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ACUTE EDEMA IN LEPROSY

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Davison (3) has drawn attention to the occurrence of acute edema of the hands and feet in both tuberculoid and lepromatous leprosy. Scrutiny of the case records of this leprosarium has shown that it also occurs in borderline leprosy and in association with reactional conditions. It is invariably accompanied by some degree of neuritis.

The types of leprosy in which this condition has been recorded and the particular features noted are discussed.

IN TUBERCULOID LEPROSY IN REACTION

The conditions observed in this form of leprosy are:

(1) Edema in and around the reacting lesions. Patients with very severe edema of the face and eyelids have been seen in this condition. There is invariably present gross enlargement and tenderness of associated cutaneous nerves.

(2) Edema occurring after the reaction in the skin lesion has subsided.

Case 61/101. Male, aged 25 years, admitted on August 5, 1961. The lesions present were of the major tuberculoid variety, most of which were large although a few were more recent in origin and smaller in size. There were lesions on the palms of both hands, and an early medial nerve palsy of the right hand. Skin smears were negative. Treatment was by 50 per cent aqueous Sulphetrone by injection, 1 cc. twice weekly.

In October there occurred a slight reaction with increased infiltration of the lesions, but there was no associated neuritis. Skin smears were then 1+ positive. Treatment was continued and the reaction subsided.

In December the reaction recurred, and there was edema of the hands associated with the reacting skin lesions (Fig. 1). Treatment with S.A.T. (sodium antimony tartrate) and mepacrine was effective.

Three weeks later the patient again reported edema of the hands—less of the palsied right hand than of the left hand (Fig. 2), and of the left foot. The skin lesions were not reacting. There were several enlarged, tender cutaneous nerves associated with the resolving skin lesions on the edematous extremities, and both ulnar

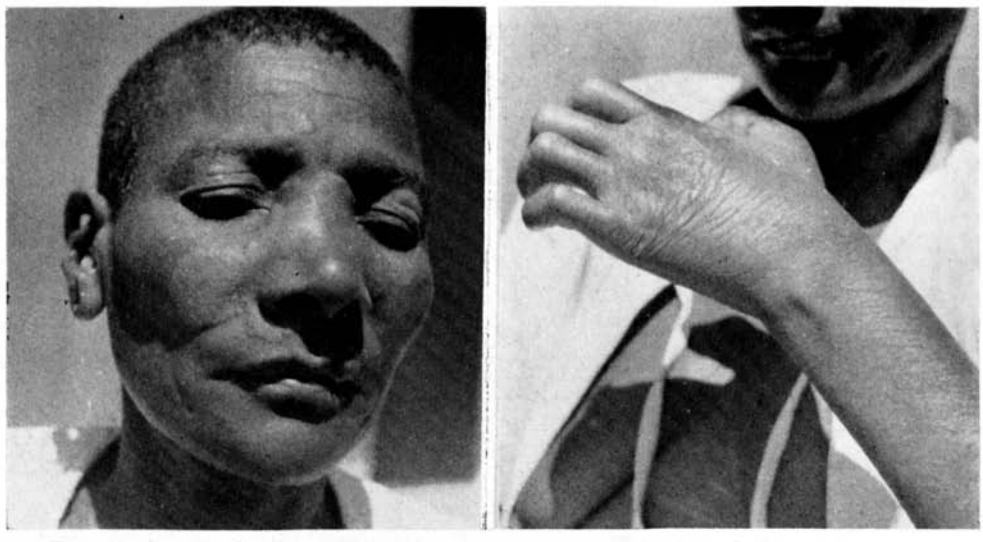


FIG. 1.—(Case 61/101).—Edema of the face in a case of tuberculoid leprosy in reaction.
FIG. 2.—Left hand of the same patient; showing edema in association with a lesion located there, with clawing.

nerves and the left lateral popliteal were tender though not grossly thickened. The condition responded to prednisolone.

Edema in the course of reaction in tuberculoid leprosy is a well-recognized complication, and is specifically mentioned by Cochrane in his textbook ([2a]).

IN "AFRICAN DIMORPHOUS" LEPROSY

As pointed out by Browne ([1]), it is not uncommon in Central Africa that patients with several large, fairly well defined, flat, uniformly hypopigmented lesions suddenly develop a generalized eruption, or have a succession of crops of small, erythematous lesions with hazy edges and slight infiltration within the edge. This form of "reaction" may occur in the course of sulfone therapy. It is often accompanied by thickening and tenderness of nerves, and sometimes by edema of the hands and feet, usually bilateral (not surprisingly, as the skin lesions are so widespread and symmetric), and by lymphadenopathy. In these "reacting dimorphous" cases, skin lesions are invariably positive bacteriologically. Furthermore, use of or pressure on the edematous part is painful, and the patient can neither walk nor work. Considerable care of and explanations to the patient are required to prevent trophic effects, such as ulceration of the feet. Browne found neurologic complications in no less than 70 per cent of the bacteriologically positive cases in his series.

