Sinusitis 2025

- Michael J. Mitchell, MD
- Otolaryngology – Head and Neck Surgery
- MultiCare Ear Nose and Throat – Creekside Loop
- Yakima, Washington

Bio

- Primary care 7 years in United States Air Force
- Residency in United States Air Force in San Antonio, TX
- Practiced in Vancouver, Washington 18 years
- 2008 Worked in Nigeria, training a family medicine resident
- Moved to Yakima in 2023 following family.

Objectives

1. Review of paranasal sinus anatomy and physiology
2. Diagnosing and managing sinusitis in adults
3. Overview of 2025 guidelines published by the American Academy of Otolaryngology – Head and Neck Surgery

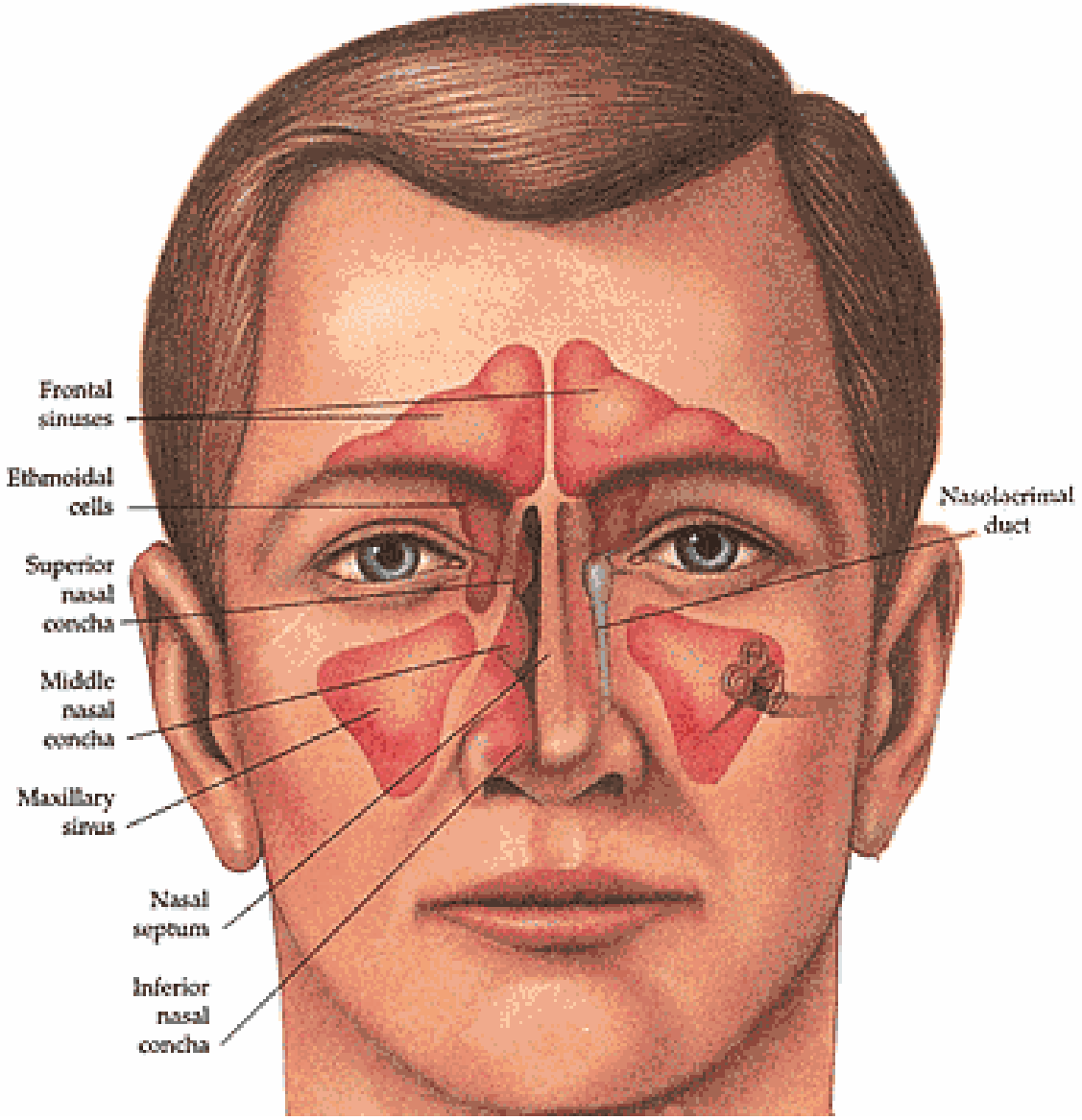
Why talk about sinusitis?

- Very Prevalent
  - Twenty to thirty million cases per year
  - Fifth most common diagnosis for which antibiotics are prescribed. Nine percent of pediatric and 21% of adult antibiotic prescriptions written
- Challenging to appropriately diagnose and treat patients
- Commonly misdiagnosed
  - <50% of my referrals for sinusitis actually have paranasal sinus disease
  - Occasional “incidental” finding for minor complaints
- Updated approach to sinuses

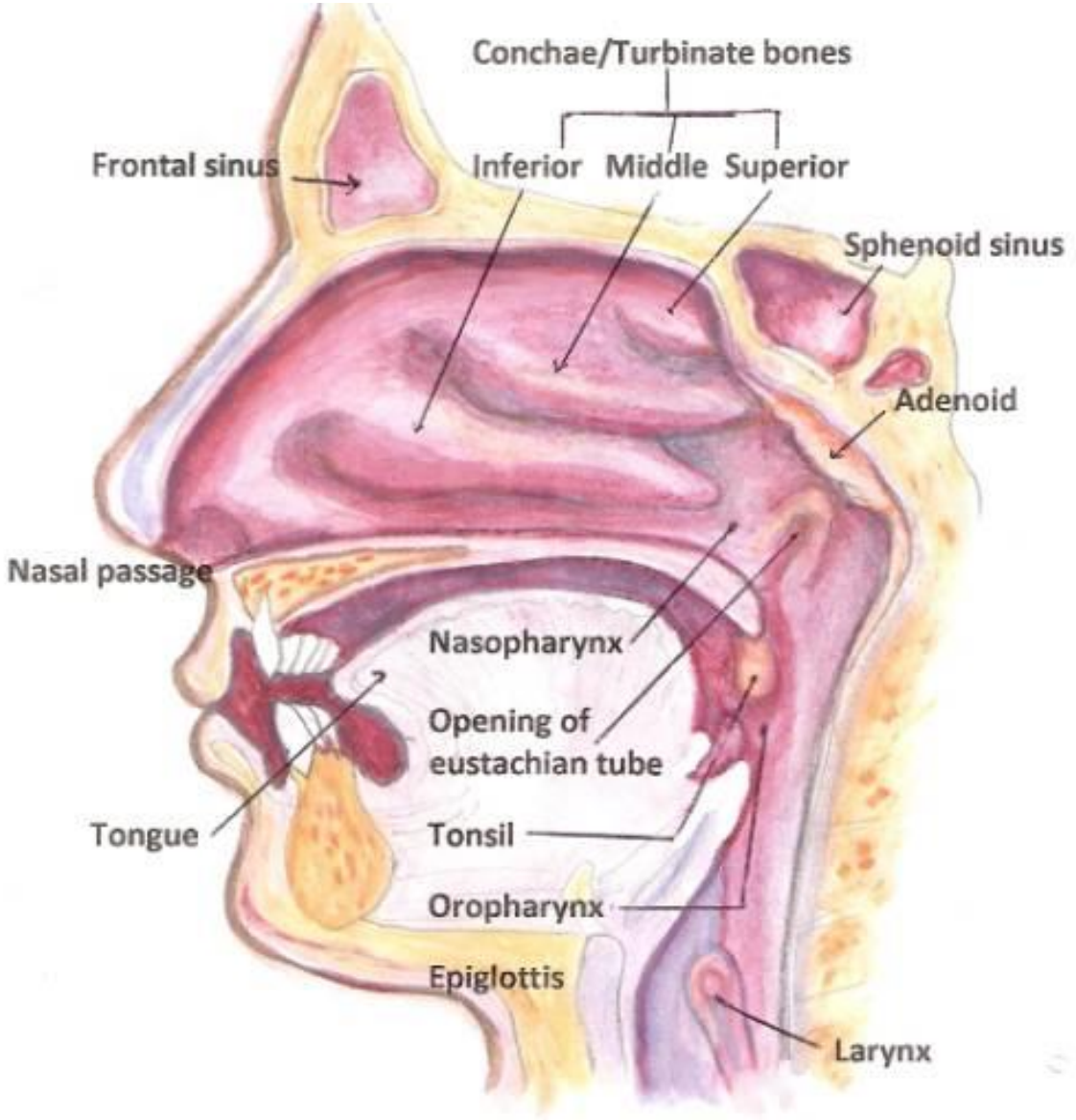
“For the average family physician to remain current on medical literature, they would need to read 17 to 19 papers per day, every day of the year.”

