Chronic Sinusitis Update

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• None.

Learning Objectives:

• Define Chronic Rhinosinusitis.
• Employ the appropriate evaluation and imaging measures to accurately diagnose chronic rhinosinusitis.
• Apply current clinical guidelines to management and treatment of chronic rhinosinusitis.
Sinusitis Facts

- Affects 1 in 8 adults in U.S.
- 30 million diagnoses per year
- Greater than $11 billion per year spent managing acute and chronic sinusitis
- 1 in 5 antibiotics prescribed in adults are for sinusitis
- Significant variation in clinician management

Acute Rhinosinusitis

Up to 4 weeks of purulent nasal drainage (anterior, posterior, or both) accompanied by nasal obstruction, facial pain-pressure-fullness, or both.

- Purulent nasal discharge is cloudy or colored, in contrast to the clear secretions that typically accompany viral upper respiratory infection, and may be reported by the patient or observed on physical examination.
- Nasal obstruction may be reported by the patient as nasal obstruction, congestion, blockage, or stuffiness, or may be diagnosed by physical examination.
- Facial pain-pressure-fullness may involve the anterior face, periorbital region, or manifest with headache that is localized or diffuse.

Chronic Rhinosinusitis

- Twelve weeks or longer of two or more of the following signs and symptoms:
  - mucopurulent drainage (anterior, posterior, or both).
  - nasal obstruction (congestion).
  - facial pain-pressure-fullness, or
  - decreased sense of smell.
- AND inflammation is documented by one or more of the following findings:
  - purulent (not clear) mucus or edema in the middle meatus or anterior ethmoid region.
  - polyps in nasal cavity or the middle meatus, anterior.
  - radiographic imaging showing inflammation of the paranasal sinuses.
CRS Triad

1. Nasal congestion
2. Post nasal drainage
3. Decreased sense of smell

Evaluation of Chronic Rhinosinusitis

History and Physical
Key Questions

- Recurrent infections, returning to a healthy state in between infections?
- Chronic symptoms with no change worsening or improvement? Chronic symptoms with acute exacerbations?
- What is a typical infection feel like? Ask them to be very specific and detailed. Avoid accepting vague answers like “head feels full”, “my sinuses are congested”, “I get a sinus headache”…ask them what they mean!
- Improvement with antibiotics? Steroids? Surgery?
- If they have Asthma, is it worse during a sinus infection?

Physical Exam

- Complete Head and Neck Physical exam
  - Anterior rhinoscopy
  - External appearance of the face/nose
  - Posterior pharynx
  - Decongest the nose if necessary
- Nasal Endoscopy if available
  - Important to visualize the middle meatus and sphenoid recess.
  - Pus, mucus, polyps, edema?

Laboratory Testing

- Serum IgE
- CBC w/ differential
- Allergy testing (more helpful when you rule OUT chronic rhinosinusitis, but have symptoms and findings more fitting for allergic rhinitis)
Radiographic Studies

- CT scan w/o contrast in most circumstances
- MRI w/ and w/o contrast for masses

Other Testing

- Allergy Testing
  - Sweat Chloride Testing if polyps present and under 18 yo
  - Cilia evaluation (Kartagener’s/Primary Ciliary Dyskinesia)
- Immune System Evaluation
  - Pneumococcal Challenge
  - Immunoglobulin levels
  - Compliment testing

Maximal Medical Therapy

- Varies between providers, but same general concept.
- No data to show what is BEST.
- Typically will consist of an extended course of culture directed or broad spectrum antibiotics (3-6 weeks) and burst/taper of Prednisone if significant polypoid disease present. High volume saline irrigations and nasal steroid sprays may also be implemented.
Timing of Imaging

- Avoid getting CT scan when patient is feeling well or in between infections.
- If the patient is “well” when you are seeing them, order CT during next “infection”.
- If patient feels “infected”, but no signs on exam, I will order CT scan before putting them on a lengthy medical treatment.
- If patient feels “infected”, and there is evidence of pus, I sometimes will order a CT to know what I am starting with and obtain a post treatment scan in about 4-6 weeks to assess the response.

Decision for Surgery

- Give realistic expectations for what they can expect to improve after surgery.
- This is especially important for symptoms such as headache and facial pain. I always tell patients, those symptoms may NOT improve, even with addressing their known chronic rhinosinusitis.
- Also important to set up expectations for after surgery. This is particularly important for patients with Eosinophilic based inflammation.

Eosinophilic Chronic Rhinosinusitis (ECRS)

- In same spectrum of disease as Allergic Fungal Sinusitis.
- Eosinophilic inflammation is the underlying problem.
- MUST HAVE PATHOLOGIST COMMENT ON PRESENCE OF INCREASED EOSINOPHILS.
AFS Criteria

- 1. Characteristic CT scan
- 2. Nasal Polyps
- 3. Type 1 Hypersensitivity
- 4. Eosinophils
- 5. Presence of Fungus

AFS Facts

- Likely genetic base.
- Can occur in children, but more often in adulthood.
- Can affect one family member in a household with same environmental exposure as others, but not affect the others.
- Can be unilateral at presentation. 2nd side may develop at some point in the future.
- At least 50% associated with Asthma, more than prevalence in general population.
- We think this requires some “event” to trigger the eosinophilic response.

ECRS 4/5 Patient
ECRS

- If the patient has eosinophils in the pathology report, classify them by the number of AFS criteria they meet. This may serve as a prognostic indicator.

Eosinophil Count Data

- AFS patients over 5 years; 30 patients with 2/5 criteria (Eosinophils and Polyps), 21 patients with 4-5/5 criteria.
- Retrospectively performed EC on their tissue from surgery.
- EC 2/5: 70.66/hpf; EC 4-5/5: 157.43 (P<0.0001)
- 34% of 2/5 patients had a Stage III recurrence compared to 74% of 4-5/5 patients (P<0.0171).
- Average length of follow up, 27 mo for 2/5 and 40 mo for 4-5/5.
- Many 4-5/5 patients and some 2/5 had “too numerous to count classification” >250/hpf
Stage I

- Edema

Stage II

- Polypoid Edema

Stage III
Treatment Paradigm

• Surgery
• Treat with high dose Prednisone until mucosa is Stage 0.
• Transition onto Pulmicort (Budesonide) irrigations and taper off of Prednisone.
• Monitor closely for signs of early recurrences and adjust treatment appropriately.
• Recurrences will start to occur BEFORE patient shows symptoms. Recurrences can occur up to 2 years post op, so long term follow up is needed.

Prednisone Dosing

• Need 0.1 mg of Prednisone per lb of body weight to have effect on sinuses. i.e. 20 mg/day for 200 lb patient
Leukotriene Receptor Antagonist

- Singulair and Zyflo
- Zyflo is particularly effective in “adult onset polyps”, however chance for liver toxicity and very expensive.

Antifungals

- Not needed for AFS.
- May have some anti-inflammatory contribution, but I do not use them frequently in my practice.

Office based treatments

- Topical application/irrigation of sinuses with antibiotics.
- Topical application of antibiotic/steroid gels. ALLCare pharmacy (Lyons, Georgia).
Polyp Vac

Propel Steroid Eluding Stents

- Possible alternative to using oral steroids.

Conclusions
- Careful history including specific symptoms and pattern of symptoms.
- Prove sinus inflammation with either endoscopy or CT scan.
- If patient requires surgery, confirm or deny presence of increased eosinophils.
- If eosinophils present, counsel patient on prognosis and need for extended medical therapy/ follow up.
Questions?

- Thank you!