

## Evaluation and Treatment of Chronic or Recurrent Nasal Congestion

15-20% of population suffer from chronic or recurrent nasal congestion.

I. **Etiology** -vast majority allergic rhinitis, followed by chronic or recurrent sinusitis and vasomotor rhinitis. Etiology is determined primarily through careful history taking, particularly aggravating and alleviating factors (e.g. exposures, time of year).

A. **Allergic Rhinitis** = IgE mediated degranulation of mast cells in response to antigen exposure.

- onset usually in childhood and family hx often positive.
- congestion frequently accompanied by sneezing, profuse watery discharge, itching of nose, throat and eyes, tearing and post nasal drip.
- physical exam may reveal pale edematous nasal mucosa and conjunctival injection.
- serum IgE levels and eosinophil count may be elevated.

1. Seasonal allergic rhinitis (pollens) -patients with seasonal allergies outnumber those with perennial complaints 10:1.
  - tree pollen (March-April)
  - grass pollen (May-June)
  - ragweed (Late August-first frost)
2. Perennial allergic rhinitis (dusts, molds, animal danders) -patients have symptoms all year long.

Atopic (allergic) patients may have multiple allergies.

B. **Vasomotor Rhinitis** = most likely to abnormal autonomic responsiveness (abnormal response to alpha adrenergic tone) causing nasal submucosal vasodilation.

- appears identical to response some patients have with an alpha blocker (e.g. Prazosin) and directly opposite to response to alpha agonists (e.g. Pseudoephedrine)
- classically exacerbated by temperature or humidity change, emotional upset and/or sexual arousal.
- characterized by absence of sneezing, itching and identifiable allergen.
- nasal mucosa often appears normal.

1. Idiopathic (classic vasomotor rhinitis)
2. Rhinitis medicamentosa (overuse of topical nasal decongestants)
3. Drugs (reserpine, guanethidine, prazosin, cocaine)
4. Hormonal (congestion is a common presenting sx in hypothyroidism; also seen in pregnancy)

**C. Chronic and Recurrent Sinusitis** = rhinitis caused by persistent or recurrent bacterial infection.

-Edematous nasal mucosa from any cause can obstruct sinus ostia and promote infection.

-Therefore, sinusitis can be self-perpetuating and is often associated with allergy, recurrent colds, local irritants (e.g. cocaine, tobacco, chlorine), mechanical obstruction (e.g. polyps, deviated septum, granulomatous disease), etc.

-characterized by purulent, occasionally blood-tinged, nasal discharge, post nasal drip and cough, tiredness, and occasionally headache, facial or tooth pain which is classically exacerbated by leaning over (usually indicative of acute infxn).

Mechanical obstruction may be suggested by unilateral obstruction or discharge and is caused by:

1. Polyps –associated with ASA sensitive asthma
2. Deviated septum (most often congenital, occasionally traumatic)
3. Tumor (rare; suspect with blood tinged discharge)
4. Crusting (e.g. atrophic rhinitis -unknown etiology, mostly in women, characterized by dry atrophic mucosa with crusting and purulent discharge)
5. Foreign body (children)

Chronic sinusitis can be caused by chronic granulomatous diseases such as:

1. Sarcoidosis
2. Wegener's granulomatosis
3. Midline granuloma (rare; unknown etiology; onset in middle age with progressive ulceration of septum)

-diagnosis is usually made by ENT biopsy showing granuloma once a patient is referred for chronic sinusitis.

Chronic sinusitis can be associated with immunodeficiency:

1. Immunoglobulin deficiency (can check quantitative immunoglobulins if suspected)
2. Kartagener's syndrome (associated with bronchiectasis)
3. Immotile cilia syndromes (rare)
4. HIV

## II. Evaluation of Rhinitis

A. **History** –History is the key to diagnosis. Look for key historical factors listed above. Usually history is all that is required to make specific diagnosis.

B. **Physical** -inspect nasal mucosa preferably with nasal speculum  
-assess ability to breathe through each nostril  
-check ears and throat  
-palpate sinuses, transilluminate if able and sinusitis suggested

C. **Labs and Imaging** –Usually not done. Use selected tests in select cases.

1. Nasal smear -send dried smear to hematology for Wright's stain for eos and polys  
-can help when it is difficult to differentiate allergy vs. infection vs. vasomotor rhinitis by history alone. In general:  
Eosinophils =allergic rhinitis  
Neutrophils in abundance = sinusitis  
Absence of Eos & Polys = vasomotor rhinitis (occasionally eos are seen)
2. Skin testing (pin prick testing for allergen specific IgE) –more sensitive but less specific than serum testing.  
-usually obtained if considering allergy shots for severe or difficult to treat allergic rhinitis and to help to direct avoidance measures (however treatment and avoidance can usually proceed effectively based on history alone).
3. RAST (radioallergosorbent testing)-uses patients serum and is specific for high levels of specific IgE.  
-rarely indicated since sensitivity is low.
4. Quantitative IgE -specific for allergy but has low sensitivity.
5. Eosinophil count -specific for allergy but has low sensitivity.
6. Sinus Films -helpful if diagnosis of sinusitis suspected but not clear from hx & px.
7. Limited Sinus CT -more sensitive than routine films and better show specific areas of involvement.  
-indicated as initial test in patients for whom sinus surgery is anticipated.

