LATE SYPHILIDS OF THE NODULAR AND NODULO-ULCERATIVE TYPE

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The cutaneous manifestations of late syphilis may be divided into (1) solitary gumma and (2) nodular syphilid. The nodular syphilid may or may not become ulcerated; consequently, it is designated a nodular ulcerative or a nonulcerative syphilid. Late syphilids of the palms and soles may be erythematous and scaly and simulate the commoner squamous dermatoses such as psoriasis and epidermophytosis, and therefore will not fit well into this classification of late syphilids. Such a late palmar and plantar syphilid may not show many of the characteristics so consistently observed in late nodular syphilids located elsewhere. However, nodular syphilids may occur on the palm or sole and the squamous syphilids of these areas usually have one or more of the characteristics of late syphilids such as well defined, arciform, indurated margins or grouped indurated papules.

Because syphilis is a disease of protean manifestations, its late systemic effects often are unrecognized. However, the physical characteristics of late nodular syphilids are so distinctive that when certain combinations of these features are present in a lesion they are considered pathognomonic. This enables a physician who is familiar with the morphology of late syphilids to detect the presence of the disease in certain patients without the aid of serologic reactions. The blood serologic reactions of patients with late syphilis frequently are negative, and also individuals with late cutaneous syphilis often do not show other evidence of syphilis such as clinical signs of cardiovascular or neurosyphilis. Therefore, the clinical recognition of a late syphilid may be an important factor in the solution of a puzzling clinical problem.

Two decades ago patients with late syphilids were commonly seen in this clinic. During the past few years, however, late cutaneous syphilis has become relatively uncommon, while during this same period the number of patients with latent and late visceral syphilis has increased. This decrease in the incidence of late syphilids seems to be general. Many young physicians who are completing their training have commented on the small number of cases of late nodular syphilids they have seen throughout their course of undergraduate study. The decrease in the incidence of late cutaneous syphilis is in part probably the result of modern antisyphilitic therapy. In favor of this assumption is the observation that many patients with late syphilids do not know they have the disease or if they do know they are infected they never have received modern antisyphilitic remedies.

The purpose of this presentation is to point out the basic characteristics of a nodular syphilid. As physicians are familiar with the characteristics

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of solitary gumma, this form of late cutaneous syphilis will not be considered.

Because of the desire to emphasize the distinguishing characteristics of nodular and nodulo-ulcerative syphilids, a discussion of the differential diagnosis of late cutaneous syphilis has been omitted. All granulomatous processes have characteristics in common with late syphilids and in some cases a clinical differentiation is difficult and at times impossible. However, there is a combination of characteristics common to granulomas that is distinctive of late cutaneous syphilis.

Late syphilids are the result of an intense inflammatory reaction to a local focus of spirocheta pallida. They are an indication of allergy or sensitivity to the organism which is acquired by the host, usually late in the disease. The intense tissue reaction destroys or decreases the virulence of the spirochetes and varying degrees of tissue destruction follow.

Late syphilids are solitary lesions and are not infectious. One or more lesions may be present. They usually are asymmetrical in distribution, and tend to have a characteristic configuration. The lesions are circle-like, irregular or serpiginous in outline and the nodules tend to be arranged in segments of circles. This arciform configuration is an important characteristic of nodular syphilids. The central part of the lesion heals as one or more portions of its well demarcated margin extend peripherally. There is no tendency for new nodules to form in the healed, scarred areas of the lesion. The active parts of the lesion are firm, brownish-red, indurated, smooth, or slightly scaly nodules which are seen at the actively spreading margins. The nodules may remain discrete or coalesce to form an arciform, indurated, advancing segment of the periphery of the lesion. Some nodules break down and are replaced by rounded or irregularly punched-out ulcers with indurated straight margins. As these ulcers heal, the resulting scar is thin or atrophic, noncontractile, and usually surrounded by a hyperpigmented areola. This atrophic scar is a significant characteristic of late cutaneous syphilis. Some degree of atrophy may occur in the absence of ulceration. The atrophic scars retain the arciform arrangement of the original lesions and the peripheral hyperpigmentation persists for many months. This type of scar is of diagnostic importance and should not be dismissed lightly when observed during the course of the examination. In some patients, scarring may be the only clinical evidence of late syphilis. Therefore, the physician should carefully examine all cutaneous scars.

The most significant characteristics of late nodular syphilids are the arciform configuration of the lesion, the induration, and the atrophic noncontractile scar surrounded by a zone of hyperpigmentation.

