

# Chapter 1

# Common EENT Disorders in Primary Care

Karen S. Moore

## Chapter Outline

### Case 1 - Otitis

- A. History and Physical Exam
- B. Recommended Labs/Diagnostics
- C. Pathophysiology
- D. Treatment Plan
- E. Guidelines to Direct Care:

Clinical Practice Guideline: Acute Otitis Externa, American Academy of Otolaryngology—Head and Neck Surgery Foundation. Original issued in 2006, revised in 2013.

### Case 2 - Rhinitis

- A. History and Physical Exam
- B. Recommended Labs/Diagnostics
- C. Pathophysiology
- D. Treatment Plan
- E. Guidelines to Direct Care:

The diagnosis and management of rhinitis: An updated practice parameter by the Joint Task Force on Practice Parameters, representing the American Academy of Allergy, Asthma & Immunology; and the Joint Council of Allergy, Asthma and Immunology.

American Academy of Allergy, Asthma and Immunology (AAAAI) Allergy and Asthma Medication Guide (2014).

### Case 3 - Conjunctivitis

- A. History and Physical Exam
- B. Additional Assessments/Diagnostics Needed

- C. Pathophysiology
- D. Treatment Plan?
- E. Guidelines to Direct Care:

American Academy of Ophthalmology (2009). Policy Statement: Guidelines for appropriate referral of persons with possible eye disease or injury.

### Case 4 - Sinusitis

- A. Physical Exam
- B. Additional Assessments/Diagnostics Needed
- C. Pathophysiology
- D. Treatment Plan
- E. Guidelines to Direct Care:

Infectious Disease Society of America (IDSA) Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults (2012)

### Case 5 - Pharyngitis

- A. History and Physical Exam
- B. Additional Assessments/Diagnostics Needed
- C. Pathophysiology
- D. Treatment Plan
- E. Guidelines to Direct Care:

Clinical Practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Disease Society of America.

## Learning Objectives

Using a case-based approach, the learner will be able to:

1. Identify key history and physical examination parameters for common ear, eye, nose, and throat (EENT) disorders seen in primary care, including otitis, allergic rhinitis, conjunctivitis, sinusitis, and pharyngitis.
2. Summarize recommended laboratory and diagnostic studies indicated for the evaluation of common EENT disorders seen in primary care.
3. State the pathophysiology of common EENT disorders.
4. Document a clear, concise SOAP note for patients with common EENT disorders.
5. Identify relevant education and counseling strategies for patients with common EENT disorders.
6. Develop a treatment plan for common EENT disorders utilizing current evidence-based guidelines.

## Case 1

Jeremy is a 22-year-old male triathlete who presents with complaints of irritation and fullness in his right ear. He has been training 6 to 8 hours a day for an upcoming event. His training regimen includes running, swimming, cycling, weight lifting, and a strict nutritional regimen. He is very concerned that the fullness and irritation could require him to limit or curtail his training. He denies recent upper respiratory infection, denies illness in training partners and roommates, and denies nausea, vomiting, and dizziness. Immunizations up to date.

### Physical Exam

**Vital Signs:** blood pressure (BP) 118/76, heart rate (HR) 64, respiratory rate (RR) 12, temperature (T) 98.5, height (Ht) 6'2", weight (Wt) 170 lbs

**General (GEN):** No acute distress

**Head, eyes, ears, nose, and throat (HEENT):** Normocephalic, pupils equal, round, react to light, accommodation

(PERRLA), sclera and conjunctiva clear without redness or injection. Ear canal reddened, edematous. Tympanic membrane (TM) clear, pearly, bony landmarks visible. No discharge; pain noted with traction on tragus.

**Cardiovascular (CV):** S<sub>1</sub> and S<sub>2</sub>, regular rate and rhythm (RRR), no murmurs, no gallops, no rubs

**Lungs:** Clear to auscultation

**Abdomen:** Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

**Neuro:** Rhine/Weber normal, Romberg negative

**What additional assessments/diagnostics do you need?**

**What is your differential diagnoses list?**

**What is your working diagnosis?**

### Additional Assessments/Diagnostics Needed

#### ROS

Ask about common signs and symptoms of otitis and other conditions that may cause ear pain and irritation:<sup>1-2</sup>

- ▶ Cough
- ▶ Runny nose
- ▶ Throat irritation
- ▶ Hearing loss
- ▶ Ringing in the ears (tinnitus)
- ▶ Discharge from ears, nose, or throat
- ▶ Pressure or fullness in ears
- ▶ Swelling or fullness along the jawline, under the ears, or along the neck
- ▶ Pain, pressure, or difficulty with swallowing
- ▶ Chills or fever
- ▶ Pain along bony prominences of the head and neck

#### Physical Exam

The examination for this patient should include:<sup>1-2</sup>

- ▶ Careful inspection of the ear canal and TM to determine whether TM is intact and canal is obstructed
- ▶ Assessment of comorbid conditions that may require a modification in treatment (i.e., nonintact TM, immunocompromise, prior radiotherapy, tympanostomy tube)
- ▶ Evaluation of prior immunizations for adequate coverage of mumps

Common signs and symptoms of otitis externa may include:<sup>1-2</sup>

- ▶ Ear pain (otalgia)
- ▶ Irritation or itching in the external auditory canal
- ▶ Hearing loss
- ▶ Fullness or pressure in the ear
- ▶ Swelling, redness, and narrowing of the external auditory canal
- ▶ Tinnitus
- ▶ Possible discharge from ear that ranges from clear to purulent
- ▶ History of recent water activities such as swimming
- ▶ History of trauma to ear canal from use of cotton swabs and vigorous cleaning
- ▶ Fever may or may not be present

### ■ Routine Labs/Diagnostics

Otitis externa (OE) is typically diagnosed by history and physical examination, including otoscopy.<sup>1-3</sup> If a fungal causative agent is suspected, the patient is immunocompromised, the patient has a history of prior radiotherapy, or the examination suggests necrotizing OE, the following diagnostics may be considered:

- ▶ Gram stain and culture of discharge from the ear to determine causative agent
- ▶ Blood glucose level and urine dipstick to assess for diabetes
- ▶ Complete blood count (CBC) to assess white blood cells (WBCs) with CD4 count if necessary to assess for immunocompromise

Imaging studies are also not required or commonly done but may be necessary in the case of necrotizing OE, if mastoiditis or extensive cellulitis is suspected.

- ▶ Because of its ability to better detect bony erosion, high-resolution computed tomography (CT) scanning is preferred if assessing for mastoiditis<sup>4</sup>
- ▶ Magnetic resonance imaging (MRI) may be considered if soft tissue extension is a primary concern<sup>5</sup>

### ■ Differential Diagnoses List

Acute otitis externa  
 Chronica otitis externa  
 Otitis media  
 Ear canal obstruction  
 Mumps  
 Dental abscess

### ■ Working Diagnosis

Uncomplicated acute otitis externa

### ■ Pathophysiology

Acute otitis externa (AOE) is caused primarily by bacterial pathogens in the ear canal such as *Pseudomonas aeruginosa* and *Staphylococcus aureus*.<sup>1-3</sup> Many infections are polymicrobial. Fungal infection is very uncommon in primary AOE but may be seen in immunocompromised patients, patients previously unsuccessfully treated for AOE, and those with chronic otitis. AOE is characterized by acute inflammation and edema of the ear canal and surrounding tissues.

