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Chewing Gum Test for Jaw Claudication in Giant-Cell Arteritis

TO THE EDITOR: Claudication of the jaw is a specific symptom with high predictive value for giant-cell arteritis.[1] However, a standardized clinical test to differentiate claudication from other causes of jaw pain is lacking. We report two cases in which a "chewing gum test" for jaw claudication showed abnormal results.

In the first case, a woman, 61 years of age, who had received a clinical diagnosis of giant-cell arteritis 2 years earlier, presented with recurrence of pain in her right jaw, temporal headache, and lethargy after having been weaned from oral prednisolone therapy. The findings from a clinical examination were normal. She was asked to chew gum at the rate of one chew per second. After 2 minutes of chewing, she reported an ache in her right jaw that was similar to what she had felt 2 years earlier. The pain disappeared with rest but could be reproduced consistently after 2 to 3 minutes of chewing. The dose of her oral prednisolone therapy was increased, and her subjective symptoms resolved. The chewing gum test was repeated a few days later and showed normal results; no jaw ache was reported after 4 minutes of chewing.

In the second case, a woman, 77 years of age, presented with a 1-week history of vague temporal headache, blurred vision, and unsteady gait. Neuroimaging showed bilateral posterior circulation infarcts that involved the occipital lobes. She had an elevated erythrocyte sedimentation rate of 32 mm per hour, and her C-reactive protein level was 23 mg per liter. She reported no other symptoms of giant-cell arteritis, including claudication of the jaw. The findings from an ocular examination were normal. The temporal arteries were nontender and pulsatile. However, she reported an ache in her left jaw after 2 to 3 minutes of chewing gum at the rate of one chew per second. Findings from a biopsy of the temporal artery were consistent with a diagnosis of giant-cell arteritis (Fig. 1). On further questioning, the patient reported that her diet consisted mainly of soft-boiled vegetables. After prednisolone treatment, the patient reported no further jaw pain on the chewing gum test several months later.

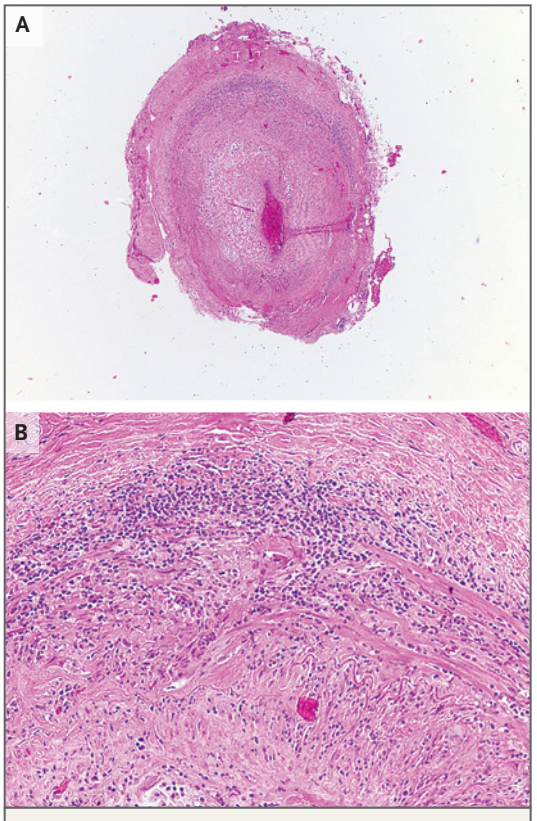

Figure 1. Biopsy Specimen of the Left Temporal Artery.
The histopathological section (Panel A) shows intimal thickening and inflammatory-cell infiltration (hematoxylin and eosin). The chronic inflammatory infiltration of lymphocytes and macrophages is consistent with giant-cell arteritis (Panel B).

Giant-cell arteritis is a potentially life-threatening and sight-threatening condition that remains difficult to diagnose and has no validated diagnostic criteria.[2] Claudication of the jaw is reported in less than 50% of patients at presen-

tation.[1,3] Underreporting of jaw claudication may be a consequence of modern diets that require less mastication effort, particularly in the elderly population. The two cases reported here show that the chewing gum test (i.e., chewing gum at the rate of one chew per second) may be a simple and repeatable test for jaw claudication and allow for a better characterization of this symptom. In our patients, claudication of the jaw appeared after 2 to 3 minutes of chewing and resolved after prednisolone treatment. Further research is warranted to validate the chewing gum test for jaw claudication.

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Disclosure forms provided by the authors are available with the full text of this letter at NEJM.org.

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Reevaluating PSA Testing Rates in the PLCO Trial

TO THE EDITOR: In March, the Centers for Medicare and Medicaid Services temporarily suspended the development of a proposed "Non-Recommended Prostate-Specific Antigen (PSA)–Based Screening" measure that would discourage PSA screening in all men. The U.S. Preventive Services Task Force (USPSTF) is currently in the process of updating its recommendations for prostate-cancer screening. The decisions made by these two organizations are likely to determine the fate of PSA screening in the United States.

Much of the controversy surrounding screening revolves around the Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial, which randomly assigned men to annual prostate-cancer screening or usual care and showed equivalency in the primary outcome of prostate-cancer mortality.[1] The major criticism of this trial relates to the degree of PSA testing in the control group as reported in the 2009 publication of the trial results. Subsequent analyses, including the 2012 USPSTF recommendations, have interpreted the rate cited in the 2009 report as "approximately 50% of men in the control group received at least 1 PSA test during the study."[2]

This is an inaccurate interpretation of PSA testing in the control group during the trial. Rates of testing during the trial were determined by a follow-up survey, termed the Health Status Questionnaire (HSQ), that was administered to a subgroup of participants in the control group.[3] In the HSQ, men were asked whether they had ever undergone a PSA blood test for prostate cancer, along with follow-up questions about when and why the test was performed. Categorical responses for when the most recent test was performed were within the past year, 1 to 2 years ago, 2 to 3 years ago, more than 3 years ago, and do not know, and responses for the main reason for the test were because of a specific prostate problem, follow-up to a previous health problem, and part of a routine physical examination. In the landmark 2009 trial report, the rate of testing in the control group was limited to men who responded that they had been tested within the previous year as part of a routine physical examination, and other responses were not counted as testing.[3]

As seen in Figure 1, more than 80% of the participants in the control group without baseline screening contamination (which for PSA was defined as ≥2 tests within 3 years before trial entry) reported having undergone at least 1 PSA test during the trial, with more than 50% undergoing testing within the past year and 70% within the past 2 years. Overall, including the 10% of control participants with baseline PSA screening contamination, the proportion of control participants who reported having undergone at least 1 PSA test before or during the trial was close to 90%. Moreover, the pervasiveness of PSA testing was such that when both trial groups were surveyed with the HSQ, men in the control group reported having had more cumulative PSA testing than men in the intervention group (see the Supplementary Appendix, available with the full text of this letter at NEJM.org). These clarifications should be considered by policymakers and