The following cases illustrate the characteristics of late nodular syphilids:

Case 1: A married man came to the Clinic in September, 1936, complaining

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FIGURE 1: Solitary ringed lesion with indurated, brownish-red nodules at the periphery. Active portion of lesion is below the eye. The healed and involuting portion is on the nose. Note the tissue destruction with ulceration and crusting of one nodule.

of an eruption on the face, nervousness, and lack of endurance. During the past year he had become nervous and irritable, and he tired easily. These symptoms increased in severity and recently he had slept poorly and had lost his appetite.

In the fall of 1935, a "pimple" appeared on the right side of the nose. This lesion enlarged by peripheral extension and by January, 1936, several dull red nodules developed just below the eye on the right side of the face. One nodule near the inner canthus of the right eye interfered with his wearing glasses. A central crust developed on some of the lesions.

Treatment at that time consisted of one treatment with ultraviolet light and the application of ointments, but the lesions did not improve. Since adolescence there had been numerous comedones and an occasional acne on the face. With the exception of the eruption on the face and a slight bilateral nerve deafness, physical examination showed no abnormal findings.

The skin of the face was abnormally oily and numerous comedones were present on the nose. Small, indurated, brownish-red cutaneous nodules were located only on the right side of the face and nose (Fig. 1). The lesion as a whole was circinate. The nodular and nodulo-ulcerative lesions were at the periphery. The nodules on the right ala and distal portion of the nose had almost disappeared, but those on face and near the base of the nose were more active. This portion of the periphery was arciform and was the progressive portion of the lesion. A sharply demarcated and infiltrated margin was present across the ridge of the nose at its base. Atrophic scarring was not conspicuous. There was slight atrophy near the lateral portion of the lesion.

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Wassermann and Kahn tests of the blood gave strongly positive reactions. Blood counts and urinalysis showed normal findings. Examination of spinal fluid revealed 51 lymphocytes per 100 cc., a faint trace of globulin, a total protein of 25 mg. per 100 cc., a 4 plus Wassermann reaction, and a negative gold chloride reaction.

Comment: This patient had a late nodulo-ulcerative syphilid on the face and associated syphilis of the central nervous system. He was nervous and irritable but came to the Clinic primarily for the cutaneous eruption which had failed to heal following the use of topical remedies. With the exception of a slight bilateral nerve deafness, there were no neurologic signs which would suggest that this patient had neurosyphilis.

This case demonstrates the value of the recognition of a late syphilid as a diagnostic aid and the importance of including examination of the spinal fluid in the investigation of a patient who is known to have or who is suspected of having syphilis.

Case 2: A fifty-nine year old woman came to the Clinic in June, 1939, because of an eruption on the arms and the right palm. For the past five years recurrent groups of red "spots" had appeared on the arms and the right palm, the lesions being more numerous on the left arm. The eruption would last for a few weeks or months and then would disappear almost completely, only to return without any apparent reason. There had been no itching and at no time had vesiculation

2A 2B

FIGURE 2: A. Lesion consists of infiltrated, smooth or scaly brownish-red papules surrounded by a collarette of loose epithelium. They are grouped and in places have an arciform arrangement. No vesicles or pustules are present.
B. Brownish-red nodules arranged in an arciform configuration. Induration of the skin is a prominent characteristic.

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or ulceration of the lesions been present. She had not been well for several years but had no particular symptom or group of symptoms. Antisyphilitic treatment had never been given, and she had not suspected that she might have syphilis.

Physical examination showed no noteworthy findings except for the eruption on the right hand and arms. An eruption was seen on the right palm and on the lateral and palmar surfaces of the fingers (Fig. 2A.) The left palm and the feet were not involved. The eruption consisted of large, brownish-red, flat, smooth and indurated papules which were arranged in groups, and in an arciform configuration which was seen best in the area between the thenar and hypothenar portions of the palm. There was distinct induration of this margin of the lesion and its surface was slightly scaly. Many of the papules were surrounded by a collarette of loose epithelium.

The eruption on the left arm consisted of brownish-red nodules arranged in an arciform configuration (Fig. 2B). Some of the nodules formed segments of circles while others were arranged to produce a serpiginous outline to a large circle-like lesion. The nodules were smooth or were covered with thin and loosely adherent scales. Deep induration could be detected easily by palpation. There were no ulcers. Slight atrophy was present within the central portion of the lesion. Wassermann and Kahn tests of the blood gave strongly positive reactions. The hemogram showed a mild secondary anemia. The spinal fluid was normal.

