

Differential Diagnosis of Leprosy

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From time immemorial leprosy has often been mistaken for numerous other diseases (¹). In countries where leprosy is endemic, other diseases are not infrequently taken to be leprosy. In areas where leprosy is not endemic, the disease is easily overlooked or not recognized. The simultaneous presence of several diseases should also be taken into consideration, because they may be confused with one another, or one may conceal another. It has also not been proven that the presence of leprosy precludes other diseases or that it is a forerunner of them, with the exception of the sequelae of leprosy. Thus, in Ethiopia sporadic cases of tetanus could be observed, though leprosy patients are always said to be immune against tetanus. However, with the great number of ulcerations and lesions of the skin, a higher occurrence of tetanus cases would be expected than actually is the case. Cancer of the skin had been observed in patients with lepromatous leprosy, but its frequency did not exceed that found among nonleprosy patients or persons suffering from other types of leprosy. The extensive comparative material originating from the skin clinic colocated with the leprosarium with its annexed ambulatory clinic, permits one to draw the conclusion that about the same percentage of leprosy patients suffers from other dermatoses as nonleprosy patients living in the same environment.

In differential diagnostic considerations of skin manifestations one has to distinguish among macular, papular, nodular and tumorous lesions. The time of appearance, the fact whether they are inherited or have been acquired in the course of life, the duration, and the distribution are all important. A careful anamnesis protects against disastrous errors.

Numerous features of macular diseases resemble leprosy disease patterns; however, in most cases these diseases can be excluded because of the negative result of the sensitivity test. Melanoderma and leucoderma, vitiligo, pinta, tinea versicolor and nevus anemicus, can be cited as examples, to mention only a few of them. In one single case, a patient with an extensive vitiligo suffered simultaneously from indeterminate leprosy. Even clinically normal-appearing skin can show the histopathologic picture of leprosy, a condition known as diffuse lepromatosis, which was first described in Mexican patients (Figs. 1-4).

The papular lesions and plaques may be mistaken for psoriasis, lichen ruber planus, superficial mycoses, "tuberculoid" types of leishmaniasis, syphilis, pityriasis rosea, and neurodermitis circumscripta. In cases where squamous lesions exist, seborrhoea, pityriasis rosea, pityriasis rubra pilaris, psoriasis, parapsoriasis, mycoses and forms of leishmaniasis of the skin and the treponematoses may be taken into consideration. With children, pityriasis simplex, or dry streptoderma, is frequently mistaken for leprosy lesions of the face (Figs. 5-13).

Manifestations of syphilis, framboesia, South-American blastomycosis and oncho-

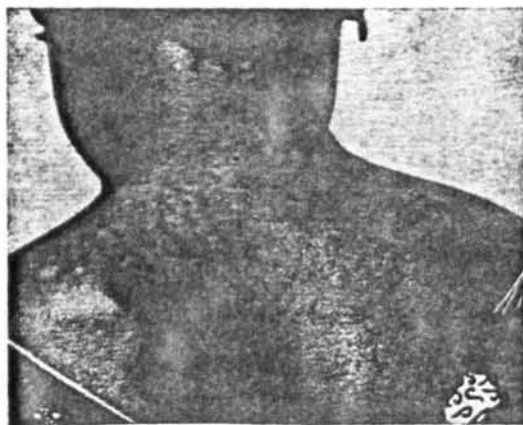


FIG. 1. Tinea versicolor.

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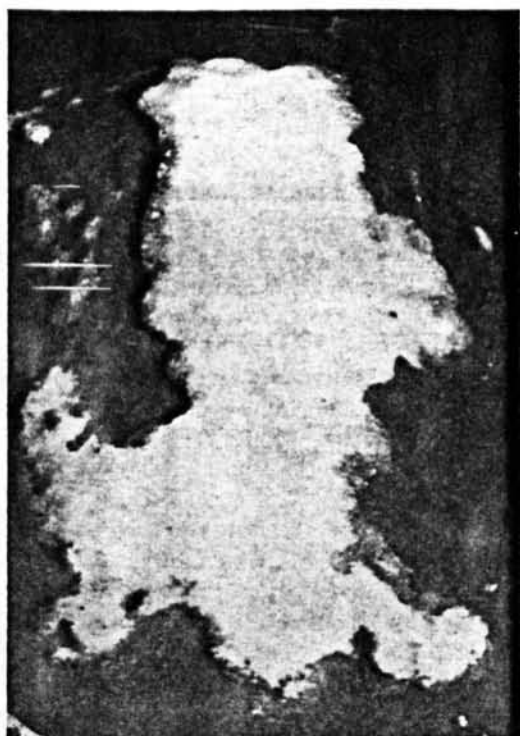