IN BORDERLINE LEPROSY

The following cases exemplify such conditions that may be seen in borderline leprosy, especially in its reacting phase.

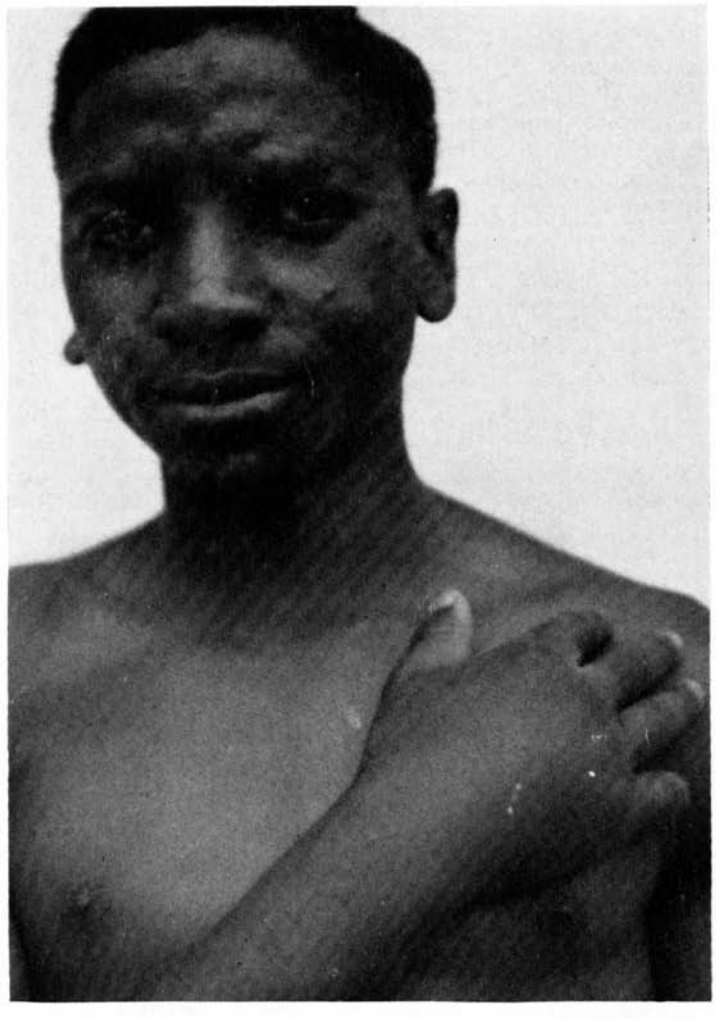


FIG. 3. (Case 58/48). — A 16-year-old patient with borderline leprosy, with edema of the right hand, only, at the time of admission.

Case 58/48. A schoolboy aged 16 years was admitted in June 1958 with the following history. In May-June 1957 he noticed a small, flat erythematous patch on the left forearm. Subsequently a patch appeared on the right knee. In February 1958 numerous new patches appeared, which soon became infiltrated. He developed edema of the right hand one week before admission (Fig. 3).

On examination, typical succulent borderline lesions were found, the majority showing some loss of touch sensation to cotton wool. Both of the cutaneous radial nerves were enlarged, and also a cutaneous nerve on the ulnar side of the dorsum of the right hand. The right ulnar and the left lateral popliteal nerves were both slightly thickened and tender. Skin smears were bacteriologically positive (bacillus index 2.4, average of five sites). The Mitsuda reaction to lepromin measured 5 mm. in diameter.

Histopathology: Dr. J. M. Garrod reported that the specimen "appears to be from a reacting borderline case. There is a considerable area of infiltration but only an occasional globus. There is a fair number of lymphocytes. No actual giant cells are seen. I would put Ridley's Index at $2 \times 0.1 = 0.2$ It is low because of the paucity of bacilli."

The patient responded well to a short course of prednisolone and treatment by 50 per

cent aqueous Sulphetrone by injection. Skin smears were all negative after six months, and all skin lesions were resolving well; there were no signs of neuritis. Accordingly, treatment was changed from the Sulphetrone to oral DDS.

