Headache and Sinusitis

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Learner Objectives
• After this presentation you should:
  – 1) be more familiar with sinuses and headaches
  – 2) learn appropriate work up for headache
  – 3) know when surgery is an option for headache

Background
• Headache is a world-wide issue
  – Leads people to seek medical care
• Patients logically blame the sinuses for pain, based on proximity
• Patients are not alone in this
  – Many erroneous referrals are made for "sinus headaches"
How can we tell?

- How can we tell if the headache is due to the sinuses?
- History – does it meet outlined criteria?
- Physical Exam – are there consistent findings?
- Imaging studies
  - Plain X-Rays of the sinus (X-Ray)
  - Computed Tomography of the Sinuses (CT)
  - Magnetic Resonance of the Sinuses (MRI)

Cases

Case 1

- 35 yo male comes in with frontal headaches
- Nothing helps
- What do we do now?
Case 1

• Audience Response
• Can this cause headaches?
• Yes or no?

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Case 1

• Audience Response
• What about this?
• Yes or no?
Your poll will show here

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Case 1

- Audience response
- This one?
- Yes or no?
Case 1

- Audience response
- How about this?
- Yes or no?

Case 1 - Panelists

- Does the location of the headache give insight into the specific sinus involved?
- Can a unilateral sinusitis cause bilateral pain?
- Is there any role for medicines?
- Could there be other causes of headaches too?
Resolution of sphenoid sinusitis

Before Surgery

After Surgery

Sinuses causing headaches

• Occasionally a chronically plugged sinus can cause headaches
• More common in acute infections than chronic infections
• Patients with bad nasal polyps have fewer issues with headaches than those without polyps
• Occasionally, a single sinus may be plugged and cause pain

Sinuses causing headaches

• If the plugged sinuses are surgically opened, this can improve the health of the sinuses and help decrease the headaches
• May not be the cause of all the headaches a person experiences
  – Other evaluations may be needed
Questions?

Case 2

- 47 yo female with recurrent sinusitis
  - 8 rounds of antibiotics over the past year
  - All manifest as facial and sinus pain
  - Acute onset
  - Can last days
- History of migraines but "these are different"
- Now what do we do?

CT when acutely ill
Case 2 Panelists

- What do you think of the 8 antibiotics?
- Does being a migraineur predispose one to different types of migraines?
- Any additional work up?

Diagnosis of migraine in the patient with “sinus headache”

- A comprehensive evaluation is recommended
  – Head and neck exam, neurologic exam, nasal endoscopy, CT scan, application of IHS criteria
- Maintain a high clinical suspicion for migraine
  – Shown to be the most likely diagnosis in this subset
- In a minority where nasal endoscopy and CT scan do show signs of significant sinus disease, the patient should be appropriately diagnosed and treated

Diagnosis of migraine in the patient with “sinus headache”

- Good data supporting a headache evaluation. Level B
- Benefit: comprehensive workup and prompt diagnosis of migraine will allow patients to undergo the appropriate treatment instead of undergoing medical or surgical therapy directed at sinonasal disease
- Harm: NO harm in this methodology
- Cost: Minimal to moderate: nasal endoscopy, CT scan
- Benefits-Harm assessment: Preponderance of benefit over harm
Questions?

Case 3

- 26 yo male with severe facial pain
- Pain almost constant with occasional worsening
- No real sinus infections but some drainage
- On physical exam, a severely deviated septum

CT Scan
Case 3 - Panelists

- Any further work up/evaluation?
- Inject contact point with lidocaine?
- Diagnostic accuracy of this technique?
- Audience Response
- Do you find contact point numbing useful?
- Yes or no

Contact Point Headaches

- When the nasal septum touches other structures in the nose it may cause headaches
- Debated as a cause of headaches
  - Many contact points do NOT cause headaches
- Identified on physical exam and/or imaging
- Anesthetizing the specific contact point with either a topical solution or injection may help with diagnosis
  - If headaches go away immediately, supports this as a cause of the headaches
Contact Point Headaches

• Nasal Surgery for contact points is an **OPTION**
• **IF:** The patients have a chronic headache, NO sinusitis on endoscopy or CT scan, and an obvious contact point
• **AND** have failure to resolve after migraine-directed therapy by a headache specialist
• **AND** have a positive response to directed anesthetic
  – Keep in mind, this represents a **limited** patient population

Contact Point Headaches

• Data on surgery for contact points is poor
  – Aggregate level of evidence: C
• Benefit: Highly selected patients may find relief of headaches after having failed all other options, with directed surgery to remove contact points
• Harms: Risks of anesthesia (MI, CVA, death), bleeding, infection, septal perf
• Cost: High, however as a one-time expense, may be better than lifetime of medicines

Questions?
Case 4

- 52 year old male with bad “sinus headaches”
- Manifests as facial pain
- Occur whenever the weather changes
- Flew last month and thought he was going to “explode on descent”
Case 4 - Panelists

- At what point do you offer surgery?
- At what point do you consider a headache eval?

Barometric Sinusitis

- If the atmospheric pressure cannot equalize with the air in the sinuses, this can lead to pressure and pain
  - Inadequate outflow pathways of the sinuses
- Often reported during descent from altitude or underwater diving
- **NOT** a common cause of headaches
  - Frequently there are no obvious findings on imaging
- Other, more common causes of headaches must be ruled out prior to any surgical intervention

What if?

- What do we do if we cannot find a sinus cause?
  - History not consistent with sinusitis
  - Physical exam normal
  - No plugged sinuses on imaging
  - No contact points
- The **BEST** next step is to have patient evaluated for migraine
Case 5

- 63 yo female with a 6 month history of headache and sinus pain
- No prior history
- Antibiotics help quite a bit but the pain returns
- Also complains of nasal congestion, PND, poor sense of smell and foul odor

CT scan
Odontogenic Sinusitis

- This occurs more than many realize
- Can be missed on dental X-rays and CT scans
  - The CT scan shows this better than dental x-rays
  - May not be noticed by provider
  - Important to pay close attention to roots
- Requires dental procedure and/or sinus surgery
  - Tooth extraction
  - Root canal
  - Opening maxillary sinus surgically
Questions?

Conclusions

• Sinusitis causes the vast minority of facial pains and headaches
  – Sinusitis greatly exaggerated as the cause
• Crucial to get appropriately diagnosed
  – Avoids unnecessary medicines
  – Avoids unnecessary surgeries
• Crucial to obtain a headache evaluation by a HEADACHE specialist

Summary

• Do
  – Find a neurologist/headache specialist
  – Always consider a headache evaluation
  – Offer this to patients and document such
Summary

• Do not:
  – Offer/perform surgery right away