Pustular secondary syphilis

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The cutaneous manifestations of syphilis are many. Most commonly one sees macular, papular, and papulosquamous lesions. Rarely, except in infants, are the lesions vesicular and only occasionally are they pustular (Pillsbury, Shelley, and Kligman, 1956; Pariser, 1964). The pustular lesions may easily be misdiagnosed unless the clinician is aided by the presence of a persistent primary lesion or more characteristic secondary lesions. Current text-books consider pustular secondary syphilis to be a very rare entity that occurs in vagabonds or debilitated persons either as a purulent breakdown of lesions that are initially papular (Lomholt, 1968) or as a superimposed pyoderma (Fitzpatrick, Arndt, Clark, Eisen, Van Scott, and Vaughan, 1971). Older texts (Becker and Obermayer, 1947; Ormsby and Montgomery, 1943; Sutton and Sutton, 1939; Stokes, Beerman, and Ingraham, 1944) must be referred to for a more thorough description of this entity, although it was considered an infrequent occurrence even then. The following report describes a case of pustular secondary syphilis seen recently at our institution.

Case Report

A 37 year-old Negro male airplane mechanic was admitted to the dermatology ward of the Naval Hospital, San Diego, with a 'sore' on the penis of one month's duration.

The patient admitted an unprotected extramarital contact about one month before the appearance of the lesion. The primary lesion began as a crusted, tender ulcer on the shaft near the corona followed 3 days later by nontender bilateral inguinal adenopathy. Eight days before admission he developed inability to retract the foreskin and increased left inguinal adenopathy with tenderness. He stated that 3 days before admission 'small sores' had begun appearing on the trunk and extremities. Macular

lesions on the palms and soles developed on the day of admission. The past history revealed negative VDRL tests 4 and 2 years before admission.

He had been treated for gonorrhoea with penicillin one year before admission but there was no available information about serological testing that may have been done at that time.

Examination

There was a generalized eruption of discrete, perifollicular papules and pustules on an erythematous base. This particularly involved the face, neck, chest, back, abdomen, buttocks, and extremities (Figs 1 and 2). There were a few macular and papular lesions on the palms and soles. The foreskin was indurated and not retractable. Several 0.5 to 1.0 cm., flat-topped, non-erythematous hyperkeratotic papules were noted on the penile shaft and scrotum. The glans penis was not visible initially.

Several erosive lesions of the oral mucosa were noted. There was diffuse, bilateral, shotty adenopathy of the anterior neck, and bilateral, 1.5 to 2.0 cm. matted, nontender inguinal adenopathy. The skin over the inguinal nodes was hyperpigmented and scaly (Fig. 3). The patient was in good general health and was clean, alert, and afebrile.

Laboratory investigations

The VDRL test on admission was reactive 1 : 256 and the FTA-ABS test was positive. Dark-field examinations of aspirates of the inguinal lymph nodes and of one of the pustular lesions were positive for *Treponema pallidum*. The WBC was 10,700 with a normal differential. The haematocrit and haemoglobin were normal. Polymorphonuclear leucocytes were seen in smears of material from the pustules, and cultures of the pustules, both aerobic and anaerobic, grew *Staph. aureus*. Wet-mount potassium hydroxide preparations and fungal cultures were negative. A Frei test was negative. Biopsy of a pustular lesion showed a perivascular lymphocytic infiltrate in the upper dermis associated with four to five plasma cells per high-power field. The epidermis showed minimal spongiosis and widely scattered small areas of lymphocytes. There was a moderate amount of oedema in the upper dermis, but the pustule could not be demonstrated despite multiple sectioning of the specimen. A Warthin-Starry stain showed structures in the epidermis and dermis thought to be consistent with spirochaetes.

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FIG. 1 *Dark-field positive pustular lesions scattered over the back*

No evidence of a sarcoid-like tissue reaction, not infrequently seen with the follicular syphilides (Mikhail and Chapel, 1969), was noted.

Treatment

The patient received a 10-day course of procaine penicillin, 600,000 i.u. intramuscularly daily, and topical treatment to the penis consisting of warm soaks and subpreputial irrigations. He had a Jarisch-Herxheimer reaction on the first day of treatment characterized by malaise and a brief rise in temperature to 103.6°F.

Result

The penile lesions and adenopathy regressed with treatment, the papulopustular lesions became dried and crusted, and the hyperpigmentation in the groin faded. Repeat dark-field examinations of the healing lesions after the full course of penicillin were negative and a repeat VDRL one month later was reactive 1 : 64. A year later the serum VDRL was reactive 1 : 1. At that time a lumbar puncture was performed and the cerebrospinal fluid VDRL was non-reactive.