The lesions disappeared under antisyphilitic treatment with intramuscular injections of bismuth salicylate, and potassium iodide by mouth.

Comment: The arciform configuration and the induration of the lesions on the arms comprise the most important basic physical characteristics of late nodular syphilids. The eruption on the palm is a typical example of late palmar syphilis. The lesion was unilateral, involving the hand which was used most frequently. The indurated papular lesions showed the grouping and arciform arrangement which is typical of late syphilis. The absence of vesicles, and the presence of the induration are two factors against the diagnosis of a ringworm infection which is a superficial erythematous and vesicular eruption.

Case 3: A married man fifty years of age came to the Clinic in May, 1939, complaining of an eruption which had been present for a year. He had gonorrhea when twenty-seven years of age, but denied ever having acute syphilis. He had never received antisyphilitic treatment.

The first lesion was a dull red, raised area on the right temple. There were no subjective symptoms. This lesion enlarged by peripheral extension and cleared at the center at the same time. Two months before coming to the Clinic a similar lesion developed over the deltoid region of the left arm. This lesion also had enlarged by peripheral extension. He had been told that the eruption was a ringworm infection and various ointments and lotions had been applied without any benefit. Except for the cutaneous lesions, the physical examination showed normal findings.

There was a large ringed or circinate lesion in the temple region (Fig. 3A). The margin of the lesion was irregular or serpiginous and was composed of brownish-red nodules. The nodules were fairly discrete in places while in other portions they had coalesced to form a band-like, indurated and elevated margin. There was only slight scaling at some parts of the periphery of the lesion. The skin in

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the central portion of the lesion was smooth and showed some atrophy. No atrophic noncontractile scars were seen.

3A 3B

FIGURE 3: Solitary, ringed lesion on temple (A) and an arciform lesion on the arm (B). The margins are nodular or indurated. There is central healing with peripheral extension.

On the deltoid region of the left arm there was a large lesion consisting of brownish-red nodules arranged in an arciform configuration (Fig. 3B). The lesion had enlarged by peripheral extension and the skin beneath the progressing periphery showed some atrophy. Induration of the margins could be detected by palpation. Wassermann and Kahn tests of the blood gave positive reactions. The patient would not submit to a lumbar puncture.

Comment: In this case, the eruption consisted of two solitary lesions of asymmetrical distribution, each lesion consisting of brownish-red, granulomatous nodules arranged in circular and arciform configurations. There was distinct induration, and as the lesions enlarged by peripheral extension, there was central clearing with slight atrophy of the skin.

Case 4: A married man twenty-six years of age came to the Clinic in October, 1935, because of an eruption on the arms and legs. It had been present for three years.

He had acute gonorrhea when twenty years of age, but did not remember having had a chancre or secondaries. Soon afterward he had a positive blood Wassermann reaction. He neglected to take antisyphilitic treatment at that time and had not received any since then.

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In 1932, approximately three years after he contracted gonorrhea, a "sore" appeared on the lateral surface of the left leg. This gradually healed, leaving a thin scar. Since then new lesions appeared from time to time near the site of the original "sore." These ulcerated and disappeared, leaving scars. A similar eruption developed on the lateral surface of the right leg and the inner surface of the right elbow. No attempts had been made to cure this eruption.

Except for the cutaneous lesions, physical examination showed normal findings. Wassermann and Kahn tests of the blood gave strongly positive reactions. He would not submit to a lumbar puncture.

There were three solitary lesions, one on the lateral surface of each leg, and one on the inner surface of the right elbow. All lesions showed the same physical characteristics. The lesion near the right knee consisted of a group of atrophic, noncontractile scars, each surrounded by a zone of hyperpigmentation (Fig. 4). These scars were surrounded by punched-out ulcers with granulomatous bases and brownish-red nodules, some of which were covered with adherent scales and thin

FIGURE 4: Advancing arciform, nodulo-ulcerative portion of the lesion at the upper margin. Atrophic scarring with peripheral hyperpigmentation at right portion of the lesion.

crusts. The nodules and ulcers which comprised the active extending portion of the lesion were located at the periphery and were arranged in an arciform configuration. Palpation of the nodules showed induration caused by the inflammatory reaction in the deep portions of the skin.