FIG. 2. Vitiligo in a patient suffering from indeterminate leprosy.

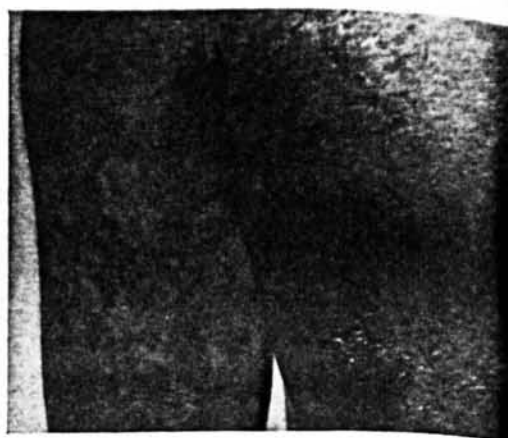


FIG. 4. Tinea versicolor on the upper arm and tuberculoid leprosy on the back of the patient.



FIG. 3. Tuberculoid leprosy with camouflage painting.



FIG. 5. Pityriasis simplex faciei.



FIG. 6. Leishmaniasis cutis of tuberculoid type.



FIG. 9. Tinea corporis and tuberculoid leprosy in one lesion on the wrist of the patient.

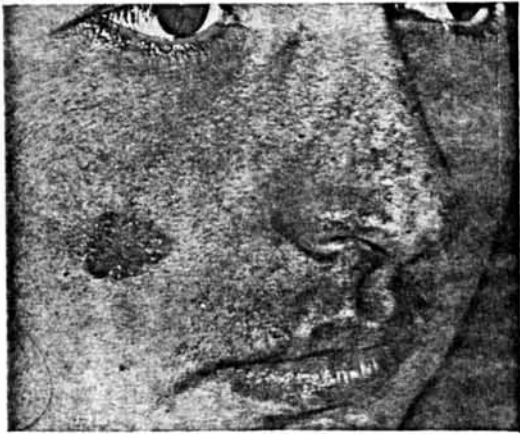


FIG. 7. Lupus vulgaris-Leishmaniasis cutis?



FIG. 10. Tinea imbricata.



FIG. 8. Lepromatous leprosy.



FIG. 11. Tinea corporis on the right upper arm and tuberculoid leprosy on the forehead of the same patient.



FIG. 12. Psoriasis vulgaris.

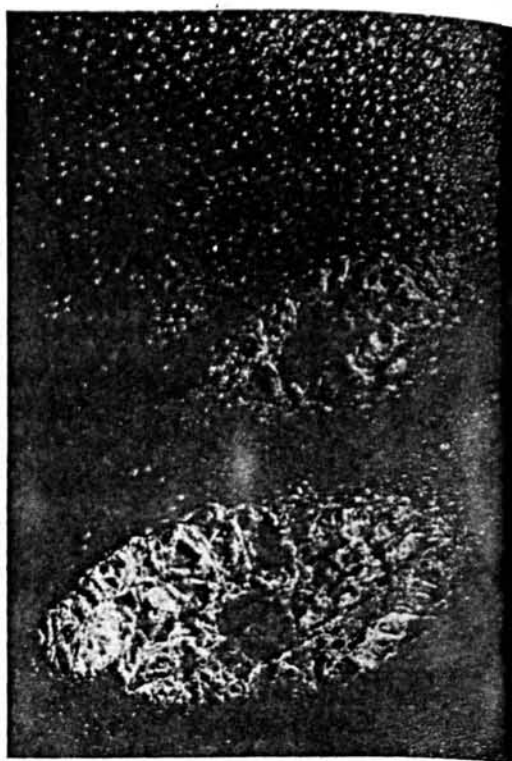


FIG. 13. Pityriasis rubra pilaris.



