Abstracts

Cutaneous lesions of the different clinical forms of leprosy. J. TERENCIO DE LAS AGUAS, *Revista de Leprologia, Fontilles*, 1965, **6,** 3, p. 263.

The author points out that skin lesions stand out in the symptomatology of leprosy for their constancy and profusion. As there are very different characteristics he describes the distinct lesions of the different forms.

1 **Indeterminate leprosy:** This form has a special importance in spite of its benignity and lack of stability because of the earliness of the lesions. They are flat macular lesions without being raised above the level of the skin and can easily undergo a papular change or evolve towards a polar form. The coloration of these macules may be either too much or too little and become erythematous or erythematous on lessened colour. They think that the hypochromic are the earliest, occurring in children and often called 'white macules'. They never attain to the colour density of the macules of vitiligo. The most frequent site of these pale macules is in the buttocks, shoulders, face, front of the chest, deltoid region and face, perhaps because in the infant these zones are more intimately in contact with the mother who has leprosy. The size is variable from a lenticular scattering to a wide plaque. The border is practically never well defined and almost always hazy, though sometimes well defined lesions have been noted, and a geographic border. The lesions are usually regular.

In lesions which are both erythematous and hypochromic, the features are combined without large variations. The lesions are modified by treatment and even may disappear spontaneously. When they evolve to a polar type the erythema may accentuate, papules and infiltration may occur, and a histological study may be necessary to find out whether the evolution is lepromatous or tuberculoid.

Mostly inderterminate lesions are associated with benignity and good evolution under treatment. Anaesthesia can be present but bacilli are scanty.

2 **Lepromatous leprosy** without doubt is the most polymorph type. It has macules with a diffuse hazy outline which blends with the surrounding skin. The lesions have a rosy form sometimes like roseola: erythematous and pigmented macules are also common, with brownish-yellow tint, even violet. Less often hypochromic macules exist, with aspect recalling the indeterminate but already having a thicker lepromatous texture.

Apart from the diffusion of the border, all these lepromatous macules are characterized by infiltration and are located in the buttocks, the trunk, the thighs, the arms, cheeks, maxillary border, and forehead. The author has noted some lepromatous patients with macular lesions and infiltrations, which showed a more definite outline and even resembled figured tuberculoid leprides.

Leproma constitutes the typical lesion of this clinical form. The lesions are dermo-hypodermic nodules which almost always are raised above the surrounding skin, the covering skin being erythematous and pigmented or violaceous, sensitivity is altered, and there is a great richness in bacilli.

The localization is distal in preference, as in all leprosy lesions noted by the author, as Latapí comments 'as if there is a preference for light', so that the zones most affected are the face and limbs. In the face he has noted a preference for the superciliary and frontal regions, cheeks, nasal and maxillary borders, auricular pavilions, and all the nodules tend to fuse, forming leonine and choleric aspects, with a strong background of infiltrative fusion. Although not often the author has noted them in the hairy scalp, in the occipital and temporal zones as much as the neck.

In the upper limb the preference is for the forearm, the lower part of the arm, and the dorsum of the fingers and hand. In the arm these lesions are symmetrical, in the medial and lower aspect, sometimes forming plaques and lepromata covered over with very pigmented skin. In the forearm they are met with in isolated form in the anterior surface and in the lower third of the lateral aspect as a sheet. In the hands, in the dorsum, and the wrist region they occur preferably and less so in the fingers. They occur seldom in the palmar aspect.

In the trunk they especially occur in the scapular regions, the front costal plane, the abdominal and gluteal regions, where they are often hypodermic and need palpation.

In the lower limb they are especially frequent on the medial face of the thighs, knees, and legs, being exceptional in the plantar regions.

In the palate cavity we have encountered lepromata in the palate vault, in the anterior pillars of the fauces and more often in the tongue. These lesions are noted in very advanced lepromatous patients with predominance of nodules, but lesions are often noted in the skin of scrotum, penis, and glans. The size of the lepromata is very variable, from a pinhead to a dove's egg, and the covering skin is erythematous-brownish or coppery in colour, becoming more pigmented when they regress because of the specific therapy.

The leproma can undergo changes. One of these is cure. It begins to lose turgidity, to diminish in size, the covering skin begins to look like an empty sac, folding and umbilicating and disappearing as a nodule, leaving a pigmented scar which is depressible and covered by atrophic skin. At other times the leproma ulcerates centrally and exudes purulent and sanguineous fluid which forms a scale in the form of a plug in the centre. This phenomenon, which results in the partial or total disappearance of the nodule, may result from vascular phenomena in a reactional period in quiescent phases when the leproma grows and does not sufficient circulation, for it is not a very vascularized lesion.