- Sackett DL, Rosenberg WM, Gray JA, et al. Evidence-based medicine: what it is and what it isn't. BMJ. 1996;312(7023):71–72. PMID: 8555924

Paranasal Sinuses



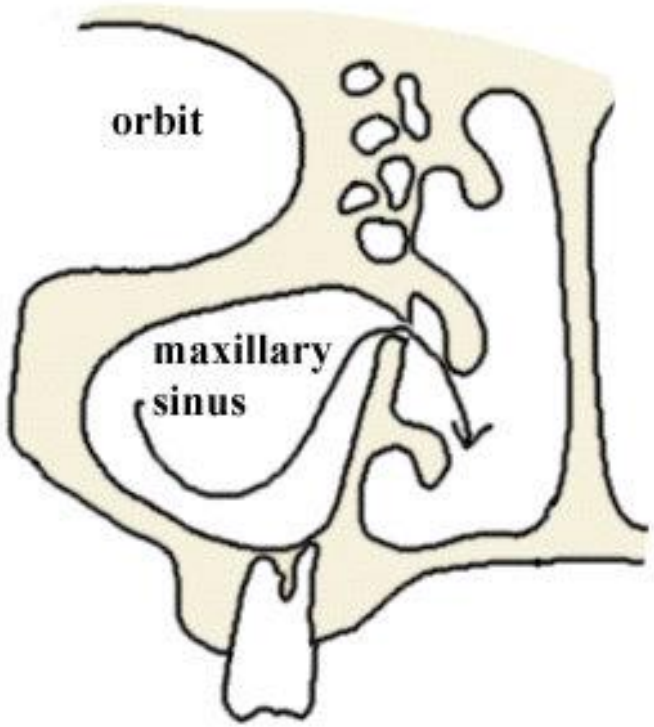
NASAL ANATOMY



Paranasal Sinuses Normal Physiology

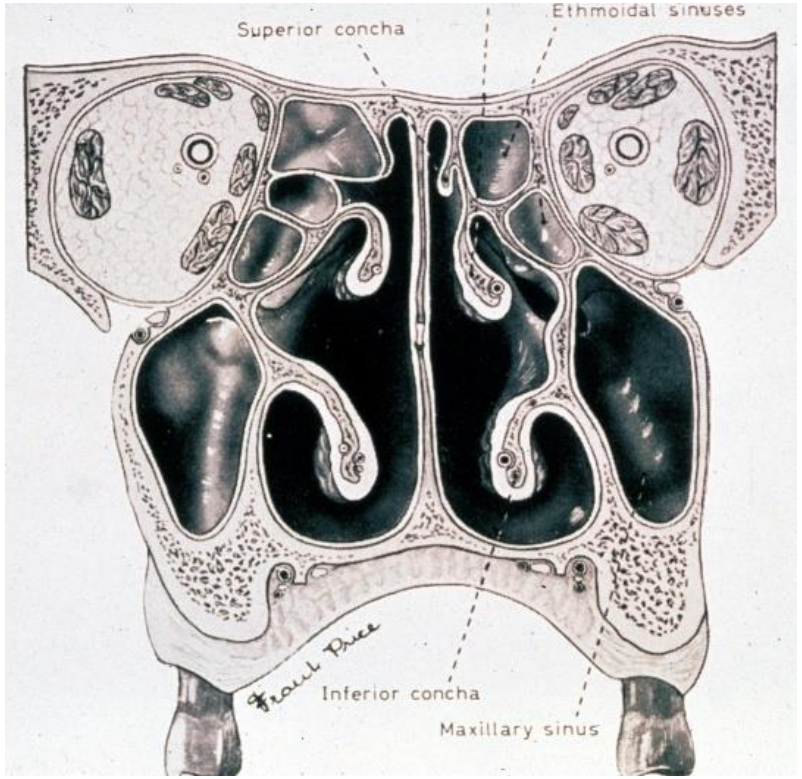
- Pseudostratified, ciliatied, columnar epithelium
- Multiple goblet cells
- Biphasic mucous blanket
  - Upper layer thick and viscous
  - Deep layer contacts cilia
- Mucous blanket moves in spiral pattern to and out of the sinus ostium
- Complete clearing every 10 minutes

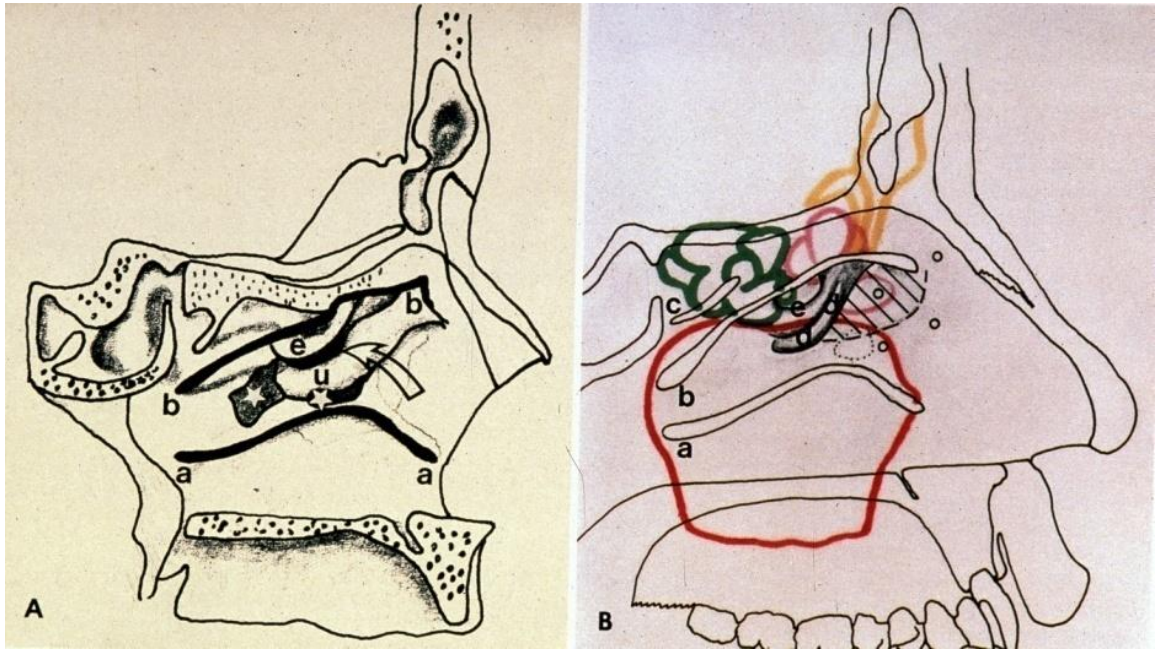
Maxillary Sinus Clearance



Ostiomeatal Complex Disease

- Most common site for pathology to start (Hajek, Hermann, Messerklinger, Procter)
- Poorly visualized area
- Minor swelling can cause obstruction





Paranasal Sinuses Normal Physiology

Sinus ostia vary in size

Size influences

po2 in sinus	Mucociliary clearance	Susceptibility to infection

Definition

- *Rhinosinusitis* is defined as inflammation of the paranasal sinuses and nasal cavity. The term rhinosinusitis is preferred because sinusitis is almost always accompanied by inflammation of the contiguous nasal mucosa.[10-12] Therefore, *rhinosinusitis* is used in guidelines.

Symptoms associated with acute rhinosinusitis (ARS)

- Rhinorrhea
- Nasal congestion/nasal obstruction
- Facial pressure/pain
- Sneezing
- Hyposmia/anosmia
- Postnasal drip
- Sore throat
- Cough
- Ear fullness
- Fever
- Myalgia

Definition

- Acute rhinosinusitis (ARS) is less than 4 weeks
- Chronic rhinosinusitis (CRS) is more than 12 weeks
- Subacute rhinosinusitis is 4-12 weeks. Not a real entity for management or research. Treat as one of the above.

Upper Respiratory Tract Infections (URTI)

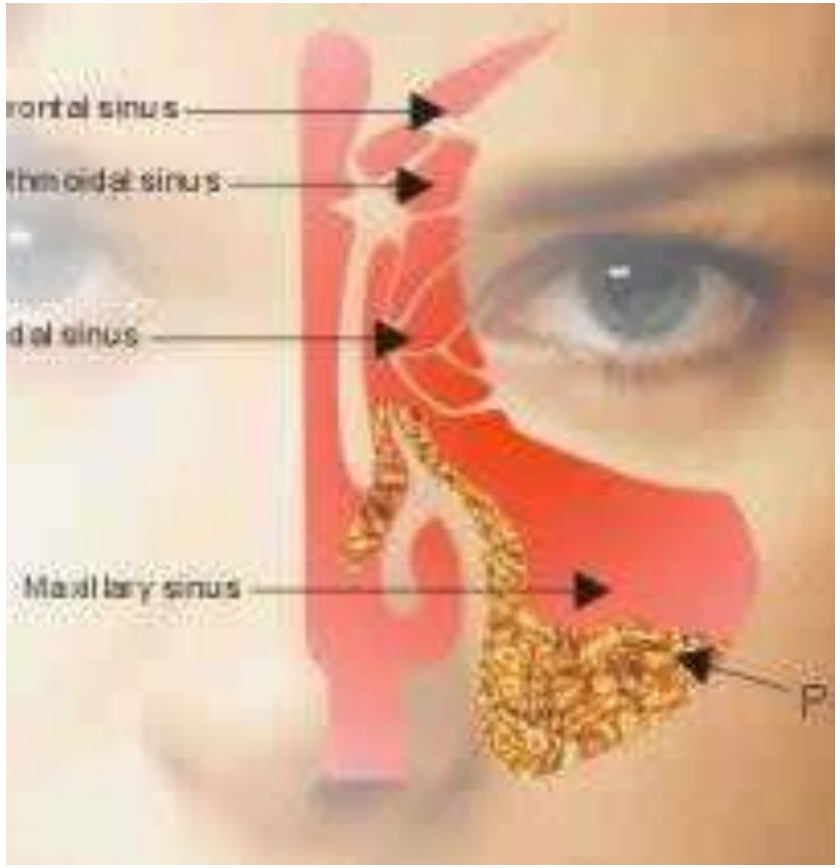
- Rhinovirus
- Coronavirus
- Influenza
- Parainfluenza
- Respiratory sincytial virus (RSV)

Upper Respiratory Tract Infection (URTI)

- Common
  - Pediatric age group – 3-8/year
  - Adults – 2-3/year
- Diagnosis is made predominantly by history and physical
- Nasal swab tests available
- 90% will have abnormalities on computed tomography (CT) scan
- Secondary acute bacterial rhinosinusitis (ABRS) will complicate about 0.5%-2% cases of URTI

Acute Bacterial Rhinosinusitis (ARBS) Four Stages

- Inciting (viral, polyp) stage
- Ostial obstruction stage
- Bacterial stage
- Irreversible (chronic) stage



Acute Bacterial Rhinosinusitis (ABRS) per 2025 Guidelines

Cardinal Symptoms

- purulent nasal drainage
- accompanied by:
  - nasal obstruction
  - facial pain-pressure-fullness
  - or both