### ■ What Is Your Treatment Plan?

#### ■ Pharmacologic

- ▶ Analgesic treatment based on the severity of pain
- ▶ Topical agents including antibiotics and anti-inflammatory agents
  - ▶ Acetic acid 2% solution
  - ▶ Acetic acid 2%, hydrocortisone 1% solution
  - ▶ Ciprofloxacin 0.2%, hydrocortisone 1% solution<sup>6</sup>
  - ▶ Ciprofloxacin 0.3%, dexamethasone 0.1%
  - ▶ Neomycin, polymyxin B, hydrocortisone
  - ▶ Ofloxacin 0.3%
- ▶ Oral/systemic antibiotics, antifungals, and anti-inflammatory agents should be reserved for complicated otitis that includes extension to surrounding soft tissue or bony involvement.<sup>1-3</sup>

#### ■ Nonpharmacologic

- ▶ Ear hygiene: Avoid use of cotton swabs; keep ear canal dry
- ▶ Avoid swimming and submerging ear canal in water.
- ▶ If canal is obstructed, consider aural toileting, wicking, or both to encourage mobilization of drainage.
- ▶ Surgical debridement is reserved for necrotizing otitis or severe inflammation that prevents instillation of ear drops.
  - ▶ A wick may be placed to help with drop instillation.<sup>1-3</sup>

#### ■ Education/Counseling

- ▶ Proper ear drop instillation requires appropriate positioning and patience. Patients should be instructed to:
  - ▶ Lie down with affected ear up
  - ▶ Instill enough drops to fill ear canal
  - ▶ Stay lying down with affected ear up for 3–5 minutes
  - ▶ Massage the tragus or gently move the ear back and forth to ensure proper placement of drops

- ▶ If a wick was placed, instruct the patient that the wick will fall out on its own as the inflammation recedes.
  - ▶ Do not pull or tug at the wick.
- ▶ Symptoms should begin to resolve in 48–72 hours. If symptoms worsen or do not improve in that time frame, additional care should be sought.
- ▶ Avoid swimming or submerging ear in water for 2–3 days following completion of treatment. Treatment regimens last from 7 to 10 days.<sup>1–3</sup>

### SOAP Note

**S:** Jeremy is a 22-year-old male triathlete who reports a 3-day history of irritation and fullness in his right ear. He has been training 6–8 hours a day for an upcoming event with two hours per day swimming. He denies recent upper respiratory infection, denies illness in training partners and roommates, and denies nausea, vomiting, and dizziness. Immunizations up to date.

**O:** *Vital Signs:* BP 118/76, HR 64, RR 12, T 98.5, Ht 6'2", Wt 170 lbs

*GEN:* No acute distress

*HEENT:* Normocephalic, PERRLA, sclera and conjunctiva without redness. Ear canal reddened, edematous. TM clear, pearly, bony landmarks visible. No discharge, pain noted with traction on tragus.

*CV:* S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs

*Lungs:* Clear to auscultation

*Abdomen:* Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

*Neuro:* Rhine/Weber normal, Romberg negative

**A:** Acute otitis externa

**P:** Prescriptions provided for otic drops: ciprofloxacin 0.2%, hydrocortisone 1.0%, 3 gtts in affected ear three times daily × 7 days.<sup>6</sup> Use over-the-counter acetaminophen as directed. If no improvement in 48–72 hours, return for further evaluation. Avoid swimming, water sports, ear plugs, ear buds, cotton swabs, or mechanical irritation of ear canal during treatment and for 3 days following completion of otic antibiotic. Instruction provided on proper instillation of drops.

### Health Promotion Issues

- ▶ Good ear hygiene<sup>1–3</sup>
- ▶ Discussion of sexually transmitted infection (STI) prevention, safety, depression, alcohol/drug use, skin cancer prevention/screening<sup>7,8</sup>
- ▶ Annual influenza vaccine<sup>9</sup>

### Guidelines to Direct Care

Centers for Disease Control and Prevention. Recommended adult immunization schedule, by vaccine and age group. 2014. <http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>. Accessed September 2, 2015.

Rosenfeld RM, Schwartz SR, Cannon CR, et al. Clinical practice guideline: acute otitis externa. *Otolaryngol Head Neck Surg.* 2014;150(1 suppl):S1–S24. Originally issued in 2006, revised in 2013. <http://www.guideline.gov/content.aspx?id=47795&search=otitis>. Accessed September 2, 2015.

US Preventive Services Task Force Recommendations for primary care practice: published recommendations. <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index/browse-recommendations>. Accessed September 2, 2015.

## Case 2

Oscar is a 42-year-old African American male who reports he has “had a cold for three weeks.” States he has nasal congestion, a runny nose, nasal irritation, and sneezing. Denies frequent colds, but states he seems to “get sick every fall.” Denies chest pain, reports “irritating cough” primarily at night, which he believes is due to “drainage.” Past medical history (PMH) is significant for eczema, asthma symptoms in childhood, and allergy to strawberries. Denies facial pain or pressure, fever, night sweats, nausea, or vomiting. Denies recent illness in family members. Patient is married. He denies tobacco use in self or spouse. Reports childhood immunizations completed with a tetanus vaccination received 3 years ago. He refuses an annual influenza vaccination.

### Physical Exam

*Vital Signs:* BP 130/84, HR 88, RR 16, T 98.8, Ht 6'0", Wt 192 lbs

*GEN:* No acute distress

*HEENT:* Normocephalic, PERRLA, sclera and conjunctiva clear without redness or injection. TMs intact bilaterally with bony landmarks visible, no discharge, no pain on palpation. Nares erythematous and edematous bilaterally. Inferior and middle turbinates gray and boggy with clear drainage noted. Posterior pharynx slightly erythematous without exudate. No lymphadenopathy. No pain on palpation of sinuses.

*CV:* S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs

*Lungs:* Clear to auscultation

*Abdomen:* Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

**What additional assessments/diagnostics do you need?**

**What is the differential diagnoses list?**

**What is your working diagnosis?**

## ■ Additional Assessments/Diagnostics Needed

### ■ ROS

The examination of this patient should include:

- ▶ Detailed history of the onset of symptoms, pattern of illness, chronicity and possible seasonality of symptoms, association with allergens/triggers, environmental and occupational history, as well as any medications used to alleviate symptoms.

### ■ Physical Exam

- ▶ Careful examination of the EENT system will help rule out any anatomic malformations and provide clues based on color of drainage, condition and color of nasal turbinates and pharynx.
- ▶ A complete respiratory examination is also necessary with a focus on any signs or symptoms of respiratory compromise.

