



## LEPROSY MASQUERADING AS DEEP FUNGAL INFECTION

## Dermatology

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## ABSTRACT

Leprosy exhibits a wide spectrum of presentations, varying from the tuberculoid to the lepromatous pole, with immunologically unstable reactional states in-between, depending on the immune status of the individual. The reactional states of leprosy itself maybe the initial presentation of leprosy in some cases. We hereby report an untreated case of lepromatous leprosy in reaction mimicking deep fungal infection. Our patient is a 58 year old male, who presented with multiple episodes of painful raised lesions all over the body associated with fever and generalized malaise since 2 months. Lesions that initially developed on the trunk, later progressed to involve face and bilateral extremities, became pustular followed by ulceration and crusting. History of significant weight loss over the past 6 months. Cutaneous examination revealed multiple pustules, nodules over the face, ears, trunk, abdomen, both extremities. Multiple ulcerated plaques with necrotic crusting were also present. DDs of deep fungal infection, and leprosy in erythema nodosum leprosum were considered. KOH mount for fungal elements came negative. Slit skin smear showed a bacillary index of 4+. Skin biopsy from the skin nodule revealed thinned epidermis with flattened rete ridges, clear grenz zone and multiple foamy macrophages and neutrophilic infiltrate in the dermis. So we confirmed it as a case of lepromatous leprosy in erythema nodosum leprosum necroticans and as the patient had no previous evidence suggestive of leprosy it was difficult to diagnose the condition clinically. Hence it is important to have a high index of clinical suspicion of leprosy and initiate prompt treatment to prevent further disabilities and reduce the morbidity associated with leprosy.

## KEYWORDS

Lepromatous leprosy, erythema nodosum leprosum, bacillary index, erythema nodosum leprosum necroticans.

## INTRODUCTION

Leprosy, also known as Hansen's disease, is one of the oldest diseases known to man but still remains a challenge to public health. Leprosy is a chronic granulomatous disease caused by *Mycobacterium leprae* that have a predilection to affect the peripheral nerves and skin. According to the World Health Organization (WHO), individuals having one of the following three features have leprosy: (i) definite loss of sensation in a hypopigmented or reddish skin patch; (ii) a thickened or enlarged peripheral nerve with loss of sensation; and (iii) the presence of acid-fast bacilli in a slit-skin smear. Erythema nodosum leprosum (ENL) is an immune-mediated inflammatory complication affecting about 50% of patients with lepromatous leprosy (LL) and 10% of borderline lepromatous (BL) patients [4-6]. ENL can occur before, during or after successful completion of multi-drug therapy. The onset of ENL is acute, but it may progress to a chronic phase and can be recurrent. The uncommon morphological variants of ENL-like erythema nodosum necroticans, erythema multiforme (EM)-like ENL, Sweet's syndrome (SS)-like ENL, Lucio phenomenon, and reactive perforating type of ENL have also been described in the literature.[3]. We hereby report an untreated case of lepromatous leprosy in ENL mimicking deep fungal infection.

## Case report

A 58 year old male patient, a septic tank cleaner by occupation, belonging to low socioeconomic status presented to DVL OPD with history of multiple episodes of crops of multiple, painful, raised lesions all over the body since 2 months. These sudden crops of lesions were associated with high grade fever and generalized malaise. Lesions initially developed on the trunk, abdomen later progressed to involve the face, both upper limbs and lower limbs. Some of these lesions became pustular followed by ulceration and crusting, while some of them healed with hyperpigmentation. Fever was high grade, intermittent in nature, more in the evening. History of significant weight loss over the past 6 months. No history of redness of eyes, joint pain or bone pain, cloudy urine, epistaxis, hoarseness of voice. No history of dyspnoea on exertion, hemoptysis, chest pain, palpitation. No history of swelling of lower limbs or any wound over feet. No history of motor weakness, slippage of footwear. No history of similar complaints in family and contacts.

General physical examination revealed that the patient was moderately built and poorly nourished. He was febrile with a temperature of 100.4 F. Generalized tender lymphadenopathy involving right posterior cervical, left axillary and bilateral inguinal lymph nodes were present.

A differential diagnosis of deep fungal infection, leprosy in ENL and papulonecrotic tuberculid were considered based on history and general physical examination.

Cutaneous examination revealed multiple papules, pustules, and nodules over the face, ears, trunk, abdomen, both upper limbs and lower limbs. Multiple ill defined ulcerated plaques with necrotic crusting were present over the face, trunk and abdomen. On palpation, these lesions were warm, tender, firm in consistency. Specific deformities involving the ear lobes including Buddha ears and rat bitten ears were present. Fusiform swelling of digits suggestive of dactylitis with characteristic banana hand deformity was present. Sensory examination was intact. No evidence of glove and stocking anesthesia. Cranial nerve examination was also normal.



