

Maybe *rhinitis*, maybe *sinusitis*, maybe *rhinitis* and *sinusitis*, but certainly not *rhinosinusitis*!

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Recently there has been a push to adopt the term *rhinosinusitis* in place of *sinusitis*. For many reasons, I view this term as not only not helpful but also a disservice that will add more confusion to our current understanding of chronic sinusitis. One of the primary arguments given for the term *rhinosinusitis* is that these conditions often coexist. However, on deeper reflection, this seems an insufficient justification. Adoption of the term *rhinosinusitis* is unnecessary because, for example, asthma and allergic rhinitis often coexist, but there seems no pressing need to adopt the term *rhinoasthma*. Atopic dermatitis and food allergies coexist without a need to treat patients with *dermatoenteritis*. More important is that adoption of this term is unnecessarily confusing. An analogy is provided to gastroenteritis, arguably also 2 unique conditions that frequently coexist. But at least with gastroenteritis, there is a clear clinical distinction between the symptoms, signs, diagnostic criteria, and specific treatments required for the separate components of gastritis and enteritis. However, as discussed here, none of these distinctions can be made by proponents of the term *rhinosinusitis*, and as a result, adoption of the term *rhinosinusitis* will only further complicate patient diagnosis and care.

The overarching problem is that there are no agreed-on diagnostic criteria for chronic sinusitis. Traditionally, that diagnosis is based on clinical criteria including such features as sinus headaches, sinus pressure, posterior pharyngeal drainage, purulent nasal drainage, nasal congestion, toothache, cough, and so forth.¹ None of these are at all specific to the sinuses and, in fact, the presence of any or all of these has little predictive value in identifying patients with sinusitis. Innumerable studies have shown that compared with objective criteria such as computed tomography scans or rhinoscopy, clinical criteria are little better than random in predicting the presence and severity

Abbreviations used

PAR: Perennial allergic rhinitis

PNAR: Perennial nonallergic rhinitis

of sinusitis.²⁻⁷ Although headaches and pressure are routinely present in acute sinusitis, these subjective symptoms are surprisingly rare in chronic sinusitis, and the neurology community categorically excludes chronic sinusitis in the differential diagnosis of headache!⁸⁻¹⁰ Numerous published studies have addressed the poor predictive value of the sinus headache in predicting the actual presence of chronic sinus disease. In one particularly dramatic recent study, out of 2991 patients presenting with sinus headaches, fewer than 4% were considered likely to have sinusitis, and the preponderance of the remainder had classic or atypical migraines.¹¹ Other symptoms used to diagnose chronic sinusitis include nasal congestion, rhinorrhea, posterior pharyngeal drainage, and purulent nasal drainage.¹ None of these symptoms directly reflect the presence of sinus disease, and all of them refer to processes occurring in the nasal passages. Certainly, in the absence of extensive nasal polyposis, there is no mechanism by which isolated sinus disease causes obstruction to nasal airflow. It can even be argued that sinus disease should be characterized by the absence of these symptoms insofar as our current understanding of the etiology of sinus disease is that it is precipitated by occlusion of the sinus ostia, and occlusion of the sinus ostia should preclude egress of mucopurulent materials. This spectrum of symptoms at best cannot distinguish putative chronic sinusitis from perennial allergic (PAR) or nonallergic rhinitis (PNAR). As a result, similar to the study on sinus headaches,¹¹ 38 patients referred to the University of Virginia for sinus surgery in a 1-year period were found to have absolutely no evidence of disease within their sinuses!¹² In the lay community, a sinus condition generally refers to subjective feelings of having nasal congestion. It is unfortunate that this misconception is so often shared by physicians, a tendency that will only be worsened if the term *rhinosinusitis* is allowed to take hold.

Part of the argument for adopting the term *rhinosinusitis* is the belief by many experts that chronic sinusitis and perennial rhinitis do in fact produce the same set of symptoms, and *rhinosinusitis* obviates the need to determine which aspect is produced by the sinus component and which by the nasal component. Using objective criteria, such as CT scans, ~75% to 90% of patients with asthma can be shown to have chronic sinusitis, and in the majority of cases, this sinus process is completely asymptomatic.²⁻⁶

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To summarize this new paradox, the majority of patients with sinusitis have no symptoms, and the overwhelming majority of patients with symptoms have no sinusitis! Given this irony, it is totally plausible that for patients who have both rhinitis and chronic sinusitis, all of their symptoms could be driven by the nasal component of their disease. Clearly, until these types of questions are answered, adoption of the term *rhinosinusitis* can only perpetuate our confusion.