### ■ Routine Labs/Diagnostics

- ▶ Determination of the offending allergen via immunoglobulin E (IgE) skin testing is recommended to provide a basis of treatment. For some patients, avoidance of the offending allergen is possible; others may require medication and allergen immunotherapy.<sup>11</sup>
- ▶ Fiber-optic nasal endoscopy or rhinomanometry may be indicated in cases in which obstruction of the nasal passages is suspected.
- ▶ Nasal smears for eosinophilia and nasal biopsies are reserved for cases in which the diagnosis of allergic rhinitis is uncertain.
- ▶ If a polyp found during nasal endoscopy requires further evaluation, a biopsy is performed.<sup>10</sup>

### ■ Differential Diagnoses List

Allergic rhinitis  
 Vasomotor rhinitis  
 Mechanical obstruction of nares  
 Chronic inflammatory rhinitis  
 Viral influenza  
 Acute sinusitis  
 Chronic sinusitis

### ■ Working Diagnosis

Allergic rhinitis

### ■ Pathophysiology

Rhinitis can be defined as one or more nasal symptoms of congestion, rhinorrhea, sneezing, and itching.<sup>10</sup> Rhinitis may be classified as allergic, nonallergic, or mixed. Although typically viewed as an inflammatory condition, some nonallergic types of rhinitis such as vasomotor and atrophic rhinitis are not primarily inflammatory. Allergic rhinitis is estimated to impact 10% to 30% of US adults

annually. Risk factors for development of allergic rhinitis include a family history of allergies, presence of allergies in the patient documented by skin prick allergy testing, higher socioeconomic class, and a serum IgE > 100 U/mL noted before the age of 6 years. Although commonly viewed as a troublesome symptom rather than a disease in need of treatment, rhinitis is associated with significant morbidity, including lost time from school or work and decreased quality of life from fatigue and sleep disturbance. Allergic rhinitis is also implicated as a comorbidity for asthma exacerbation, sinusitis, and sleep apnea.

### ■ What Is Your Treatment Plan?

#### ■ Pharmacologic

Intranasal pharmacologic agents are generally preferred over oral medications as the primary treatment modality for allergic rhinitis. In addition to efficacy of each category of medication and specific agents, side effects must be considered when making prescribing decisions.

- ▶ *Antihistamines:* Intranasal antihistamines are considered first-line treatment for allergic rhinitis. Second-generation antihistamines are preferred over first generation because of decreased sedative side effects. Intranasal antihistamines can be systemically absorbed, so sedation and interference with skin allergy testing must be considered in both intranasal and oral preparations.
- ▶ *Corticosteroids:* Intranasal corticosteroids are the most effective drug class in the management of allergic rhinitis. Corticosteroids provide consistent relief of inflammation when used on a routine basis. As-needed dosing of corticosteroids is not quite as effective as routine dosing regimens. Concerns over systemic side effects of corticosteroids are not generally seen when the intranasal medications are given in recommended doses. Oral corticosteroids are generally not recommended for management of allergic rhinitis.
- ▶ *Decongestants:* Decongestants such as pseudoephedrine and phenylephrine are alpha-adrenergic agonists that can be effective in reducing nasal congestion but also commonly result in troubling side effects such as insomnia, palpitation, and irritability. Decongestants should be used cautiously in patients with cardiac disease, hypertension, bladder neck obstruction, glaucoma, and hyperthyroidism.
- ▶ *Anticholinergics:* Anticholinergics may reduce rhinorrhea, but they are not effective in reduction of any other symptoms of allergic rhinitis.
- ▶ *Other:* Cromolyn, leukotriene antagonists (LT), and intranasal saline preparations are effective adjuvant treatments in the management of allergic rhinitis with minimal side effects noted.

Allergen immunotherapy may be recommended for patients with a documented IgE antibody to specific allergens if the burden of medication use is thought to be onerous or if the amount and types of medications can be significantly reduced, resulting in lowering of side effects.

## ■ Nonpharmacologic

Allergen avoidance is the primary prevention method for allergic rhinitis. Patients should be encouraged to keep a symptom diary and associated potential environmental and food triggers. Imaging studies are not routinely performed for allergic rhinitis unless comorbidities of sinus infection or mechanical obstruction are suspected.

## ■ Education/Counseling

- ▶ Allergen avoidance
- ▶ Treatment methodologies
  - ▶ Discuss choice of medications and side effect profile
  - ▶ Discuss the need for daily management
  - ▶ Consider special circumstances of each patient when prescribing
    - ▶ *Pregnancy*: Follow pregnancy risk categories
    - ▶ *Advanced age*: Important to differentiate type of rhinitis prior to management
    - ▶ *Specific disease states*: Cardiac disease, hypertension, bladder neck obstruction, glaucoma, and hyperthyroidism
    - ▶ *Athletes*: Competitive athletes must be given medications that comply with antidoping testing standards of international sports organizations
- ▶ Instruct in proper instillation of intranasal medications

## ■ SOAP Note

**S:** Oscar is a 42-year-old African American male with a 3-week history of nasal congestion, runny nose, nasal irritation, sneezing, nocturnal cough, and post-nasal drip. Reports spring exacerbation of symptoms annually. PMH is significant for eczema, asthma symptoms in childhood, and allergy to strawberries. Denies facial pain or pressure, and denies fever, night sweats, nausea, or vomiting. Denies recent illness in family members. Denies tobacco use in self or spouse. Tetanus vaccination 3 years ago, but refuses annual influenza vaccination.

**O:** *Vital Signs*: BP 130/84, HR 88, RR 16, T 98.8, Ht 6'0", Wt 192 lbs

*GEN*: No acute distress

*HEENT*: Normocephalic, PERRLA, sclera and conjunctiva clear without redness or injection. TMs intact bilaterally

with bony landmarks visible, no discharge, no pain on palpation. Nares erythematous and edematous bilaterally. Inferior and middle turbinates gray and boggy with clear drainage noted. Posterior pharynx slightly erythematous without exudate. No lymphadenopathy. No pain on palpation of sinuses.

*CV*: S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs

*Lungs*: Clear to auscultation

*Abdomen*: Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

**A:** Allergic rhinitis

**P:** Referral provided for skin prick allergy testing. Following allergy testing, patient is instructed to begin taking fluticasone propionate intranasal 50 mcg/spray, two sprays in each nostril one time each day.<sup>11</sup>

## ■ Health Promotion Issues

- ▶ Discussion of STI prevention, depression, alcohol/drug use, skin cancer prevention/screening<sup>7,8</sup>
- ▶ Dyslipidemia screening<sup>7,8</sup>
- ▶ Annual influenza vaccine<sup>9</sup>

## ■ Guidelines to Direct Care

American Academy of Allergy Asthma and Immunology. AAAAI allergy and asthma medication guide. 2014. <http://www.aaaai.org/conditions-and-treatments/drug-guide/nasal-medication.aspx>. Accessed September 2, 2015.

Centers for Disease Control and Prevention. Recommended adult immunization schedule, by vaccine and age group. 2014. <http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>. Accessed September 2, 2015.

US Preventive Services Task Force. Recommendations for primary care practice: published recommendations. <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index/browse-recommendations>. Accessed September 2, 2015.