FIG. 14. Sarcoma idiopathicum hemorrhagicum (Kaposi).



FIG. 15. Neurofibromatosis (von Recklinghausen).



FIG. 16. Leishmaniasis cutis.



FIG. 18. Erythematodes chronicus tumidus.



FIG. 17. Granuloma anulare, lichen ruber planus or tuberculoid leprosy?



FIG. 19. Erythematodes chronicus cum exacerbatione acuta.

cerciasis are very often confused with leprosy changes. Occasionally single cases of sarcoma idiopathicum hemorrhagicum (Kaposi), dermatomyositis and mycosis fungoides may be found in leprosy under the diagnosis of Hansen's disease (Figs. 14, 24).

Leishmaniasis of the skin, neurofibromatosis of Recklinghausen, and mycosis fungoides have repeatedly been described as diseases which can be confused with lepromatous leprosy. Leishmaniasis of the skin produces a clinical picture deceptively similar to both lepromatous and tuberculoid leprosy, the histology corresponding to that of leprosy, except that instead of mycobacteria leishmania bodies are to be found. Granuloma anulare, Besnier-Boeck-Schaumann disease and lupus vulgaris, forms of erythematodes and scleroderma produce a clinical picture similar to that of the tuberculoid and lepromatous types of leprosy (Figs. 15-18, 25-27).



FIG. 20. Erythematodes chronicus mutilans.

In differential diagnosis of the various aspects of tuberculoid and lepromatous lepra reactions, erysipelas, erythema nodosum, and erythema induratum of Bazin, manifestations of erythematodes, leishmaniasis of the skin, and mycoses have to be taken into consideration (Figs. 19-21).

Trophic ulcers are found most frequently with leprosy; otherwise they occur with syphilis, framboesia and diabetes. Ainhum is found mainly in Negroes and manifests itself in spontaneous amputation of the small toes (Fig. 22).

Often other diseases are deceptively similar to certain types of leprosy, so that they are treated in leprosaria as leprosy cases, for a long period before their true nature is discovered. This occurred in the case of



FIG. 21. Lepra reaction in tuberculoid leprosy.

leishmaniasis cutanea diffusa, first described in Venezuela by Convit, Kerdell-Vegas a.o. ⁽²⁾ (1960) as a "new" disease of the leishmaniasis group, and later on observed also in Ethiopia (1963). Leiker, Kok and Spaas ⁽⁷⁾ described granuloma multiforme as a new disease. They observed their cases in the Benue province of Northern Nigeria and became suspicious

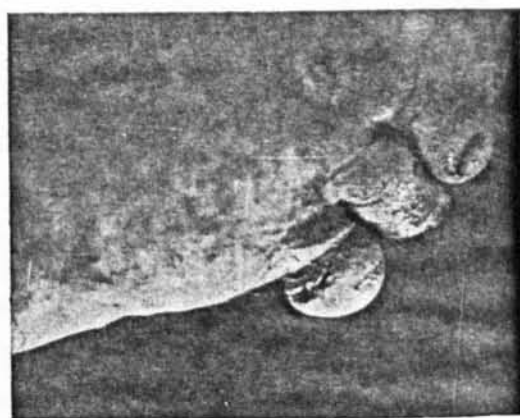


FIG. 22. Ainhum.



FIG. 23. Granuloma multiforme.

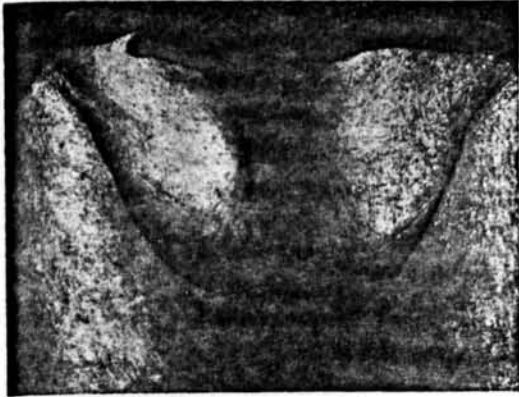


FIG. 24. Onchocerciasis with hanging groins and lepromatous leprosy in the same patient.



