ring should form around a droplet on filter paper if it's CSF – but it's very unreliable in reality)
Why is a septal hematoma (in the nose) a big deal?	**Because without rapid treatment the pressure causes septal necrosis –** ***"saddle nose"* deformity results**
Where do most nosebleeds come from? **(give two names for it)**	**Anterior veins of the nose (along the septum)** **Or** **Kiesselbach's plexus (same thing)**
Patients with posterior epistaxis make up what percentage of epistaxis patients overall?	**5 %** (fortunately)
What is the biggest risk factor for posterior epistaxis?	Arteriosclerosis
What are the main risks involved in posterior epistaxis? **(2)**	**1. Hypovolemia** **2. Aspiration**
How is posterior epistaxis treated?	**Posterior nasal pack**
What must you watch out for with patients who have a posterior nasal pack? **(4)**	**1. Hypoxia & CO_2 retention (due to airway obstruction)** **2. Bradycardia (vagal response)** **3. Sinusitis/OM** **4. Coronary ischemia (due to stress and hypovolemia, in a patient at risk for ischemia)**
What is the correct disposition for a patient with posterior epistaxis who has had a posterior pack placed?	**Admit to ICU for observation under ENT's supervision**

In cavernous sinus thrombosis, which cranial nerves are likely to be affected?

Ipsilateral 3, 4, 5, & 6 –

CN6 is usually the FIRST affected, because it is not well anchored compared to the other two, so it is most easily stretched by the increasing pressure

Which infections are likely to produce cavernous sinus thrombosis?

Midface infections –

Sinusitis, periorbital cellulitis, dental

Who was LeFort?

A guy who dropped cadavers from heights to find out how their faces would fracture

How did LeFort classify facial fractures?

Three groups:
LeFort 1 – the maxilla moves freely
LeFort 2 – the maxilla & nose move freely
LeFort 3 – the maxilla, nose, & cheeks (to the orbits) move freely

(in other words, the *whole* midface is mobile as a unit)

Why is a LeFort facial fracture concerning?
(3)

1. ***Risk of airway compromise*** **(teeth or bleeding in airway)**
2. **Risk of basilar skull fracture or associated c-spine injury**
3. **Risk of brain injury**
4. **Risk of tooth malocclusion if not properly repaired**

What is the most common complication of outpatient ENT surgery?

Post-op hemorrhage

Historically, what was the most common cause of epiglottitis?

H. flu

Which vessel is the most common culprit in posterior epistaxis?

The lateral nasal branch of the *sphenopalatine artery*

How does chronic otitis media spread to other locations?

It erodes nearby bone

What is the most common cause of sialadenitis worldwide?	**Mumps**
Excruciating stabbing or electric shock-type pain to the cheek with sudden onset, that waxes & wanes, typically in a female patient =	**Tic Douloureux (trigeminal neuralgia)**
If there is a hematoma on the pinna, how should it be treated and why?	• **It must be aspirated (evacuated) then dressed with a pressure dressing to prevent it from refilling** • **Without treatment the cartilage deforms and causes cauliflower ear**
A hard, rounded swelling of the hard palate or posterior mandible that is not tender is likely to be what diagnosis?	Torus palatinus/torus mandibularis
What is trench mouth, and what organism causes it?	• Acute necrotizing ulcerative gingivitis • Treponema vincentii Mnemonic: Think of *Vincent* van Gogh with bad teeth to remember the organism
How is trench mouth treated?	Metronidazole & Penicillin *(surgical debridement may also be needed)*
What is the typical age group for croup?	6 months to 6 years (typically <3 years)
What is the other name for croup?	Laryngotracheobronchitis
What infection produces "lumpy jaw syndrome?"	**Actinomycosis (the one with "sulphur-colored crystals")** (Remember that a single lump on the jaw of an African child is usually Burkitt's lymphoma)

What are the most important risk factors for rhinocerebral mucormycosis?	Neutropenia & Diabetic ketoacidosis
A child presents with ear pain and fluid-filled blisters on the tympanic membrane. What is the *most likely* diagnosis and its associated organism?	• **Bullous myringitis** • **Mycoplasma is most associated in the literature BUT the typical otitis media pathogens are actually more common**
What diagnosis and related organism should always be considered in a child who seems to have bullous myringitis?	• **Ramsay-Hunt** • **Herpes**
The main treatment for rhinocerebral mucormycosis is . . .?	**Surgical debridement (+ antifungals IV)** ***High mortality!***
Where do preauricular sinus tracts come from?	**Failure of the first & second branchial arches to fuse properly**
Why must nasal packing be removed promptly (24–48 h) after placement?	**Toxic shock syndrome can develop!** **(The antibiotics prescribed to prevent sinusitis while the packing is in are somewhat preventative)**
Which laryngeal ring is essential in airway patency?	**The cricoid (goes the whole way around)**
Which sinuses are present at birth?	**Sphenoid** **Ethmoid (one or two cells)** **Maxillary** (sources differ on the ethmoid – some say it is present, others dispute that)
What is the diagnostic test of choice for neck masses?	FNA (fine-needle aspiration)
Does anticoagulant therapy improve outcome in patients with cavernous sinus thrombosis?	**No**

