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Abstract

A 62yo white male presented to same day clinic with an erythematous nodular rash. He was initially treated with antibiotics for a furunculosis, but the rash worsened and he was eventually found to have secondary syphilis. He is an MSM who had a prior history of syphilis, putting him at high risk for STI's and HIV, and should have been undergoing annual screening. He was found to be HIV positive.

The rates of STI's and HIV are increasing in older Americans. Despite this, physicians do not regularly screen this population for unsafe sexual behavior. This case emphasizes the importance of taking a sexual history in older patients, assessing their risk for STI's and HIV, and providing them with education about safe sex.

Persistent Nodular Rash in an elderly patient

Presentation

A 62 year old white male presented to the same day clinic with a complaint of painless, nonpruritic maculopapular lesions on his back, chest, and shoulders. The lesions first appeared two weeks prior, and the patient had treated them unsuccessfully with bacitracin ointment. His past medical history was significant for Crohn's disease, hyperlipidemia, a CVA, and recurrent methicillin-resistant *Staphylococcus aureus* (MRSA) furunculosis. Overall, his medical problems were well-controlled and he was compliant with his care. His medications included simvastatin and aspirin, which he had been taking for years. He denied insect exposure, use of new detergents, soaps, lotions, or other skin irritants. Of note, the patient was a wrestling coach and himself a competitive wrestler.

Physical examination revealed diffuse, erythematous, scaling papular and nodular lesions diffusely spread over his back and chest. A wound culture was sent to the lab and came back with light growth of Staphylococcus aureus, and he was started on clindamycin for a presumed MRSA folliculitis.

The patient returned for follow-up in ten days. The lesions became more diffuse, spreading to his palms, still nonpruritic and painless (Figures 1, 2 and 3). Upon further questioning it was discovered that the patient had had syphilis in 1982 and was treated successfully. He had additional post-exposure negative RPR in 2001 and 2002. He denied any genital ulcer disease. He was sexually active with a male partner. He had never had a HIV test.

Discussion

Due to the patient actively wrestling, and his history of MRSA skin infection, the initial differential diagnosis of the lesions included folliculitis, scabies, tinea corporis, and contact dermatitis. Pityriasis rosea, the rash of primary HIV, cutaneous lymphoma, and an unusual presentation of secondary syphilis were also considered (Table 1).

A folliculitic infection should have responded to clindamycin, even if caused by MRSA and would not have spread to the palms. Scabies more characteristically would be found in the interdigital webs and would be intensely pruritic. Tinea corporis lesions are sharply demarcated plaques with overlying scale. They also do not characteristically occur on the palms. Contact dermatitis is an inflammatory reaction secondary to allergen exposure and is usually pruritic or tender. This patient denied any known allergen exposures. Pityriasis rosea usually begins with a "herald patch" then the fine-scaled papules erupt in a characteristic "Christmas tree" pattern. The rash of pityriasis is often

pruritic and rarely involves the palms. The rash of acute HIV could not be ruled out. It can present in many ways. Diffuse morbilliform rashes with macules and papules, ulcerated lesions, vesicular and pustular exanthems have been reported. Cutaneous lymphoma presents as randomly distributed sharply demarcated erythematous plaques. The lesions can be scaling or non-scaling and rarely occur on the palms.

At his follow-up visit a punch biopsy of the lesion was performed and an RPR sent. The patient initially refused HIV testing, but eventually consented after 3 months. The RPR was reactive with a titer of 1:4096, and follow up treponemal specific test was reactive (FTA-ABS). The punch biopsy showed a nodular lymphocytic infiltrate thought to represent a rare pseudolymphoma presentation of syphilis, but a nodular tumor stage of mycosis fungoides could not be ruled out. Warthin-Starry stain failed to show any treponemal organisms. The HIV test came back positive.

Management

The patient was treated with benzathine penicillin G. In an HIV positive patient clinical and serological follow-up is required at 3, 6, 9, 12, and 24 months. With treatment, symptoms should resolve and nontreponemal tests should decline 4-fold by 6 months, if not, it is considered treatment failure and the patient requires a lumbar puncture (1). Our patient's symptoms resolved clinically and his RPR decreased to 1:512 at the 3 month follow-up. His HIV viral load was 202,000 and his CD4 count was 211. He was referred to an HIV specialist and started on HAART. He has responded well to therapy and remains active and symptom-free.

