A Case of Secondary Syphilis

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A Case of Secondary Syphilis

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History of Present Illness: The patient presents with a generalized rash for 1 month. The eruption started on his right arm then spread to his face and rest of his body. Patient described it as asymptomatic pink bumps. However, the lesions are painful when they drain. Associated with fevers. Patient is sexually active.

Medical History/Surgical History: Tobacco use

Previous Treatments: Prednisone taper, IV ceftriaxone, IV doxycycline, topical mupirocin

Current Treatment: Single penicillin G 2.4 million units intramuscular injection

Physical Examination: Face with ill-defined deep pink nodules with overlying yellow crusting and eyelid edema. Left ear with purulent yellow drainage and crust. Right arm with umbilicated pink papules. Right palm with 1 pink macule. Left palm with 1 pink-purple papule. Left arm has subtle pink papules and thin plaques. Abdomen and chest with ill-defined pink papules with central crust. Distal extremities have pink umbilicated papules with central hemorrhagic crust. Necrotic plaque with surrounding erythema on left sole. Right sole with 1 purple dusky plaque with central eschar.

Studies: Syphilis screen positive, RPR 1:256. WBC 13.8 with neutrophilia of 12.0 thou/cmm (4.0-10.5), creatinine 1.5 mg/dL (0.53-1.30). HIV, chlamydia, gonorrhoeae, hepatitis profile, blood cultures are negative or WNL.

Biopsy: *Advanced Dermatology/ Pennsylvania Dermatology Partners* (SR19-00009/ PDP19-12016, 7/01/2019) Right proximal dorsal forearm: "Psoriasiform interface dermatitis. The underlying epidermis reveals irregular epidermal hyperplasia with an occasional keratinocyte. Occasional plasma cells and neutrophils are seen. A Warthin-Starry stain is negative"

Advanced Dermatology (AD19-06885, 7/12/2019) Right forearm and left inferior breast: "Superficial and deep, perivascular, lymphoid infiltrate with papillary dermal edema and prominent serum crusting. Immunostains and Warthin-Starry stains are negative for the definitive presence of spirochetes. However, the germane microscopic findings are otherwise consistent with syphilis."

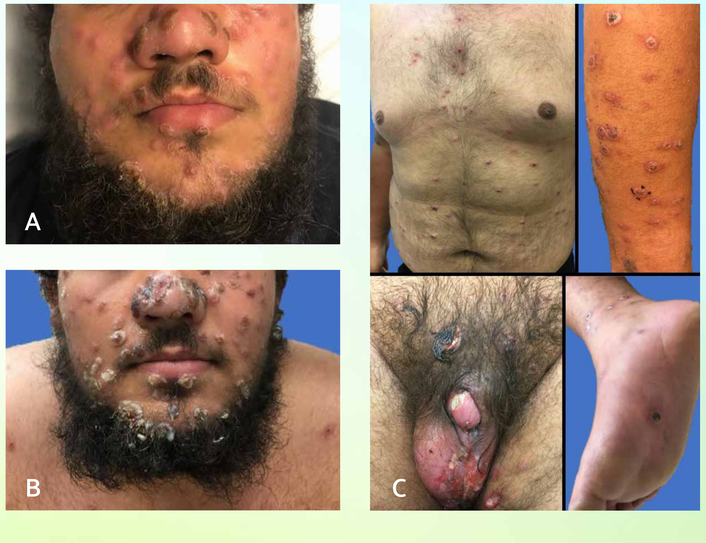

Figure A. Early presentation. Face with ill-defined deep pink nodules some with yellow crust.

Figure B. A few days after initial presentation. Patient with deep-pink nodules, many with purulent drainage and yellow crust.

Figure C. Generalized distribution of eruption on trunk, extremities, genitalia, and sole.

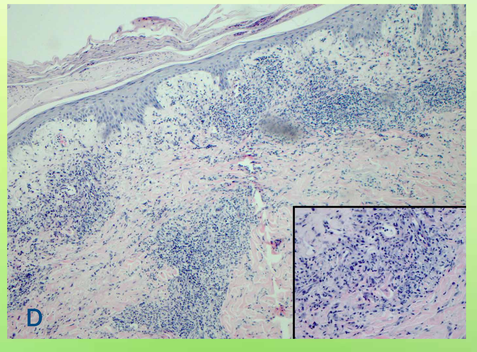

Figure D. (H&E, 10x). Punch biopsy of right forearm shows superficial and deep perivascular lymphoid infiltrate with papillary dermal edema. Inset (H&E, 40x) showing mixed infiltrate of lymphocytes and plasma cells.

Diagnosis: Secondary Syphilis

The incidence of syphilis is now increasing worldwide. According to the Centers for Disease Control and Prevention, over 30,000 cases were reported in 2017. The causative organism is a spirochete, *Treponema pallidum*. Syphilis is most commonly transmitted sexually with the second most common mode of transmission being transfer across the placenta.

Known as the great imitator, the clinical presentation of syphilis can vary based on stage. The primary lesions begin up to 90 days after exposure and present with a well-circumscribed painless ulceration. Regional lymphadenopathy can accompany this lesion. The secondary stage is characterized by hematogenous dissemination and multiplication in different tissues. Latent syphilis is the time frame between healing of clinical lesions and appearance of late manifestations. The tertiary stage, also called late syphilis, occurs in one-third of untreated patients up to several years after exposure. Manifestations involve various organs including the central nervous and cardiovascular systems.

Clinically, secondary syphilis has varying morphologies. The skin eruption can be macular, papular, follicular, and rarely pustular. The pustular variant can present with acneiform lesions. In addition, this variant includes varioliform lesions, which are pustules with crusts that then form punched out ulcers. In addition, patients can present with granulomatous nodules and plaques as well as crusted necrotic lesions. Lesions are classically copper colored. They are generalized with involvement of the palms and soles. The lesions are commonly nonpruritic. Mucosal lesions range from small, superficial ulcers to large gray plaques. Condylomata lata are papules or nodules seen in the anogenital area. In addition, alopecia can present in a "moth eaten" pattern. The majority of patients will have regional lymphadenopathy.

Laboratory evaluation includes screening and confirmatory tests. Histopathology can aid in diagnosis. Important findings include endothelial cell swelling along with a dermal infiltrate of lymphocytes and plasma cells. Secondary syphilis can be particularly varied on pathology. The epidermis may be normal, psoriasiform, or ulcerated. This is accompanied by a dermal infiltrate of plasma cells, lymphocytes, and histiocytes. Silver stains, such as the Warthin Starry stain, can be considered but when used in primary and secondary syphilis have a low specificity and low sensitivity.

The recommended treatment for all syphilis stages is Benzathine penicillin G given intramuscular. However, neurosyphilis, ocular syphilis, and otic syphilis will require aqueous penicillin G.

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