FIG. 25. Squamous cell carcinoma in a patient suffering from lepromatous leprosy.



FIG. 26. Monstrous lepromatous leprosy.

that a nonleprous disease might be involved when patients were not responsive to sulfones. The skin picture is identical to that of tuberculoid leprosy, but it differs with regard to the existence of itching, the nontypical distribution of lesions, the lack of anesthesia, the thickening of nerves, and the loss of sweat secretion. Histologically,



FIG. 27. Leishmaniasis anergica disseminata.

there exists a tuberculoid infiltration which has no relationship to the nerves and to the sweat glands. Jonquieres ⁽⁶⁾ drew attention to the fact that the description of the "new" disease was identical with that of granuloma anulare disseminatum (Fig. 6, 16, 23, 27).

The purely neural types of leprosy, with involvement of one or more nerves, may be mistaken for alcoholic neuritis, beriberi neuritis and the Roth-Bernhardt syndrome. Disturbances observed in leprosy may be caused also by trauma of the nerves. Cervical ribs produce both sensory and motor symptoms. In differential diagnostic considerations, the Bell syndrome also has to be taken into account. A thickening of the nerves similar to that observed in leprosy is to be found with the Dejerine-Sottas syndrome, which is coupled with muscular atrophy, or as a physiologic variant of the great auricular nerve in men, as found by Fasal ⁽³⁾ in Samoa. Syringomyelia leads to an early loss of temperature sensation and of pain, while the sense of touch is preserved over a long period. In countries with endemic leprosy advanced cases of syringomyelia (Morvan syndrome) are occasionally mistaken for leprosy mutilans. Some time ago, Gerber ⁽⁴⁾ described a case where syringomyelia was said to have existed simultaneously with leprosy. Hall ⁽⁵⁾ believed that a combination of both diseases existed in a patient from Somalia showing spastic symptoms and suffering from trophic troubles of the toes with some skin changes and sensibility disturbances with a peripheral distribution. Sequelae of poliomyelitis resemble leprosy deformities. Paresthesia at the fingertips occurring in connection with Raynaud's disease reminds one of similar changes occurring with leprosy.

The temperature curves observed in lepra reactions differ widely and often resemble those of infectious diseases, such as malaria, typhus, typhoid, relapsing fever, acute rheumatic fever, tuberculosis, and kala-azar, to mention only a few. As far as differential diagnosis is concerned, it has to be ascertained whether the feverish condition originates from lepra reaction, or from

an intercurrent disease or whether both possibilities exist.

Statistics reveal that the average time between the appearance of symptoms and a correct diagnosis in leprosy patients amounts to more than three years, irrespective of the standard of the medical services available. Either the physicians will seldom consider leprosy in their differential diagnosis, or there are no physicians available to diagnose the disease, as is the case in most developing countries. The combined efforts of all those concerned with, or responsible for, the health of the population are necessary to overcome this most unsatisfactory situation.

SUMMARY

In differential diagnostic considerations of skin manifestations one has to distinguish among macules, papules, plaques, nodules, and tumors.

Chronic tropical diseases such as yaws, leishmaniasis, blastomycosis, and leprosy may produce partly identical clinical pictures, and the histologic picture of the tissue structure may also be similar to a great degree. In the case of leishmaniasis of the skin, the resemblance with leprosy goes so far that, apart from the typical oriental sore, identical disease patterns occur in both the hyperergic and the anergic phases of both diseases.

With regard to granuloma multiforme, which has only recently been described, it was not until the ineffectiveness of sulfones was observed that the suspicion arose that a nonleprosy disease may be involved.

The difficulties for differential diagnosis apart from the dermatologic manifestations are caused by the neural lesions of leprosy and various types of leprosy reactions, particularly those with intermittent high temperature manifestations.

In countries with well developed health service the average time between the first appearance of leprosy symptoms and their recognition is over three years; time differences ranging from six months to 20 years have been observed.

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