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Comment: The eruption in this case presented the basic physical characteristics of late nodulo-ulcerative syphilids. The lesions were asymmetrical, few in number, or solitary. They were indolent and the nodules and ulcers were arranged in an arciform configuration at the actively spreading margin. Tissue destruction was evidenced by punched-out ulcers, resulting in atrophic scars which were surrounded by hyperpigmentation and located at the central healed portion of the lesion. Induration of the involved skin, a significant characteristic, could be made out by palpation of the nodules. The duration of the infection was not known; however, this patient was younger than most individuals who have late syphilids.

Case 5: A tailor sixty-three years of age came to the Clinic in May, 1940, complaining of an eruption on the right hand, which had been present for two years. He had been married for twenty-eight years. His wife and two children were living and well. He had gonorrhea when he was twenty-three years of age, but denied having had a chancre or secondary syphilis. He had not suspected that he might have syphilis.

The eruption started on the sides of the right thumb and the thenar aspect of the right hand, as red, scaly and crusted areas. Later lesions appeared on the radial aspects of the right palm, and on the dorsal surface of the hand near the base of the thumb. The lesions had continued to come and to disappear, leaving thin scars. There were no subjective symptoms. Roentgen therapy and the application of ointments had been of no benefit.

Except for the cutaneous lesion, the physical examination showed no abnormal signs.

The eruption was limited to the right hand and involved the thumb, the palm, and the dorsal surface of the hand at the base of the thumb (Fig. 5). It consisted of groups of discrete and coalesced brownish-red nodules arranged in an arciform configuration which was best demonstrated on the thenar aspect of the palm. Here the nodules had coalesced to form a sharply demarcated, advancing, indurated, orbicular or arciform margin. A large adherent scale or thin crust was present on the surface of most of the nodules. There was distinct atrophic scarring of the skin on the dorsal surface of the hand and on the thenar portion of the palm at sites of previous nodules. The tip of the thumb was involved and the thumb nail was thickened, not friable and brownish in color. Nodules had not recurred in the healed portion of the lesion. Wassermann and Kahn tests of the blood were strongly positive.

This eruption had been considered to be a ringworm infection, but the tissue destruction with resulting atrophic scarring and the arciform, advancing, indurated margins are characteristics seen in late syphilids and not in epidermophyton infection. This combination of characteristics are distinctive of late syphilid.

Case 6: A married man fifty-six years of age was first observed in May, 1940. While being examined as a possible donor for his wife who had entered the hospital for a major operation, it was discovered that the Wassermann and Kahn tests of his blood gave strongly positive reactions. For the past two years crusted and ulcerated lesions had been present on the forehead and left elbow. Various ointments had been advised by his physician and the eruption apparently had not improved. However, new crusted areas continued to develop. He had

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FIGURE 5: Note the grouping and arciform arrangement of the nodules; also atrophy on the thenar eminence.

not suspected that he might have syphilis. He contracted gonorrhea when twenty-six years of age, but denied having had a chancre or secondary syphilis. This was

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the first time he had had a blood test and he never had received antisyphilitic treatment.

The initial lesion appeared late in 1938 as a nodule on the left elbow. It was excised but soon afterward new nodules developed near the site of the original lesion. Since then, nodules and ulcers had continued to come and go, leaving scars and hyperpigmentation. For almost two years a smaller but similar erup-