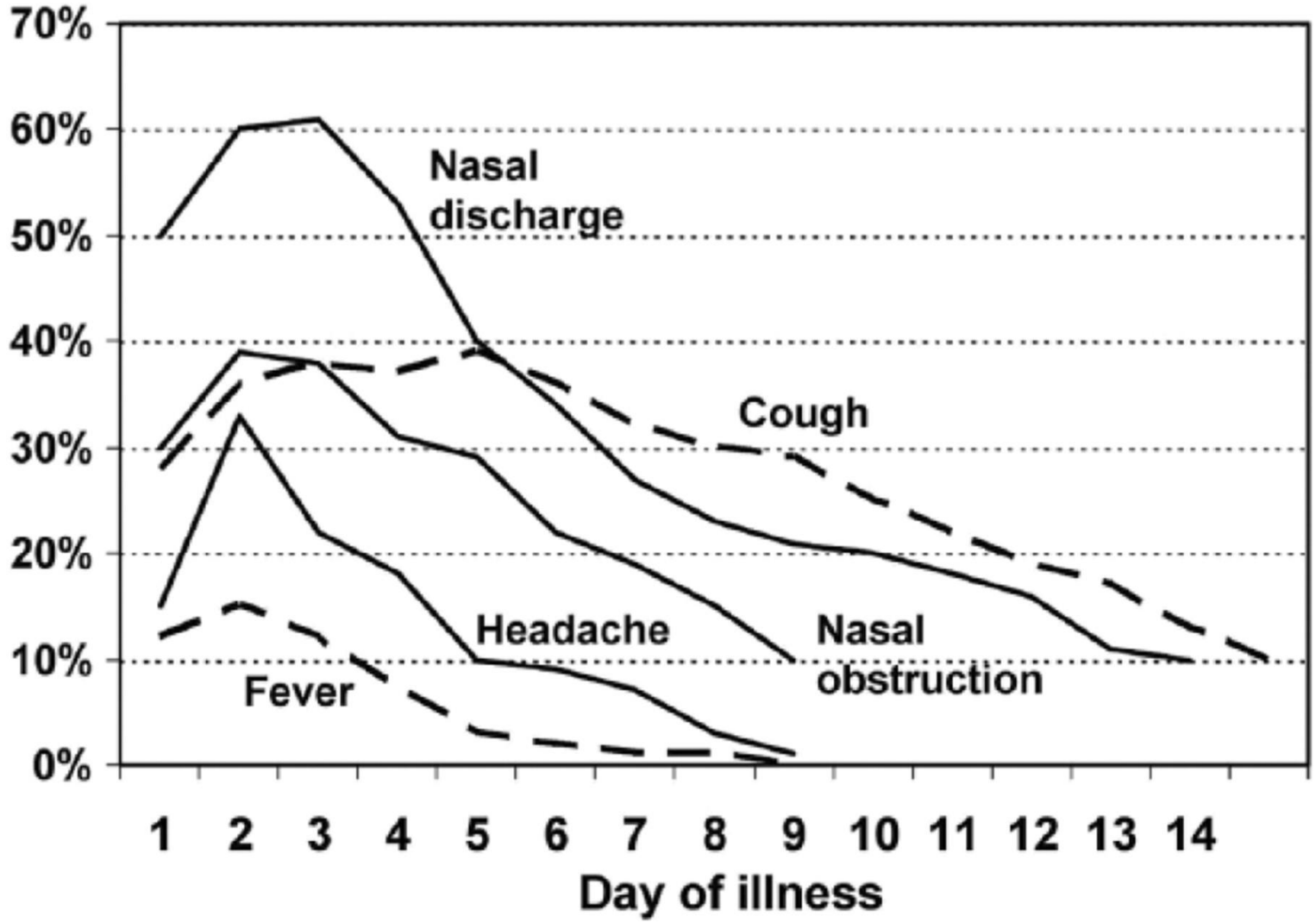
Minor symptoms

- Fever
- Cough
- Hyposmia
- Ear fulness
- Sore throat
- Fatigue

Duration

- 10 days
- Worsening after 5 days (double worsening)

Acute Bacterial Rhinosinusitis (ABRS)



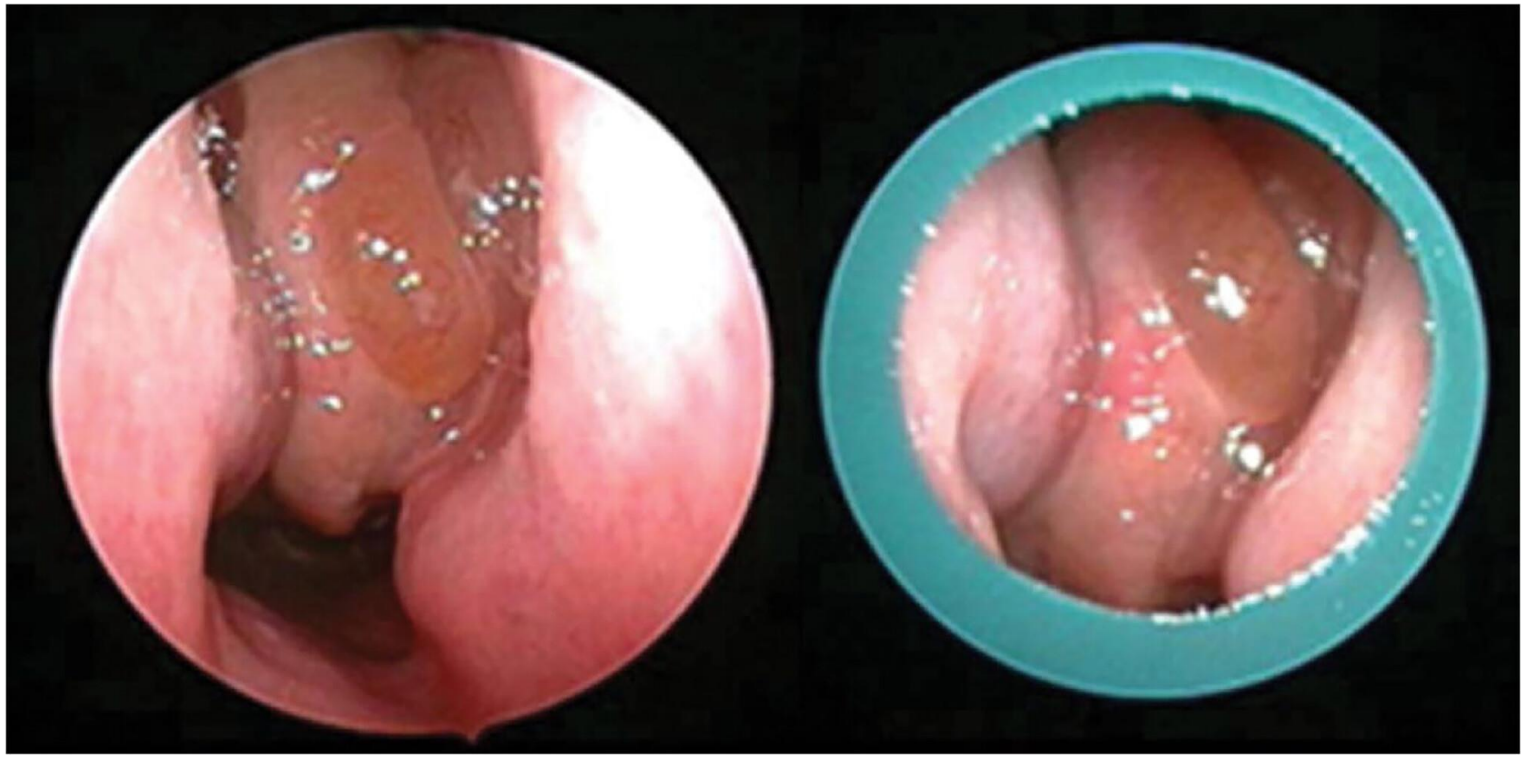
Microbiology

- Streptococcus pneumoniae (20% to 45%)
- Haemophilus influenzae (20% to 43%)
- Moraxella catarrhalis (14% to 28%)
- Staphylococcus aureus (8-11%)

Chronic Rhinosinusitis (CRS)

- ABRS symptoms for more than 12 weeks
- Need CT or nasal endoscopy to make a definitive diagnosis
- Chronic Rhinosinusitis without nasal polyposis (CRSsNP)
- Chronic Rhinosinusitis with nasal polyposis (CRSwNP)
- Aspirin Exacerbated Respiratory Disease (AERD)
  - Nasal polyposis
  - Asthma
  - NSAID allergy
  - Formerly known as “Samter’s Triad”
- Often treated with surgery

Nasal polyps



Patient presents with one or more of following symptoms

- Sneezing
- Rhinorrhea
- Nasal congestion/nasal obstuction
- Hyposmia/anosmia
- Facial pressure/pain
- Postnasal drip
- Sore throat
- Cough
- Ear fullness
- Fever
- Myalgia

Differential Diagnosis

- Viral – acute onset
- Allergic rhinitis – more chronic, often seasonal, no infectious components, eye and lung involvement
- Acute Bacterial sinusitis – delayed onset, PURULENT DISCHARGE, nasal obstruction, pain
- Chronic sinusitis – prolonged ARS symptoms, emphasis on purulent discharge
- Migraine – pain or pressure and nasal congestion with NO purulent discharge.

Migraine

- Extremely common diagnosis in otolaryngology.
- One in 10 people estimated to have variations of migraine.
- Diagnosis in 89% of patients with “sinus headache”.
  - Schreiber CP, Hutchinson S, Webster CJ, Ames M, Richardson MS, Powers C. Prevalence of migraine in patients with a history of self-reported or physician-diagnosed "sinus" headache. Arch Intern Med. 2004 Sep 13;164(16):1769-72. doi: 10.1001/archinte.164.16.1769. PMID: 15364670.
- Usually normal CT sinus
- Often have history of pain progressing to severe headache with photophobia.
- May or may not have a prior diagnosis of migraine.

Migraine – More than a Headache

- Information Provided by Dr. Michael Teixido, MD
- Dr. Teixido is a board certified Otolaryngologist and Otologist/Neurotologist, with a special interest in medical and surgical conditions that affect hearing and balance. He is actively pursuing his goals of advancing the study and understanding of problems involving hearing and balance as a result of hereditary hearing conditions in his own family.
- Dr Teixido has developed video teaching materials that have been used by patients, students and physicians.

- https://entad.org/resources/patient-information-dr-teixido/migraine-more-than-a-headache/

Migraine or Sinusitis?