What study is preferred to diagnose cavernous sinus thrombosis?	**CT or MRI**
What is the most common organism found in retropharyngeal abscesses?	**β-Hemolytic strep**
At what age does retropharyngeal abscess typically occur?	**6 months to 3 years**
How does retropharyngeal abscess present?	**Fever** **Ill to toxic appearing** **Stridor** **Dysphagia** **+/– Drooling** **Refusal to eat** **Little movement (it hurts)**
What is the most feared complication of lateral pharyngeal space infections?	**Septic thrombophlebitis of the jugular vein** ***(Lemierre's syndrome)***
What is the usual bacterial agent in Lemierre's syndrome?	**Fusobacterium** **(others are possible, and is often polymicrobial)**
A teenager presents with a sore throat, but seems genuinely ill, with fever & rigors. What serious disorder should you consider?	**Lemierre's syndrome**
What is the most common congenital laryngeal disorder?	**Laryngomalacia**
If a mandibular tumor has a "soap-bubble" appearance on X-ray, what is it?	**Ameloblastoma**
What three signs should you look for on physical exam when evaluating for basilar skull fracture?	**1. Blood behind the TM (hemotympanum)** **2. Raccoon eyes** **3. Battle's sign (bruising over the mastoid)**

What two presenting complaints are most common with acoustic neuromas?	**1. Hearing loss** **2. Tinnitus**
What is the most common laryngeal tumor of children?	**Laryngeal papillomas**
Which major artery runs through the cavernous sinus?	**The internal carotid**
Adolescent male + **nose bleed +** **nasal obstruction =**	**Juvenile nasopharyngeal angiofibroma**
What is the most characteristic finding on physical exam of a patient with malignant otitis externa?	**Granulation tissue in the external auditory meatus**
Diplopia after facial trauma suggests what diagnosis?	**Orbital floor fracture**
A patient presents with fever, malaise, and a dark red raised lesion – painful to touch – on his face. The lesion is expanding over time. What is the likely diagnosis?	**Erysipelas**
Only one muscle abducts the vocal cords. Which one?	Posterior cricoarytenoid
Infection and edema spreading from the lower part of the oral cavity into the neck is called . . .?	**Ludwig's angina –** **Neck is usually described as having "brawny edema"**
What usually gets Ludwig's angina started?	**Dental work**
Technically, what is Ludwig's angina, and why is it called "angina?"	• **Bilateral submandibular cellulitis** • **"Angina" just means "pain" (not specific to the heart)**

What types of organisms are usually involved in Ludwig's angina?

Mixed aerobic & anaerobic

If an item mentions "brawny edema" of the anterior neck, what diagnosis should you be thinking of?

Ludwig's angina

(Brawny just refers to the skin color deepening due to underlying infection)

What is the most common cause of death in Ludwig's angina?

Airway obstruction

Can a dermoid cyst be found in the mouth?

Yes –
Along the floor of the mouth

What is the diagnostic test of choice for acoustic neuromas?

MRI with gadolinium contrast

In general, how can you differentiate viral sialadenitis from bacterial sialadenitis?

Viral – usually bilateral
Bacterial – usually unilateral

What two important structures are often injured by horizontal (ear to lip) cheek lacerations?

The parotid duct
&
Facial nerve

What noninfectious cause of salivary gland problems should you be aware of?

Calculi –
They sometimes block salivary outflow

What is one clue that your patient's salivary gland problem is caused by obstruction?

Symptoms get worse with induction of salivation –

Sometimes this also pushes the calculous out

(Give them some lemon to suck on!)

How can you remember which duct comes from the parotid gland, and which from the submandibular?

Parotid – Stensen's is from the Side

Submandibular – Wharton's. W looks like the floor of the mouth, looking straight on at it

What two causes of gingival hyperplasia are important to remember?

