Cutaneous Clues Can Help Peg Coccidioidomycosis

BY SHERRY BOSCHERT
San Francisco Bureau

SCOTTSDALE, ARIZ. — Think of coccidioidomycosis in patients with a rash, fever, and cough, even if they don't live in the southwestern United States where *Coccidioides* is endemic.

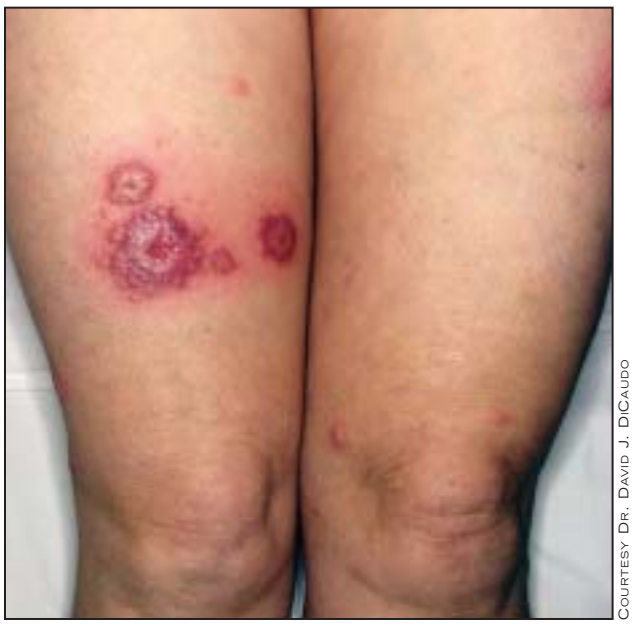
At least two patients have presented to the Mayo Clinic, Rochester, Minn., with cutaneous manifestations of coccidioidomycosis. Both patients were "snowbirds" who traveled to warmer climates in the southwest during the winter, according to physicians from the Mayo Clinic, Scottsdale, Ariz.

Although this mainly is a lung infection, cutaneous manifestations provide a clue to the diagnosis. "In the last 10 years at the Mayo Clinic in Arizona, I've been impressed by how often the dermatologist has a role to play in the diagnosis of coccidioidomycosis," Dr. David J. DiCaudo said at a dermatology conference sponsored by Skin Disease Education Foundation.

The desert areas of the southwestern United States and northern Mexico are the prime locations of this fungus, which is found in the western United States, Central America, and south to Argentina. Most U.S. infections occur in Arizona and in California's San Joaquin Valley, where a syndrome with the infection was first recognized and dubbed "valley fever," said Dr. DiCaudo of the Mayo Clinic, Scottsdale.

The incidence of coccidioidomycosis in Arizona more than tripled in the past decade, with a 56% increase in the past year alone. Droughts in recent years and construction activity stirring up soil and dust probably have contributed to the increase, he suggested. The organism lives in soil as filamentous mycelia that break down into arthroconidia, which can be carried on the wind and inhaled. Once inside people or animals, they transform into the spherule form recognized in biopsy specimens.

Most *Coccidioides* infections cause no symptoms. Around 40% of infected people develop a mild to moderate influenzalike illness with fever, cough, chills, and arthralgias. Even healthy people can be severely affected and laid low for weeks by the symptoms. Fewer than 1% develops severe infection or dissemination to the meninges or bones, with some deaths. People of Filipino heritage are hundreds of times more likely to develop severe infection or dissemination, compared with the general population, and African Americans are at increased risk as well, Dr. DiCaudo said. People with compromised immune systems caused by pregnancy, HIV infection, organ transplant, or those using steroids or other immunocompromising medications also face greater risk with this infection.



COURTESY DR. DAVID J. DICAUDO

Sweet's syndrome, presenting as painful plaques, are associated with pulmonary coccidioidomycosis.

The painful red nodules of erythema nodosum are the most common cutaneous manifestation of coccidioidomycosis. They typically appear on the lower extremities 1-3 weeks after the onset of systemic symptoms and suggest a good prognosis. Other cutaneous symptoms appear earlier. Acute exanthem may appear within the first 24-48 hours of illness. "I've seen several patients who had a florid eruption even before the onset of any other symptom. Days later, they developed fever and cough," he said.

The acute exanthem can resemble a drug reaction. Associated pruritus may be mild to severe. Lesions on the palms are common. It may last days or weeks.

The infection also can cause Sweet's syndrome, presenting as painful plaques, often but not always on the upper body, associated with fever and peripheral blood leukocytosis. In other settings, Sweet's syndrome commonly is treated with systemic corticosteroids. "It's worth checking to make sure the patient doesn't have coccidioidomycosis first," because an immunosuppressive drug would increase their risk, Dr. DiCaudo said.

Granulomatous dermatitis can develop early in the course of the disease with widely distributed papules and plaques.

All of these cutaneous symptoms are reactive conditions; no *Coccidioides* will be found in the skin. The skin symptoms evolve over a period of weeks or months as the patient recovers from the pulmonary infection.