When sheet or plaque lepromata re-absorb they are replaced by zones of great cutaneous atrophy which also gives on pinching the sensation of an empty sac.

These changes are seen very well in the lower third of the forearms, in the medial aspect of the thighs, and in the face.

Infiltrations occur very often, and although they appear in most patients along with lepromata and macules, in some they are the only skin lesion of lepromatous leprosy.

Infiltration is a thickening of the skin which seems to be augmented by erythematous pigmentation and often telangiectasis. The skin has a shining oedematous aspect and the skin folds are exaggerated. These lesions also appear preferably in the distal parts and in the face in the frontal and superciliary regions and temporal regions are apt to be associated with alopecia.

The auricular pavilions are the regions most involved, the nodules making them hypertrophied and pendulous, and there are also infiltrations in the regions of chin and cheeks. In advanced infiltrative patients there is a total alopecia of eyebrows along with an infiltration of the whole face, loss of eyelashes, and a collapse of the nose (the oriental Mongolian face of Negro). In the upper limb the hands appear oedematous and infiltrated, the skin shining and devoid of down hair, the tint erythematous and cyanotic recalling the 'hypogenital face' of Marañón and the 'succulent hand' of Marinesco. These hands and equally the face recall to us patients with myxoedema. In the forearm infiltrations present most in the lower third which disappear centripetally. In the trunk in advanced patients the infiltrations have a pasty succulent aspect, together with absence or scarcity of hair.

In the lower limb the infiltrations are preferably constant and typical in the lower third of the leg, where they form a pigmented sleeve with muscular atrophy and dry and broken skin, which is called 'stocking infiltration'. Infiltration also appears in the dorsum of the feet, which are oedematous, hairless, and with dry skin, sometimes with an elephantiasis aspect. In the thighs the infiltrations are less intense and sometimes with livid and marbled cutis. The long duration infiltrative patients, when they are cured, present an aspect of premature ageing because of the destruction of cutaneous elastic fibres, and the muscular and trophic bony lesions in the limbs add a scar tissue.

Ulcers are frequent in the lepromatous form. Specific lepromatous ulcers occur and also mixed ulcers due to trophic and vascular causes and lack of nerve sensitivity. As specific ulcers, apart from those on lepromata, we can cite those occurring in the infiltrations of forearms and leg, mostly in periods of reaction, ulcers with borders cut off at an irregular point, base dirty and purulent, and which cure more slowly than those of the lepromata. In lepra reactions, especially in the papular with blisters, the bursting of the blister gives place to a shallow ulcer which cures rapidly. At other times the ulcer forms after the spontaneous appearance of a blister which seems to follow approximation to a heat point or a minimum traumatism.

Trophic ulcers affect preferably the lower limb. They localize preferably on the lateral aspect of the limbs, the malleolar areas, the dorsum of the foot, the knee, the tibial crest. There are extensive lesions which circumscribe sometimes the whole limb, which have an indentated and geographic border, and are raised and atonic surrounded by a pigmented sclerous and atrophic skin.

The border of most of the cases is sharp-cut and sloping and undermined, and the base is very deep and irregular, formed by muscular and bony tissue. The evolution of these lesions is long and they respond badly to therapy usually, and when they cure the centre is covered with a mother-of-pearl scar, with separable scales, surrounded by hyperpigmented zones. Relapses are frequent.

Another ulcer is the perforating plantar ulcer, which sites especially on the head of the first metatarsal and also over the other metatarsals. It is common at the extreme edge of the foot and heel, where pressure is greatest. There is another perforating ulcer sited dorsally on the interphalangeal articulations of the digits of foot and hands, where there are repeated micro-traumata. There is a perforating ulcer in the elbow and the knee.

Lesions of anexures:

Hair: This system is constantly involved in lepromatous leprosy. Alopecia of the eyebrows can present in various degrees, from the initial phases of depilation up to patients with total madarosis in advanced stages. Areas of the beard may have alopecia, especially pre-auricular, maxillary angle chin, and it is typical for the hair of the beard to persist in areas which run from the labial commissures to the maxillary border, giving the 'Chinese moustache' aspect.