VDRL tests on serum from the patient's wife and son were negative at the time of his admission, one month later, and again one year later.

FIG. 2 *Pustular syphilide on forearms*

Comment

In the older textbooks of dermatology and syphilology the entity, *syphiloderma pustulosum* (or pustular syphilide), is quite extensively described. It was said to occur usually in cachectic and ill-nourished patients with a resultant lowered resistance to staphylococcal infection and was subdivided into types according to the size and shape of the lesions.

The *small acuminate pustular syphilide* (miliary pustular syphilide) is a diffuse eruption, usually symmetrical, on the trunk and extremities, of small, discrete, occasionally confluent, perifollicular pustules that occurs early, in the first few months of infection. These lesions occur alone or with papular lesions, develop slowly, and persist for several weeks if untreated. They dry, forming crusts, and on healing leave temporary, minimally depressed, hyperpigmented areas. There are no constitutional symptoms and the lesions are prone to relapse if treatment is not complete.

The *large acuminate pustular syphilide* (acneiform, varioliform, or obtuse syphiloderma) occurs within the first 8 months of infection and consists of large, discrete, acuminate, perifollicular pustules with

FIG. 3 Inguinal adenopathy with overlying hyperpigmentation

infiltrated bases and a tinted border with a coppery hue. They may be accompanied by constitutional symptoms. These lesions tend to show polymorphism and may even be umbilicated, resembling the lesions of variola. They dry, forming crusts, and heal leaving brownish, sometimes atrophic, areas.

The *flat pustular syphiloderm* (impetiginoid or echthymiform syphilide) consists of pea to dime-sized, yellow or brown, superficial pustules of the face, scalp, trunk, flexor aspects of the extremities, and genito-anal region occurring within the first year of infection. Often a dull red areola may be seen around the crusts. The ulcers exposed on removal of the crusts are shallow and only slightly inflamed. These lesions often become confluent and form a large crust called a carapace.

The *pustulo-ulcerative syphilide* is a deeper, destructive variety of the pustular syphilide and is usually of late onset. The lesions are purulent with a deep, infiltrated base and have a dark brown halo. They soon crust, forming a conical, round or oval, black-brown crust which exactly covers the sharply defined edges of the ulcer beneath. These crusts often have the appearance of oyster shells and are called

rupial syphilides. As with all pustular syphilides, these lesions begin as macules or maculopapules, but unlike the other forms they become destructive with attendant pain and toxicity. There is a frequent association of papulopustular secondary syphilis with neurosyphilis.

The case presented here is best described as the small acuminate type of pustular syphilide. No scars were evident after the initial hyperpigmentation faded. It is important to note that the patient was neither a vagabond nor cachectic and was in fact in excellent health at the time of infection. He had been diagnosed 4 years before as having minimal pulmonary tuberculosis and was treated with isoniazid and para-aminosalicylate for 20 months; 2 years before admission it was felt that he had had adequate therapy and that his tuberculosis was inactive. No evidence of active tuberculosis was found on the present occasion. The pustules were dark-field positive before treatment, but in addition *Staph. aureus* was cultured. This may have represented a secondary pyoderma in papular or maculopapular lesions. There was no evidence that the patient was prone to staphylococcal infections.

Considering the steady increase in the incidence of syphilis and the many different forms that secondary syphilis may take, it is imperative that clinicians maintain a high index of suspicion. We must be particularly aware of the unusual and less frequently seen manifestations of this disease and must make use of serological and dark-field examinations in every case of possibly syphilitic skin eruption.

Summary

A case of secondary syphilis presenting in the infrequently seen pustular form is presented, and the various types of pustular syphilis are described. Considering the many different forms that secondary syphilis may take, we must be aware of the unusual and less frequently seen manifestations of this disease and make use of serological and dark-field examinations in all cases with possibly syphilitic skin lesions.

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Syphilis secondaire pustuleuse

SOMMAIRE

On rapporte un cas de syphilis secondaire présentant la forme pustuleuse, rarement rencontrée, et l'on décrit les différents types de syphilis pustuleuse. En considérant les nombreuses différentes formes que peut revêtir la syphilis secondaire, nous devons être avertis des manifestations inhabituelles et moins fréquentes que l'on observe dans cette maladie et faire usage de la sérologie et du fond noir dans tous les cas présentant des lésions cutanées éventuellement syphilitiques.