1. **Phenytoin**
2. **Acute leukemia**

How do you treat acute necrotizing ulcerative gingivitis?	**Metronidazole** & **Penicillin** **(Surgical debridement is often also necessary)**
What is the most common deep infection of the head and neck, and which age group tends to get it?	**Peritonsillar abscess –** **Young adults & adolescents**
Aside from the patient's discomfort, what is the most concerning aspect of a peritonsillar abscess?	**Spread to the adjacent tissue planes producing** **1. Serious infection** **2. Airway compromise**
What is the buzzword for peritonsillar abscess findings on physical exam?	**Uvula deviation** **(away from the abscess)**
What is bacterial tracheitis?	**Bacterial infection of the interior trachea –** **Usually staph**
Which patient group is at greatest risk to develop bacterial tracheitis?	**People who have had their tracheas manipulated** (especially those with tracheostomies in place)
Why is bacterial tracheitis concerning?	**1. Very toxic infection** **2. Copious secretions can compromise the airway**
Rapid onset of a *very sore throat, fever,* & no findings on oropharyngeal exam, +/– stridor = what diagnosis?	**Epiglottitis**
Lateral neck X-ray shows a "thumb print" – what is the diagnosis?	**Epiglottitis**
What is the treatment for significant croup?	**1. Inhaled racemic epinephrine** **2. Steroids**

What must you watch out for, if a child has received racemic inhaled epinephrine, as a treatment for significant croup?	**Rebound of symptoms when the epinephrine wears off – a dose of steroid given early in treatment should help to prevent this** **(about 3 h of observation is usually recommended)**
If you suspect epiglottitis, what must you *not do?*	**DO NOT try to visualize the epiglottis or stick anything in the mouth** **(risk of closing off the airway)**
What is trismus?	**Difficulty opening the jaw**
How can you remember the causes of trismus (mnemonic)?	**It would be hard to kiss on a DATE with trismus:** **Dystonia** **Abscess** **Tetanus** **Epiglottitis** (Abscess could be peritonsillar, retropharyngeal, Ludwig's angina, etc.)
How can you tell a thyroglossal cyst from a branchial cleft cyst on physical exam?	**Thyroglossal are central (between the thyroid & tongue)** **Branchial are lateral** Mnemonic: Branches grow laterally!
What is the buzzword for trigeminal neuralgia?	**"Electric shock" facial pain**
What medication is often used for the pain of trigeminal neuralgia?	**Carbamazepine**
How is leukoplakia different from candida on physical exam?	**Leukoplakia *cannot be scraped off* and is *not painful***
Which patients are likely to develop oral leukoplakia? (3 groups)	Smokers Males Immunocompromised

Does leukoplakia develop into cancer?	Sometimes
How is leukoplakia associated with trauma?	Local trauma sometimes seems to get it started
Nasal polyps in a child <12 years old should make you suspect what diagnosis?	**CF (In older kids, it's more likely to be associated with allergic rhinitis)**
It would seem reasonable to treat nasal polyps with decongestants to decrease their size. Have decongestants been effective for polyp treatment?	No
What medications have been shown to be very effective in decreasing the size of nasal polyps – especially for CF patients?	**Steroids**
What infectious disease predisposes to development of nasal polyps?	**Chronic sinusitis**
Other than being annoying, can nasal polyps cause real problems?	Yes – Can sometimes obstruct or even *deform the nose*
If nasal polyps require treatment, what can be done?	Surgical removal (but they often grow back for CF patients)
What is the most common cause of epistaxis in children?	**Nose picking!** (Discreetly put, and so that you can recognize it on an exam, "local digitally induced trauma")
To remove a foreign body in the office of ER setting, what equipment/meds are needed? (4 items: 2 meds, 2 equipment)	1. Topical anesthetic (e.g., viscous lidocaine) 2. Vasoconstrictor (e.g., neosynephrine) 3. Forceps 4. Suction

An adolescent presents with anterior epistaxis – what should you remember to ask him or her?	"Are you using cocaine?" (It irritates, and can even eat through, the nasal septum – due to its strong vasoconstrictive properties)
What do nasal polyps look like?	Gray, grapelike masses
What is the most common congenital anomaly of the nose?	**Choanal atresia**
After surgical correction, what common complication develops for many choanal atresia patients?	Restenosis
If only one side is affected by choanal atresia, what should be done?	Surgical repair – but you can wait a few years to do it
Anytime you diagnose a child with choanal atresia, what else should you be looking for?	The CHARGE abnormalities – Coloboma Heart problems Atresia (choanal) Retarded growth & intellect Genital anomalies Ear problems/deafness
What is "lingual ankyloglossia?"	When the frenulum under the tongue limits its anterior movement significantly ("tongue tied")
Why is lingual ankyloglossia a problem for some newborns?	If the tongue can't get past the alveolar ridge, breast feeding is difficult
What social activity is potentially a big problem for the lingual ankyloglossia patient?	Licking an ice cream cone
If treatment for lingual ankyloglossia is desired, what is done?	**Snip the frenulum (frenulectomy) in the office**

