CASE REPORT

Bullous erythema nodosum leprosum: a rare case series

SWETALINA PRADHAN, ARPITA NIBEDITA ROUT, CHANDRA SEKHAR SIRKA, KANANBALA SAHU & GAURAV DASH

AIIMS Bhubaneswar, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, Odisha, India

Accepted for publication 15 July 2019

Summary Bullous erythema nodosum leprosum (Bullous ENL) is the severe form of Type 2 lepra reaction. There are only a handful of reports of bullous ENL cases in English literature. We hereby report five cases of lepromatous leprosy with bullous erythema nodosum leprosum, of whom cases 1, 3, 4 and 5 had bullous ENL at initial presentation, while case 2 developed bullous lesions during the fourth episode of ENL. The diagnosis was based on clinical features and histopathology. All cases had a bacillary index more than 4+. None of the patients had a history of previous anti-leprosy treatment. A history of contact with another person with leprosy was present in two cases. All five cases were successfully treated with multidrug therapy, oral steroids and thalidomide. This case series on bullous ENL emphasises that a high bacillary index and delay in diagnosis and treatment can lead to the more severe form of bullous Type 2 lepra reaction.

Keywords: Bullous lesions, ENL, Type 2 lepra reaction

Introduction

Erythema nodosum leprosum (ENL) or Type 2 lepra reaction is characterised by the sudden appearance of bilaterally symmetrical crops of erythematous tender evanescent nodules or plaques in a leprosy patient. It may be associated with extra-cutaneous features such as fever, neuritis, lymphadenopathy, iridocyclitis and arthritis. The various reported morphologies of ENL include nodular, vesicular, pustular, bullous and necrotic – with the nodular pattern being the most common. The occurrence of bullous ENL is rare and bullous lesions indicate an increased severity of reaction. In total, 16 individual cases have been reported till date. We hereby report a series of five cases of bullous erythema nodosum leprosum treated with multidrug therapy, oral steroids and thalidomide.

Correspondence to: Swetalina Pradhan, AIIMS Bhubaneswar, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, Odisha, India (e-mail: dr.swetalinapradhan@gmail.com)
Case reports

Five cases of lepromatous leprosy presented to the Dermatology outpatient department within a 6 months period, with recurrent bullous and ulcerative lesions, along with areas of sensory loss, fever and joint pain; the duration of symptoms ranged from 1 month to 1 year. All except case 2 had bullous lesions at their first presentation. There was no history of any prior drug intake in any of the cases.

Figure 1. Flaccid bulla over the erythematous, oedematous nodular lesions.
Demographic details, duration of disease, contact history, treatment status at time of presentation, clinical features (Figures 1–3) and systemic co-morbidities are discussed in Table 1. All cases were subjected to routine baseline investigations, including a slit skin smear (Table 2). Histopathology showed suprabasal cleft with lympho-histiocytic and dense

Figure 2. Multiple erythematous, oedematous lesions, some showing vesicular changes on the surface.

Figure 3. Scanner view showing intraepidermal cleft with dermis showing mixed infiltrates. [H&E, 40x].
<table>
<thead>
<tr>
<th>Case No</th>
<th>Age/Sex</th>
<th>Duration of disease</th>
<th>Disease in family</th>
<th>Precipitating factors</th>
<th>First presentation as Bullous ENL</th>
<th>MDT status</th>
<th>Clinical features</th>
<th>Nerve enlargement</th>
<th>Systemic features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50yr/M</td>
<td>2 months</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>Not received at presentation</td>
<td>Infiltrated papules, nodules, ear nodules, madarosis</td>
<td>Bilateral common peroneal and ulnar</td>
<td>Neuritis, Orchitis</td>
</tr>
<tr>
<td>2</td>
<td>42yr/M</td>
<td>6 months</td>
<td>No</td>
<td>None</td>
<td>No</td>
<td>Not received</td>
<td>Infiltrated papules, nodules, ear nodules, madarosis, glove and stocking anaesthesia</td>
<td>Bilateral ulnar</td>
<td>neuritis, orchitis, iritis, arthritis</td>
</tr>
<tr>
<td>3</td>
<td>24yr/M</td>
<td>5 months</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>Not received</td>
<td>shiny nontender nodules with 20–40% loss of sensation to fine touch with cotton</td>
<td>Bilateral common peroneal and ulnar</td>
<td>Neuritis, arthrits</td>
</tr>
<tr>
<td>4</td>
<td>32yr/M</td>
<td>1 year</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>Not received</td>
<td>multiple nontender shiny nodules over ear lobes, trunk and face</td>
<td>Bilateral common peroneal and ulnar</td>
<td>Neuritis, arthrits</td>
</tr>
<tr>
<td>5</td>
<td>63yr/M</td>
<td>1 month</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
<td>Not received</td>
<td>Glove and stocking anaesthesia, sagging of ear</td>
<td>Bilateral common peroneal and ulnar</td>
<td>Neuritis</td>
</tr>
</tbody>
</table>