Wallace DV, Dykewicz MS, Bernstein DI. The diagnosis and management of rhinitis: an updated practice parameter. *J Allergy Clin Immunol*, 2008;122(2). <http://www.aaaai.org/Aaaai/media/MediaLibrary/PDF%20Documents/Practice%20and%20Parameters/rhinitis2008-diagnosis-management.pdf>. Accessed September 2, 2015.

## Case 3

Emily is a 17-year-old white female who reports she awakened today with a red eye and feeling like her eyelashes were “stuck together.” States initially upon awakening she felt like something was in her eye and her vision was blurry, but after she was able to fully open her eye and wash the eyelashes and eyelid, her vision

was normal. Reports a history of recent “cough and stuffy nose” that she believes is improving. Denies sore throat, ear pain, or eye trauma. She is a nonsmoker and is not sexually active. Admits to occasional champagne at New Year’s or weddings. Last menstrual period (LMP) was 20 days ago. She lives at home with

her parents and two younger siblings. She is very active in sports in her high school, playing soccer and softball, and hopes to get a scholarship to attend college out of state next year. When asked about sick contacts, reports a teammate was treated for “pink-eye a few days ago.” Childhood immunizations including human papillomavirus (HPV) vaccination series completed; tetanus booster received last year. Does not receive annual influenza vaccination.

## Physical Exam

**Vital Signs:** BP 106/74, HR 72, RR 12, T 98.6, Ht 5'4", Wt 135 lbs

**GEN:** No acute distress

**HEENT:** Normocephalic, ear canal without redness, discharge, or edema noted. TM clear, pearly, bony landmarks visible. No pain on palpation of pinna or with traction. PERRLA with positive red reflex bilaterally. Oculus sinister (OS) visual acuity 20/20, sclera and conjunctiva clear and without redness, injection, or discharge noted. Fundoscopic exam with discs well marginated. No AV nicking. No photosensitivity noted. Oculus dexter (OD) 20/20, bulbar and palpebral conjunctiva reddened and injected with yellow-green discharge noted on lashline.

**CV:** S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs

**Lungs:** Clear to auscultation

**Abdomen:** Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

**What additional assessments/diagnostics do you need?**

**What is the differential diagnoses list?**

**What is your working diagnosis?**

## Additional Assessments/Diagnostics Needed

### ROS

When assessing a patient with red eye, it is important to differentiate between emergent, urgent, and routine eye issues.<sup>12,13</sup> Visual impairment necessitates immediate referral.

## Eye Issues That Do Not Commonly Impair Vision

- ▶ Viral conjunctivitis
- ▶ Bacterial conjunctivitis
- ▶ Nongonococcal or nonchlamydial conjunctivitis
- ▶ Allergic conjunctivitis
- ▶ Blepharitis
- ▶ Episcleritis
- ▶ Peripheral corneal pterygium
- ▶ Subconjunctival hemorrhage

## Eye Issues That Can Impair Vision

- ▶ Corneal injection (gonococcal infection/chlamydia/herpes simplex virus/herpes zoster virus)
- ▶ Corneal ulcer
- ▶ Anterior uveitis
- ▶ Scleritis
- ▶ Superficial keratitis
- ▶ Pterygium or corneal abrasion that encroaches on central cornea

## Physical Exam

The examination for a complaint of a red eye should include the following:<sup>12,13</sup>

- ▶ A thorough health history to explore:
  - ▶ Any causes of injury if they exist
  - ▶ When the irritation and redness first began
  - ▶ Visual changes
  - ▶ Level of pain
  - ▶ Light sensitivity
  - ▶ Possible exposure to allergens and environmental causative agents
  - ▶ Narrowing the causative agents in possible infectious exposures
- ▶ A review of the patient's medical record allows for comparison of current visual acuity with baseline visual acuity if the patient is well known to your practice.
- ▶ An undilated ophthalmoscopic examination should be performed, with the addition of fluorescein staining if available. Introduction of fluorescein and illumination with the blue or green light of the ophthalmoscope cause abrasions and dendritic lesions to be visualized more clearly by the examiner.

## Routine Labs/Diagnostics

Laboratory testing is not routinely performed in acute, uncomplicated conjunctivitis.<sup>12,13</sup> If infection is resistant or recurring, a culture may be performed.

If the patient reports a sudden onset of severe eye redness with copious purulent discharge from the eye, hyperacute bacterial conjunctivitis associated with *Neisseria gonorrhoeae* infection should be suspected. Cultures of the eye and urgent referral should be initiated related to the propensity of *N. gonorrhoeae* to cause corneal perforation.

## Differential Diagnoses List

- Viral conjunctivitis
- Bacterial conjunctivitis
- Nongonococcal or nonchlamydial conjunctivitis
- Allergic conjunctivitis
- Blepharitis

Episcleritis  
Peripheral corneal pterygium  
Subconjunctival hemorrhage

## ■ Working Diagnosis

Bacterial conjunctivitis

## ■ Pathophysiology

Bacterial conjunctivitis is caused by introduction of bacteria into the bulbar or palpebral conjunctiva.<sup>12</sup> Defense mechanisms within the eye trigger inflammation and the resultant redness as well as an increase in the viscosity and amount of lacrimal secretions. The offending organism impacts the amount of discharge, degree of redness and injection, and rapidity of progression of the infection.

## ■ What Is Your Treatment Plan?

### ■ Pharmacologic

Pharmacologic therapy and antibiotic choice are based on bacteria suspected to be causing the infection and clinician preference.<sup>12-14</sup> A significant difference in outcomes based on antibiotic selection in uncomplicated acute bacterial conjunctivitis has not been shown. With acute uncomplicated bacterial conjunctivitis in adults who do not wear contact lenses, pharmacologic treatment could include one of the following:

- ▶ Azithromycin 1% ophthalmic drops
- ▶ Trimethoprim/polymyxin B ophthalmic drops
- ▶ Sulfacetamide 10% ophthalmic drops or ointment
- ▶ Tobramycin 0.3% ophthalmic ointment
- ▶ Erythromycin 0.5% ophthalmic ointment

If the patient wears contact lenses, antibiotic coverage for *Pseudomonas aeruginosa* must be considered in the antibiotic selection process. A broad-spectrum antibiotic ophthalmic solution such as levofloxacin 1.5% ophthalmic drops should be selected.

Topical glucocorticoids have no role in the management of acute conjunctivitis by primary care clinicians. They can cause sight-threatening complications (corneal scarring, melting, and perforation) when used inappropriately in herpes simplex or bacterial keratitis.

### ■ Nonpharmacologic

- ▶ Wet compresses, cool or warm per patient preference
- ▶ Attention to patient education and counseling

### ■ Education/Counseling

- ▶ Advise contact lens wearers to discontinue lens wear. Contaminated lenses should be discarded, as should all contact lens solution and cases.
- ▶ All eye makeup should be discarded.

