

# Diffuse leprosy with “deck-chair” sign

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## ABSTRACT

A 55-year-old male presented with asymptomatic extensive skin lesions since one year. He was found to have diffuse lesions involving the face, trunk, arms, and thighs along with symmetric peripheral nerve thickening. Bacteriological and histopathological examination confirmed lepromatous leprosy. There was a conspicuous sparing of the abdominal creases and axillae from the infiltrative lesions suggesting a positive “deck-chair” sign. This sign has been described in the past with papulo-erythroderma of Ofuji and certain other disorders. Leprosy may be now included among the causes of “deck-chair” sign.

**Key words:** Deck-chair sign, diffuse infiltration, leprosy

## INTRODUCTION

Leprosy is a chronic infectious disease caused by *Mycobacterium leprae*, a pathogen that is capable of surviving in the macrophages. Long period of incubation and host interaction in the form of cell-mediated immunity leads to a spectrum of clinical manifestations. Cutaneous lesions of lepromatous leprosy include widespread and symmetric papules, nodules, and diffuse infiltration.

Classically, the “deck-chair” sign is described in papulo-erythroderma of Ofuji, an inflammatory disorder characterized by coalescence of solid papules that typically “spare the skin folds” such as those of abdomen and antecubital and axillary areas.<sup>[1]</sup> This sign has also been described with many extensive inflammatory dermatoses.

## CASE REPORT

A 55-year-old male presented with skin changes of one year duration. There was also recurrent blistering and ulceration of the hands and feet. He was being managed by a primary care physician with no relief, hence he reported to our centre. On examination, his general condition, vital signs, and systems were normal except for the presence of anemia. Cutaneous examination was remarkable with diffuse erythema, shininess, and induration involving the face, earlobes, trunk, thighs, arms, and hands [Figure 1]. Conspicuous sparing of the abdominal creases and axillae, that

is “deck-chair sign” was noticeable [Figures 2 and 3]. Hands and feet were swollen and shiny with erosions and depigmentation indicating ruptured and healed blisters. There were no noticeable cutaneous lesions such as macules or nodules. Symmetrical thickening of ulnar, radial cutaneous, lateral popliteal, and posterior tibial nerves was also found. Tactile sensations on the hands and feet were diminished. Ocular and orthopedic examination was normal. With all findings directing towards the diagnosis of leprosy; confirmation was sought with slit skin smear, which was positive for *M. leprae* with bacteriological index (BI) of 5 + in the right earlobe [Figure 4]. Histopathology confirmed lepromatous leprosy with epidermal atrophy, grenz zone, and massive infiltration of foamy macrophages in the dermis. Fite staining was also positive for *M. leprae*. Having confirmed it as a case of lepromatous leprosy, we treated him with the WHO recommended multibacillary multidrug therapy (MDT). The patient showed good response to treatment during a one year follow-up, with reduction in BI within two months of initiating MDT [Figure 5].

## DISCUSSION

Leprosy primarily affects the peripheral nerves and skin, and sometimes certain internal organs. It has a wide range of cutaneous manifestations depending on the host response to the pathogen. Apart from the clinical forms, there are lepra reactions with a complex pathogenesis involving

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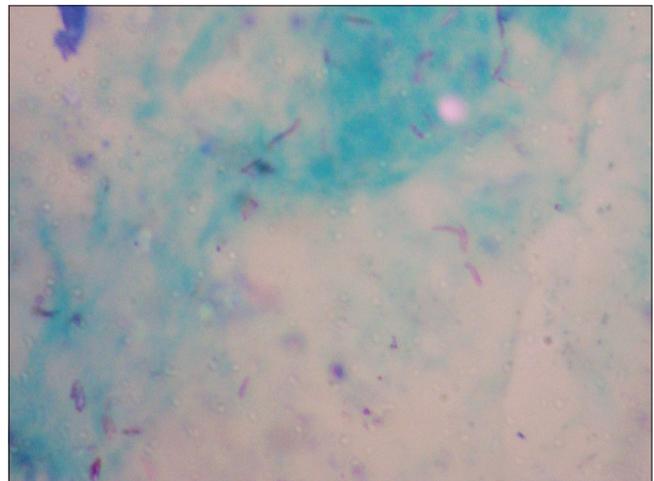
**Figure 1:** Diffuse infiltration involving the posterior trunk



**Figure 2:** Lesions sparing abdominal crease



**Figure 3:** Lesions sparing the axilla



**Figure 4:** *Mycobacterium leprae* in split skin smear (Zeihl-Neelson, ×1000)



**Figure 5:** Follow-up image of subsiding infiltration at six months

inflammatory cells and cytokines.<sup>[2]</sup> The diagnosis of leprosy is based on clinical, bacteriological, and histological evidences. Delayed diagnosis and misdiagnosis are not uncommon, and in lepromatous leprosy this may lead to permanent disability and deformities.<sup>[3]</sup> Diffuse infiltration of the trunk, face, and large portions of the extremities was noted on presentation in our patient. Diffuse infiltration is one of the later manifestations of lepromatous leprosy. This is an example of a case of lepromatous leprosy with a delayed diagnosis, leading to a diffuse pattern of leprosy amounting to erythroderma.

Interestingly, we noticed sparing of the abdominal creases and axilla, a sign described as "deck-chair sign". The sign has been classically described in papuloerythroderma of Ofuji, but may not be a specific sign since it is described in certain other conditions such as generalized acanthosis nigricans,

Waldenstrom's macroglobulinemia, large plaque parapsoriasis, angioimmunoblastic T-cell lymphoma, and erythroderma due to various causes.<sup>[4-8]</sup> This clinical observation has been described previously by Prashar *et al.* and probably this is the second report.<sup>[9]</sup> Sparing of the abdominal creases and other body folds was probably due to the tendency of leprosy lesions to spare warmer areas of the body. It is important to realize that no skin area is an "immune zone" to the invasion of *M. leprae*, as studies have documented bacteriological and histological evidence of the disease process in clinically uninvolved skin.<sup>[10]</sup> Relative sparing of certain areas in lepromatous leprosy is a known finding, but transformation of this finding into a clinically appreciable "deck chair" sign is an interesting observation.

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