Thyroglossal cysts are usually asymptomatic. Why might you be worried about one?	**When infected, they can rapidly expand & compromise the airway**
What is the management of thyroglossal duct cysts?	**Surgical excision**
If a child is described as having a "divided" or "lobulated" tongue, what should you expect to find on the rest of physical exam?	• Lip & palate issues • Digit issues • Usually part of an overall syndrome
Should lab tests be ordered for children who appear to have URIs?	**No**
Which viruses typically cause URIs?	Rhinoviruses & Coronaviruses (+ adenoviruses, enteroviruses, influenza, & parainfluenza, among others)
What is the significance of thick green or yellow nasal discharge in the first week of an apparent URI?	**None –** **It *does not* indicate sinusitis**
Are antihistamines helpful when treating URIs?	**No –** **Actually harmful as they decrease mucous clearance**
If a school-aged child has a URI, and then gets worse with a new fever, sore throat, & cough about 10 days into the illness, what is the diagnosis?	**Sinusitis**
How does sinusitis present in school-aged kids?	**Fever** **Nasal discharge** **Cough – especially at night**
How does sinusitis present in adolescents/adults?	**Headache** **Fever** **Facial pain & tenderness**

Is it helpful to take a nasal swab culture to identify the organism causing sinusitis?	**No – Useless**
If a possible sinusitis patient is also severely immunocompromised, what is the most certain way to diagnose it and ensure appropriate treatment?	**Aspirate the sinus directly via the face (!)**
Aspirating a sinus would be acceptable in which patient populations?	**1. Severe immunocompromise 2. Life-threatening illness 3. Not responding to therapy**
What is "Pott's puffy tumor?"	**Osteomyelitis/abscess of the frontal bone (generally due to frontal sinusitis)**
What is the most common *bacterial* cause of acute pharyngitis?	**Strep pyogenes (Group A)**
What percentage of all acute pharyngitis is due to strep pyogenes?	**15 % (It's almost all *viral!*)**
A sexually active adolescent with pharyngitis might have what type of pharyngitis?	**Gonococcal pharyngitis (yikes!)**
Exudates on the tonsils strongly suggest a bacterial cause for pharyngitis. True or false?	False
What symptom/sign constellation *does* suggest a bacterial cause for pharyngitis?	**• Diffuse erythema of tonsils & pillars • Soft palate petechiae • No other URI symptoms**
Coryza, long-lasting fever, postnasal discharge, pharyngitis, tender cervical lymphadenopathy, and anorexia in a child less than 2 years old is known as _____?	**Streptococcosis (Can last 8 weeks!)**

How long do we have *to start antibiotics* for strep throat, if the goal is to avoid rheumatic heart disease?	**Nine days**
How long is a strep throat patient contagious, after antibiotic therapy is begun?	**Only a few hours** **(can go to school/daycare 24 h after treatment begins)**
Which patients may have a prolonged course of sore throat, accompanied by numerous coryza symptoms, due to streptococcus?	**Those <2 years old** **(can last 8 weeks – streptococcosis)**
Although epiglottitis is much less common these days due to immunization, what is the most common cause when it does occur in pediatric patients?	***H. flu* (still!) –** **Followed by staph & strep species**
When epiglottitis occurs in adolescents or adults, what are the usual pathogens (in general terms)?	**Polymicrobial**
Tonsillectomy used to be wildly popular. When is it currently recommended?	**1. If needed to exclude tumor** **2. Severe obstructive sleep apnea** **3. Severe adenoidal/tonsillar hypertrophy** **4. Recurrent pharyngitis (also may be recommended for recurrent otitis media)**
What qualifies as "recurrent pharyngitis," as an indication for tonsillectomy?	• **Three episodes each year for 3 years** • **Five episodes each year for 2 years** • **Seven episodes in 1 year**
Does tonsillectomy decrease URIs?	No
Will tonsillectomy decrease the likelihood of chronic otitis media?	No
Does tonsillectomy decrease sinus infections – either acute or chronic?	No

Does adenoidectomy decrease the likelihood of recurrent or chronic otitis media, if the adenoids are hypertrophied?	**Yes** (It is an indication for adenoidectomy)
Can persistent mouth breathing be an indication for adenoidectomy?	Yes (The palate can actually deform due to persistent mouth breathing!)
Can persistent or frequent nasopharyngitis be an indication for adenoidectomy?	**Yes, if the infections correlate with times that the adenoids were particularly hypertrophied**
What is the most common cause of bacterial tracheitis?	**Staph aureus**
When bacterial tracheitis occurs in otherwise normal children (no neck or airway problems prior to infection), how is it usually managed?	• Admit (usually about 2 weeks) • Intubate • IV antibiotics (e.g., ceftriaxone, with nafcillin)
Which patients are most likely to develop bacterial tracheitis?	• **Patients with instrumented airways** • **<3 years old**
High fever, brassy cough, and stridor in a young child are a likely presentation for which two diagnoses _____?	**Croup** **Or** **Bacterial tracheitis**
How can you differentiate croup from bacterial tracheitis?	Bacterial tracheitis – Patient is sicker & doesn't respond to croup measures (e.g., cool air, racemic epinephrine)
What causes inspiratory stridor (what is the mechanism)?	Partial obstruction *at or above the larynx*
Is stridor common in newborns?	Yes – The airway is very narrow anyway, so stridor often develops before age 2 years
"*Wet" sounding* or *variably pitched* inspiratory stridor indicates that the source of the problem is _____?	Laryngomalacia (the most common cause of inspiratory stridor)