- ▶ New makeup may be purchased but should not be worn, until 24 hours after completion of treatment, when the eye is no longer pink and no discharge is observed.
- ▶ Clean the eye prior to medication administration.
- ▶ Instruct on proper medication administration.
- ▶ If an adult is prescribed ointment, remind the person not to drive or perform activities requiring good visual acuity for at least 20 minutes following administration as a result of blurring of vision.
- ▶ Instruct on good hand washing for all family members.
- ▶ Keep linens and washcloths separate from other household members' linens.
- ▶ Use linens one time only.
- ▶ Wash the affected eye area and side of the face last to avoid contamination of the noninfected eye if possible.
- ▶ Bacterial conjunctivitis is highly contagious and spread by direct contact with secretions or contact with contaminated objects.
- ▶ No work or school until 24 hours after complete resolution of eye redness and no discharge is observed.
- ▶ Call in 2 days if no improvement is seen or if symptoms worsen or vision decreases.
- ▶ Patients who do not respond should be referred to an ophthalmologist.

## ■ SOAP Note

**S:** Emily is a 17-year-old white female with a history of recent upper respiratory infection who awakened today with a red eye, matting of eyelashes, foreign body sensation, and blurry vision. Emily states her vision clears after washing eye region and eyelashes. Denies sore throat, ear pain, or eye trauma. She is a nonsmoker, is not sexually active, and does not use tobacco. Denies regular, frequent ETOH use. Reports a teammate was treated for "pinkeye a few days ago." Childhood immunizations including HPV vaccination series completed, tetanus booster received last year.

**O:** *Vital Signs:* BP 106/74, HR 72, RR 12, T 98.6, Ht 5'4", Wt 135 lbs

*GEN:* No acute distress

*HEENT:* Normocephalic, ear canal without redness, discharge, or edema noted. TM clear, pearly, bony landmarks visible. No pain on palpation of pinna or with traction. PERRLA with positive red reflex bilaterally. OS visual acuity 20/20, sclera and conjunctiva clear and without redness, injection, or discharge noted. Fundoscopic exam with discs well marginated. No AV nicking. No photosensitivity noted. OD 20/20, bulbar and palpebral conjunctiva reddened and injected with yellow-green discharge noted on lashline.

*CV:* S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs

*Lungs:* Clear to auscultation



*Abdomen:* Soft, nontender, nondistended, bowel sounds present  $\times$  4 quadrants, no organomegaly

**A:** Acute bacterial conjunctivitis

**P:** Patient instructed on application of sulfacetamide 10% ophthalmic drops (1–2 gtts every 2–3 hours  $\times$  7 days). Hygiene, hand washing, and back to school education discussed with patient. Follow-up for conjunctivitis if the infection is not improving within 48 hours as evidenced by decreased irritation, decreased redness, and decreased discharge, or if not fully resolved within 7 days, or if condition worsens.

## Health Promotion Issues

- ▶ Discussion of STI prevention, depression, alcohol/drug use, skin cancer prevention/screening, safety<sup>8</sup>
- ▶ Meningitis vaccine, annual influenza vaccine<sup>9</sup>

## Case 4

Susan is a 54-year-old white female who reports she has had a “stuffy head” for “about two weeks” that will not go away. Reports nasal congestion, facial pain, facial pressure, and dental pain that worsens when bending forward. Reports she has intermittent nasal fullness and facial pain that have been treated successfully with antibiotics in the past. She is unsure of which antibiotic she was given previously, but states she “needs them about once or twice a year.” She usually uses over-the-counter nasal spray when she starts to feel congestion “for about a week until it stops working.” Admits to coughing intermittently throughout the day. States she usually has straw-colored sputum but has noticed it is a brownish green “for about a week.” Denies allergies, denies recent well-woman exam, denies recent immunizations. States she has not been to see a healthcare provider other than at urgent care centers for antibiotics “in about ten years.” Reports childhood immunizations were completed. PMH of varicella, rubella, rubeola, and mumps diseases in childhood. LMP 5 years ago. Reports alcohol use of about eight drinks per week. Twenty-pack-year history of tobacco use. Denies illicit drug use. Lives with husband of 15 years, no children. Denies illness in close contacts.

## Physical Exam

*Vital Signs:* BP 110/76, HR 80, RR 12, T 99.1, Ht 5'6", Wt 160 lbs

*GEN:* No acute distress

*HEENT:* Normocephalic, PERRLA, sclera and conjunctiva clear without redness or injection. Ear canal slightly reddened, no discharge. TM clear, pearly, bony landmarks visible. Posterior pharynx slightly erythematous without exudate. No lymphadenopathy. Maxillary and frontal sinuses tender to palpation. Toothache increases with percussion. Dull transillumination

## Guidelines to Direct Care

American Academy of Ophthalmology. Policy statement: referral of persons with possible eye diseases or injury. 2014. <http://www.aaopt.org/clinical-statement/guidelines-appropriate-referral-of-persons-with-po>. Accessed September 2, 2015.

Centers for Disease Control and Prevention. Recommended adult immunization schedule, by vaccine and age group. 2014. <http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>. Accessed September 2, 2015.

US Preventive Services Task Force. Recommendations for primary care practice: published recommendations. <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index/browse-recommendations>. Accessed September 2, 2015.

of right maxillary sinus, left opaque. Frontal sinuses show dull transillumination. Nares erythematous and edematous bilaterally. Inferior and middle turbinates patent bilaterally. Mucopurulent mucus visible bilaterally. Neck: Supple. Thyroid without nodules or prominence noted.

*CV:* Point of maximal impact (PMI) located at 5th intercostal space (ICS) midclavicular line (MCL), S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs. Pedal pulses 2+, no peripheral edema noted, no jugular vein distention (JVD) noted.

*Lungs:* Coarse crackles that clear with coughing noted throughout. No wheeze, no stridor, no tactile fremitus.

*Abdomen:* Soft, nontender, nondistended, bowel sounds present  $\times$  4 quadrants, no organomegaly

Skin turgor normal, mucous membranes moist.

**What additional assessments/diagnostics do you need?**

**What is the differential diagnoses list?**

**What is your working diagnosis?**

## Additional Assessments/Diagnostics Needed

### ROS

Ask about common signs and symptoms of sinus infection as well as other conditions that may cause the symptoms she describes, including:

- ▶ Cough
- ▶ Nasal drainage
- ▶ Throat irritation
- ▶ Ear pressure or pain

- ▶ Difficulty swallowing
- ▶ Chills or fever
- ▶ Altered taste, bad taste in the mouth
- ▶ Nausea
- ▶ Vomiting

## ■ Physical Exam

The examination for this patient should include:<sup>15–16</sup>

- ▶ Detailed history of the onset of symptoms, pattern of illness, chronicity, and possible seasonality of symptoms, association with allergens/triggers, environmental and occupational history, as well as any medications used to alleviate symptoms.
- ▶ Careful examination of the EENT system will help rule out any anatomic malformations and provide clues based on color of drainage, condition and color of nasal turbinates and pharynx.
- ▶ A complete respiratory examination is also necessary with focus on any signs or symptoms of respiratory compromise.