Also frequent in advanced lepromatous are forms of alopecia of the temple which begin in the zone of the side-whiskers, affecting several centimetres of the hairy scalp and continue as a fringe to the back of the neck. There the alopecia is very characteristic in the lepromatous; the hair disappears and leaves a quite extensive fringe which gives the impression that the patient wears a wig. Rarely there is fronto-parietal alopecia in patients with infiltrations and lepromata of the hairy scalp, and equally in the upper occipital region. Also the eyelashes are diminished or absent in many patients. In the trunk above all in patients who began their disease in infancy and puberty, diminution or absence of hair is noted in the axillae and thorax, and a feminine distribution in the pubis.

In the upper and lower limbs the diminution or absence of hair coincides with the skin areas affected.

Nail lesions are frequent in advanced lepromatous patients, who show skin lesions round the nails.

In patients with advances neural lesions there is destruction of the nails but mainly they persist in atrophied form, diminished in size and deformed in fingers which have suffered absorption of bones and soft parts.

Trophic lesions: These present in the advanced lepromatous patient as a sequel of paralysis and destruction of the nerve filaments. There is sclerotic and atrophic skin, ichthyosis, fissuring, leprotic pemphigus, dyschromia, shining skin, acrocyanosis, oedema, elephantiasis, whitlows, etc.

Reactional lesions: In the acute episodes of lepra reactions there is a series of new acute cutaneous lesions. *Nodose erythema* is without doubt the most frequent reactional lesion. Erythematous nodes are disseminated mostly on the extremities. Sometimes they form real plaques. When they regress they lose their coloration and turgidity.

Polymorph erythema is also met with in some reactions, when as a single lesion or many or others combined with elements of *nodose erythema*, or large papules with elevated border and blister in the centre. There is a preference for the face in the superciliary and malar regions, and they occur very often in the neck and in the arms and thighs.

Necrotizing erythema or the *Lucio phenomenon* is the reactional cutaneous lesion of the diffuse lepromatous form of Lucio and Alvarado, frequent in Mexico and studied by the school of Latapi. It consists of multiple red and painful spots, which become necrotic in the centre after the appearance of a blister. There also exist some skin lesions which are non-specific erysipeloid acute reactions appearing as repeated erysipelas in burnt-out lepromatous patients in whom there are many portals of entry of infection. Such lesions appear most frequently in the legs and there are oedematous plaques complicated with blisters and ulcers, lymphangitis and adenopathy. They respond well to antibiotic therapy.

Tuberculoid leprosy

This is a benign form very polymorph in its skin lesions. The lesions can be either quiescent or reactional, the first most frequently.

Quiescent lesions

Nodular leprides have been well described by Souza Campos and Souza Lima, as a primitive form which appears in the infantile age. It often evolves towards cure without leaving scarring, does not suffer episodes of reactivation, and maintains its suberculoid characters throughout its whole evolution. Souza Campos and Souza Lima have never seen in minors of three years any other clinical form than the nodular tuberculoid lepride.

These lesions vary in size from 2 or 3 mm to several cm and adopt the aspect of rounded tubercules of rosy aspect or brownish erythema, with smooth shiny surface, localized chiefly on the thighs, forearms, and arms, usually bacterially negative. The prognosis is good; there is a tendency to spontaneous cure, reactions do not occur, nor changes to other clinical forms.

Macular leprides are less common and contain the typical figured leprides and the atypical leprides. The former have a well-defined border, are papulous, are raised and scale. The colour is erythematous or erythematous with a brownish or violet tint and there is a central zone which is much lighter, hypochromic, or atrophic. These lesions are mostly oval and assymmetrically placed. The border is dentrate and geographic and the long axis may measure 10 to 15 cm.

Characteristically, growth takes place at the external border and the lesion in this phase a violet or vinous colour and the surrounding skin presents an absence of histological lesions while the central part inside the delimiting border spreads to the centre of the lesion.

More extensive macular leprides occur, not so oval, of a uniform rosy erythematous colour but not so well marked nor with a contrasting central hypochromia as in other leprides. These lesions are located preferably in the buttocks, trunk, shoulders, front aspect of the forearms, thighs, and face. We have sometimes noted them in palms and soles and the hairy scalp.

When these lesions regress the colour of the border and centre diminishes, the micropapules of the limit diminish, and a fine desquamation begins and goes on to total regression. Reaction of these lesions is rare.

Atypical leprides: Macular achromic lesions are rare, or erythemato-hypochromic and erythematous, similar to those of indeterminate leprosy, except that they have a tuberculoid histology, being transformation forms and localized preferably in the buttocks and shoulder.