If a patient's stridor is *worse when lying down*, and *improves with expiration*, what is it likely to be caused by?	**Laryngomalacia**
A neonate whose stridor *worsens when he or she is agitated* probably has what underlying problem?	**Laryngomalacia**
***High-pitched* inspiratory stridor in an infant with a *weak cry* is typically due to _____?**	**Vocal cord paralysis**
Why might an infant have a paralyzed vocal cord? (2 reasons)	1. Birth trauma to the recurrent laryngeal 2. CNS problem (various sorts)
What is another laryngeal reason that a neonate might have a weak cry?	**Laryngeal web**
How much can the tympanogram tell you about how well the child is hearing?	**Nothing – It measures the movement of the TM** **(The kid could have a perfect tympanogram, but have sensorineural deafness)**
When tympanograms are presented on the boards, what do they usually show?	Normal findings Or Poor technique
If a tympanogram is flat, what does that tell you?	**Poor mobility – The TM is stiff, or fluid is pushing against it**
If your patient with tympanostomy tubes in place get a tympanogram, and it is low amplitude (flat), how should you interpret that?	**The tubes are blocked**
If the tympanogram is unusually high, what does that mean?	**Hypermobile TM**

What is the significance of the area-under-the-curve for tympanography?	**It is a measure of the volume of the external auditory meatus**
If there is a TM perforation, what will the tympanogram show?	**Large area under the curve (because the canal is open to the middle ear)**
What would you expect to see for the area-under-the-curve on a tympanogram for a patient with myringotomy tubes that are functioning properly?	Large area under the curve (the EAM is open to the tube)
Postauricular swelling and erythema, especially if the pinna is pushed out from the head, suggest what infectious disease diagnosis?	**Mastoiditis**
How is mastoiditis treated?	Surgery & IV antibiotics
What infant feeding position increases the child's probability of developing otitis media?	**Horizontal positioning – child lying flat**
If the TM is erythematous, and you suspect OM from history, can you make the diagnosis?	No – Not enough physical findings
Are antihistamines or decongestants helpful for treating OM?	No
Are antihistamines or decongestants helpful in preventing OM?	No
When is it reasonable to change your antibiotics regimen for OM?	**After 3 days of PO treatment, if fever or pain continues**
In addition to "nose picking," what other situation often precipitates anterior epistaxis?	Dry air (for example, wintertime heating)

A developmentally delayed child presents with otorrhea, and pain with pinna movement. Diagnosis? (2 options)	• Foreign body • Otitis externa
Will decongestants or antihistamines help in cases of middle ear effusions?	**No**
Why can a middle ear effusion be such a big deal?	**It can decrease hearing (conductive hearing loss), which delays speech & language development**
If middle ear fluid is present for more than 3 months, and the child has not had antibiotic treatment, what is the next step in management?	**Evaluate for hearing loss – if <20 dB loss compared with expected hearing level, repeat testing after a further 3–6 months (earlier if there are signs of a possible problem)**
In which patients with persistent middle-ear effusion should you consider more aggressive management, according to guidelines?	Those already "at risk" for developmental, speech & language problems – e.g., other sensory impairments, autism, craniofacial disorders, or existing developmental disorder
What percentage of children with middle-ear effusion lasting 3 months will spontaneously clear that infection, over 12 months?	Only 30 % (so significant follow-up testing for adequate hearing will be needed)
At what point should you stop watchful waiting (with regular interval hearing examinations) for a patient with a middle-ear effusion?	**1. Effusion has resolved** **2. Hearing loss is identified** **3. Structural abnormalities are suspected**
If the hearing evaluation indicates a loss of 21–40 dB, what does that mean for management?	**It is a relative, but not absolute, indication for myringotomy tube placement**
At what level of hearing loss is further management absolutely indicated?	**40 dB**

