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BRIEF ANSWERS TO SPECIFIC CLINICAL QUESTIONS

Q: How do you manage a healthy, asymptomatic, 24-year-old with a positive RPR on a premarital blood test?

SHERIF B. MOSSAD, MD
Department of Infectious Disease, The Cleveland Clinic

A: First, confirm or refute the diagnosis of syphilis by:

- Taking a sexual history
- Performing a physical examination, looking for signs of primary, secondary, or tertiary syphilis
- Doing confirmatory laboratory tests, such as a fluorescent treponemal antibody absorption (FTA-ABS) test.

If all these are unrevealing, there is a great chance the rapid plasma reagin (RPR) test is falsely positive. However, if the diagnosis of syphilis is established, treatment with penicillin is recommended; the dose and frequency depend on the stage of illness.

Unless the RPR test is considered falsely positive, serial monitoring is recommended to assess adequacy of therapy and to exclude reinfection. Patients with syphilis should also be tested for other sexually transmitted diseases (STDs), such as human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), *Chlamydia trachomatis*, and *Neisseria gonorrhoeae* infections.

WHAT ARE THE POSSIBILITIES?

There are four distinct possibilities for a positive RPR in a person without symptoms:

- **False-positive test**—particularly if the titer is low (≤ 1:8). This can be due to a variety of infectious and noninfectious causes.[1] In a person without symptoms, the list also includes injection drug use, pregnancy, multiple blood transfusions, and recent immunization.
- **Active syphilis.** The patient may be either unaware of the infection or reluctant to disclose it, particularly before marriage. Primary chancre is usually painless, and not all patients with secondary syphilis have the noticeable rash on their palms and soles. Tertiary neurosyphilis can certainly be asymptomatic, particularly in those co-infected with HIV.[2]
- **Latent syphilis.** Untreated primary or secondary syphilis usually resolves spontaneously. The ensuing period has been arbitrarily divided into early (3–12 months) and late (beyond 12 months) latent syphilis. Persons in this stage have, by definition, no symptoms but have a positive RPR test.
- **Treated syphilis.** Most people with primary or secondary syphilis that was adequately treated show decreasing RPR titers and become nonreactive in 12 to 24 months. However, in a minority, low RPR titers can persist for a long time—possibly for life. This is referred to as the "serofast reaction."[3]

A positive RPR must be confirmed or refuted

HOW SHOULD THIS PATIENT BE MANAGED?

Take a detailed sexual history, including history of sexual promiscuity and previous STDs. Also ask whether the patient has lived abroad, specifically in areas of the world where treponemal infections such as yaws are endemic.

Examine the patient for genital, anal, or oral chancres, localized or generalized lymphadenopathy, alopecia, skin rash, and mucous patches. Cardiovascular involvement, classically with aortic regurgitation, would probably be unlikely at this young age.

If the suspicion for syphilis is high, repeat the RPR test and determine the titer, confirm the diagnosis by a treponemal test such as the FTA-ABS test, and treat with penicillin according to the stage of illness if the patient is not allergic to it.

If the suspicion for syphilis is low, the

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RPR titer is low, and the FTA-ABS test is negative, the RPR result was most likely falsely positive, but it should be repeated at least once in 3 months. If the titer is increasing, active infection or reinfection is likely, and treatment should be given.

All treated patients should be monitored until the titer is negative, or for at least 12 to 24 months. Titers in patients with latent and tertiary syphilis take longer to fall. The FTA-ABS test is positive for life in almost all infected patients and should not be used to document adequacy of treatment.[4]

All patients with any stage of syphilis should be counseled about other STDs and offered screening tests for HIV, HBV, HCV, *C trachomatis*, and *N gonorrhoeae*.

SHOULD THE RPR TEST BE DONE IN THE FIRST PLACE?

A recent epidemiologic analysis[5] indicates that the rate of primary and secondary syphilis in the United States has declined to 2.5 cases per 100,000 population, the lowest rate ever reported. Moreover, cases are concentrated in certain geographic areas, mainly in the southeastern regions of the country.

Unless this healthy young person without symptoms has reason to believe that he or she is at risk of having syphilis, most authorities do not recommend premarital screening for syphilis.[6] The only exception would be if this person were pregnant.

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ADDRESS: *Sherif B. Mossad, MD, FACP, FIDSA, Department of Infectious Disease, S32, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195; e-mail mossads@ccf.org.*

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