

Leprosy in Disguise: A case report of 20-Years Diagnostic Odyssey

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Abstract

Leprosy is one of the neglected tropical diseases that is endemic in Nepal. It is a chronic disease with consequent deformities and disabilities if left untreated. Leprosy is diagnosed if patient presents with hypopigmented or erythematous skin lesions with decreased sensation or if peripheral nerve is involved or if slit-skin-smear demonstrates acid fast bacilli. The variable clinical presentations of leprosy can imitate other dermatological, rheumatological or neurological diseases. This case study reports unusual presentation of Borderline tuberculoid leprosy which remained undiagnosed for two decades. Delayed diagnosis led to physical, psychological and economic impact on the patient. This case highlights the importance of maintaining a high index of suspicion for leprosy in patients with chronic unexplained skin lesions, as early recognition and treatment are essential to prevent physical, psychological, and socioeconomic consequences.

Keywords: Hansen's disease; Leprosy; Misdiagnosis; Unusual presentation

Introduction

Leprosy is a granulomatous disease affecting skin and peripheral nerves. It is caused by an acid fast bacilli, *Mycobacterium leprae*. Though it has been declared to be eliminated as a public health problem in Nepal in 2010 AD, there are still considerable number of new cases being diagnosed every year. The prevalence of leprosy in Nepal was 0.92 per 10,000 population in 2080/2081 BS.¹ There is increasing prevalence of multibacillary leprosy over the years.² We report a case of Hansen's disease with unusual presentation that was undiagnosed for twenty years.

Case Description

The patient was a 72-year-old lady, farmer from a rural

area of western Nepal. She had no history of contact with leprosy patient. She presented to Emergency Department for hematemesis since 1 week. She was evaluated and diagnosed as a case of Upper Gastrointestinal bleeding secondary to oral corticosteroids, which she had been taking for twenty years for her skin lesions.

She gave history of itchy nodules and plaques over her bilateral arms and thighs since 20 years. The lesions would ulcerate and become necrotic over few days. For these symptoms, she used some over-the-counter medications for 1 month which she could not recall. But the lesions didn't improve following which she visited a local hospital twenty years back where based on her clinical findings, she was diagnosed with vasculitis by a general physician and was prescribed oral corticosteroids. She had been taking oral

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corticosteroids daily for two decades. The lesions used to remit and reappear on tapering the corticosteroids. Due to long-term intake of corticosteroids, she had developed Peptic ulcer disease and upper gastrointestinal bleeding.

On examination, there were multiple non-tender crusted ulcers over her bilateral arms (Figure 1). Bilateral ulnar nerves and radiocutaneous nerves were palpable and non-tender. Other neurological examinations were intact.



Figure 1: Multiple crusted plaques and nodules over arms

With high suspicion of leprosy, slit-skin-smear and skin biopsy were performed. Slit-skin-smear with Ziehl Neelsen stain showed acid fast bacilli with bacteriological index 2+ (Figure 2). Skin biopsy showed epidermal ulceration, irregular acanthosis, dense lymphohistiocytic infiltrate in the superficial dermis, peri-adnexal and perivascular inflammatory infiltrates (Figure 3). Hence, she was diagnosed as a case of Borderline Tuberculoid Leprosy.

The patient was started on Multibacillary Multidrug therapy which included Rifampicin, Clofazimine and Dapsone for one year duration. She followed up after two months of treatment during which her old lesions had completely healed and there was no reappearance of new lesions.



Figure 2: Acid fast bacilli on slit-skin-smear with Ziehl Neelsen stain (100X)