Syphilis

Typically, syphilis first presents as a chancre, a painless ulcer that forms about 21 days after the site's exposure to the spirochete *Treponema pallidum*. This primary lesion, usually in the genital area, frequently goes unnoticed and untreated, as in the case of our patient. In the preantibiotic era, studies found that 50% to 75% of exposed sex partners of persons with primary or secondary syphilis were subsequently infected (1).

Secondary syphilis usually develops 4 to 10 weeks after the appearance of the chancre. This second stage of the disease is known for its protean manifestations. Most commonly, a painless, non-pruritic, macular rash develops on the trunk and extremities. If untreated, the rash can progress and become scaly and copper-colored, maculopapular or papulosquamous, and cover the palms and soles. The rash can be pustular, annular, or follicular, but almost never vesicular (2). The rash is the presenting complaint in 70% of patients (1).

In 2000 the incidence of syphilis reached an all-time low in the United States. Since then the rates have been increasing, especially among men who have sex with men (MSM). In 2007 MSM accounted for 65% of primary and secondary syphilis cases, up from 5% in 2000 (3). Also of note, adults 55 and older accounted for 4.3% of all reported primary and secondary syphilis in the U.S in 2007, compared to 3.4% in 2003 (4). In all, primary

and secondary syphilis occurred at a rate of 1.5/100,000 persons aged 55 and older in 2007, increased from 0.8/100,000 in 2003 (4).

This increase in syphilis cases, particularly in the 55 and older age group, underscores the importance of taking a sexual history in all patients, including those 55 and older. Numerous studies have demonstrated that older Americans remain sexually active (8). As a MSM with a history of syphilis infection, our patient was at high risk for a recurrent infection and for HIV (7).

Syphilis and HIV

Syphilis frequently coexists with HIV infection. Active syphilis infection with genital lesions is a risk factor for both transmitting and acquiring HIV (3).
In general, the clinical and laboratory presentations of syphilis in HIV-infected persons are similar to those not infected. However, chancres and ulcerating lesions seem to be more common in HIV infected individuals (2). Also, there are reports of syphilis having a more rapid progression to the tertiary stage with HIV co-infection (6).

There have been several case reports linking atypical lymphoid infiltrates simulating mycosis fungoides occurring in secondary syphilis lesions in patients co-infected with HIV (5). Physicians are encouraged to obtain Warthin-Starry stains and syphilitic serologic tests when atypical lymphoid cutaneous reactions are found in an HIV positive patient (5).

As a man who has sex with men (MSM), our patient should also undergo annual STD/HIV risk assessment (7). Since he contracted syphilis, he is considered a high-risk patient and should be encouraged to get the following studies routinely (in addition to syphilis serology tests): an HIV serology test; either an urethral culture or urine nucleic acid amplification test for gonorrhea and chlamydia; pharyngeal specimen collection to check for gonorrhea in men with oral-genital contact; and rectal gonorrhea and chlamydia culture in men having receptive anal intercourse (7).

HIV in the Elderly

The HIV population is aging due to both improved pharmacologic treatment and an increased number of new cases. In HIV, elderly denotes a patient over age 50, which is younger than the designation of elderly in other diseases (9). In 2005, 24% of those living with HIV were over 50 years old, increased from 17% in 2001 (9, 10, 11). The increasing prevalence of HIV in this age group is due partly to unsafe sexual practices and lack of patient knowledge about risk factors (12). Also, men who have sex with men have the greatest risk for new HIV infection in the elderly, but heterosexual transmission, especially in women, is on the rise. Approximately 25% of those newly diagnosed over age 50 have no reported risk factors, further complicating screening protocols (13). Currently, there are no HIV recommendations specifically targeting the over 50 age

group. The CDC recommends HIV screening annually in high risk patients, and as part of routine medical care for patients aged 13-64 (20).

