CASE REPORT

Uncommon clinical presentations of leprosy: apropos of three cases

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Accepted for publication 4 April 2016

Summary  Leprosy has been labelled as a great imitator since times immemorial. This mainly is because of the wide range of its clinical presentations. In endemic regions it is important to entertain the possibility of leprosy even in atypical presentations so as to avoid misdiagnosis. Here we report three cases of leprosy with uncommon disease presentations. First case had presented with eczematous morphology of cutaneous lesions without sensory loss and nerve thickening. Second case had localized type-2 reaction and third case had presented initially with only rheumatologic manifestations. Histopathology is an important tool in arriving at correct diagnosis and thus should be done in all suspected cases.

Introduction

Leprosy is a great mimic and can have varied clinical presentations. The most remarkable thing about leprosy is the wide variations in the way it affects different people. Apart from the common presentations, which can be easily identified, certain uncommon clinical presentations can delay diagnosis. In those circumstances, histopathology comes to the rescue by aiding with accurate and timely diagnosis. Further patients of lepromatous leprosy can also be diagnosed with the help of slit skin smear examination. We here present three cases having uncommon clinical presentations of leprosy where histopathology was key in establishing the correct diagnosis.
Case series

CASE 1

A 45 year old man sought dermatology consultation for multiple asymptomatic erythematous to hyper-pigmented scaly papules and plaques over his face, trunk and extremities predominantly involving extensors for 1\frac{1}{2} years (Figure 1).

The patient correlated the onset of lesions with the spray of insecticides in the fields. He also complained of nasal stuffiness and pain in his legs. There were no sensory symptoms or peripheral nerve enlargement. The patient was investigated with a provisional clinical diagnosis of air-borne contact dermatitis. Nasal endoscopy revealed a gross left sided deviated nasal septum and septal perforation. A skin biopsy taken from the erythematous plaques showed mildly atrophic epidermis with multiple foamy macrophages and lymphocytes in the dermis. On fite stain abundant acid-fast bacilli were demonstrated (Figure 2).

A slit skin smear and nasal smear taken subsequently showed acid-fast bacilli in globi. Thus a final diagnosis of lepromatous leprosy was established and the patient was started on multidrug therapy.

CASE 2

A 25 year old man presented to the dermatology outpatient department with chief complaints of erythema, edema and tenderness of his right hand with 3–4 overlying pustules for the past 1\frac{1}{2} months. He also had two subcutaneous nodules of 2 × 2 cm over the right side of his chest wall and right arm medial side (Figures 3A & 3C).
**Figure 2.** (Case 1) Mildly atrophic epidermis with superficial dermis showing many telangiectatic blood vessels surrounded by many foamy macrophages, lymphocytes and neutrophils (Figure 2A: H&E × 4). Fite stain demonstrates many acid fast bacilli (Figure 2B: Fite stain × 40).

**Figure 3.** (Case 2) Erythema & edema of right hand with 3–4 overlying pustules (Figure 3A), subcutaneous nodules of size 2 × 2 cm over right arm medial side (Figure 3C). Erythematous papules and plaques over forehead (Figure 3B).
For the past week the patient had experienced fever. With the provisional clinical diagnosis of pyoderma, the patient was started on intravenous antibiotics but there was no improvement after one week of therapy. Further he developed a few erythematous papules and plaques over his back and forehead (Figure 3B).

Fine needle aspiration cytology from the nodule over his arm showed multiple acid-fast bacilli. A skin biopsy taken from the plaque on his back revealed an atrophic epidermis with dense dermal inflammatory infiltrate of lymphocytes and foamy macrophages. Fite stain showed numerous lepra bacilli in stacks and dispersed singly (Figure 4).

Thus a final diagnosis of lepromatous leprosy with localised Type 2 reaction was made. The patient responded well to multidrug therapy and oral corticosteroids.

**CASE 3**

A 52 year old man presented with a one-month history of polyarthritis, fever and testicular pain. On investigation he was found to be Hepatitis C virus (HCV) seropositive. The patient was given non-steroidal anti-inflammatory drugs and investigations for HCV viral load were sent. The patient was lost to follow-up and reported back after 2 weeks with multiple erythematous, tender, subcutaneous nodules over both legs. A skin biopsy taken from these nodules revealed the presence of multiple foamy macrophages surrounding pilosebaceous units (Figure 5A).

Fite stain was positive for the presence of acid-fast bacilli (Figure 5B).

The final diagnosis established was lepromatous leprosy with Type 2 reaction. The patient was started on multidrug therapy and oral corticosteroids and he responded well to treatment.
Leprosy can be diagnosed fairly accurately on the basis of its three cardinal signs. However, as it is a spectral disease, its range of clinical presentations is wide. The uncommon disease presentations include localized lepromatous disease presenting with single nodule or localized area of papules and nodules, histoid leprosy, lucio leprosy and spontaneous ulcerations seen in long-standing untreated lepromatous leprosy.

First case of our series had presented with atypical morphology resembling eczematous disorder. Further history of development of lesions following insecticide spray, absence of sensory symptoms and absence of nerve enlargement was misleading. However subtle clues to point towards diagnosis of leprosy were nasal stuffiness, pain in legs and absence of pruritus in the lesions.

In the second case initial absence of cutaneous lesions suggestive of leprosy, short duration of symptoms, absence of sensory symptoms and nerve enlargement and localization of disease to right upper limb delayed the diagnosis of leprosy. Ankad BS et al have reported a case of pure neural leprosy involving isolated cutaneous radial nerve as multiple abscesses along the course of nerve.\(^1\) Other atypical manifestations reported previously include verrucous lepromatous leprosy, leprosy presenting initially with myositis followed by skin lesions and lymphadenopathy and leprosy presenting as erythema multiforme like Type 2 reaction.\(^2\)–\(^4\) There are also few case reports of leprosy mimicking common rheumatologic entities.\(^5\) Our third case was also initially misdiagnosed as polyarteritis nodosa due to absence of cutaneous lesions and sensory symptoms. The presence of fever, arthritis and testicular pain in view of a positive HCV serology pointed towards the possible diagnosis of polyarteritis nodosa.

**Figure 5.** (Case 3) Foamy macrophages surrounding pilosebaceous units (Figure 5A: H&E × 10), fite stain showing few fragmented acid fast bacilli (Figure 5B: Fite stain × 100).
The possibility of leprosy was entertained only after the development of erythema nodosum lesions.

In all the three cases presented histopathology was central in establishing the correct diagnosis. Thus all suspected cases, especially in endemic regions, should be subjected to histopathologic examination. Further various clinical presentations of leprosy, common as well as uncommon, must be kept in mind to avoid untoward delay in diagnosis.

Conclusion

Skin and nerves affected by leprosy is quite common. However, it is a great mimic of many conditions. In areas endemic for leprosy it is imperative to keep in mind the diverse presentations of leprosy. Leprosy should be actively ruled out in all suspected cases so as to prevent misdiagnosis.

As none of the patients are identifiable in the clinical photographs no patient consent form was required.

This being a case report containing retrospective data without any drug trial, ethical clearance was not required.

References