

## **Sinus Headache: Does it exist?**

Roger Cady, M.D.,  
Headache Care Center, Primary Care Network, Inc. Springfield, Missouri

Updated by Randolph W. Evans, MD, Houston, Texas

Headache is both a symptom and a diagnosis. This distinction is the basis for differentiating primary and secondary headaches and may provide an answer to the existence of "sinus headache."

### **Headache as a diagnosis**

Diagnoses of primary headache disorders include tension-type headache, migraine, and cluster. Primary headache syndromes are defined by clinical characteristics of the headaches; symptoms associated with the headaches; the pattern of headache attacks; and the lack of underlying pathology. All primary headaches are recurrent and, with the exception of episodic tension-type headache, are always more than 'just a headache'. For migraine, symptoms beyond headache used for diagnosis are nausea, vomiting, light and noise sensitivity. . Many patients with migraine may have symptoms during some attacks of headache which seem similar to sinus or allergy symptoms: nasal congestion, clear drainage, and tearing of one or both eyes.<sup>1</sup>

Secondary headache disorders are defined by their associated pathology and resolution of the headache when that pathological process is corrected. Sinus headache is not a diagnostic term preferred by the International Headache Society (IHS) but the IHS does recognize headache as a symptom resulting from acute and chronic rhinosinusitis.<sup>2</sup> When a patient is evaluated for a stable stereotypic pattern of potentially disabling headaches, it is highly probable that the diagnosis is migraine. Eighty percent of subjects in a clinical study with self or physician diagnosed "sinus headache" met diagnostic criteria for migraine as defined by the IHS.<sup>1</sup> Reasons for the high degree of diagnostic inaccuracy are attributable to pain being located in the periorbital area and the presence of nasal autonomic symptomatology such as nasal congestion, rhinorrhea, or tearing.<sup>3</sup> At least one of these symptoms was observed in 87% of migraine subjects.<sup>1</sup>

In patients presenting with a new or unique headache the potential for a secondary headache diagnosis increases dramatically. If the headache is associated with signs or symptoms of infection or rhinosinusitis the headache is likely a symptom of this underlying pathology. Fever is present in about 50% of cases. However, sphenoid sinusitis may cause headache without purulent drainage. Diagnosis is best confirmed by careful clinical history with nasal endoscopy. CT scan and MRI are frequently over interpreted as demonstrating sinus disease.<sup>4</sup> Treatment of the underlying pathology results in resolution of the headache.

Diagnostic difficulty occurs with recurrent bouts of rhinosinusitis that may be interpreted as a stable recurrent pattern of headaches. The diagnosis is clarified by associated symptoms of rhinosinusitis and appropriate diagnostic studies. More controversial are the presence of anatomical lesions (e.g., concha bullosa, deviated nasal septum, and contact point) that may act as a trigger for episodes of headaches phenotypically similar to migraine.<sup>5</sup> With careful patient selection, these headache patterns may be improved by surgical intervention. However, these are not common conditions.

Differentiating migraine from sinus pathology begins with a careful history. If the patient reports a stable pattern of headache with a positive family history of migraine or in women an association of headache with menses the likely diagnosis is migraine. If the patient is being evaluated for a unique headache the likelihood of secondary disease must be anticipated. Association of symptoms suggesting infection or nasal examination suggesting rhinosinusitis should prompt diagnostic studies and medical treatment of the underlying condition. If the diagnosis of migraine is made but the patient fails to respond to a well executed treatment plan, an ENT evaluation may be warranted. On the other hand, a patient presenting with recurrent headaches being attributed to “sinuses” should be carefully evaluated for migraine.

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<sup>1</sup> Schreiber CP, Hutchinson Susan, Webster Christopher, et al. Prevalence of migraine in patients with a history of self-reported or physician diagnosed “sinus” headache. *Arch Intern Med.* 2004;164:1769-72.

<sup>2</sup> Headache Classification Committee of the International Headache Society (IHS). The international classification of headache disorders, 3rd edition (beta version). *Cephalgia* 2013;33(9):629–808.

<sup>3</sup> Eross E, Dodick D, Eross M. The sinus, allergy, and migraine study. *Headache* 2007;47:213-24.

<sup>4</sup> Mehle ME, Kremer PS. Sinus CT scan findings in “sinus headache” migraineurs. *Headache* 2008;48:67-71.

<sup>5</sup> Marmura MJ, Silberstein SD. Headaches caused by nasal and paranasal sinus disease. *Neurol Clin.* 2014 May;32(2):507-23.