Within only a few days the patient had developed a mild reactivation of his skin lesions, with tenderness of nerves. He responded well to a short course of prednisolone and continued treatment with Sulphetrone injections. Clinical cure was recorded in July 1959. Oral DDS was again tried, this time with no untoward effects. He now has no signs whatever of leprosy, but is still under treatment with DDS 50 mgm. daily.

This a case with edema involving only one hand, occurring in association with the asymmetric lesions of borderline leprosy, in a phase of reaction with slight, but definite, neuritis. It also illustrates the fact that oral DDS is contraindicated in such cases.

A similar case of unilateral edema of the right hand only is shown in Fig. 4.

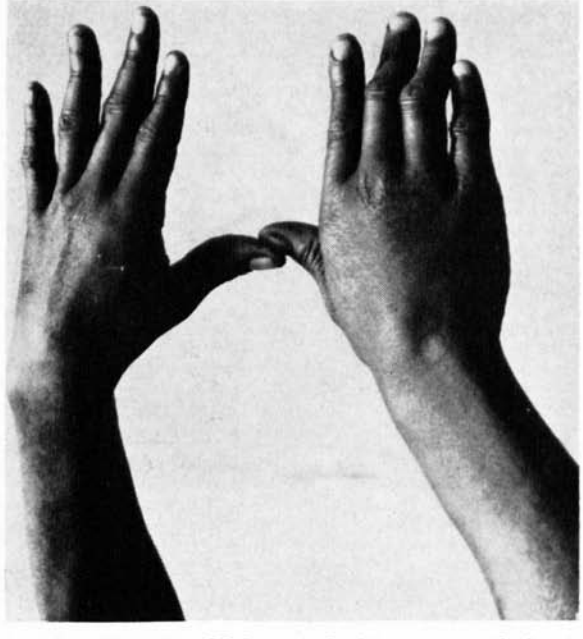


FIG. 4. — A similar instance of unilateral edema of the right hand, in another case of borderline leprosy.

Case 61/34. Male, aged 37 years, admitted February 19, 1961. There were extensive infiltrated lesions, some showing "immune areas." The infiltration of the face and ears, the loss of eyebrows, the nature, extent and symmetry of the lesions, together with a bacillus index of 3.0, led to the diagnosis of "lepromatous with borderline features." The patient had, on admission, no edema of hands or feet. Treatment was instituted with 50 per cent aqueous Sulphetrone by injection.

In April 1961 he had a mild, apyrexial bout of erythema nodosum reaction, followed by an attack of orchitis.

In November 1961 he was admitted to the hospital with fever, generalized pains in the limbs, conjunctivitis, and exacerbation of the skin lesions, which were infiltrated and tender. This condition was regarded as a borderline reaction; unfortunately, no biopsy specimen was taken to confirm this clinical diagnosis. He did not respond to chloroquine or to S.A.T., but the condition subsided immediately with administration of prednisolone.