If a middle-ear effusion meets criteria for treatment, what is the recommended treatment for most patients?	**Bilateral myringotomy with pressure equalization tube placement**
Chronic bacterial infection of the middle ear is called _____?	Chronic suppurative otitis media
Chronic suppurative otitis means that a bacterial infection has continued for more than 6 weeks, despite treatment. What ear complication is this condition especially likely to produce?	**Cholesteatoma**
Can environmental factors cause middle ear effusions? If so, give some examples.	Yes, due to inflammation of the eustachian tube • Smoke • Allergens • Infection
Which kids are most likely to develop acute otitis media with resistant strains of Strep pneumo? (3)	1. <2 years old 2. In daycare 3. Received antibiotics in past month
Most acute otitis media is caused by which two organisms, if it is bacterial? (2)	• *S. pneumo* • Non-typeable *H. flu* (*M. catarrhalis* causes <10 % of all acute OM, with S. pyogenes still causing some cases)
Pain or fever continuing 3 days after antibiotic treatment has been started for acute otitis media = treatment failure. What about otorrhea or a bulging TM?	Otorrhea or bulging TM after 3 days are both treatment failures – Switch meds!
Why is developing a cholesteatoma a problem?	1. It erodes & destroys the bones (ossicles, mastoid, etc.) 2. Often produces a nasty ear discharge

What *is* a cholesteatoma?	Keratinized squamous epithelium that is not shed properly – It forms a ball
How is a cholesteatoma usually described on physical exam?	Pearly & superior, at the margin of the TM
What are "screamer's nodules?"	Nodules that develop on the cords due to overuse
What is the significance of screamer's nodules?	Makes the voice hoarse
If you palpate a solid mass in the sternocleidomastoid of an infant, what is it likely to be? (especially if the infant holds his or her head in an odd position)	Torticollis (contracted/spasmed muscle is the mass)
If a neck mass is described as soft and "spongy," it is likely to be what diagnosis?	**Cystic hygroma**
If a patient has biphasic stridor & a cutaneous hemangioma, what should you consider as a possible explanation?	**Hemangioma at the glottis (or subglottic)** ***Must be eliminated due to airway risk!***
Can a foreign body produce stridor?	**Yes** (If it is intrathoracic, it will be *expiratory* stridor)
If you suspect that vascular compression of the airway is causing your patient's stridor (expiratory), how do you evaluate that?	Barium swallow – Shows *posterior* compression of the esophagus
Which type of vascular compression of the airway will barium swallow miss?	***Anterior* compression –** **Usually due to an aberrant innominate artery**
How does unilateral choanal atresia usually present?	**Unilateral rhinorrhea in later infancy/ early childhood**

If a child begins to ignore things the caregiver asks her to do, and usually turns up the TV volume a little whenever she starts to watch TV, what should you suspect?	Conductive hearing loss
Is there anything you can do for a child with conductive hearing loss?	Yes – Hearing aide, or sometimes surgical correction (depending on the cause)
Hearing loss that occurs after a significant head trauma or blast injury is usually due to what type of problem?	TM perforation & disruption of ossicles
Does otitis media with effusion cause a big decrease in hearing?	**Usually not – It is mild & intermittent (but still important)**
Do cholesteatomas usually cause hearing loss?	**No, not by themselves** *(If they open the TM or erode the ossicles, though, that will be a problem!)*
What is tympanosclerosis?	**Opacification & slight thickening of the TM** *(usually develops in response to multiple bouts of OM)*
What is the impact of tympanosclerosis on hearing?	**Slight (conductive) hearing loss**
Does having small or malformed ears impact a person's hearing (ears meaning the pinna or outer ear)?	**Yes – But correction is easy via hearing aide or surgery**
Congenital syndromes that have sensorineural hearing loss as one of the problems mainly fall into two categories. What are they? (exclude in utero infections)	**1. Syndromes with cleft lip & palate 2. CHARGE syndrome**

How do you definitively test for hearing problems in a child less than 6 months old?	**BAER or ABR (stands for: Brainstem Auditory Evoked Response or Auditory Brainstem Response)**
What does an auditory brainstem response tell you? (3)	• Whether there is hearing loss • Whether it's conductive or sensorineural • Whether one or both ears are affected
How can an auditory brainstem response provide so much information?	It follows the electrical path of CNS processing from the moment the sound is heard until it is completely processed
What is an appropriate screening test for hearing in infants <6 months old, since ABR is so complicated?	Behavioral Observational Audiometry
Which patient group should have hearing tested with conventional, pure tone audiometry?	**School-aged & older**
How specific is the information provided by conventional pure tone audiometry?	**Specific – Tests each ear separately & discriminates sensorineural & conductive loss**
When would you choose visual reinforcement audiometry (VRA) to evaluate for possible hearing loss?	Preschool kids – Screens for *bilateral* hearing loss
A child is being treated for a perforated TM, but foul smelling discharge persists. What diagnosis was missed (or developed)?	**Cholesteatoma**
Do some kids have congenital reasons for persisting effusion after OM infection?	Yes – Some have floppy Eustachian tubes or defective opening mechanisms
What nearby structure sometimes causes or contributes to middle-ear effusion?	Adenoid hypertrophy/tonsil hypertrophy