The counter argument is that none of these issues are important given the frequency with which these diseases coexist. This would be reasonable if true and if these represented the same disease processes and had the same treatments. No objective evidence has been reported for the frequency of chronic sinusitis in patients with perennial rhinitis, and in our experience, in the absence of underlying asthma, chronic sinusitis is rare in these subjects. Literature on the frequency of rhinitis in chronic sinusitis is confounded by the frequency with which nasal symptoms and signs are used to diagnose chronic sinusitis and the absence of objective quantification of the sinus disease. This kind of illogical reasoning contributes to literature in which sinus disease is defined using nasal-associated symptoms such as congestion and mucopurulent posterior pharyngeal drainage, and then investigations are performed that show, for example, that leukotriene modifiers or immunotherapy provides clinical benefit for chronic sinusitis, but only by reducing these nasal-specific symptoms, and only in the cohort of subjects with chronic sinusitis and allergies!¹³

While most patients with rhinitis do not have chronic sinusitis, the converse does seem plausible, in that allergic and nonallergic rhinitis are presumed to be the primary triggers for chronic sinusitis. Patients with chronic sinusitis are therefore likely also to have either PAR or PNAR. However, it should not be concluded from this association that these represent the same disease processes attacking different end organs, but merely that perennial rhinitis might be a trigger for the secondary development of the distinct disorder of chronic sinusitis. The pathology of neither PAR nor PNAR bears similarity to chronic sinusitis. As preliminarily addressed in a recent summary statement,¹⁴ chronic sinusitis represents at least 2 processes, one (chronic sinusitis without nasal polyposis) characterized by goblet cell hyperplasia, a chronic inflammatory (mononuclear cell) infiltrate, variable neutrophilia, absence of eosinophils, and, less commonly, nasal polyps; and the other (chronic sinusitis with nasal polyposis) characterized by overwhelming eosinophilia, absence of neutrophils, and a stronger tendency to produce nasal polyps. PNAR is considered to be neurohormonally mediated with little inflammation, and while PAR certainly represents a disease of activated mast cells, eosinophils, and other immune cells, the degree of tissue damage, intensity of the eosinophilia, massive glandular hyperplasia, fibrosis, and tissue remodeling observed in chronic sinusitis is never observed in PAR; nor, paradoxically, does rhinitis produce nasal polyps. The strongest argument for adopting the term *rhinosinusitis* is derived

from 1 study in which nasal biopsies were performed in patients undergoing endoscopic sinus surgery.¹⁵ Although rhinitis and sinusitis were, in fact, universally coexpressed, this study nicely establishes that these are profoundly different diseases. Thus, sinusitis tissue was associated with 6.6 eosinophils/high-powered field, whereas the nasal condition—PAR or PNAR—was associated with only 1.9 eosinophils/hpf. This supports other observations that the pathology of chronic sinusitis or, more specifically, chronic sinusitis with nasal polyposis, closely resembles that of asthma¹⁶⁻¹⁸ and not that of either PAR or PNAR. As coexpressed eosinophilic diseases of the respiratory tract involving the upper and lower airways, respectively, the term *bronch sinusitis* seems more appropriate than *rhinosinusitis*.

Rhinitis and sinusitis are different diseases developing in different organs, and this leads to the biggest problem with adoption of the term *rhinosinusitis*, in that these diseases require different treatments. There is a real danger inherent in labeling patients with sinusitis with the term *rhinosinusitis*. As noted, most patients referred to the University of Virginia with rhinosinusitis—or, for that matter, sinusitis—in fact have either PNAR or migraines. Invariably, however, numerous therapies that should be reserved for patients with sinusitis have been used in these improperly diagnosed patients. Although the authors of the guidelines and proponents of the term *rhinosinusitis* are assiduous at limiting their use of this term to patients with chronic sinusitis, many physicians clearly are not, and adoption of this term will only make it easier to continue this kind of intellectual torpor. Billions of dollars in health care costs are currently being inappropriately directed at treating patients without any objective evidence for sinus disease with surgery, antibiotics, narcotics, and so forth; never mind the unnecessary morbidity, discomfort, and health risks inherent in these approaches.^{11,12} We must not allow adoption of the term *rhinosinusitis* to further this confusion and rising tendency to misdiagnose and mismanage our patients with chronic sinusitis.

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