Sinus Headache vs. Migraine

John M. DelGaudio, MD, FACS
Professor and Vice Chair
Chief of Rhinology and Sinus Surgery
Department of Otolaryngology
Emory University School of Medicine
Sinus Headache

**Problems**

- A common diagnosis given to the patient with facial pressure or pain
  - Over-diagnosed and over-treated
  - Common chief complaint in Otolaryngology
  - Can lead to unnecessary surgical intervention
Headache Disorders

- **Primary**
  - Migraine
  - Tension
  - Cluster

- **Secondary**
  - Sinusitis
  - TMJ
  - Sleep apnea
  - Neuralgias
  - Trauma conditions
  - Intracranial processes
    - Tumor
    - Pseudotumor

Much overlap because of common mediation through Trigeminal nerves.
Rhinosinusitis Task Force: Sinusitis Defined

<table>
<thead>
<tr>
<th>Major Factors</th>
<th>Facial Pain/Pressure- MUST be associated with ANOTHER major factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Facial Congestion/fullness</td>
</tr>
<tr>
<td></td>
<td>Nasal Obstruction/blockage</td>
</tr>
<tr>
<td></td>
<td>Nasal Discharge/drainage</td>
</tr>
<tr>
<td></td>
<td>Hyposmia/anosmia</td>
</tr>
<tr>
<td></td>
<td>Fever (in acute)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor Factors</th>
<th>Headache</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fever</td>
</tr>
<tr>
<td></td>
<td>Halitosis</td>
</tr>
<tr>
<td></td>
<td>Fatigue</td>
</tr>
<tr>
<td></td>
<td>Dental pain</td>
</tr>
<tr>
<td></td>
<td>Cough</td>
</tr>
<tr>
<td></td>
<td>Ear pain/fullness/pressure</td>
</tr>
</tbody>
</table>

Benninger et al (2003); Lanza and Kennedy (1997)
Rhinogenic Headaches

- Signs and Symptoms:
  - Nasal Stuffiness
  - Pain character – pressure
  - Pain frequency - continuous to intermittent
  - Pain location - Frontal, Periorbital, Maxillary
  - Not usually associated with Photophobia, Nausea, or Vomiting.
Rhinogenic Pain
My Rules of Thumb

• Pain attributable to sinus disease should correlate with the presence and location of the disease.
• Suspicion for other causes of facial pain should be sought if:
  • The pain is out of proportion to the degree of disease
  • The location of the pain does not correlate to the location of the disease
  • Pain is intermittent
  • Pain is brought on by weather changes, allergy, temperature changes, foods, stress
  • *The sinuses are normal on CT scan*
What about the patient with “SINUS HEADACHE” and a normal CT scan? i.e. no inflammatory sinusitis.

Does this represent a rhinogenic source or migraine headache?
**International Headache Society:**

**Classic Migraine Defined**

<table>
<thead>
<tr>
<th>Migraine with Aura</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At least 2 attacks fulfilling criteria (2) - (4) if aura is present</td>
</tr>
<tr>
<td>2. Headache lasts 4-72 hours</td>
</tr>
<tr>
<td>3. Headache with 2 or more of the following: unilateral, pulsating, moderate-severe intensity, aggravated by or causing avoidance of routine physical activity</td>
</tr>
<tr>
<td>4. One of the following occurs during headache: nausea, vomiting, photophobia, phonophobia</td>
</tr>
<tr>
<td>5. Headache cannot be attributed to another disorder</td>
</tr>
</tbody>
</table>

# IHS Migraine Classification

1. Migraine
   1.1 Migraine without aura
   1.2 Migraine with aura
   1.2.1 Migraine with typical aura
   1.2.2 Migraine with prolonged aura
   1.2.3 Familial hemiplegic migraine
   1.2.4 Basilar migraine
   1.2.5 Migraine aura without headache
   1.2.6 Migraine with acute-onset aura
   1.3 Ophthalmic migraine
   1.4 Retinal migraine
   1.5 Childhood periodic syndromes that may be precursors to or associated with migraine
   1.5.1 Benign paroxysmal vertigo of childhood
   1.5.2 Alternating hemiplegia of childhood
   1.6 Complications of migraine
   1.6.1 Status migrainosus
   1.6.2 Migrainous infarction
   1.7 Migrainous disorder not fulfilling above criteria

“Sinus Headache” is Usually Migraine

- 96% of patients with a diagnosis of sinus headaches met the IHS criteria for migraine HA

Sinus Headache” is Usually Migraine

90% of 2524 patients with diagnosis of “sinus headache” met IHS criteria for migraine HA

- Excluded those with sinus disease and previous diagnosis of migraine HA


- Cranial autonomic symptoms frequently present in migraine headache
  - Nasal congestion, rhinorrhea, lacrimation, eyelid edema
- Causes patients and physicians to attribute symptoms to sinonasal pathology
- Trigeminal innervation