Letters to the Editor

Case Report: Efficient and Cost-Effective Diagnosis of Vaginitis

To the Editor: A 27-year-old woman presented with vaginal odor and increased discharge. Her physician was in a hurry and instead of completing a wet mount test, ordered a nucleic acid amplification test (NAAT). The results were negative. The cost of the examination was nearly $1,000, with $295 being the patient's responsibility.

Vaginal symptoms are some of the most common reasons for outpatient visits. Physicians often use microscopy, pH, and whiff tests in addition to history and physical examination findings to aid in diagnosis because culture is not always readily available or timely. NAAT, however, provides laboratory results with less diagnostic effort and tests for the most common infectious etiologies with one swab. How does the diagnostic accuracy of NAAT compare with traditional clinical diagnosis?

Bacterial vaginosis is the most common cause of vaginitis, with *Gardnerella* as the most common organism. Bacterial vaginosis is commonly diagnosed if three out of four Amsel criteria (vaginal pH greater than 4.5; positive whiff test; clue cells present on microscopy; and thin, homogenous white discharge on vaginal examination) are met. Although the specificities of the Amsel criteria and NAAT for bacterial vaginosis are similar, the sensitivity of the Amsel criteria is only 60% for bacterial vaginosis, compared with 90.5% for NAAT.[1]

Candida, most commonly *Candida albicans*, is the second most common cause of vaginitis. Microscopy to evaluate for hyphae and vaginal pH less than 4.5 have a sensitivity of 50% to 80% for predicting yeast as the cause of infection and cannot distinguish between different organisms within the *Candida* genus.[2] The sensitivity and specificity of NAAT swabs for *Candida* were 90.9% and 94.1%, respectively.[1]

Trichomoniasis, the least common type of infectious vaginitis, is caused by the protozoan *Trichomonas*. Although microscopy has a specificity of nearly 100% for *Trichomonas*, its sensitivity is only 60% to 70%.[2] The Centers for Disease Control and Prevention, therefore, considers NAAT the preferred test.[3]

Given the evidence, NAAT is a good test for all three organisms, although it may lead to higher costs and more false-positive results in patients with low pretest probabilities of infection.[4] In routine cases of vaginitis, it is reasonable to treat based on microscopy results, reserving NAAT for patients at risk of trichomoniasis or with resistant or recurrent symptoms. Studies commonly employ rigorous microscopy protocols not common in day-to-day practice; therefore, physician education could minimize the limitations of microscopy.[5] Regarding the case study presented here, an improved clinical decision-making tree could have avoided an unnecessary bill and financial stress for the patient.

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