Clinical presentation leading to a diagnosis of sinusitis would include:<sup>15</sup>

- ▶ Onset with persistent symptoms of sinusitis that last for >10 days without clinical improvement
- ▶ Onset with severe symptoms of fever >39°C (102°F) and purulent nasal discharge or facial pain lasting 3–4 consecutive days at the beginning of illness
- ▶ Onset with worsening of symptoms characterized by initial illness with improvement and then 5–6 days later worsening of fever, headache, and increased nasal discharge referred to as double sickening

Once the clinical diagnosis is made, antibiotic therapy is recommended.<sup>15–16</sup>

## ■ Routine Labs/Diagnostics

### ■ Labs

In acute bacterial rhinosinusitis (ABRS), routine labs are generally not performed.<sup>15–16</sup> If indicated, the following labs may be helpful:

- ▶ A CBC with differential may help differentiate cause. Allergic causes of ongoing symptoms would appear as increased eosinophils, and primarily bacterial causes will show an increase in neutrophils.
- ▶ Skin prick allergy testing identifies the allergen that may precipitate sinus infections, allowing for allergen control to decrease frequency of exacerbations.
- ▶ Culture of direct sinus aspiration should be reserved for patients who experience antibiotic treatment failure.

## ■ Imaging Studies

Imaging studies in this case may include the following:

- ▶ Plain sinus radiographs provide a gross exam of the paranasal sinuses in an easily available and cost-effective manner. Air fluid levels can be seen in acute sinusitis, and mucosal thickening can be seen in chronic sinusitis. Although this is commonly done in practice, current guidelines do not recommend plain radiographs as the best imaging choice.<sup>15–16</sup>
- ▶ CT is the most useful imaging study in sinusitis. Imaging should be reserved for patients with suppurative complications of sinusitis. CT is much more specific than plain films and provides more detailed information about the type and level of sinus involvement, especially if surgical intervention is being considered. CT also shows surrounding tissues such as the orbits and brain.<sup>15–16</sup>
- ▶ MRI is more specific than CT scan in differentiating soft tissue densities and also more expensive. This imaging is reserved for differentiating benign and malignant lesions and is not generally recommended in cases of sinusitis alone.<sup>15–16</sup>
- ▶ Fiber-optic nasal endoscopy or rhinomanometry provides direct visualization of the sinus cavity, allowing the practitioner to visualize causes of mechanical obstruction. Polyps, foreign bodies, and anatomic anomalies can be directly visualized. Additionally, endoscopy allows for a specific culture of the middle meatus, which can be helpful in guiding treatment.<sup>10,15,16</sup>

## ■ Differential Diagnoses List

- Upper respiratory infection
- Allergic rhinitis
- Vasomotor rhinitis
- Mechanical obstruction of nares
- Chronic inflammatory rhinitis
- Viral influenza
- Acute bacterial rhinosinusitis
- Chronic sinusitis
- Periodontal disease

## ■ Working Diagnosis

Acute bacterial rhinosinusitis

## ■ Pathophysiology

Sinusitis is a disease characterized by inflammation, edema, and infection.<sup>15</sup> Sinusitis and its treatment methodologies are subdivided into acute, subacute, chronic, and recurrent as follows:

- ▶ Acute—sudden onset runny, stuffy nose, facial pain that does not go away after 10–14 days. Acute sinusitis typically lasts 4 weeks or less.
- ▶ Subacute—an inflammation lasts 4–8 weeks.

- ▶ Chronic—a condition characterized by sinus inflammation symptoms lasting 8 weeks or longer.
- ▶ Recurrent—several attacks within a year.

Main goals in the treatment of sinusitis include controlling infection, reducing tissue edema, facilitating drainage, and maintaining the patency of the sinus ostia.

## ■ What Is Your Treatment Plan?

### ■ Pharmacologic

- ▶ Analgesic as needed<sup>15-16</sup>
- ▶ Antibiotic treatment<sup>15-16</sup>
  - ▶ Amoxicillin/clavulanate as first-line treatment 5–14 days based on severity and recurrence
  - ▶ In patients who are allergic to penicillin (PCN), may use doxycycline or respiratory fluoroquinolones<sup>15-16</sup>
- ▶ Intranasal and systemic corticosteroids

### ■ Nonpharmacologic

- ▶ Moisture
- ▶ Saline nasal drops, sprays, or irrigations
- ▶ Heated mist
- ▶ Increased fluid intake<sup>15-16</sup>

Avoid common causes of sinusitis:

- ▶ Allergies
- ▶ Complication of acute or chronic rhinitis
- ▶ Environmental irritants
- ▶ Nasal polyposis
- ▶ Viral infection

### ■ Education/Counseling

- ▶ Return for evaluation if symptoms don't improve within 48 hours.
- ▶ Return if there is swelling in the periorbital area.
- ▶ Humidify the air and increase fluid intake.
- ▶ Avoid allergens.
- ▶ Avoid swimming during the acute phase.
- ▶ Avoid antihistamines.
- ▶ Avoid smoking.<sup>15-16</sup>

### ■ SOAP Note

**S:** Susan is a 54-year-old post-menopausal white female with a 2-week history nasal congestion, facial pain, facial pressure, and dental pain that worsens when bending forward. Reports intermittent nasal fullness and facial pain approximately one to two times per year that have been treated successfully with antibiotics in the past. States she

usually uses over-the-counter nasal spray when she starts to feel congestion. Reports 20-pack-year history of tobacco use and coughing intermittently throughout the day. States she usually has straw-colored sputum but has noticed it is a brownish green “for about a week.” States she has not been to see a healthcare provider other than at urgent care centers for antibiotics “in about ten years.” Childhood immunizations complete. PMH of varicella, rubella, rubeola, and mumps diseases in childhood. NKDA. Alcohol use of about eight drinks per week, no illicit drug use. Lives with husband no children. Denies illness in close contacts.

**O:** *Vital Signs:* BP 110/76, HR 80, RR 12, T 99.1, Ht 5'6", Wt 160 lbs

*GEN:* No acute distress

*HEENT:* Normocephalic, PERRLA, sclera and conjunctiva clear without redness or injection. Ear canal slightly reddened, no discharge. TM clear, pearly, bony landmarks visible. Posterior pharynx slightly erythematous without exudate. No lymphadenopathy. Maxillary and frontal sinuses tender to palpation. Toothache increases with percussion. Dull transillumination of right maxillary sinus, left opaque. Frontal sinuses show dull transillumination. Nares erythematous and edematous bilaterally. Inferior and middle turbinates patent bilaterally. Mucopurulent mucus visible bilaterally. Neck: Supple. Thyroid without nodules or prominence noted.

*CV:* PMI located at 5th ICS MCL, S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs. Pedal pulses 2+, no peripheral edema noted, no JVD noted.

*Lungs:* Coarse crackles that clear with coughing noted throughout. No wheeze, no stridor, no tactile fremitus.

*Abdomen:* Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

Skin turgor normal, mucous membranes moist.

**A:** Acute bacterial rhinosinusitis

**P:** Begin treatment for ABRS with amoxicillin-clavulanate 875/125 mg PO BID × 7 days. Instructions provided for increased oral hydration, warm mist vaporizer, and acetaminophen or ibuprofen OTC for analgesia as needed. S/S of worsening and improvement reviewed. Discussed the relationship of smoking and upper respiratory infections, encouraged smoking cessation, well-woman exam, mammogram, colonoscopy, and immunizations. Discussed ETOH use. Susan verbalized understanding and is “open” to further discussion at future visit. Recheck in two weeks or sooner as needed.