The benign evolution of tuberculoid leprosy can in certain cases suffer failures in the immune equilibrium, giving place to reactions in the cutaneous lesions and general symptoms. This acuteness of tuberculoid leprosy is sometimes retarded, without bacterial modifications nor immunity changes, which is why it is called 'tuberculoid leprotic reaction'. In other cases the skin picture reacts more intensely, with bacterial and immunity changes, and the form is called 'reactional tuberculoid'. In the 'tuberculoid leprotic reaction' the leprides undergo an increase of colouration in their border, a greater neatness, a greater elevation, but the Mitsuda continues positive and the bacilli negative.

In the 'reactional tuberculoid' the characteristic basic forms of tuberculoid leprosy are modified, at least transitorially, by certain breakdowns in the immunoalergic state. There are new outbreaks of skin lesions and general changes in the bacteria, such as appearance of single bacilli and globi and negative Mitsuda. These reactional phases can follow each other or this immunoalergic desequilibrium can change the process of evolution and cause mutation to the lepromatous form.

The change in skin lesions is to increase the colour of the border, which becomes violet or vinous, the whole lesion more raised, broad and hazy, even the centre of the macule elevates and increases in colour and the lesion becomes greater. Outbreaks of new lesions occur, especially nodular and with raised plaques, in colour lively erythematous or violaccous. At other times the leprides flow together forming capricious pictures with shagreen border. Ulceration of these lesions is rare.

Regression follows the general rule of diminution, of elevation of the lepride, laminar scaling of the border, and atrophy, and take on a sarcoid aspect. In parallel the skin picture regresses, the bacilli become negative and the Mitsuda positive.

Intermediary leprosy

This form also called 'borderline', 'dimorphous', 'bipolar', 'fronteriza', 'limitante', constitutes in the author's opinion an intermediary form between the two polar groups in which we include all the atypical and unstable forms, which are mostly reactional tuberculoid which in their mutation towards lepromatous or simply by their reactional characteristics, present skin lesions which do not fit in well into the polar forms and offer atypical characteristics of lepromatous and tuberculoid.

Therefore the lesions differ very little or exactly coincide with those described under reactional tuberculoid leprosy. The author presents figures which illustrate well the clinical features of the conditions he describes.

Clinical and Serological Profiles in Leprosy, L. J. MATHEWS and J. R. TRAUTMAN, *Lancet*, 6th November, 1965, p.9p. 15–918.

This was a paper presented to the meeting of the Public Health Service Clinical Society, Staten Island, New York, on 6th May, 1965.

The authors state that numerous clinical and serological similarities exist between lepromatous and dimorphous leprosy and collagenous diseases, such as particularly lupus erythematosus and rheumatoid arthritis. The clinical features include spontaneous skin ulcers, ischaemic necrosis, petechial and purpuric eruptions, vesicle and bulla formation, subcutaneous nodules, enlargement of the liver, migratory arthralgia and polyarthritis, bizarre skin lesions including butterfly facial rashes, and a general tendency towards exacerbations and remissions. Blood findings include anaemia and the occasional appearance of lupus cells. Positive serum findings include rheumatoid factors, circulating thyroglobulin antibodies, false positive serological tests for syphilis, and (consistently) cold precipitable proteins.

Because of these similarities the authors think that leprosy is a disease which should be thought of as a model for the study of states of haemoglobulinaemia, especially the collagen diseases. It is important that the causal agent of leprosy is known, unlike other diseases in the group.

Role of Plastic Reconstructive Surgery in Leprosy, by S. C. ALMAST, Leprosy Plastic Reconstructive Surgery Centre, Anandgram, Shahdara, Delhi, *J. India Med. Assoc.*, **45,** 6, 16th September, 1965, pp. 300–316.

The author groups the deformities and surgical complications of leprosy under face, upper extremity, lower extremity, and miscellaneous, and after discussion of their importance in the diagnosis and prognosis of the disease and their consequent public health importance, lists the available plastic and reconstructive procedures. Phinoplasty and reconstruction of the nose may be by post nasal inlay skin graft, or bone graft, or total reconstruction for total loss. For lagophthalmos there is the operation of temporalis musculo-facial sling. Ectropion can be dealt with by McLaughlin lateral tarsorraphy, and/or epiphora by upper to lower lid rotation flap. Loss of eyebrows can be dealt with by grafting of hairy skin, either a free graft, or a transposition flap, or a temporal artery island scalp flap. The ear lobule can be reconstructed, and a face lift operation done for improving aged appearance. Foot drop needs the tibialis posterior transfer operation. The Webster operation is available for gynaecomastia. Chronic ulcers and flexion contractures may need skin grafting. There are miscellaneous operations of the bones, joints, and nerves. Many practical details are given and the author explains the necessity of trained physiotherapy. He mentions the scarcity of scar or keloid formation.