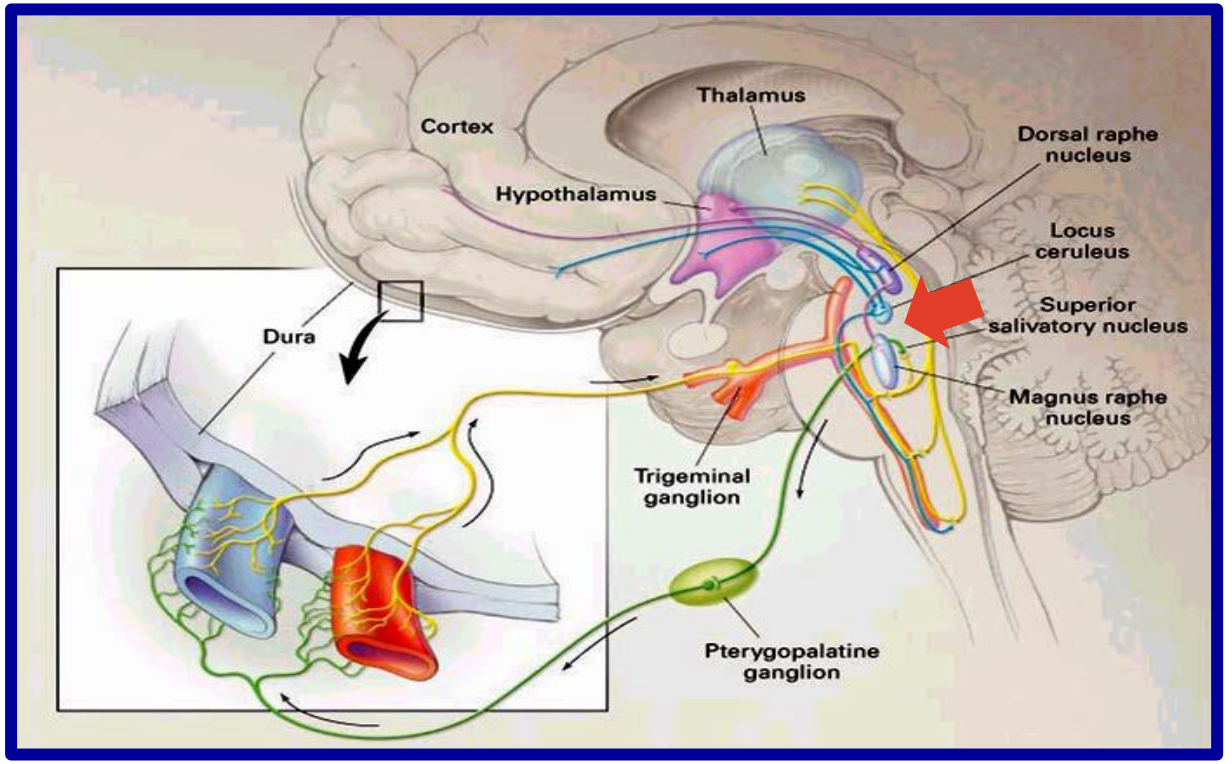
Migraine

- Congestion/ rhinorrhea only at time of headache
  - triggerable
- Facial pressure
- Symptoms last for Hours
- Infected drainage NO
- Mucosa normal
- CT usually normal
- Responds to decongestants
- Episodes prevented by substance P blockers, migraine specific meds

Sinusitis

- Congestion/rhinorrhea is perennial or seasonal
  - not triggerable
- Facial pressure
- Symptoms last for Days
- Infected drainage YES
- Mucosa allergic/ vasomotor
- CT abnormal
- Responds to decongestants
- Episodes not prevented by substance P blockers, migraine specific meds

Feedback loops in migraine



Goadsby, PJ, et al. Migraine - Current Understanding and Treatment, Jan. 24, 2002 New England Journal of Medicine, No. 4, Volume 346:257-270 Copyright (C) 2002. Massachusetts Medical Society. All rights reserved.

So, how can I be sure it's migraine?

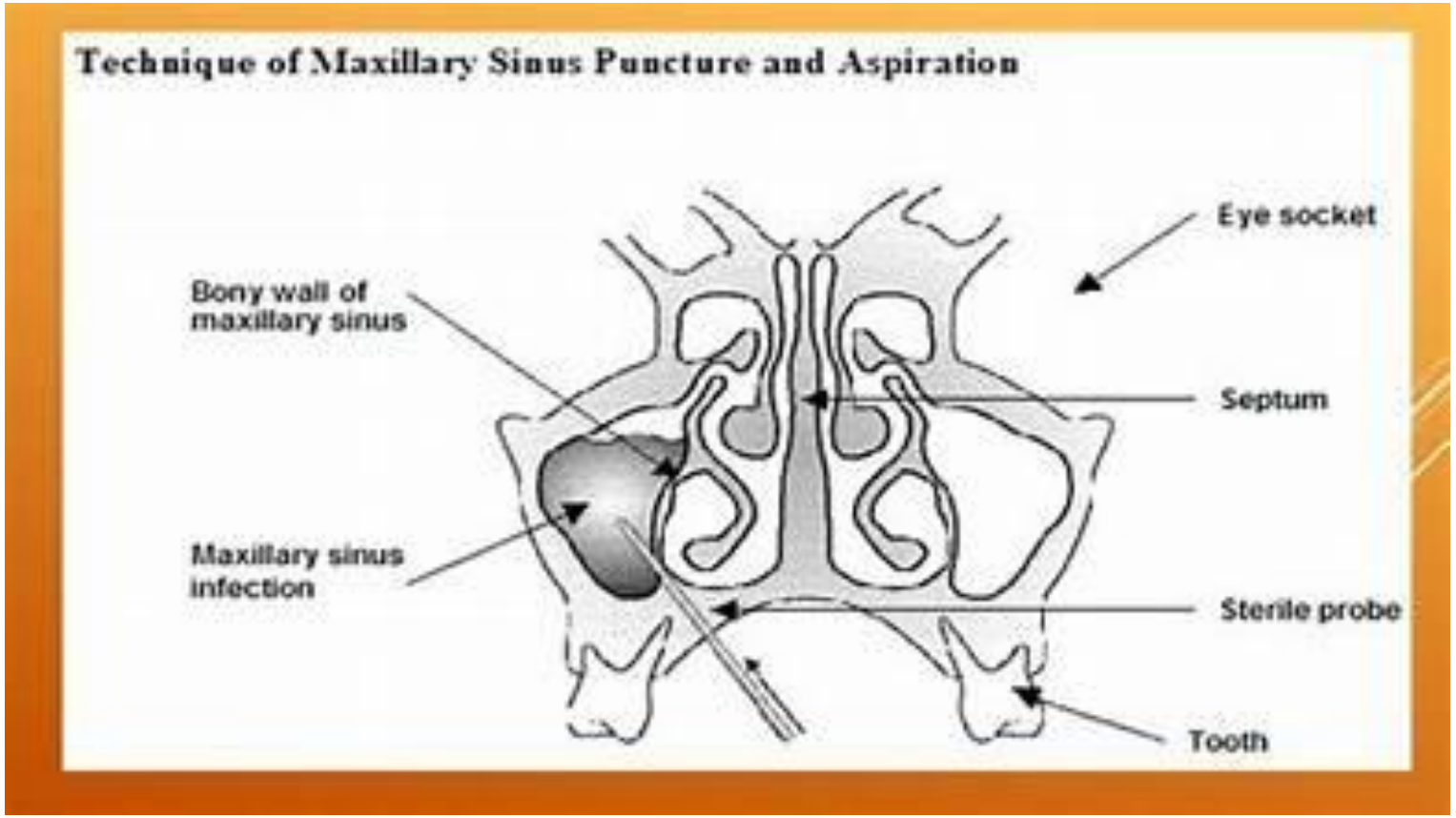
Maintain a high degree of suspicion in the patient with:

- Chronic / recurrent facial or head pain
- Associated neurological symptoms – e.g photophobia, phonophobia, severe headache, nausea, vertigo
- No response to antibiotics
- Triggerability
- Past history of migraine
- Family history of migraine or symptoms similar to the patient's

Differential Diagnosis

- Gastroesophageal reflux disease (GERD) – emphasis on postnasal drip and hoarseness. NO purulent discharge or facial pain
  - Called laryngopharyngeal (LPR) reflux when upper airway is involved
- Acute Dental abscess- facial pain but no purulent discharge. Chronic. Unilateral
- Deviated nasal septum with or without turbinate hypertrophy – nasal obstruction without pain or purulent discharge.
- Adenoiditis – nasal obstruction, sore throat, postnasal drip
  - Rare in adults
  - Extremely common in children
- Rarely
  - Tumor
  - Autoimmune disorder (i.e. granulomatosis with polyangiitis – Wegner's)

Gold standard for diagnosis of bacterial rhinosinusitis



Management of Acute Bacterial Rhinosinusitis

- Symptomatic relief
  - Nasal irrigations
  - Topical nasal corticosteroids (fluticasone)
- Watchful waiting without antibiotics for 3-5 days.
  - spontaneous recovery among participants receiving placebo or no treatment is common (46% after 1 week and 64% after 2 weeks)
- Antibiotics
  - Amoxicillin with or without clavulanate
  - Penicillin allergy
    - 3rd gen cephalosporin
    - Respiratory flouroquinolone
    - Doxycycline
- Macrolide antibiotics (including azithromycin and clarithromycin) and trimethoprim-sulfamethoxazole are not recommended. High rate of resistance.
- Duration of antibiotics : 5-7 days
- Change antibiotics if no improvement in 5 days

