Sinus Headache vs. Migraine

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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>
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<tr>
<td></td>
<td>Nasal Obstruction/blockage</td>
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<tr>
<td></td>
<td>Nasal Discharge/drainage</td>
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<td></td>
<td>Hyposmia/anosmia</td>
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<td></td>
<td>Fever (in acute)</td>
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<table>
<thead>
<tr>
<th>Minor Factors</th>
<th>Headache</th>
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<tbody>
<tr>
<td></td>
<td>Fever</td>
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<tr>
<td></td>
<td>Halitosis</td>
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<tr>
<td></td>
<td>Fatigue</td>
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<td></td>
<td>Dental pain</td>
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<td>Cough</td>
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<tr>
<td></td>
<td>Ear pain/fullness/pressure</td>
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</tbody>
</table>

Benninger et al (2003); Lanza and Kennedy (1997)
Facial Pain of Rhinogenic Origin Classification

- Rhinosinusitis
  - Inflammatory
  - Barosinusitis
    - Changes in atmospheric pressure (flying, scuba)
    - Can it occur in normal stable atmospheric pressure?
- Contact point (?)
- Neurogenic
  - Postop
  - Anterior ethmoid nerve syndrome
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, stresss
• The sinuses are normal on CT scan

Opacification

- Mild-to-moderate mucosal thickening (>3 mm diffuse/circumferential mucosal thickening)
- Minimal mucosal thickening (<3 mm mucosal thickening in a dependent position)

<table>
<thead>
<tr>
<th>Intermediate</th>
<th>Most pain</th>
<th>Least pain</th>
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<tbody>
<tr>
<td>Non-polyp patients had more pain than polyp patients</td>
<td></td>
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</table>
What about the patient with facial pain ("SINUS HEADACHE") and a normal CT scan? i.e. no inflammatory sinusitis

Does this represent a rhinogenic source or migraine headache?
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

Migraine with Aura

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

<table>
<thead>
<tr>
<th>IHS Migraine Classification</th>
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<tbody>
<tr>
<td>1. <strong>Migraine</strong></td>
</tr>
<tr>
<td>1.1 Migraine without aura</td>
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<tr>
<td>1.2 Migraine with aura</td>
</tr>
<tr>
<td>1.2.1 Migraine with typical aura</td>
</tr>
<tr>
<td>1.2.2 Migraine with prolonged aura</td>
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<tr>
<td>1.2.3 Familial hemiplegic migraine</td>
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<td>1.2.4 Basilar migraine</td>
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<td>1.2.5 Migraine aura without headache</td>
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<tr>
<td>1.2.6 Migraine with acute-onset aura</td>
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<td>1.3 Optic ataxic migraine</td>
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<td>1.4 Retinal migraine</td>
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<tr>
<td>1.5 Childhood periodic syndromes that may be precursors to or associated with migraine</td>
</tr>
<tr>
<td>1.5.1 Benign paroxysmal vertigo of childhood</td>
</tr>
<tr>
<td>1.5.2 Alternating hemiplegia of childhood</td>
</tr>
<tr>
<td>1.6 Complications of migraine</td>
</tr>
<tr>
<td>1.6.1 Status migrainosus</td>
</tr>
<tr>
<td>1.6.2 Migrainous infarction</td>
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<tr>
<td>1.7 Migraines disorder not fulfilling above criteria</td>
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Migraine Headache
United States Incidence

- 18% of females, 6% of males (3:1 ratio)
- Peak incidence 25-55 years of age
  - Onset of new cases peaks in adolescence
- Family history
- Inciting factors
  - Alcohol, chocolate, stress
“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

Diagnostic and Therapeutic Dilemma of “Sinus Headache”

  - 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
Causes of Headache in Patients with Primary Diagnosis of Sinus Headache

- 58 patients with PCP diagnosis of “sinus headache” presenting to Otolaryngologist, then referred to neurologist for evaluation and treatment
- Diagnosis
  - 68% migraine HA
  - 27% tension HA
  - 5% recurrent acute sinusitis