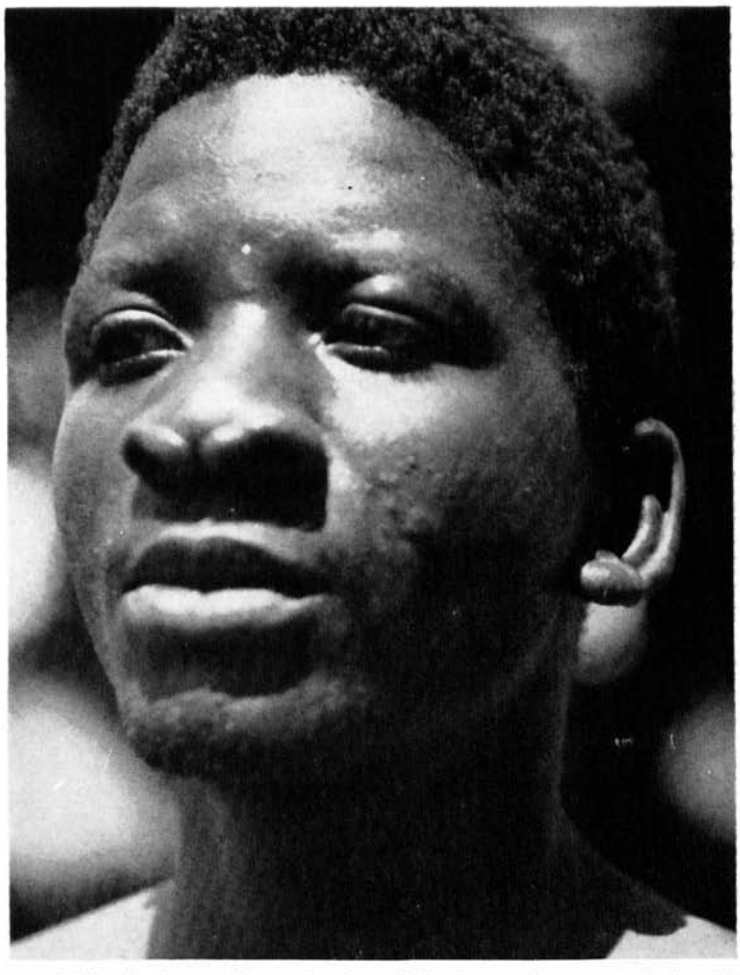


FIG. 5 (Case 58/79). — Unilateral edema of the eyelids, in a case with a borderline lesion at the site.

Within a few days of his discharge from the hospital, the patient returned with edema of the hands and feet and severe pains in the limbs. The skin lesions were slightly infiltrated and wrinkled, and showed slight desquamation and tenderness on palpation. Both ulnar and lateral popliteal nerves were tender. There was a slight synovial effusion of the right knee joint, and ganglion-like swellings of the synovia of both wrists on the dorsal aspects. There was slight inguinal lymphadenopathy. It was noted that he had lost 12 lbs. in weight since his admission in February 1961, largely, it was thought, since the beginning of the reaction in November. Response to prednisolone on this occasion was not dramatic, and improvement occurred only after stopping the Sulphetrone treatment and giving diphenyl thiourea (CIBA 1906) plus chloroquine.

The noteworthy feature of this case is the involvement of synovial membranes in the reactional process. I can find no mention of this condition in the literature.

One occasionally sees a case with unilateral edema of the eyelid, associated with a borderline lesion at that site.

Case 58/79 illustrates this condition, as shown in the photograph (Fig. 5). This patient has been under treatment for three years, and still is, and scanty bacilli are

still to be found in the left earlobe, but all other sites are negative. He has had three reactions of the "acute infiltration" type, the first with edema of both hands and both feet, and the other two involving the ears, the left to a greater extent than the right.

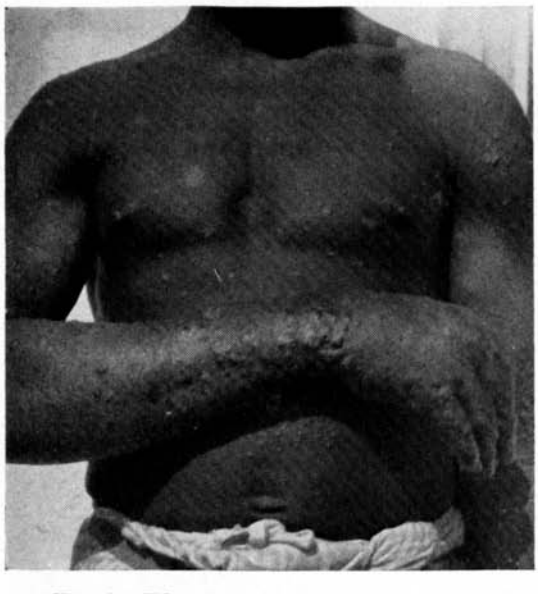
The asymmetry observed in this case is noteworthy as a feature diagnostic of borderline leprosy.

Several cases of the borderline-going-lepromatous group have presented an interesting syndrome, consisting of edema of the hands, nodules on the fingers, and bony swelling around the proximal interphalangeal joints.

Again, one invariably finds enlarged and tender cutaneous nerves at the wrist and thickened tender ulnar nerves. Injudicious use of the hand at this stage (e.g., heavy cultivation with the African hoe) results in damage which, in a leprosarium where patients receive constant inspection and instruction, is usually confined to blisters but which, nevertheless, I believe to be likely to lead to permanent disability if ignored.

IN LEPROMATOUS LEPROSY

In classical lepra reactions of lepromatous leprosy one occasionally sees a case in which nodules ulcerate. The ulceration of nodules on the wrist, hand and fingers is usually associated with edema (Figs. 6 and 7).