### ■ Health Promotion Issues

- ▶ Assess motivation for smoking cessation and discuss strategies<sup>8</sup>
- ▶ Recommend tetanus booster, annual influenza vaccine<sup>9</sup>

- ▶ CAGE assessment—discuss potential side effects of alcohol (ETOH) use<sup>8</sup>
- ▶ Schedule well-woman exam<sup>8</sup>
- ▶ Schedule mammogram<sup>8</sup>
- ▶ Schedule colonoscopy<sup>8</sup>

### Guidelines to Direct Care

Centers for Disease Control and Prevention. Recommended adult immunization schedule, by vaccine and age group. 2014. <http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>. Accessed September 2, 2015.

Chow AW, Benninger MS, Brook I, et al. IDSA clinical practice guideline for acute bacterial rhinosinusitis in children and adults. *Clin Infect Dis*. 2012;54(8):e72–e112. <http://www.guideline.gov/content.aspx?id=36681>. Accessed September 2, 2015.

US Preventive Services Task Force. Recommendations for primary care practice: published recommendations. <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index/browse-recommendations>. Accessed September 2, 2015.

University of Michigan Health System. Acute rhinosinusitis in adults. Ann Arbor, MI: University of Michigan Health System; 2011. <http://www.guideline.gov/content.aspx?id=34408>. Accessed September 2, 2015.

## Case 5

Tom is an 18-year-old white male who reports he had just returned from a trip with his basketball team when he experienced sudden onset of severe sore throat pain, fever, headache, muscle pain, and malaise. Reports “a few” of his teammates became sick on the trip and were not able to play in the final game. States the teammates had played in the first two games of the tournament. Reports they “try” to not share water bottles when on the bench, but if they come out of the game and quickly need a drink they “just grab whatever bottle is laying there.” States he felt ill yesterday, and came in for evaluation because he is feeling worse. Tom states that today he is unable to eat because of his severe sore throat and that is concerning to him. Denies cough, nausea, vomiting, sneezing, and nasal discharge. Childhood immunizations completed, tetanus booster given 2 years ago.

### Physical Exam

**Vital Signs:** BP 112/70, HR 86, RR 14, T 101.5, Ht 6'0", Wt 152 lbs

**GEN:** Ill-appearing male

**HEENT:** Normocephalic, PERRLA, sclera and conjunctiva clear without redness or injection. Ear canal without redness or discharge, TM clear, pearly, bony landmarks visible. Oropharynx reddened, tonsillar exudates noted, anterior cervical lymph node (LN) swollen and tender

**CV:** S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs

**Lungs:** Clear to auscultation

**Abdomen:** Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

**What additional assessments/diagnostics do you need?**

**What is the differential diagnoses list?**

**What is your working diagnosis?**

### Additional Assessments/Diagnostics Needed

#### ROS

Differentiation of group A beta-hemolytic streptococcal (GABHS) infection from viral pharyngitis may be accomplished utilizing clinical symptomatology, epidemiology, and throat culture.<sup>17–19</sup> Proper diagnosis is important to decrease overuse of antibiotics in cases of viral pharyngitis while allowing for treatment of GABHS to reduce suppurative complications and sequelae of infection such as poststreptococcal glomerulonephritis and rheumatic fever.

The Centor criteria stratifies risk based on known epidemiological data and exam findings to arrive at a total score to predict the likelihood of GABHS. While the Infectious Disease Society of America (IDSA) recommends rapid antigen detection testing (RADT) for all patients with clinical symptomatology that is suspicious of GABHS, the Centers for Disease Control and Prevention (CDC), the American Academy of Family Physicians (AAFP), and the American College of Physicians (ACP) recommend RADT testing for adults with a Centor score of 2–3.

Per the CDC, AAFP, and ACP guidelines, a total score of 0–1 allows for exclusion of GABHS infection without further testing in adults. The exception is a score of 1 with a recent family contact of GABHS. A total score of 2–3 necessitates a throat culture or RADT, and a score of 4 or greater suggests the need for empiric antibiotic treatment for presumptive GABHS infection. The Centor criteria assigns one point for each of the following:

- ▶ Absence of cough
- ▶ Swollen and tender anterior cervical nodes
- ▶ Temperature >100.4°F (38°C)
- ▶ Tonsillar exudates or swelling
- ▶ Ages 3–14 years

The Centor criteria awards zero points for 15–44 years of age and deducts one point for age 45 years and older.

### ■ Physical Exam

The examination for this patient should include:

- ▶ Detailed history of the onset of symptoms, pattern of illness, chronicity, and sick contacts
- ▶ Careful examination of the EENT system and utilization of the Centor criteria to help direct care
- ▶ A complete respiratory examination, focusing on any signs or symptoms of respiratory compromise

### ■ Routine Labs/Diagnostics

Labs to consider when evaluating the possibility of GABHS infection could include:<sup>17–19</sup>

- ▶ RADT testing, as previously discussed
- ▶ Throat culture for negative RADT is not recommended in the adult patient but would be recommended in the pediatric population
- ▶ CBC with differential may be considered if suppurative symptoms are noted

### ■ Differential Diagnoses List

Upper respiratory infection  
 Viral influenza  
 Peritonsillar abscess  
 Viral pharyngitis  
 GABHS pharyngitis

### ■ Working Diagnosis

GABHS pharyngitis

### ■ Pathophysiology

GABHS pharyngitis is caused by group A beta-hemolytic *Streptococcus* bacteria.<sup>17–19</sup> GABHS pharyngitis occurs in 5% to 15% of adult cases of acute pharyngitis and 25% of cases of pediatric pharyngitis. In homes with one case of GABHS, approximately 43% will experience GABHS in a second household member. Most infections occur in late winter or early spring, are spread via respiratory secretions, and have an incubation period of 24 to 72 hours. Proper, rapid diagnosis of GABHS can decrease morbidity, lower risk of spread to close contacts, and lessen the appearance of suppurative and poststreptococcal sequelae.

### ■ What Is Your Treatment Plan?

#### ■ Pharmacologic

Antibiotic therapy should be initiated immediately upon diagnosis of GABHS pharyngitis. First-line therapy for adults is penicillin or amoxicillin. For adults allergic to penicillin,

erythromycin is recommended. Extended spectrum macrolides and fluoroquinolones are not recommended for treatment of uncomplicated GABHS pharyngitis. Analgesics are utilized as needed.

#### ■ Nonpharmacologic

- ▶ Warm saltwater gargles and soft, soothing foods to increase comfort
- ▶ Analgesics as needed for comfort
- ▶ Attention to patient education and counseling

#### ■ Education/Counseling

- ▶ Patient instructions to not share utensils, drinks, or food to avoid spread of infection to household contacts
- ▶ Medication counseling to ensure adherence to antibiotic treatment
- ▶ Drink plenty of fluids
- ▶ Get plenty of rest
- ▶ May use warm drinks or frozen treats such as sherbet and fruit pops to soothe the throat
- ▶ Avoid spicy foods and crunchy, difficult-to-swallow foods
- ▶ May use warm saltwater gargles for comfort

#### ■ SOAP Note

**S:** Tom is an 18-year-old white male with a 1-day history of sudden onset of severe sore throat pain, fever, headache, muscle pain, malaise, and unable to eat related to throat pain. Reports similar illness in close contacts. Denies cough, nausea, vomiting, sneezing, and nasal discharge. Childhood immunizations completed, tetanus booster given 2 years ago. No annual influenza.