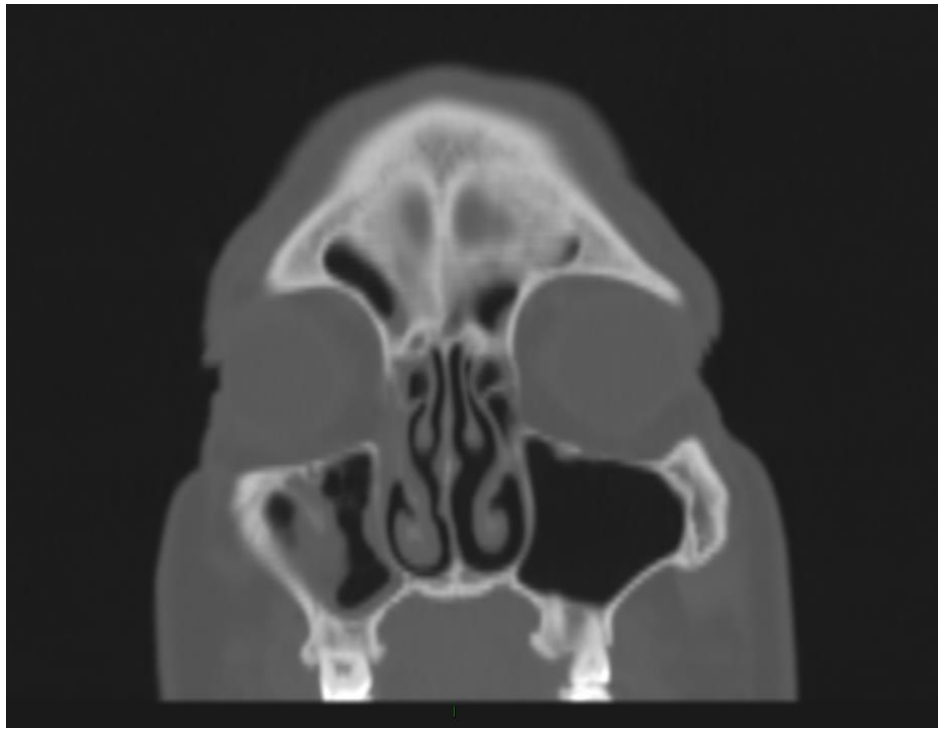
Imaging

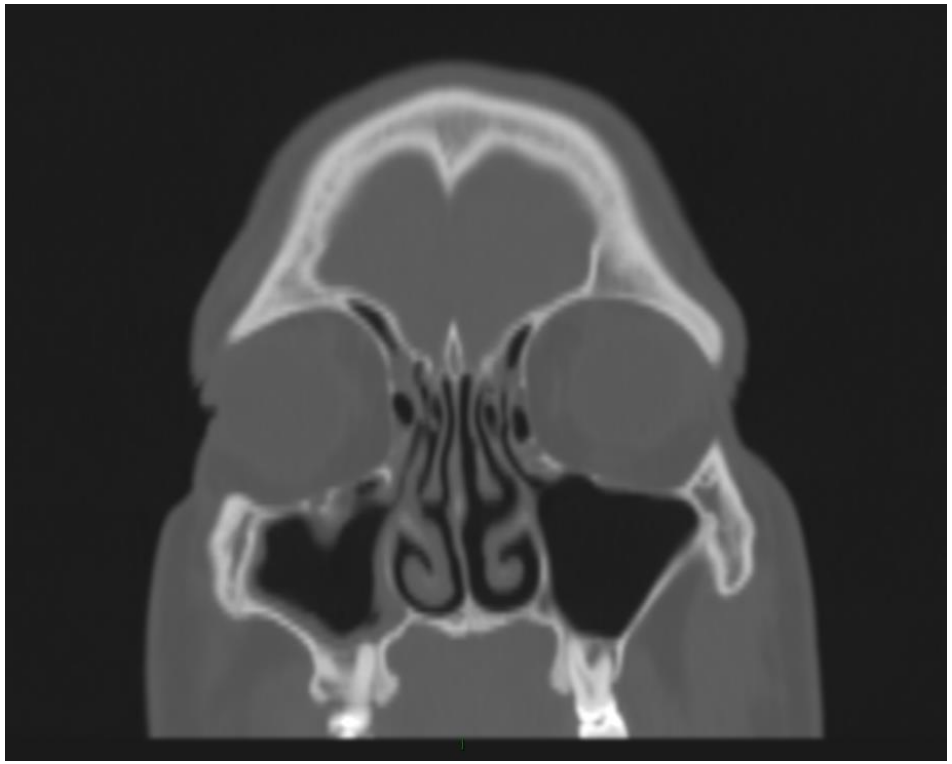
- Not recommended in the acute setting
  - 90% of viral ARS have findings on CT sinus
- Consider if patient is symptomatic more than 4 weeks despite appropriate therapy including antibiotics.
- Consider if patient has had more than 4 episodes in a year.
- CT sinus without contrast is preferred modality.
  - Plain X-rays of sinuses have very limited sensitivity and specificity
  - MRI does not define bony anatomy well
  - Radiation dose of 1-10 mSv
  - Natural radiation dose of 3 mSv/year at sea level.
  - Natural radiation dose of 3.5 mSv/year in Denver.
- Severity of CT findings do not correlate with severity of patient's symptoms
- Most insurers will authorize CT after documentation of nasal corticosteroid use for at least one month or documentation of multiple courses of antibiotics.

Case Presentation

- 63 yo male physician
- Recurrent symptoms
- H/o allergic rhinitis treated with immunotherapy in the past
- 5 year h/o symptoms after viral URTI
  - Modest purulent rhinorrhea
  - Mild nasal obstruction
  - No facial pain
  - Tickling non-productive cough
  - Mild sensation of postnasal drip
  - A few more headaches than usual
  - Only minimal fatigue
- Self medicates with amox/clav 875 bid x 10 days.

CT Sinus Coronal views





CT sinus axial view

Case presentation

- Impression
- IMPRESSION: Minimal mucosal thickening of anterior ethmoidal air cells, of the lower right frontal sinus, of the lateral recess of the left sphenoid sinus.
- Narrative
- TECHNIQUE: Multidetector CT was performed utilizing routine protocol. Iterative reconstruction techniques were utilized to optimize dose reduction. COMPARISON: None available. FINDINGS: Evidence of moderate mucosal thickening of the right maxillary sinus, no mucosal thickening of the left maxillary sinus, minimal mucosal thickening of the anterior ethmoidal air is cells and minimally of the lower right frontal sinus. Sphenoid sinus demonstrate minimal mucosal thickening of the left lateral recess. Septum: Is midline Turbinates: Unremarkable. Ostiomeatal Complexes: Unremarkable. Visualized Intracranial Contents: Unremarkable. Orbits: Unremarkable. Soft Tissues: Unremarkable. Osseous Anatomy: Unremarkable.

Case presentation Future Management

- Repeated treatment when symptomatic
- Maximize allergic rhinitis therapy
  - Fluticasone
  - Azelastine
- Humidifier in bedroom

Refer to ENT

- Routine referral
  - Abnormal CT scan
  - Nasal polyps visualized
  - Symptomatic after multiple courses of antibiotics (ideally after CT sinus)
  - To confirm migraine if patient is skeptical
  - 4 or more episodes per year

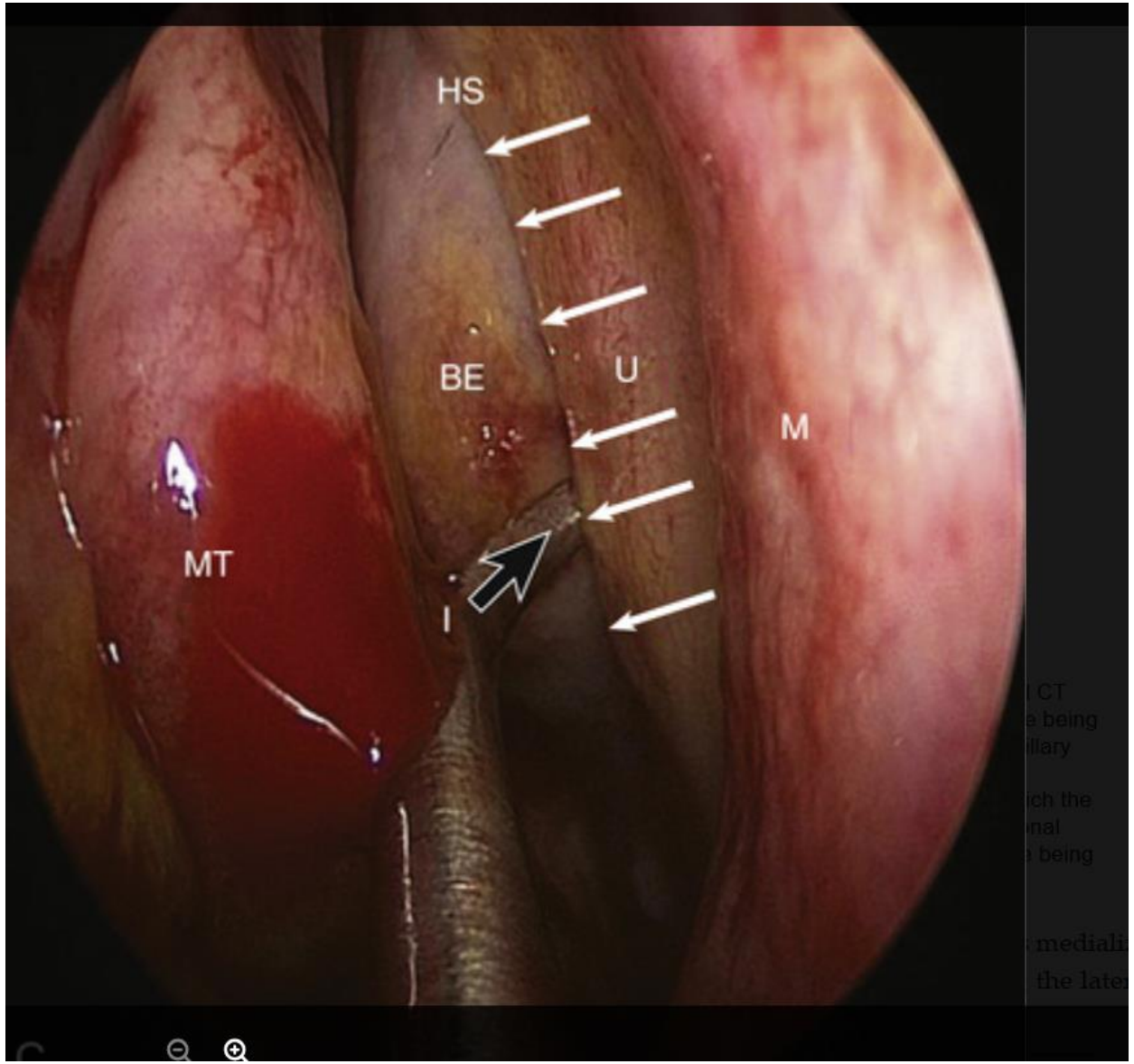
- Urgent/emergent referral for complications of sinusitis
  - Orbital involvement
  - Pott’s puffy tumor = osteomyelitis of frontal bone
  - Central nervous involvement
    - Meningitis
    - Abscess

Surgical management of chronic sinusitis

- Functional endoscopic sinus surgery

Sinus surgery

- Working in the middle meatus



Balloon Sinuplasty

- Limited use
- Not indicated in extensive sinus disease
- Not widely used in academic centers
- Can be office based
- “Balloon factories” more common in the South and Midwest
- Lucrative for the practitioner

Clinical Practice Guideline: Adult Sinusitis Update

Disclaimer

The clinical practice guideline is provided for information and educational purposes only. It is **not intended as a sole source of guidance in managing adults with sinusitis**. Rather, it is designed to assist clinicians by providing an evidence-based framework for decision-making strategies.

