



Correspondence

Sinusitis

A frequent cause of chronic spontaneous urticaria



Urticaria is characterized by the appearance of hives or angioedema.¹ Chronic urticaria is defined by urticarial episodes that last more than 6 weeks, occurring daily or several times per week.² Although acute urticaria is commonly associated with infections,³ most cases of chronic urticaria have no identifiable cause. Nevertheless, several reports documented chronic urticaria from infectious causes including *Helicobacter pylori*.⁴ Studies show association of upper respiratory infections, including sinusitis, with chronic urticaria with remission after antibiotic therapy.⁵ Gershwin and Watson⁶ reported that all 9 patients with angioedema had dramatic resolution of angioedema after treatment of sinusitis.

Twelve years ago when I began performing nasal smears for eosinophilia, I noticed that most patients with chronic urticaria had neutrophilia. I then started performing nasal smears on all patients with chronic urticaria. Patients blew into waxed paper, or if no sample was available, the turbinates were swabbed with a Q-tip. The smear was allowed to dry, then fixed in methanol. The slide was flooded with "Eosinophil stain" for 30 seconds, then water dropped onto the slide for 30 seconds. Finally, this slide was rinsed with distilled water, flooded with methanol for 5 seconds and blow dried. The sample was evaluated under a Nikon Eclipse E100 microscope at 40× and occasionally 100× objective. Slides were scanned for neutrophils, eosinophils, and lymphocytes, scanning up to 20 high-powered fields (hpf). Results were rated 0 to 4+. All patients had history and physicals performed, noting evidence for sinusitis. All patients with chronic spontaneous urticaria were treated with 21 days of amoxicillin/clavulanate, 875/125, or 30 to 40 mg/kg per day in children. If amoxicillin sensitive, adults were treated with doxycycline, and children with cefdinir. Patients were instructed to call back in 1 week if there was no improvement in hives. A second-line antibiotic was instituted. If still no improvement, clindamycin was prescribed. If urticaria continued after 3 different antibiotics, patients were referred to ear, nose, and throat physicians.

I reviewed all patients treated with antibiotics for suspected sinusitis-induced chronic urticaria, from October 2015 to March 2019. One hundred thirty-seven patients fulfilled these criteria. In March 2019, we were able to contact only 66 of these patients, asking whether the hives resolved on antibiotic therapy. The duration of hives was 6 weeks to 20 years; 23 of 66 had daily hives. Two patients had a history of recurrent sinusitis, 3 had a history consistent with sinusitis, and 17 had symptoms consistent with

allergic rhinitis. On examination, 3 had tender sinus areas, 7 had tender lymphadenopathy, and 23 had white, yellow, or green crust. Fifty percent had no evidence of sinusitis on examination. Five patients had no neutrophils on nasal smear, 5 were 1+, 17 were 2+, 19 were 3+, and 7 were 4+. Five were "dry," 2 were "positive," and 2 were "not done." Forty-one patients claimed complete resolution on antibiotics: 22 after the first course of antibiotics, 10 after the second course, 7 after the third course, 1 after the fourth course, and 1 after surgery. (Many patients had hives recur months later, again responsive to antibiotics.) Of 18 patients who have claimed antibiotics were unhelpful, 13 did not call back after the first antibiotic failed.

In summary, over 70% of patients with hives had complete resolution with antibiotic therapy. Less than 10% (5/66) had any history consistent with sinusitis, and less than 50% had any evidence for sinusitis on examination. This is similar to what Gershwin and Watson⁶ reported: "...only 3 patients reported symptoms that were suggestive of sinusitis."⁶ I recognize that interpretation of nasal smears is subjective and do not accurately document evidence of sinusitis. Also, retrospective reports are subjective and involve recall bias. Nevertheless, this evidence strongly suggests that occult bacterial sinusitis is a major cause of chronic hives. I believe that a prospective study should be done to verify this hypothesis.

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References

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