## D. Referral

1. ENT -indicated in patients for whom sinus surgery is anticipated either for chronic/recurrent sinusitis or obstruction (septal deviation, polyps or suspected tumor).
2. Allergy -indicated in suspected allergic patients when skin testing, allergy shots, etc. are needed but are not available in your office.

## II. Treatment of Rhinitis

A. **Avoidance of Allergens** = cornerstone of tx in allergy. Vinyl cover for mattress, pillows in hot dryer for 30 mins monthly, and wash mattress pad in hot water monthly.

### B. Drugs et al.

1. Antihistamines –1<sup>st</sup> line for allergic. Non-sedating formulations sometimes not as helpful for allergy or sinusitis as more potent sedating forms (NNT 10 for non-sedating antihistamines). Topical antihistamine sprays (e.g. Azelastine) and nasal Atropine/Ipratropium also can be helpful. Long term antihistamine use is associated with tooth decay.

2. Topical Corticosteroid Therapy -best 2nd line tx for allergy. More potent for chronic allergy than antihistamines but increase risk of cataracts with long term use. Work well in conjunction with antihistamines; also effective at reducing inflammation and allowing drainage in chronic sinusitis. Good for vasomotor and chronic/recurrent sinusitis.

3. Daily hypertonic saline nasal irrigation –Numerous trials now demonstrate that nasal irrigation improves sinus symptoms and reduces medication requirements in recurrent sinusitis and allergic rhinitis. Mix 1/2 tsp salt +/- 1/4 tsp baking soda with 1 cup warm water & irrigate with bulb syringe or use a Neti Pot. See video: <http://www.youtube.com/watch?v=j8sDIbRAXIg>

4. Cromolyn Sodium -prevents mast cell degranulation. Effective for prophylaxis when known exposure to allergen is anticipated.

5. Hyposensitization -allergy shots stimulate production of IgG antibodies which block binding of IgE to mast cells. Useful in pts with prolonged allergic symptoms unresponsive to other therapies and works best for dust, mold and animal dander allergies.

6. Sympathomimetics -helpful adjunct in non-hypertensive patients. Best for use in sinusitis and vasomotor rhinitis. Topical spray only helpful in limited 2-3 day course.

7. Systemic steroids -indicated only rarely for severe recalcitrant recurrent or chronic sinusitis to reduce inflammation and allow drainage.

8. Antibiotics -A 6-8 week course of Clinda or other drug with good anaerobic coverage may be indicated for chronic sinusitis along with adjunctive therapy prior to consideration of ENT referral for surgical drainage.

### Questions:

1. What is the best diagnostic test for allergic rhinitis?
2. What is the best first line therapy for allergic rhinitis?
3. What conditions can predispose you to develop recurrent or chronic sinusitis?
4. What are some common causes of vasomotor rhinitis?
5. When should you refer someone to an ENT doctor?
6. When should you refer someone to an allergist?
7. When should you get a sinus CT?
8. What is the best test to identify specific allergen sensitivities?

## **Answers:**

1. What is the best diagnostic test for allergic rhinitis? **History**
2. What is the best first line therapy for allergic rhinitis? **Avoidance**
3. What conditions can predispose you to develop recurrent or chronic sinusitis?

**URI, sleep deprivation, allergic rhinitis, local irritants, mechanical obstruction (polyps, granulomatous dz, deviated septum, tumor, etc.), immunodeficiency (IgG deficiency, immotile cilia, etc.)**

4. What are some common causes of vasomotor rhinitis?

**Hormones (hypothyroidism, pregnancy, etc.), drugs (alpha blockers, reserpine and other centrally acting agents, cocaine) rhinitis medicamentosa (overuse of topical nasal decongestants)**

5. When should you refer someone to an ENT doctor?

**When surgery may be needed, for example when unilateral nasal obstruction is noted, or when recurrent sinusitis is unresponsive to aggressive multi-modality tx**

6. When should you refer someone to an allergist?

**Severe allergic rhinitis inadequately responsive to aggressive multi-modality tx (i.e. may need allergy testing or shots)**

7. When should you get a sinus CT?

**Typically when you are ready to send someone to ENT for surgery.**

8. What is the best test to identify specific allergen sensitivities?

**Hypersensitivity skin testing (prick skin tests) is a quick, inexpensive, and safe way to identify the presence of allergen specific IgE. However, sensitization may occur at allergen levels below those that provoke symptoms. RAST is less sensitive and more expensive than skin tests.**