The guideline is **not intended to replace clinical judgment or establish a protocol for all individuals with this condition** and may not provide the only appropriate approach to diagnosing and managing this program of care. As medical knowledge expands and technology advances, clinical indicators and guidelines are promoted as conditional and provisional proposals of what is recommended under specific conditions but are not absolute.

Guidelines **are not mandates; these do not and should not purport to be a legal standard of care**. The responsible physician, in light of all circumstances presented by the individual patient, must determine the appropriate treatment. Adherence to these guidelines will not ensure successful patient outcomes in every situation.

The AAO-HNSF emphasizes that these clinical guidelines should **not be deemed to include all proper treatment decisions** or methods of care or to exclude other treatment decisions or methods of care reasonably directed to obtaining the same results.

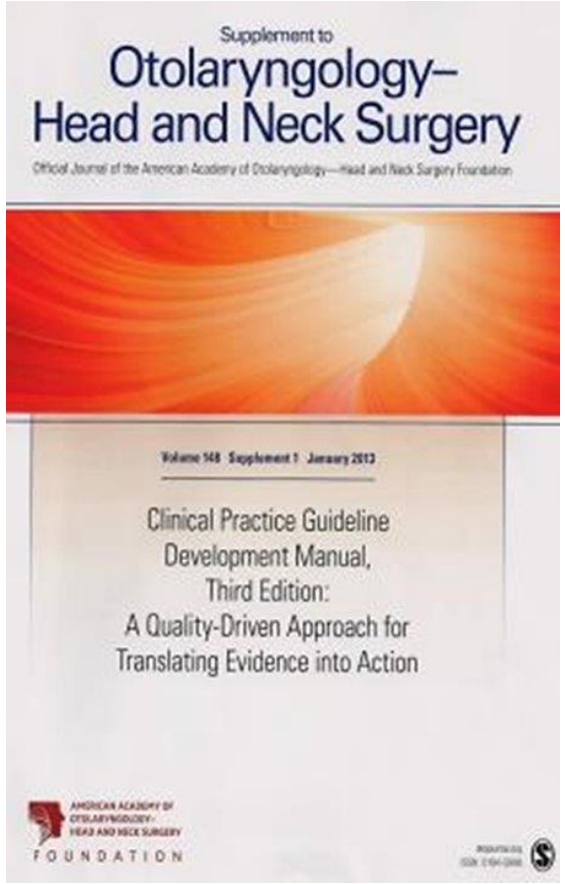
“The code is more what you'd call 'guidelines' than actual rules.”

– Barbossa, Pirates of the Caribbean.

Clinical Practice Guideline Manual: Third Edition

Rosenfeld, Shiffman, and Robertson

- **Pragmatic**, transparent approach to creating guidelines for performance assessment
- Evidence-based, multidisciplinary process leading to **publication in 12-18 months**
- Emphasizes a focused set of **key action statements** to promote **quality improvement**
- **Action statement profiles** summarize decisions in recommendations



Clinical Practice Guidelines (CPG) Goals

- Focus on **quality improvement** opportunities
- Define **actionable recommendations** for clinicians regardless of discipline to improve care
- The guideline is **not** intended to be **comprehensive**
- The guideline is **not intended to limit or restrict care** provided by clinicians to individual patients

Literature Search

- Performed by a search strategist
- New evidence included:
  - 14 Clinical Practice Guidelines
  - 194 Systematic Reviews
  - 133 Randomized Control Trials
- See section S43 for references in the published CPG document

AAO-HNSF Guideline Development Group

Spencer Payne, MD, Chair

Margo McKenna, MD, Methodologist

Jennifer Buckley, MD, American Academy of Family Physicians

Maria Colandrea, DNP NP-C CORLN FAANP FFNMRCSI, Society of Otorhinolaryngology Head-Neck Nurses

Anthony Chow, MD, Infectious Disease Society of America

Kara Detwiller, MD, American Rhinologic Society

Angela Donaldson, MD, Rhinology and Paranasal Sinus Committee

Peter Filip, MD, Complementary and Integrative Medicine

Anju T. Peters, MD, American Academy of Allergy, Asthma & Immunology

Marc Dubin, MD, Board of Directors of the AAO-HNS

Sandra Finestone, MA, PsyD, Consumers United for Evidence-Based Healthcare (CUE)

Ayesha Khalid, MD, MBA, FAAOA, American Academy of Otolaryngologic Allergy

Zarah Akrami, MPH, AAO-HNSF Staff Liaison

Nui Dhepyasuwan, MEd, AAO-HNSF Guidelines Oversight

Elizabeth Moreton, MLS, Search Strategist

Strength of Action Terms/Implied Levels of Obligation

Strength	Definition	Implied Obligation
Strong Recommendation	Benefits >> Harms Quality of Evidence excellent (Grade A or B)	Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
Recommendation	Benefits > Harms Quality of Evidence not as strong (Grade B or C)	Clinicians should also generally follow a recommendation but should remain alert to new information and sensitive to patient preferences.
Option	Quality of Evidence (Grade D) OR Benefits ≈ Harms from well-done studies (Grade A, B, or C)	Clinicians should be flexible in their decision making regarding appropriate practice, although they may set bounds on alternatives. Patient preference should have a substantial influencing role.

Adult Sinusitis Update CPG:
Summary of Key Action Statement Strength

- Strong Recommendations: 2
- Recommendations: 12
- Options: 3

External Review & Public Comment

External Review (November 2024)

- 20 organizations/AAO-HSNF committees
- 27 individuals
- 130 comments
- 50 subsequent changes

Public Comment (December 2024)

- 2 individuals
- 23 comments
- 11 subsequent changes

Purpose and Target Audience

- **PURPOSE**: Identify quality improvement opportunities in managing adult rhinosinusitis, improve diagnostic accuracy for adult rhinosinusitis, promote judicious use of systemic and topical therapy, and promote appropriate use of ancillary tests to confirm diagnosis and guide management, including radiography, nasal endoscopy, computed tomography, and testing for allergy and immune function
- **DEFINITION**: of Rhinosinusitis (CRS): symptomatic inflammation of the paranasal sinuses and nasal cavity
  - Uncomplicated rhinosinusitis: Rhinosinusitis without clinically evident extension of inflammation outside the paranasal sinuses and nasal cavity at the time of diagnosis
- **TARGET PATIENT**: Aged 18 years or older with a clinical diagnosis of uncomplicated rhinosinusitis
- **TARGET AUDIENCE**: Clinicians who diagnose and manage adults with rhinosinusitis

Statement 1A. Differential Diagnosis of Acute Rhinosinusitis

Clinicians should distinguish presumed acute bacterial rhinosinusitis (ABRS) from acute rhinosinusitis caused by viral upper respiratory infections and noninfectious conditions. A clinician should diagnose ABRS when (a) symptoms or signs of acute rhinosinusitis (purulent nasal drainage accompanied by nasal obstruction, facial pain-pressure-fullness, or both) persist without evidence of improvement for at least 10 days beyond the onset of upper respiratory symptoms, or (b) symptoms or signs of acute rhinosinusitis worsen within 10 days after an initial improvement (double worsening).

- Policy Level: Strong Recommendation
- Quality Improvement Opportunity: Avoid inappropriate use of antibiotics for presumed viral infections
- Level of Confidence in Evidence: Medium
- Aggregate Evidence Quality: Grade B, Systematic reviews, diagnostic studies with minor limitations regarding signs and symptoms associated with acute bacterial rhinosinusitis (ABRS)
- Value Judgments: Importance of avoiding inappropriate antibiotic treatment of viral or non-bacterial illness; emphasis on clinical signs and symptoms for initial diagnosis; importance of avoiding unnecessary diagnostic tests

Statement 1B. Radiologic Imaging and Acute Rhinosinusitis

Clinicians should not obtain radiologic imaging for patients who meet diagnostic criteria for acute rhinosinusitis unless a complication or alternative diagnosis is suspected.

- Policy Level: Recommendation (against)
- Quality Improvement Opportunity: Avoid costly diagnostic tests that do not improve diagnostic accuracy yet expose the patient to unnecessary radiation
- Level of Confidence in Evidence: High
- Aggregate Evidence Quality: Grade B, diagnostic studies with minor limitations
- Value Judgments: Importance of avoiding unnecessary radiation and cost in diagnosing acute rhinosinusitis

Statement 2. Symptomatic Relief of Viral Rhinosinusitis (VRS)

Clinicians may recommend analgesics, topical intranasal steroids, and/or nasal saline irrigation for symptomatic relief of VRS.

- Policy Level: Option
- Quality Improvement Opportunity: To encourage consideration of supportive therapies that may improve quality of life for individuals suffering from VRS and furthermore support the avoidance of unnecessary antibiotics in viral disease
- Level of Confidence in Evidence: Medium
- Aggregate Evidence Quality: Grade B and C, randomized controlled trials with limitations and cohort studies
- Value Judgments: A desire to call attention to VRS as a subset of the “common cold,” yet distinct from ABRS, that may benefit from explicit diagnosis and discussion of management options for symptomatic relief
- Intentional Vagueness: The specific “symptomatic relief” is at the discretion of the clinician and patient, but should not include antibiotics

Statement 3. Symptomatic Relief of Acute Bacterial Rhinosinusitis (ABRS)

Clinicians may recommend analgesics, topical intranasal steroids, and/or nasal saline irrigation for symptomatic relief of ABRS.