There are key clinical differences in the diagnosis, presentation, and prognosis of patients in the over 50 age group. The diagnosis is often delayed due to low clinical suspicion, resulting in an increase in disease transmission and opportunistic infections. HIV-associated dementia in the elderly is a common presenting symptom and is three times as likely to occur in older patients with HIV, independent of CD4 counts (14, 15). The dementia is subcortical, and results in memory and psychomotor impairment, depressive symptoms, and movement disorders (16, 17). It is often mistaken for Alzheimer's disease, but HIV-associated dementia is much more progressive (13). Given the prevalence of HIV-associated dementia as well as the knowledge that this diagnosis is often missed, it should likely be screened for in patients with and without known HIV diagnoses as part of routine laboratory testing for mild cognitive impairment, Alzheimer's disease, and atherosclerotic associated dementia. HIV infection should also be in the differential diagnosis of neuropathy and Parkinson's disease (9). Other than dementia, there are no major differences in AIDS-defining illnesses in the elderly, though they are more commonly misdiagnosed due to confusion with comorbidities (13). The clinical outcomes for the elderly who are newly diagnosed tend to be worse than for younger patients. The elderly are more likely to present with CD4 counts less than 200 and are more likely to die within one month of diagnosis. They also have a slower immunologic response of CD4+ lymphocytes when taking HAART therapy (18, 19).

There are scant educational materials targeting the elderly about risks for HIV disease. For this reason, it is essential that primary care physicians discuss sexual health and safe sex practices with all their patients, including those over 50 (9).

Summary

Older Americans continue to be sexually active throughout their lives. Physicians should educate their patients about safe sex, inquire about their patients' sexual practices, and assess their patients' risk for STI's and HIV. Rates of STI's and HIV are increasing in the 50 and over age group, in part because of lack of sexual risk screening and safe sex counseling by physicians and unsafe sexual practices. Our patient should have been considered high risk for STI's and HIV given his past history of syphilis and his status as an MSM, and therefore screened regularly. Because of his lack of screening, his HIV diagnosis was likely delayed, putting him at risk for opportunistic infections and poor outcome. Finally, because HIV-associated dementia is often missed, it should be included in the differential diagnosis of a dementia work-up.

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Table 1. Differential Diagnosis of Nodular Red Lesions

	Etiology	Clinical Characteristics
Folliculitis	Inflammation or infection of hair follicles, bacterial super-infection most commonly caused by *Staphylococcus aureus*	Tender papules on an erythematous base, found on scalp, arms, legs, axillae, and trunk
Scabies	Infestation of the mite *Sarcoptes scabiei*	Intense pruritis in the interdigital webs and wrists, papules and burrows may be noted in a linear distribution under the skin
Tinea corporis	Dermatophyte infection of the body, trunk, or limbs	Sharply demarcated plaques with overlying scale, KOH examination reveals numerous hyphae
Contact dermatitis	Allergic contact dermatitis is a cutaneous manifestation of a type IV delayed hypersensitivity reaction mediated by memory T lymphocytes	Severely pruritic, erythematous, vesiculated, crusting, scaling eruption of the skin
Pityriasis rosea	Unknown etiology, most likely viral origin. Herpes 7 has been implicated.	Numerous dry, finely scaled, plaques on an erythematous base are characteristic of the disease. A solitary "herald patch" may precede the secondary lesions by one week. The secondary eruption is symmetric and is localized to the trunk and adjacent areas of the neck and extremities, often having a "Christmas tree pattern."
Rash of primary HIV	Acute HIV infection	Diffuse morbilliform rash with macules and papules, ulcerated lesions, vesicular and/or pustular exanthema
Cutaneous lymphoma	T-cell lymphoma first manifested in the skin	Randomly distributed sharply demarcated erythematous scaling or non-scaling plaques. Lesions rarely occur on the palms.
Secondary Syphilis	Hematogenous dissemination of *T. pallidum*	Virtually any kind of rash except vesicular. Usually pink, red, or copper macules, 3-10mm diameter. Maculopapular lesions on palms and soles especially suggestive.