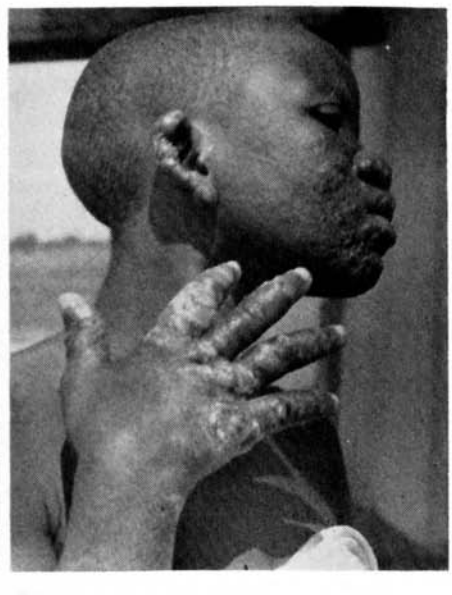


FIG. 6.—Edema of the right hand, associated with ulcerated nodules in a case of untreated lepromatous leprosy.

FIG. 7.—A case similar to that shown in Fig. 6, but worse. Untreated lepromatous leprosy.

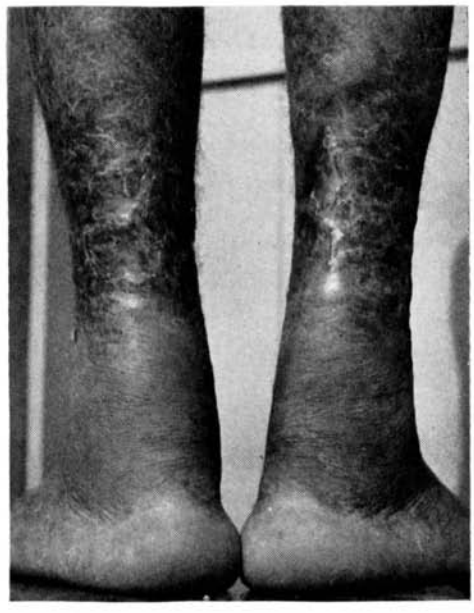


FIG. 8.—Edema of the ankles, with "erythema induratum" due to repeated attacks of ENL affecting the lower legs. A very common condition, associated with injudicious treatment with oral DDS.

Edema of the feet and ankles frequently occurs in cases of repeated attacks of ENL (Fig. 8), going on to "progressive reaction" ([2b]) or erythema induratum ([5]). If neglected, this edema is permanent.

Edema of the face and eyelids in lepromatous leprosy is, in my experience, an infrequent occurrence. I have seen it in only a few cases of severe ENL occurring in the course of sulfone therapy. I believe. however, that it is the primary cause of the condition of blepharochalasis, so well illustrated as seen in Tanganyika in a recent paper by McLaren *et al.* ([4]).

SUMMARY

Edema of the hands and feet, whatever the type of leprosy in which it occurs, is, in my experience in Tanganyika, invariably associated with thickening and tenderness of major nerves, in particular the ulnar and lateral popliteal nerves. It should, therefore, be regarded as a reactional condition and be treated accordingly, initially by corticosteroids and thereafter by specific antileprotics unlikely to provoke further reaction. Follow-up care of the patient to ensure that trophic damage does not supervene is advised. The occasional occurrence of synovitis and effusion into joints in connection with acute edema of the hands and feet is noted.

RESUMEN

El edema de las manos y los pies, sea cual fuere la forma de lepra en que se presente, va, según ha observado el A. en Tanganika, invariablemente asociado con espesamiento y hiperestesia de los nervios principales, y en particular el cubital y el poplíteo lateral. Por lo tanto, hay que considerarlo como estado de reacción y que

tratarlo así, al principio con córticoesteroides y después con antilepróticos específicos que es improbable provoquen nuevas reacciones. Se recomienda el mantenimiento del enfermo en observación subsecuentemente para cerciorarse de que no sobrevienen lesiones tróficas. Se hace notar la aparición ocasional de sinovitis y derrame intra-articular en relación con el edema agudo de las manos y los pies.

RESUMÉ

L'oedème des mains et des pieds, quel que soit le type de lèpre au cours duquel il survient, est, d'après mon expérience au Tanganyka, invariablement associé à un épaississement et à de l'hyperalgésie des nerfs, en particulier du cubital et du sciatique poplité externe. Cela devrait dès lors être considéré comme une condition réactionnelle et être traité en conséquence, d'abord par les corticostéroïdes, ensuite par le recours à des médicaments anti-lépreux spécifiques peu suceptibles d'entraîner des réactions subséquentes. Un contrôle étroit du patient est à conseiller, afin de s'assurer qu'il ne survient pas des troubles trophiques. Le développement occasionnel d'une synovite et d'un épanchement intraarticulaire a été noté, en rapport avec l'oedème aigü des mains et des pieds.

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