The sudden onset of bilateral sensorineural hearing loss can develop for a number of reasons. What is the infectious one?	**Viral labyrinthitis**
When sensorineural hearing loss occurs with a viral labyrinthitis, what is the prognosis for hearing?	**It varies – No treatment available, just wait & see**
If sensorineural hearing loss develops due to medication toxicity, what will the patient complain of?	**High-pitched tinnitus**
If a child presents with sudden onset of unsteadiness & hearing loss, what diagnosis should you think of?	**Perilymphatic fistula**
What is a perilymphatic fistula?	A communication between the middle & inner ear (that allows the inner ear fluid to leak & be disrupted)
Aside from the obvious problems a perilymphatic fistula causes, what important complication do you have to watch out for?	**Meningitis with otitis media infections**
If "refer for specialty consultation" is an option in a perilymphatic fistula question, is it likely to be the right answer?	**Yes – Pediatric exams are not big on specialist consultations, but this is one diagnosis that needs it**
How can you confirm a perilymphatic fistula diagnosis?	**ENT has to do a tympanotomy & look**
How is the presentation of a perilymphatic fistula different from Meniere disease?	**Meniere adds tinnitus (hearing loss, unsteadiness, & tinnitus)**
How common is Meniere disease in children?	Very uncommon

If you are really motivated to identify the cause of rhinorrhea, what (unusual) lab procedure could you do?

Nasal smear

If rhinorrhea is due to seasonal allergies, what kind of cells do you expect to see on a smear?

Eos!

(and a mix of other cells, of course)

If an adolescent has trouble with a chronic stuffy nose, what cause should you consider?

Cocaine use

When adolescents have a sinus infection, they present like adults. How do children with sinusitis present?

Rhinorrhea
Nasal congestion
Cough
Foul-smelling breath
+/– Fever

What are the typical sinusitis pathogens?
(3)

Pneumococcus
Non-typeable *H. flu*
Moraxella catarrhalis

If a preschooler develops sinusitis, what is first-line treatment?

Amoxicillin

If sinusitis causes a cough, when is the cough especially noticeable?

Nighttime

If orbital cellulitis develops from a sinus infection, which sinus is most likely to be the culprit?

Ethmoid –
Right beside the eyes & only separated by a very thin bone

If you are going to treat a patient for sinusitis, will the results of either a nasal or throat culture help you to determine the best antibiotic choice?

No –
The results from nose & throat don't correlate well with results of sinus aspiration (the best way to get accurate data)

Why might you confuse strep pharyngitis with EBV on physical exam?

Can cause thick exudate on tonsils
&
Palatal petechiae

How long does the high fever phase of EBV last?

Often 1–2 weeks

Sore throat with exudate and hepatosplenomegaly is likely to be _____?	**EBV**
Should the liver be tender to palpation, if the patient has EBV?	Can be – About 50 % are tender
If you have a patient with exudative pharyngitis, fever, & cervical lymphadenopathy, you may not be sure whether you're dealing with Strep or EBV. If you send a rapid strep & it's positive, what is it safe to conclude?	**Nothing –** **Strep tests are sometimes falsely positive with EBV infection** (or the patient could be a Strep carrier)
What differentiates EBV mononucleosis from Strep pharyngitis?	Longer duration Hepatosplenomegaly
How long will the monospot test remain positive after a patient contracts mono?	Nine months
Definitive diagnosis of EBV acute mononucleosis is based on what criteria/criterion?	+ EBV IgM
Progressive hoarseness that improves at adolescence, is better in the morning, and is not accompanied by any other findings or complaints is probably due to _____?	Vocal cord nodules
What is the treatment of choice for Strep pharyngitis?	**Penicillin** (waiting for culture results will not change treatment outcome) *Some controversy now exists as to whether antibiotic treatment is appropriate, as the risk of serious antibiotic adverse effects is higher in some areas than the risk of developing rheumatic fever. Most practitioners still treat it, however.*