- Policy Level: Option
- Quality Improvement Opportunity: Promote interventions that may relieve ABRS symptoms (analgesics, saline irrigation, topical intranasal steroids) and discourage interventions with questionable, unknown or unproven efficacy (systemic steroids, decongestants, antihistamines, guaifenesin)
- Level of Confidence in Evidence: Medium
- Aggregate Evidence Quality: Grade A, systematic review of RCTs for topical nasal steroids; Grade B, randomized controlled trials with heterogeneous populations, diagnostic criteria, and outcomes measures for saline irrigation and systemic steroids; grade D, first principles, for analgesics, decongestants, antihistamines (in non-atopic patients) and guaifenesin
- Value Judgments: Provide symptomatic relief while minimizing adverse events and costs
- Intentional Vagueness: We use the broad term “symptomatic relief” to acknowledge there are several interventions available for this purpose and to encourage a conversation between clinicians and patients about which specific intervention(s) may be best for their specific ABRS symptoms

Statement 4. Initial Management of Acute Bacterial Rhinosinusitis (ABRS)

Clinicians should offer watchful waiting (without antibiotics) for adults with uncomplicated ABRS with assurance of follow-up. The duration of watchful waiting may depend on the factors and timing under which the diagnosis was originally made.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Make explicit to clinicians and patients that not prescribing antibiotics for clinically diagnosed ABRS is an appropriate initial management strategy given the spontaneous improvement that many patients will experience and the potential for adverse effects when antibiotics are prescribed
- Level of Confidence in Evidence: Medium
- Aggregate Evidence Quality: Grade A, multiple systematic reviews of randomized controlled trials with some heterogeneity in diagnostic criteria and illness severity
- Value Judgments: Perception by the GUG that watchful waiting, without antibiotics, is an underused strategy for initial management of uncomplicated ABRS, despite existing guidelines and systematic reviews that support this approach
- Intentional Vagueness: The prior guideline made no differentiation on severity of disease. While the exact definition of “severepABRS” remains unclear, the GUG felt that the specific approach to those patients may be nuanced, especially considering no evidence specifically for this subpopulation

Statement 5. Choice And Duration of Antibiotic For Acute Bacterial Rhinosinusitis (ABRS)

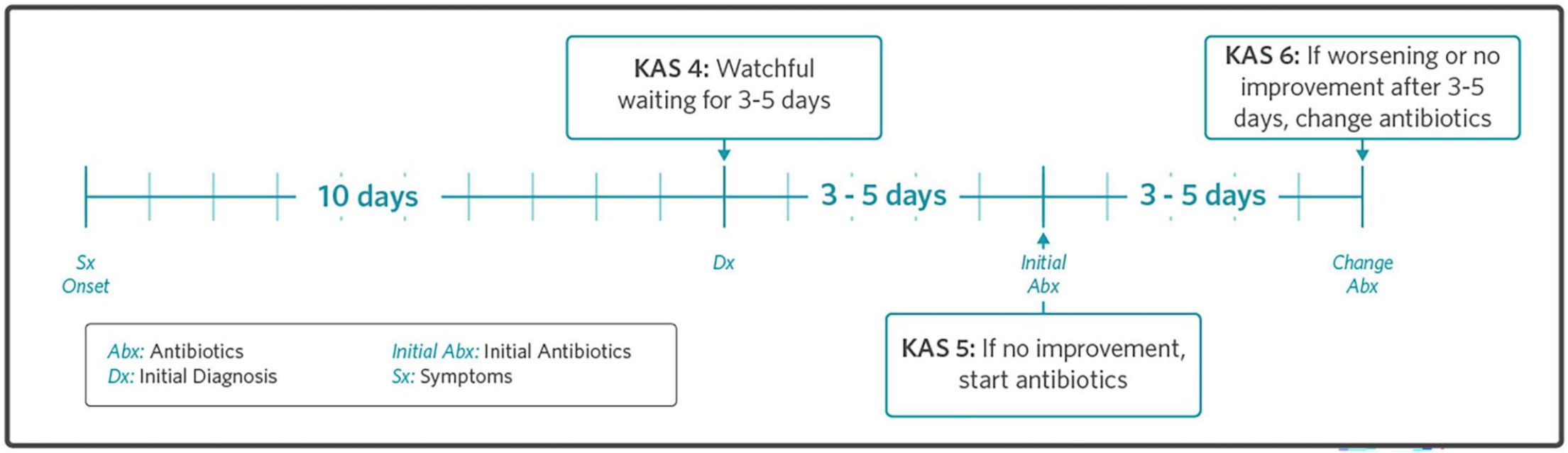
If a decision is made to treat ABRS with an antibiotic agent, the clinician should prescribe amoxicillin with or without clavulanate as first-line therapy for 5-7 days for most adults.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Make care safer and more affordable by discouraging initial prescribing of antibiotics other than amoxicillin, with or without clavulanate, that may have lower or comparable efficacy but more adverse events and higher cost
- Level of Confidence in Evidence: Moderate regarding choice of antibiotic but lower regarding the optimal duration of antibiotic therapy because of limited supporting evidence and statistical power
- Aggregate Evidence Quality: Grade A, systematic reviews of randomized controlled trials with heterogeneity and noninferiority design
- Value Judgments: Promote safe and cost-effective initial therapy
- Intentional Vagueness: Whether to prescribe amoxicillin or amoxicillin-clavulanate is at the discretion of the clinician. Further, we refer to “most” adults when recommending 5 days of therapy, based on systematic reviews showing comparable outcomes with longer courses of therapy, but a longer course of therapy may be appropriate for more severe illness or when symptoms persist beyond the initial 5 days of therapy

Statement 6. Treatment failure for Acute Bacterial Rhinosinusitis (ABRS)

If the patient fails to improve or worsens despite being on an appropriate antibiotic for 3-5 days, the clinician should reassess the patient to confirm ABRS, exclude other causes of illness, and detect complications. If ABRS is confirmed, the clinician should change the antibiotic.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Engage patients as partners in care and promote effective communication by defining realistic expectations regarding clinical response to initial management of ABRS and by articulating clearly when reassessment of the patient is warranted
- Level of Confidence in Evidence: Moderate
- Aggregate Evidence Quality: Grade D, expert opinion and first principles for changing therapy, including the use of rescue antibiotic in randomized controlled trials
- Value Judgments: Avoid excessive classification as treatment failures because of a premature time point for assessing outcomes; emphasize the importance of worsening illness in the definition of treatment failure
- Intentional Vagueness: How to define “failure to improve” or “worsening” is left to the judgment of the clinician and patient, but there was group consensus that fluctuations in signs and symptoms within the first 48 to 72 hours of initial therapy were not uncommon and not necessarily indicative of failure


KAS 4: Watchful waiting for 3-5 days
KAS 6: If worsening or no improvement after 3-5 days, change antibiotics
10 days
3 - 5 days
3 - 5 days
Sx Onset
Dx
Initial Abx
Change Abx
KAS 5: If no improvement, start antibiotics
Abx: Antibiotics
Dx: Initial Diagnosis
Initial Abx: Initial Antibiotics
Sx: Symptoms

Statement 7a. Diagnosis of Chronic Rhinosinusitis (CRS) or Recurrent Acute Rhinosinusitis (ARS)

Clinicians should distinguish CRS and recurrent ARS from isolated episodes of acute bacterial rhinosinusitis and other causes of sinonasal symptoms.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Promote effective communication and coordination of care by raising awareness of the distinct clinical entities of CRS and recurrent ARS so that appropriate management strategies may be implemented
- Level of Confidence in Evidence: High
- Aggregate Evidence Quality: Grade C, cohort and observational studies
- Benefit: Distinguish conditions that might benefit from additional management strategies than isolated cases of ABRS
- Risks, Harms, Costs: Potential misclassification of illness because of overlapping symptomatology with other illnesses; no cost
- Value Judgments: Importance of accurate diagnosis

Statement 7b. Objective Confirmation of a Diagnosis Of Chronic Rhinosinusitis (CRS)

The clinician should confirm a clinical diagnosis of CRS with objective documentation of sinonasal inflammation, which may be accomplished using anterior rhinoscopy, nasal endoscopy, or computed tomography.

- Policy Level: Strong Recommendation
- Quality Improvement Opportunity: Make care safer by reducing overdiagnosis of CRS based on self-reported symptoms
- Level of Confidence in Evidence: High
- Aggregate Evidence Quality: Grade B, cross-sectional studies
- Value Judgments: Strong consensus by the GUG that the need for objective documentation of sinonasal inflammation is likely underappreciated and underperformed, despite its critical role in substantiating a diagnosis of CRS
- Intentional Vagueness: Which of the three listed diagnostic modalities to use is not stated; MRI if already available can be used to document sinonasal disease but CT scanning is the preferred imaging modality. Diagnosis may necessitate more than one modality. The role of biomarkers for diagnosis is evolving but not yet clearly defined

Statement 8. Modifying Factors

Clinicians should assess the patient with chronic rhinosinusitis or recurrent acute rhinosinusitis for multiple chronic conditions that would modify management such as asthma, cystic fibrosis, immunocompromised state, aspirin-exacerbated respiratory disease, and ciliary dyskinesia.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Promote effective treatment by identifying comorbid conditions that are known to accompany CRS and recurrent ARS, the knowledge of which would improve management of the sinusitis, and conversely, management of sinusitis may improve the associated chronic condition (asthma)
- Level of Confidence in Evidence: Medium
- Aggregate Evidence Quality: Grade B, multiple systematic reviews and observational studies
- Value Judgments: Consensus that identifying and managing modifying factors will improve outcomes
- Intentional Vagueness: The method of assessing for these conditions is at the discretion of the clinician and may include history, physical examination, or diagnostic tests

Statement 9. Testing for Allergy and Immune Function

The clinician may obtain testing for allergy and immune function in evaluating a patient with chronic rhinosinusitis or recurrent acute rhinosinusitis.