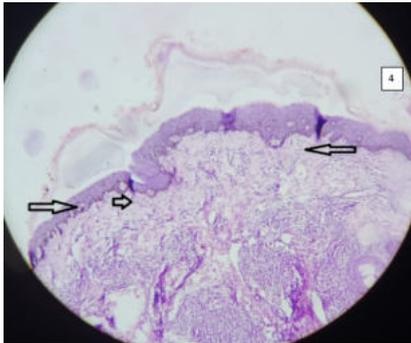
**Figure 1 –Multiple nodules, papules and plaques with necrotic crusting present on the face. Marked areas indicate rat bitten ears and Buddha ear deformity.**



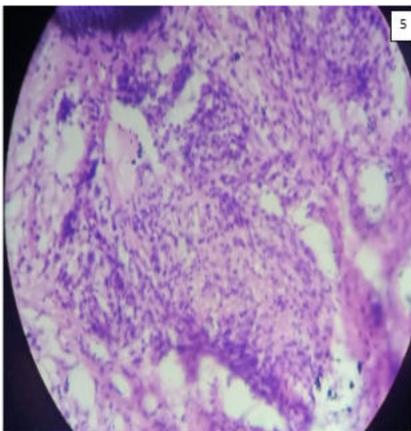
**Figure 2 : Trunk showing multiple pustules, papules, nodules, plaques with necrotic crusting and erosions; and an umbilical hernia of size 10 x 5 cm. Gynecomastia also present.**



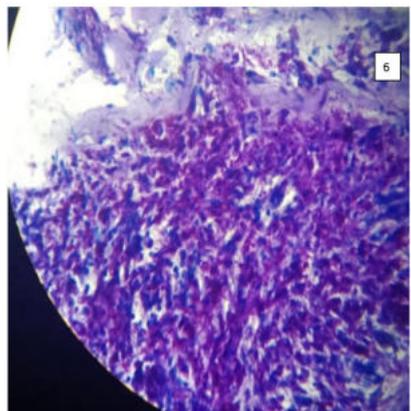
**Figure 3: Bilateral hands showing dactylitis, banana hand deformity. Multiple ill defined plaques with necrotic crusting also present on the dorsum of both hands.**



**Figure 4: Skin biopsy and histopathology from the nodule on the face showing thinned epidermis with flattened rete ridges and a clear subepidermal Grenz zone and foamy macrophages in the dermis under 10 X magnification.**



**Figure 5: Skin biopsy and histopathology from the crusted plaque on the trunk showing neutrophilic infiltrate in the deep dermis and foamy macrophages under 40 X magnification.**



**Figure 6: Fite faraco stain showing demonstrating M. Lepra bacilli under 40 X magnification.**

Routine blood investigations revealed leucocytosis with neutrophilia, raised ESR, hypoalbuminemia. Liver function test, renal function tests and urine examination were normal. VDRL (Venereal disease research laboratory test) for syphilis, ELISA for human immunodeficiency virus (HIV), and hepatitis B surface antigen were negative. KOH mount for fungal elements came negative. Pus culture and gram stain were negative. Sputum for AFB was negative. Chest X ray was normal. Slit skin smear showed presence of globi with a bacillary index of 4+. FNAC from the left axillary lymph node showed foamy macrophages with bacilli, interspersed with reactive lymphocytes and multiple neutrophils. Skin biopsy and histopathology from the nodule of the face revealed thinned epidermis with flattened rete ridges, clear subepidermal grenz zone and multiple foamy macrophages, few neutrophilic aggregates in the deep dermis.

With the above findings a final diagnosis of lepromatous leprosy in Erythema nodosum leprosum necroticans was made. And the patient was started on WHO recommended MB-MDT and oral Prednisolone 40mg in tapering doses as the patient is in type 2 reaction. There were no new lesions after the initiation of therapy. Prednisolone was tapered after 1 month by 5 mg every 2 weeks and subsequently stopped. He responded well with healing of the lesions with scarring and hyperpigmentation and without any recurrence of ENL lesions during 6 months of follow up.

**DISCUSSION**

Reactional states of leprosy itself maybe the initial presentation of leprosy in some cases. ENL as the first manifestation in Lepromatous or Borderline Lepromatous spectrum of leprosy has been described in literature. This case of erythema nodosum leprosum necroticans(ENE) which is even a rare and severe vasculonecrotic form of ENL, as the initial presentation of leprosy is an unusual entity.

Erythema nodosum necroticans is characterized by the vesicular, bullous, or pustular lesions which become necrotic and break down to produce ulcers. It was first reported by Verma and Pandhi in 1993 [7]. The presence of ulceration or skin necrosis along with constitutional and systemic manifestations is indicative of severe ENL. Severe ENL can also manifest as recurrent or chronic episodes, not responding promptly to conventional therapy.

A case of ENL clinically presenting as urticarial vasculitis that was then diagnosed to have LL has been reported by Funk WK et al [8]. Kou et al have reported a male with underlying lepromatous leprosy presenting with atypical reactional state simulating sweet syndrome[9]. A fatal case of erythema necroticans, has been reported by Sethuraman et al [10]. This case is presented due to rarity of ENL leprosy presenting with such severe ulcerations, especially at a time when we have eliminated leprosy as a major health hazard in our country.

**CONCLUSION**

Depending on the individual immune response, Hansens disease can present as a disease with no apparent features and spontaneous cure in one end and at the other end it can cause extensive nerve damage with severe disability. However, especially in the setting of lepra reactions, the disease can mimic many diverse unrelated conditions including deep fungal infections, atypical mycobacterial infection, papulonecrotic tuberculid, Sweets syndrome, pemphigus foliaceus. A strong clinical suspicion and histopathology are very crucial to confirm the diagnosis of leprosy. Early detection and prompt treatment can prevent the social and psychological burden by reducing the complications like nerve palsies, motor weakness and disabilities

**CONFLICT OF INTEREST**

None

**Consent**

Informed consent has been obtained from the patient for this publication.

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