**O:** *Vital Signs:* BP 112/70, HR 86, RR 14, T 101.5, Height 6'0", Wt 152 lbs

*GEN:* Ill-appearing male.

*HEENT:* Normocephalic, PERRLA, sclera and conjunctiva clear without redness or injection. Ear canal without redness or discharge, TM clear, pearly, bony landmarks visible. Oropharynx reddened, tonsillar exudates noted, anterior cervical LN swollen and tender.

*CV:* S<sub>1</sub> and S<sub>2</sub>, RRR, no murmurs, no gallops, no rubs

*Lungs:* Clear to auscultation

*Abdomen:* Soft, nontender, nondistended, bowel sounds present × 4 quadrants, no organomegaly

**A:** Centor Score = 4 (+ LN, fever, tonsillar exudates, no cough, age 15–44 years); GABHS pharyngitis

**P:** Patient instructed to begin amoxicillin 500 mg by mouth every 12 hours × 10 days, use warm saltwater gargles, eat soothing foods, avoid sharing of utensils and food. Off school and out of sports until symptoms improved. Return to clinic as needed or if condition worsens. Schedule appointment for meningitis and influenza vaccinations.

## Health Promotion Issues

- ▶ Discussion of STI prevention, depression, alcohol/drug use, skin cancer prevention/screening, safety<sup>8</sup>
- ▶ Meningitis vaccine
- ▶ Annual influenza vaccine<sup>9</sup>

## Guidelines to Direct Care

Centers for Disease Control. Acute pharyngitis in adults: physician information sheet. <http://www.cdc.gov/getsmart/community/materials-references/print-materials/hcp/adult-acute-pharyngitis.html>. Accessed September 2, 2015.

Centers for Disease Control and Prevention. Recommended adult immunization schedule, by vaccine and age group. 2014. <http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>. Accessed September 2, 2015.

Choby BA. Diagnosis and treatment of streptococcal pharyngitis. American Academy of Family Physicians; 2009. <http://www.aafp.org/afp/2009/0301/p383.pdf>. Accessed September 2, 2015.

Shulman ST, Bisno AL, Clegg HW, et al. Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. *Clin Infect Dis*. September 9, 2012. doi:10.1093/cid/cis629.

US Preventive Services Task Force. Recommendations for primary care practice: published recommendations. <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index/browse-recommendations>. Accessed September 2, 2015.

## REFERENCES

1. Rosenfeld RM, Schwartz SR, Cannon CR, et al. Clinical practice guideline: acute otitis externa. *Otolaryngol Head Neck Surg*. 2014;150(1 suppl):S1–S24. doi:10.1177/0194599813517083.
2. Rosenfeld RM, Schwartz SR, Cannon CR, et al. Clinical practice guideline: acute otitis externa executive summary. *Otolaryngol Head Neck Surg*. 2014;150(2):161–168. doi:10.1177/0194599813517659.
3. Rosenfeld RM, Brown L, Cannon CR, et al; American Academy of Otolaryngology—Head and Neck Surgery Foundation. Clinical practice guideline: acute otitis externa. *Otolaryngol Head Neck Surg*. 2006;134(4 suppl):S4–23.
4. Grandis JR, Curtin HD, Yu VL. Necrotizing (malignant) external otitis: prospective comparison of CT and MR imaging in diagnosis and follow-up. *Radiology*. August 1995;196(2):499–504.
5. Hegde AN, Mohan S, Pandya A, Shah GV. Imaging in infections of the head and neck. *Neuroimaging Clin N Am*. November 2012;22(4):727–754.
6. McAuley D. Ciprofloxacin and hydrocortisone otic. 2014. [http://www.globalrph.com/otic.htm#Ciprofloxacin\\_and\\_hydrocortisone](http://www.globalrph.com/otic.htm#Ciprofloxacin_and_hydrocortisone). Accessed September 2, 2015.
7. Heidelbaugh J, Tortorello M. The adult well male examination. *Am Fam Physician*. May 15, 2012;85(10):964–971. <http://www.aafp.org/afp/2012/0515/p964.html>. Accessed September 2, 2015.
8. US Preventive Services Task Force. Recommendations for primary care practice: published recommendations. <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index/browse-recommendations>. Accessed September 2, 2015.
9. Centers for Disease Control and Prevention. 2015 recommended immunizations for adults. <http://www.cdc.gov/vaccines/schedules/downloads/adult/adult-schedule-easy-read.pdf>. Accessed September 2, 2015.
10. Wallace D, Dykewicz M, Bernstein D, et al. The diagnosis and management of rhinitis: an updated practice parameter. *J Clin Immunol*. 2008;122(2). <http://www.aaaai.org/Aaaai/media/MediaLibrary/PDF%20Documents/Practice%20and%20Parameters/rhinitis2008-diagnosis-management.pdf>. Accessed September 2, 2015.
11. American Academy of Allergy Asthma and Immunology. AAAAI allergy and asthma medication guide. March 2015. <http://www.aaaai.org/conditions-and-treatments/drug-guide/nasal-medication.aspx>. Accessed September 2, 2015.
12. American Academy of Ophthalmology. Policy statement: referral of persons with possible eye diseases or injury. 2014. <http://www.aao.org/clinical-statement/guidelines-appropriate-referral-of-persons-with-po>. Accessed September 2, 2015.
13. Cronau H, Kankanala R, Mauer T. Diagnosis and management of red eye in primary care. *Am Fam Physician*. January 15, 2010;81(2):137–144. <http://www.aafp.org/afp/2010/0115/p137.html#afp20100115p137-t3>. Accessed September 2, 2015.
14. Hutnik C, Mohammad-Shahi MH. Bacterial conjunctivitis. *Clin Ophthalmol*. 2010;4:1451–1457. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3000772/>. Accessed September 2, 2015.
15. Chow AW, Benninger MS, Brook I, et al. IDSA clinical practice guideline for acute bacterial rhinosinusitis in children and adults. *Clin Infect Dis*. April 2012;54(8):e72–e112. <http://www.guideline.gov/content.aspx?id=36681>. Accessed September 2, 2015.
16. University of Michigan Health System. *Acute rhinosinusitis in adults*. Ann Arbor: University of Michigan Health System; August 9, 2011.
17. Shulman ST, Bisno AL, Clegg HW, et al. Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. *Clin Infect Dis*. November 2012;55(10):e86–e102.
18. Choby B. Diagnosis and treatment of streptococcal pharyngitis. *Am Fam Physician*. March 1, 2009;79(5):383–390.
19. Centers for Disease Control. Acute pharyngitis in adults: physician information sheet. <http://www.cdc.gov/getsmart/community/materials-references/print-materials/hcp/adult-acute-pharyngitis.html>. Accessed September 2, 2015.