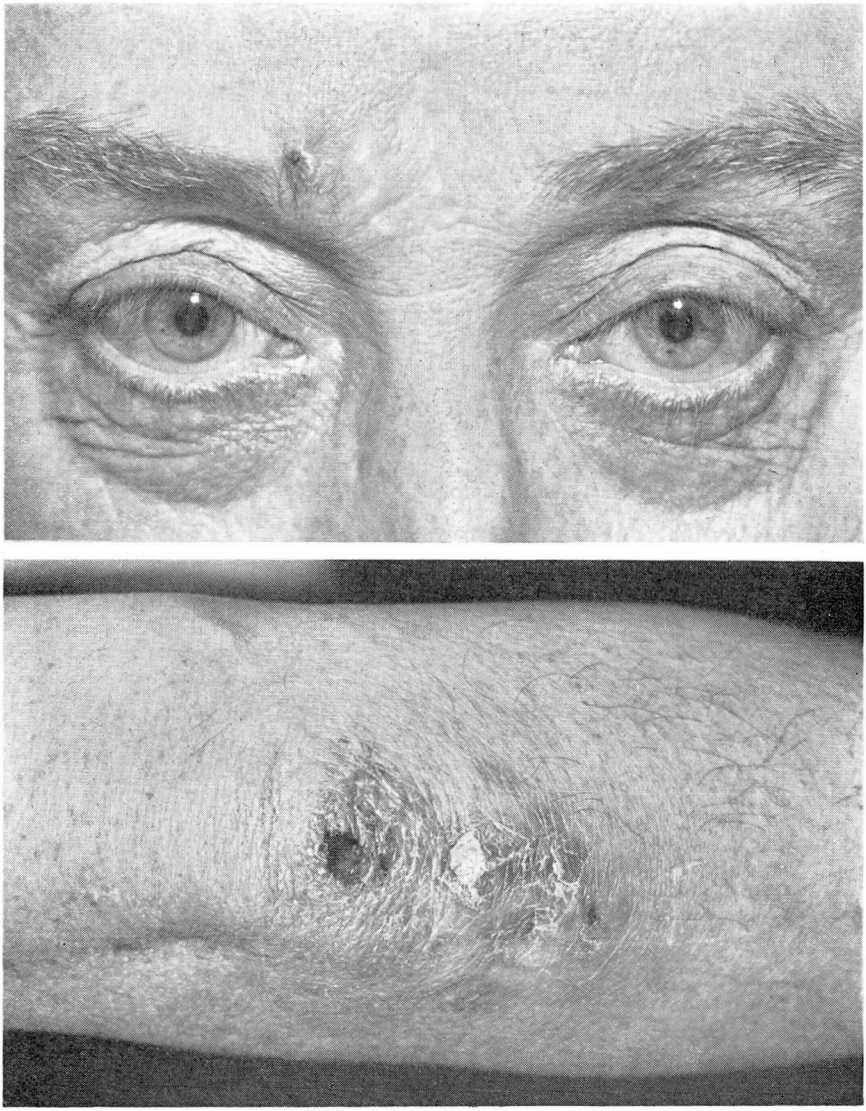

FIGURE 6: Atrophic scarring between the eyebrows and a crusted, involuting granulomatous nodule at its periphery. There are nodulo-ulcerative lesions on the elbow. Also atrophic scars with peripheral hyperpigmentation. Palpation of the nodules showed induration.

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tion had been present between the eyebrows. There had been no subjective symptoms.

Physical examination showed a mild hypertension but no abnormal neurologic signs or clinical evidence of cardiovascular syphilis. The hemogram showed a mild secondary anemia and the Wassermann and Kahn tests gave strongly positive reactions. The spinal fluid was normal. There were two solitary cutaneous lesions, one on the left elbow and one between the eyebrows (Fig. 6). A sharply marginated or punched-out ulcer was present over the olecranon process of the left ulna. Immediately below this ulcer were atrophic noncontractile scars and brownish-red smooth nodules. The indurated nodular components of the lesion were located at the periphery. The lesion between the eyebrows consisted of a group of small atrophic scars which were so closely placed as to form one larger, thin, noncontractile scar. At the periphery of this scar and near the inner portion of the right eyebrow there was a partially healed, indurated, crusted, ulcerated nodule. These lesions were typical late nodulo-ulcerative syphilids. The induration, ulceration, peripheral extension with central healing and resulting atrophic scars are basic characteristics of late syphilids. The arciform configuration in the second and third cases was not so apparent in this case.

Summary

The cutaneous lesions seen in these cases illustrate the physical characteristics of late nodular syphilids. They were sufficiently characteristic to be considered pathognomonic and ranked in diagnostic importance with the serologic reactions. In each case, the cutaneous lesions were solitary, indolent and inflammatory. They were circular, serpiginous, or arciform and one or more portions of the margins were nodular, ulcerated, or indurated and tended to advance slowly. As the lesion enlarged by peripheral extension, there was central healing with or without scarring. Tissue destruction occurred frequently. Ulceration resulted in atrophic, noncontractile scars surrounded by hyperpigmentation. In the absence of ulceration, healing resulted in varying degrees of atrophy of the skin which could be detected by careful inspection of the lesion.

The correct interpretation of a cutaneous lesion of this type is very important, particularly if it occurs in a patient who has negative serologic reactions. It may be the clue that leads to the solution of a difficult clinical problem, or as demonstrated in Case 1, may lead to the discovery of a more serious unsuspected manifestation of syphilis.

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