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

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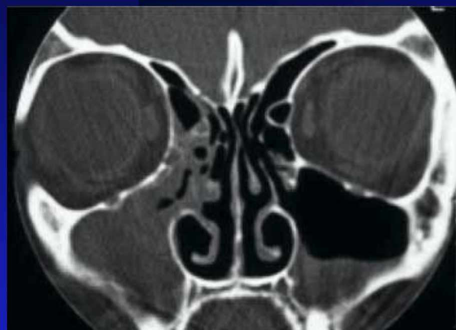
Headache Disorders

- 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



http://www.powerpak.com/courses/10132/Figure3.jpg

Major Factors	**Facial Pain/Pressure- MUST be associated with ANOTHER major factor** Facial Congestion/fullness Nasal Obstruction/blockage Nasal Discharge/drainage Hyposmia/anosmia Fever (in acute)
Minor Factors	**Headache** Fever Halitosis Fatigue Dental pain Cough Ear pain/fullness/pressure

Benninger *et* al (2003); Lanza and Kennedy (1997)

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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

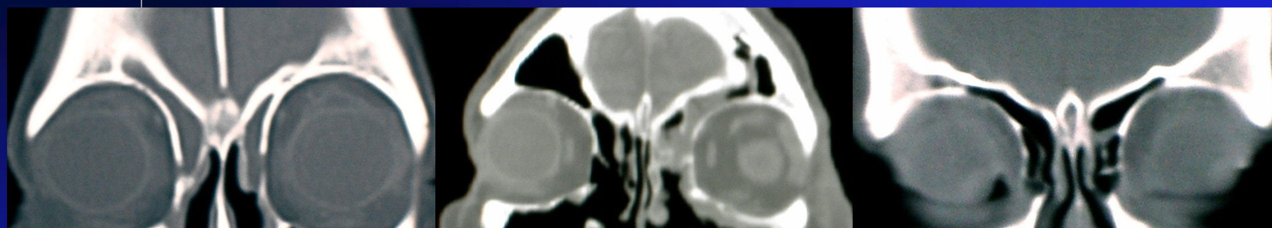
Rhinogenic Headaches

- 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*

DelGaudio JM, Wise SK, Wise JC. Association of Radiologic Evidence of Frontal Sinus Disease with the Presence of Frontal Pain. Amer J Rhinology 2005;167-73



Opacification	Mild-to-moderate mucosal thickening (>3 mm diffuse/circumferential mucosal thickening)	Minimal mucosal thickening (<3 mm mucosal thickening in a dependent position)
Intermediate	*Most pain*	*Least pain*

Non-polyp patients had more pain than polyp patients

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?

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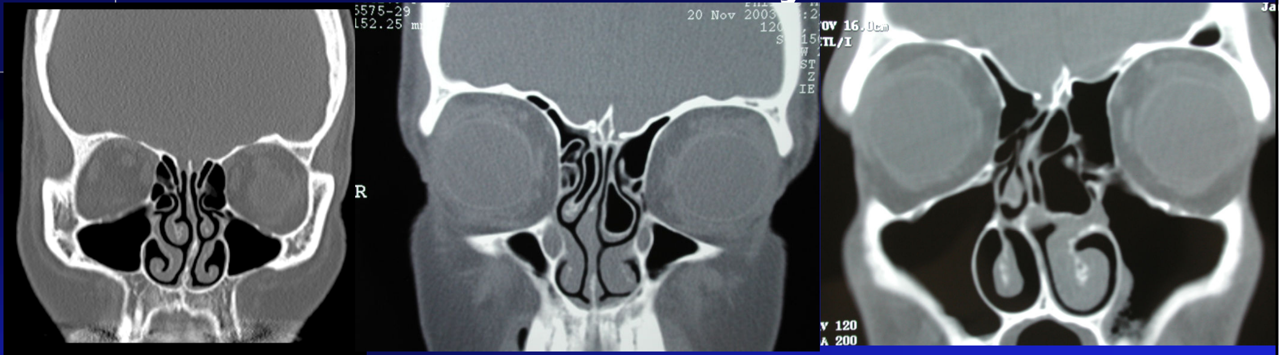
i.e. no inflammatory sinusitis



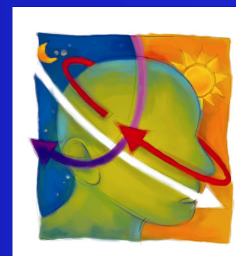
Does this represent a rhinogenic source or migraine headache?

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

Headache Classification Subcommittee of the International Headache Society (2004)



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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

From Headache Classification Committee of the International Headache Society. Classification and diagnostic criteria for headache disorders, cranial neuralgias and facial pain. *Cephalalgia.* 1988;8(suppl 7):1-96.

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

Cady RK, Schreiber CP. Sinus headache or migraine? Considerations in making a differential diagnosis. Neurology 2002;58 (Suppl 6):S10-S14.

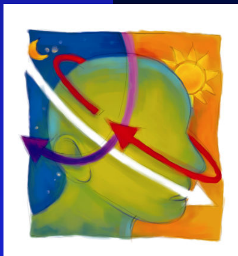
Sinus Headache”
is Usually Migraine

- 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

Schreiber CP, et al. Physician diagnosed and patient self-described “Sinus Headache” is Predominately Migraine. Arch Int Med. 2004;164:1769-1772.

Diagnostic and Therapeutic Dilemma of "Sinus Headache"

- Barbanti *et al* (2002)
  - 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



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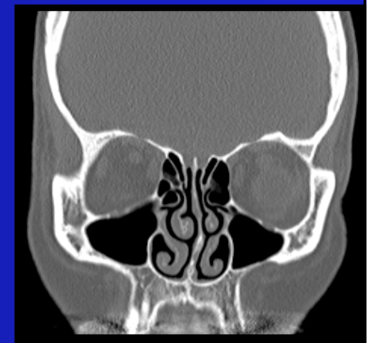

Causes of Headache in Patients with Primary Diagnosis of Sinus Headache

Foroughipour M, et al. Eur Arch Otorhinolaryngol 2011;268:1593-96

- 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