If a patient develops a peritonsillar abscess, should the tonsil be removed?	**Only if it recurs**
What organism is most often found in peritonsillar abscesses?	β-Hemolytic strep (anaerobes are also common)
If you ask a peritonsillar patient to "open wide" so you can see the pharynx, what is likely to happen?	**They *don't* open wide – they have *trismus* (pain with opening the mouth)**
Apparent torticollis, or a hyperextended neck, with enlargement of the retropharyngeal area on lateral neck X-ray in a child <4 years old is probably what diagnosis?	**Retropharyngeal abscess**
To differentiate it from epiglottitis, will retropharyngeal abscess kids drool, & will they sit up & forward?	Drool – sometimes Sit up & forward – No They usually lie down & may hyperextend or hold the neck in funny positions
If a patient sits "up and forward," how is that sometimes described in the medical literature? (single word)	Tripod (or "tripod-ing")
Peritonsillar abscesses are most common in what age group?	Adolescents
Retropharyngeal abscesses usually occur in what age group?	<4 years old
Malformations of the external & middle ear should make you consider malformations of what other structure?	**The kidney** (unless it is just ear tags)
If an infant develops cervical adenitis, what is it usually due to, and how is it managed?	• **Staph aureus** • **IV antibiotics (such as clindamycin or vancomycin) are given – if inadequate response, then surgical drainage**

If a child has cervical adenitis due to atypical mycobacteria, will this affect the PPD?	Yes, but it will be <10 mm
If your patient has bacterial lymphadenopathy, what sort of antibiotics should you start with?	β-Lactamase-resistant antibiotics (clindamycin, amoxicillin/clavulanate, cephalosporins, etc., depending on the local resistance patterns)
An unusual cause of croup that could only develop in children who have not had the usual immunizations is _____?	**Measles (rubeola)**
What is the most common "tumor" of the larynx in children?	**Papillomas (kind of a tumor)**
How are laryngeal papillomas treated?	Excision (via laser)
Do laryngeal papillomas have a potential for malignant transformation?	Yes – not often, though
Why do spasmodic croup patients not usually seem ill?	**It is thought to be an allergy problem (more common in atopics)**
What are the other names for bacterial tracheitis?	**Pseudomembranous croup (presents like croup, but has thicker secretions) Or Membranous laryngotracheitis Or Laryngotracheobronchitis**
What position will a bacterial tracheitis patient usually be found in?	Supine (They're sick – they want to lie down + it helps to drain the secretions)
A sick patient with inspiratory stridor, a barking cough, and thick nasty sputum is likely to have what diagnosis?	Bacterial tracheitis

You are examining a patient, and see 4–5 mm ulcers on the posterior pharynx. She has had a fever for several days, and is reluctant to eat. What is the likely diagnosis?	Herpangina/ Coxsackie virus
The oral lesions of Coxsackie virus are often accompanied by lesions on what other part(s) of the body?	Hands & feet – As in "hand, foot, & mouth disease"
When Coxsackie virus causes herpangina, will lesions of the hands & feet also appear?	**Often, but not always**
When Coxsackie virus does cause hand or foot lesions, what will the lesions look like?	Vesiculopapular
What is the typical presentation of a herpes simplex "cold sore?"	**Painful vesicles –** **Often at the vermillion border of the lip** (First episode accompanied by fever & adenopathy)
Some people get ulcers in the mouth that come & go, and are painful. They often develop following minor trauma to the area, but the cause is not really clear. What are these ulcers called?	Aphthous ulcers
What does an aphthous ulcer look like? (3 aspects)	Gray-white ulcer Thin rim of bright red Usually on mucosa (not gingiva)
If a patient develops periorbital swelling due to a dental problem, what is the likely problem?	Maxillary dental abscess
If a patient develops swelling under the jaw due to a dental problem, what is the likely cause?	Mandibular tooth abscess
Delayed eruption of tooth is associated with which endocrine problems?	Hypothyroidism & Hypopituitarism

What disordered development leads to delayed tooth eruption?	Ectodermal hypoplasia
Name the nutritional syndrome that causes delayed tooth eruption?	Rickets
Decreased ability to sweat – hypohidrosis – is associated with what dental problem?	Delayed tooth eruption
If a patient has a bifid uvula, what oral abnormality is often found?	Cleft palate hidden under the soft tissue (aka "submucous" cleft palate)
Midline, anterior, neck cysts are often what specific sort of cyst?	**Thyroglossal**
Is it a good idea to remove thyroglossal cysts?	**Usually not – May contain the only functional thyroid tissue**
If an infant has tender red nodules, and "deep-seated" plaques on the cheek, but seems to be otherwise well, what environmental cause could be the problem?	**Cold exposure – Diagnosis is "cold-induced panniculitis"** (usually via a cold water-filled pacifier, or something similar)
What is the treatment for cold-induced panniculitis?	Nothing – Observe & it will resolve in a week or so
If a child is diagnosed with epiglottitis, what is the correct disposition from the ED/office?	"Go to OR to evaluate under anesthesia"
If a child has recurrent OM infections, and a bifid uvula, what is the likely problem & solution?	• Submucosal (hidden) cleft palate • Bilateral myringotomy tubes are often needed