- Policy Level: Option
- Quality Improvement Opportunity: Promote effective treatment and improve patient quality of life by identifying, and managing, allergies that often coexist with CRS and recurrent ARS and have overlapping symptoms that may make diagnosis difficult using strictly clinical criteria without testing
- Level of Confidence in Evidence: Medium
- Aggregate Evidence Quality: Grade C, systematic review of observational studies
- Value Judgments: Need to balance detecting allergy in a population with high prevalence vs limited evidence showing benefits of allergy management on rhinosinusitis outcomes
- Intentional Vagueness: The methods and scope of testing for allergy and immune function are at the clinician's discretion

Statement 10. Chronic Rhinosinusitis (CRS) with Polyps

The clinician should confirm the presence or absence of nasal polyps in a patient with CRS.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Improve awareness of the prevalence of polyposis in patients with CRS and their role as a modifying factor for further diagnostic assessment and treatment
- Level of Confidence in Evidence: Medium
- Aggregate Evidence Quality: High, Grade A - Systematic review of multiple RCT
- Value Judgments: Under appreciation of the importance of polyps as a modifying factor for CRS; perception of diagnostic uncertainty in the ability to detect or exclude the presence of polyps
- Intentional Vagueness: The method of confirming the diagnosis is left to the discretion of the clinician, provided that a high degree of diagnostic certainty is achieved

Statement 11. Topical Intranasal Therapy For Chronic Rhinosinusitis (CRS)

Clinicians should recommend saline nasal irrigation, topical intranasal corticosteroids, or both for symptom relief of CRS.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Promote effective and treatment and coordination of care by addressing underutilization, raising awareness of efficacy, reducing confusion over delivery method, frequency, and duration; and by educating patients on optimal administration
- Level of Confidence in Evidence: High
- Aggregate Evidence Quality: Grade A, systematic reviews of RCTs
- Benefit: Symptomatic relief, promoting awareness of effective over-the-counter interventions, discouraging improper and ineffective usage, and avoiding adverse events from systemic therapies
- Risks, harms, costs: Intranasal discomfort, burning, stinging; epistaxis; direct costs of saline or steroid
- Intentional Vagueness: The choice of saline, steroid, or both is a shared decision; it is not clear how long the treatment should last as the natural history is unknown

Statement 12. Antifungal Therapy For Chronic Rhinosinusitis (CRS)

Clinicians should not prescribe topical or systemic antifungal therapy for patients with CRS.

- Policy Level: Recommendation (against therapy)
- Quality Improvement Opportunity: Discourage use of antifungal therapy for CRS based on lack of efficacy and presence of significant cost and adverse effects
- Level of Confidence in Evidence: High
- Aggregate Evidence Quality: Grade A, systematic reviews of RCTs
- Benefit: Avoid cost of ineffective medications, avoid unnecessary adverse events, direct management away from ineffective therapy to beneficial therapy (opportunity cost), avoid selection of resistant fungi and alterations of sinonasal flora
- Value Judgements: Antifungal therapy is frequently used, with regional variations, for treating CRS despite good evidence of no efficacy

Statement 13a. Biologics and Lack of Benefit for CRS without Polyps

Clinicians should not routinely prescribe biologicals (including, but not limited to, monoclonal antibodies such as dupilumab, mepolizumab, or omalizumab) for the treatment of adults with CRS without polyps

- Policy Level: Recommendation (against therapy)
- Quality Improvement Opportunity: Avoid biological use in patients with CRS without polyps for whom benefits would be uncertain as this patient population was not evaluated in the published randomized trials to date
- Level of Confidence in Evidence: Moderate
- Aggregate Evidence Quality: Grade A, with exclusion of patients without polyps from clinical trials
- Value Judgements: Perception by GUG that biologicals are used in practice for adults with CRS without polyps despite an absence of evidence showing benefit for this population, the importance of accurate diagnosis and the perception of diagnostic uncertainty in the ability to detect or exclude the presence of polyps
- Intentional Vagueness: The word "routinely" is included to avoid a legal standard and recognizes that some patients may have specific conditions that suggest a benefit of biologicals and that future, ongoing, randomized trials may demonstrate benefit

Statement 13b. Biologics and Patient Education

Clinicians or their designee should educate patients with CRS and nasal polyps about the role of biologicals as a means to improve disease-specific quality of life when either prior medical and surgical therapy has failed OR when surgery is not a viable option because of disease status or patient preference.

- Policy Level: Recommendation
- Quality Improvement Opportunity: Promoting effective physician/patient communication while ensuring that patients are engaged as partners in their care
- Level of Confidence in Evidence: High
- Aggregate Evidence Quality: Grade A, systematic reviews of RCTs regarding patients who fail prior medical and surgical therapy, and C, cohorts of patients within RCTs who have not had prior sinus surgery
- Value Judgements: Perception that despite benefits shown in randomized trials, there is a lack of clarity about appropriate patient selection for biologicals and the nuances of different drugs, treatment regimens, and approaches. Physician and patient perception and understanding of short and intermediate complications as they may relate to potentially unknown long-term complications can affect education and the interpretation of it
- Intentional Vagueness: The extent of "surgery" ideally refers to endoscopic sinus surgery that widely opens all involved paranasal sinuses; whether something is a "viable" or "recommended" option is a personalized decision between the clinician and patient, that takes into account the underlying disease status, risks and benefits of alternative approaches, and the patients values and preferences

Statement 14. Antibiotics and CRS

Clinicians should not routinely prescribe antimicrobial therapy for adults with CRS without acute exacerbation OR as a mandatory prerequisite for paranasal sinus imaging or surgery

- Policy Level: Recommendation (against therapy)
- Quality Improvement Opportunity: Make care safer by avoiding ineffective therapy and promote effective coordination of care by avoiding unwarranted delays in imaging studies or surgery
- Level of Confidence in Evidence: High
- Aggregate Evidence Quality: Grade A
- Value Judgements: Perception by GUG of inappropriate use of antimicrobials in patients with CRS and additional perception that many 3rd party payers arbitrarily require antimicrobial therapy, sometimes for weeks or months, prior to authorization for sinonasal imaging or surgery

Research Needs

1. Refine and validate diagnostic criteria for VRS and ABRS.
2. Determine the validity of diagnosing ABRS by patient history without confirmatory physical examination.
3. Assess the validity of diagnosing ABRS before 10 days based on persistent fever plus concurrent purulent nasal discharge.
4. Standardize the definition of “severe” illness in patients diagnosed with ABRS and determine whether it is a valid and useful distinction for diagnosis in adults.
5. Evaluate the role of analgesic therapy in managing rhinosinusitis and the comparative efficacy of different drug classes.
6. Assess the benefits of symptomatic therapy for VRS in properly conducted RCTs.
7. Assess the benefits of various symptomatic therapies for ABRS in properly conducted RCTs.
8. Confirm previous findings regarding optimum salinity, pH, and regimen for administering nasal saline irrigation.
9. Assess the impact of clinician beliefs about antibiotic prescribing for ABRS and how they might affect patient preferences and satisfaction.
10. Conduct RCTs with superiority design that emphasize time to improvement/resolution, not just binary outcomes at fixed time points.

Research Needs

11. Perform RCTs of antibiotics vs placebo using strict diagnostic criteria and stratify by clinical severity (ie, mild, moderate, or severe).
12. Perform RCTs to assess the comparative efficacy of different antibiotics for initial management of uncomplicated ABRS.
13. Conduct RCTs to determine the efficacy of adjuvant therapy (nasal steroids, antihistamines, decongestants) in combination with antibiotics.
14. Obtain greater evidence for which ABRS patients are most appropriate for short-course antibiotic regimens.
15. Perform RCTs examining antibiotic efficacy among various patient subpopulations.
16. Include quality-of-life and other patient-reported outcome measures as study outcomes in RCTs.
17. Further assess the diagnosis of CRS and recurrent acute rhinosinusitis in primary care settings, rather than specialty clinic settings, because of biased disease prevalence.
18. Conduct investigations to determine the underlying causes of the inflammation that characterizes CRS and to determine the value of individualizing therapy based on this information.
19. Evaluate the role of inflammatory markers as a diagnostic biomarker to differentiate neurological from infectious etiologies.

Research Needs

20. Determine how symptoms and QOL scores correlate to objective findings in adult CRS patients.
21. Perform scoping review of the diagnostic criteria for CRS from international papers, including differences, consistencies and best practices among the different diagnostic criteria.
22. Determine what features (exam, symptoms) are most predictive of paranasal sinus disease/CRS and should initiate an otolaryngology referral?
23. Conduct longitudinal studies to look at effects of different therapies (medical and surgical) over time. What sinonasal diseases or symptoms can be cured vs. controlled?
24. Determine a best overall care plan that includes surgery and biologic medications.
25. Investigate which modes of education promote the highest level of compliance with or adherence to the entire treatment plan.
26. Conduct long term studies to evaluate the effects of macrolide antibiotics for CRS treatment and help determine a recommended treatment length and risk profile.
27. Determine the pathogenesis of CRS and the association of allergic rhinitis and CRS.
28. Establish the benefit of testing for allergy and immune function in subgroups of patients with CRS.
29. Perform RCTs to address outcomes of allergy management in patients with CRS or recurrent acute rhinosinusitis.

Research Needs

30. Perform RCTs to address outcomes of detecting and managing immunodeficient states in patients with CRS or recurrent acute rhinosinusitis.
31. Validate nasal endoscopy scoring systems.
32. Assess the impact of intravenous immonoglobulin (IVIG) on CRS or recurrent acute rhinosinusitis in patients with humoral immune deficiency.
33. Conduct longitudinal studies with comparable control groups to evaluate long-term benefits of adjunctive therapies in the secondary prevention of CRS and recurrent acute rhinosinusitis.
34. Perform quantitative studies evaluating the impact of healthy lifestyle changes, such as smoking cessation, dietary modification, and exercise on CRS.
35. Conduct RCTs of saline nasal irrigations as short-term vs long-term treatment for recurrent acute and CRS.
36. Define what is optimal medical therapy, including the efficacy of certain medications over others and the amount of time required for treatment.
37. Further assess the cost-effectiveness of management strategies for CRS and their impact on resource utilization and patient quality of life.
38. Perform additional RCTs to clarify the impact of antibiotic therapy on CRS outcomes.
39. Evaluate the optimal use of biologics with respect to outcomes, costs and timing related to surgery.

For more information and additional resources, visit:

https://www.entnet.org/quality-practice/quality-products/clinical-practice-guidelines/cpg-adult-sinusitis/

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