Patient Management Conference

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Presentation

• 11 year-old male presents to clinic for chronic nasal symptoms for two years
  - Clear rhinorrhea
  - Chronic congestion
  - No significant nasal pruritis / sneezing
  - No ocular symptoms
  - Year round without seasonal worsening
  - No family history of atopy
  - Denies worsening with irritant exposures
  - Cetirizine without significant benefit

Exam

• Nasal mucosa pale and edematous
• Significant post-nasal drip and cobblestoning

Evaluation

• Skin prick testing negative

Non-allergic rhinitis (NAR)

Disclosure

• No conflicts of interest
### Objectives

- Describe the pathogenesis and categorization of NAR
- Be able to consider other possibilities for the symptoms in your differential diagnosis
- Know the current recommendations for medical treatment of NAR
- Be able to recognize possible adenoidal involvement or laryngopharyngeal reflux in the pediatric population presenting with chronic rhinitis

### Introduction

- Not a specific disease – syndrome established by the process of excluding other disorders
- Synonyms:
  - Vasomotor rhinitis
  - Idiopathic rhinitis
  - Nonallergic – noninfectious rhinitis
  - Intrinsic rhinitis

### Definition

- Chronic presence of one or more of the four symptoms of rhinitis in the absence of a specific etiology
  - Sneezing
  - Rhinorrhea
  - Nasal congestion
  - Postnasal drainage

### Clinical Features different from AR

- 70% develop after twenty
- Female predominance
- Frequent sx: congestion, PND
- No aeroallergen triggers
- Perennial sx
- No family hx
- Respiratory irritants (common for both)
- Lower prevalence of asthma

### Differential Diagnosis

- Atrophic rhinitis
- Rhinitis medicamentosa
- Rhinitis caused by hormonal changes (pregnancy, lactation, hypothyroidism, acromegaly)
- Occupational
- Systemic diseases (WG, sarcoidosis)
- Adenoid hypertrophy
- Foreign body / polyposis
- Infectious
- Reflux

### Pathogenesis

- No single unifying theory
- Can be broadly divided into two categories:
  - Noninflammatory
  - Inflammatory
    - Eosinophilic
    - Non-eosinophilic
- Variable component of autonomic dysregulation (more so in noninflammatory form)
**Noninflammatory**
- Abnormality of the autonomic nervous system
- Gustatory rhinitis - Watery rhinorrhea or congestion with spicy foods
- Heightened responses to histamine, cold stimulation
- Diminished responses to vasoconstrictive stimuli
- Increased intranasal neuropeptides (VIP, substance P)

**Inflammatory**
- Nonallergic rhinitis with nasal eosinophilia syndrome
  - Nasal smear > 25% eos
- Localized allergic response?
  - Local IgE production in nasal tissue in ex vivo studies
  - Increased FcεRI locally

**NAR of CFS**
- CFS
  - Severe disabling fatigue for six months
  - New onset HA
  - Nociception: Sore throat, Sore LNs, Myalgia, Arthralgia
  - Neurocognitive: Brain fog, sleep dysfunction, exertional exhaustion

**NAR of CFS**
- Majority of CFS patients complain of refractory rhinitis
- See multiple allergists, ENTs
- Medications, surgeries no relief
- Think CFS with coexistence of fibromyalgia, post-traumatic fatigue syndrome, IBS

**Pediatric NAR**
- No studies – how can one determine prevalence?
- 13 NAR investigational studies in past 20 years – none with a pediatric population

**Enlarged adenoids**
- Most common cause of nasal obstruction in the child
- Symptoms:
  - Congestion
  - Clear to mucopurulent discharge
  - Mouth breathing
  - Snoring / sleep disordered breathing
### Laryngopharyngeal Reflux (LPR)

- Some children’s reflux may contribute to rhinosinusitis
  - Vagally-mediated pathway
  - Direct tissue injury

### Pathophysiology - LPR

- Traditional GERD – LES dysfunction
- LPR – of UES dysfunction
- LPR – reflux happens more often when upright rather than supine
- Not much in way of heartburn / esophagitis symptoms
- Microaspiration of esophageal contents into laryngopharynx and tracheobronchial tree

### Clinical Presentation - LPR

- Cough is predominant symptom
- Repetitive croup episodes
- Chronic rhinitis
- Chronic middle ear effusion
- Laryngeal exam – edema of posterior pharynx and diffuse infraglottic edema
- Double probe pH study can be helpful

### Treatment - LPR

- PPI scheduled BID
- Dietary modification:
  - Avoid acidic foods, carbonated beverages, caffeine, chocolate
- Tapering doses of PPIs after six months of successful treatment
- Consider periodic laryngeal exams
- Nissen for severe cases

### Primary therapies

- Patients with NAR less responsive to pharmacologic therapy
- Two classes of medications shown to be of benefit
  - Intranasal steroids
  - Topical antihistamines
  - Nasal ipratroprium for rhinorrhea

### Primary therapy

- Combination of intranasal steroid and topical antihistamine
  - Experience (no studies) suggest combination therapy more effective
- Not all patients respond to therapy, and one large RCT with fluticasone showed no difference from placebo
- In two large RCTs (open label), 80-85% of patients responded to azelastine
### Prominent Rhinorrhea

- Nasal ipratroprium 0.03%
- 1-2 sprays per nostril 3x/day or p.r.n
- Prior to meals for gustatory rhinitis

### Oral decongestants

- Pseudoephedrine 30-60 mg q 8 hours p.r.n
  - For congestion not responsive to nasal steroid + nasal antihistamine
  - Contraindicated with HTN
- Phenylephrine – less effective. One study showed it was not superior to placebo.

### Nasal saline

- Nasal lavage
  - Improvement in many types of rhinitis
  - Use immediately prior to medication
  - Adequate volume 200 mL per side
- Saline nose sprays
  - Less effective than lavage but still help – more convenient

### Prognosis

- One study, followed 180 patients re-evaluated 3-7 years post diagnosis:
  - 50% worsening of symptoms
  - 24% allergic sensitization (HDM, animals)

### References

- Wang MB. Structural causes of Nasal Symptoms: An Overview. Up-To-Date
- Lieberman PL. Chronic nonallergic rhinitis. Up-To-Date
- Baraniuk JN, Merck SJ. The Nonallergic rhinitis of chronic fatigue syndrome. In Allergy Frontiers, volume 3: Clinical Manifestations