A skin biopsy can be helpful, however, in rare disseminated infection, which typically develops 1-3 months after the onset of illness and can cause nodules, granulomatous plaques, and ulcers on the skin. It can mimic many other diseases including tuberculosis or acne. Even rarer is primary cutaneous infection at the site of inoculation, typically from injury by a laboratory pipette, a splinter, or even a cactus spine.

Serology is the key to diagnosing coccidioidomycosis. Keep in mind that the rash precedes seroconversion, so you may want to retest some patients with negative serologies 2 weeks later, he said. Low titers are common and shouldn't be dismissed.

The IgG antibody test can be positive and the IgM negative during active infection and shouldn't be interpreted as a past infection, he added. The antibodies tend to disappear following recovery, so a positive titer most likely represents acute infection.

The large spherules (10-80 mcm) of *Coccidioides* are easily seen under microscopy, typically as granulomatous or suppurative inflammatory infiltrate. If needed, an in situ hybridization assay is available to distinguish the organism from *Blastomyces* or *Cryptococcus*.

Patients with coccidioidomycosis generally are managed by primary care physicians or infectious disease specialists.

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Use of STD Screening Tests Needs to Be More Strategic

BY MELINDA TANZOLA
Contributing Writer

ATLANTA — Many tests now are available for screening and diagnosing sexually transmitted diseases. However, screening without a clear indication may do more harm than good, Dr. Michael Policar said at a conference on contraceptive technology sponsored by Contemporary Forums.

"We're clearly overscreening women older than age 26 for chlamydia," he explained, as data from the Centers for Disease Control and Prevention suggest that fewer than 2% of sexually active women in this age group are infected with chlamydia.

On the other hand, Dr. Policar recommended routine screening for chlamydia in women through 25 years of age. The prevalence of chlamydia among sexually active teenagers is 5%-10%, and most of these patients are asymptomatic. Annual screening could lead to a 56% reduction in pelvic inflammatory disease in teenagers, according to the findings of a large study done in Seattle (N. Engl. J. Med. 1996;334:1362-6).

Screening for cervical gonorrhea is appropriate in settings where the prevalence is at least 1%, particularly in urban settings. Routine testing in lower-prevalence areas can lead to a low positive predictive value, resulting in a larger proportion of false positives.

Patients who have had a high-risk sexual exposure should be screened for gonorrhea, chlamydia, syphilis, HIV, and, possibly, herpes simplex virus-2, recommended Dr. Policar, of the University of California, San Francisco.

Clinicians now have multiple choices for screening sexually transmitted diseases. Dr. Policar said that multiple pathogen tests performed with a single sample are preferred when clinicians would like to screen for all the pathogens included in a test. However, he cautioned against using multiple pathogen test panels that "include pathogens that do not need to be found," both to reduce the likelihood of false positives and to avoid using resources for unnecessary tests.

Several molecular-based tests are now available for chlamydia and gonorrhea. The nucleic acid amplification tests (NAATs) can detect a small number of organisms and allow the use of urine rather than endocervical swabs. In fact, the new CDC guidelines suggest using urine unless a speculum already is being inserted for another reason.

Urine sampling for the NAATs has slightly different requirements than do other urine tests, to ensure that any organisms are present in sufficient quantity. Patients cannot have urinated in the past hour, they should not cleanse the perineum before sampling, they should collect the first part of the urinary stream, and they should collect only as much urine as the test requires.

Dr. Policar noted that nucleic acid probe tests are not as accurate as the NAATs, and clinicians using these tests should consider switching to a NAAT system. One caveat of the NAAT is that it cannot be used for a test of cure for at least 3 weeks, because it will detect the presence of dead pathogens. Only a culture test can be performed accurately within that time frame.

According to the 2006 CDC guidelines, a retest for chlamydia or gonorrhea should be performed in 3 months, as these infections are associated with a high likelihood of repeat infection and the retesting strategy focuses on higher-risk patients.

Tests for human papillomavirus (HPV) also are overperformed, said Dr. Policar, especially in regards to the low-risk HPV types for which there is no clinical relevance or treatment strategy. He therefore recommends using the high-risk HPV DNA test only in the context of cervical cancer screening and the management of abnormal Pap smear results, but not as a screening or diagnostic test for sexually transmitted infection.

The combined HPV/Pap test is growing in popularity as a cervical cancer screening tool. This test is indicated for women at least 30 years of age who are immunocompetent with their cervix in place. Clinicians using this test should tell women in advance that they will be screened for HPV so they can expect the result.

For the 92% of women who do test negative for both HPV and Pap on the combined test, Dr. Policar emphasized that "the guidelines are adamant that the woman does not need to be rescreened any earlier than 3 years. You don't want to test any earlier than that because there are too many false positives, yet no improvement in the detection of high-grade squamous epithelial lesions." ■