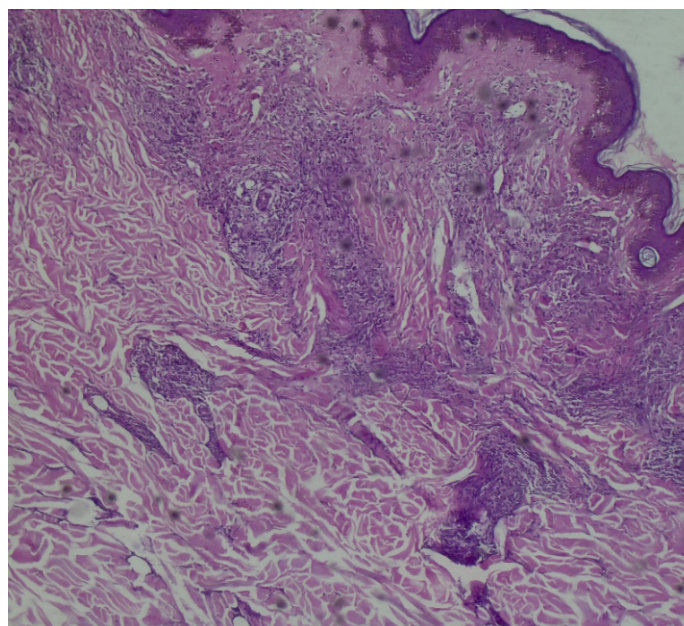


Figure 3: Histopathology findings of skin lesion showing epidermal ulcer, acanthosis, perivascular and periadnexal lymphocytic infiltrates (H&E stain, 40X magnification)

Discussion

Leprosy is a chronic granulomatous disease that can affect skin and peripheral nerves. In 2080/81 BS, new case detection rate of Leprosy in Nepal was 8.41 per 100,000 population.¹ Elimination of leprosy was declared in Nepal in 2010 AD. But there are still 18 districts where prevalence rate is more than 1 per 10,000 population.¹ Re-emergence of leprosy during this post-elimination era is a serious concern in public health.² Moreover, there is increasing prevalence of Multibacillary Leprosy cases which is an alarming sign. A study showed 91.74% of leprosy cases diagnosed to be multibacillary.³ This can be due to misdiagnosis and unavailability of health care services in our context.

According to World Health Organization, Leprosy is diagnosed if a patient has hypopigmented skin lesion(s) with loss of sensation or involvement of peripheral nerve or presence of acid fast bacilli on slit-skin-smear examination. The clinical presentation can vary according to the types of leprosy. Borderline tuberculoid leprosy typically presents with asymmetric well-defined dry plaques with decreased sensation.³ However, in our case, the patient had ulcerated nodules over her arms which is an unusual presentation. A retrospective study in India showed 18.5% of leprosy patients had atypical cutaneous findings at the time of presentation.⁴ Thus, leprosy is a great imitator and can mimic other diseases clinically.

In our society, delayed diagnosis is a common problem that can be attributed to misdiagnosis, ignorance of patients, self-medications, unavailability of health services and

logistic issues.⁵ Delayed diagnosis of leprosy especially multibacillary type with high bacterial load can lead to increased community transmission, deformities, lepra reactions, psychological impact and financial burden. In a study, delayed diagnosis was observed in 70% of leprosy patients.⁶ A retrospective study observed the mean delay of diagnosis from the time of onset of symptoms to be 28.1 months.⁷

The main causes of misdiagnosis of leprosy are non-specific and wide-range of signs and symptoms of leprosy and lack of awareness among health professionals. Misdiagnosis of leprosy by health care professionals can occur due to atypical presentations of leprosy and skin lesions mimicking other dermatological, rheumatological or neurological diseases.^{4,8} Diagnosis relies on a combination of clinical, microbiological and histopathological assessments, which can be challenging for non-specialists. There are reports of cases being misdiagnosed like in our case, leading to more complications and financial burden.⁹

The goal of National Leprosy Strategy 2021-2025 is Leprosy free Nepal by 2030 AD.¹⁰ The Government of Nepal should emphasize on training of healthcare workers, provision of diagnostic tools and awareness among general population. Furthermore, the current Information, Education and Communication materials in Nepal predominantly emphasize classical features of leprosy, with limited focus on its diverse atypical clinical spectrum which should be improved. The continuous engagement and tailored training for all levels of healthcare personnel are essential. To address shortages of specialists, staff and referral hospitals in geographically remote areas, national programs should promote decentralization and integration into primary healthcare.⁸ Early diagnosis and treatment is the most important step to achieve leprosy free Nepal.

Conclusion

Our case highlights the importance of knowledge among healthcare professionals regarding the atypical presentations of leprosy to prevent misdiagnosis. Delay in diagnosis of leprosy can lead to various complications affecting patient's physical, mental and socio-economic well-being. Proper training and awareness programs should be conducted for health care workers of all levels. Hence, Leprosy should be suspected and diagnosed early in patients presenting with rheumatic and cutaneous manifestations to prevent further complications and transmission, especially in country like ours where the disease is endemic.

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