Table 1. Demographic and clinical features of the cases reported
neutrophilic periappendageal and dermal infiltration in all cases (Figure 4). The cases were diagnosed as lepromatous leprosy with bullous ENL based on the clinical and histopathological findings. All cases were started on MB-MDT along with oral prednisolone at a dose ranging from 40 to 60 mg initially, along with thalidomide. Later the steroid dose was tapered over a 3 to 6 months period and patients were maintained on thalidomide with gradual tapering over the next 6 months. All the patients were counselled during their hospital stay and subsequent visits regarding the duration of treatment with anti-leprosy drugs and were asked not to stop the drugs by themselves without the advice of a physician. All the patients are on regular follow up at present without any recurrences. One of the patients complained of dizziness and increased somnolence with thalidomide, but it was not severe enough to warrant discontinuation.

### Table 2. Investigations and treatment of the cases reported

<table>
<thead>
<tr>
<th>Case no</th>
<th>BI</th>
<th>Histopathology</th>
<th>Treatment of Type 2 reaction</th>
<th>Other significant laboratory parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5+</td>
<td>Intraepidermal cleft, lympho-histiocytic infiltrations, vasculitis</td>
<td>Prednisolone/Thalidomide</td>
<td>Leukocytosis</td>
</tr>
<tr>
<td>2</td>
<td>4+</td>
<td>Intraepidermal cleft, lympho-histiocytic infiltrations, vasculitis</td>
<td>Prednisolone ← Thalidomide</td>
<td>Leukocytosis, Raised ESR</td>
</tr>
<tr>
<td>3</td>
<td>4+</td>
<td>Intraepidermal cleft, lympho-histiocytic infiltrations, vasculitis</td>
<td>Prednisolone</td>
<td>Within normal limits</td>
</tr>
<tr>
<td>4</td>
<td>4+</td>
<td>Intraepidermal cleft, lympho-histiocytic infiltrations, vasculitis</td>
<td>Prednisolone ← Thalidomide</td>
<td>Leukocytosis, Neutrophilia</td>
</tr>
<tr>
<td>5</td>
<td>4+</td>
<td>Intraepidermal cleft, lympho-histiocytic infiltrations, vasculitis</td>
<td>Prednisolone ← Thalidomide</td>
<td>Within normal limits</td>
</tr>
</tbody>
</table>

![Figure 4. High power view showing intraepidermal cleft. [H&E, 400x].](image)
Discussion

Bullous ENL is a rare form of severe Type 2 lepra reaction. A total of 16 cases have been reported in the literature from 1985 to 2017 from all over world.\(^1\)\(^{-16}\) Existing published data on bullous ENL are only case reports.

Type 2 lepra reactions usually occur following destruction of leprosy bacilli by bactericidal antileprosy drugs or the immune system. The bacilli act as antigen, thus forming antigen–antibody complexes, which get deposited in various tissues causing an inflammatory response and damage.

ENL commonly presents as brightly red, raised, tender nodules and plaques associated with systemic features in the form of fever, malaise and joint pain. Rarely ENL lesions can undergo vesiculation in the centre due to severe inflammation. In the present series, out of five cases, four cases had presented with bullous ENL as the initial presenting feature.

The precipitating factors known for ENL are stress, infections, and bactericidal drugs. Among antileprosy drugs rifampicin and rarely ofloxacin are commonly known to precipitate ENL.\(^10\),\(^16\) Though reported cases of bullous ENL occurred after starting MDT, in our cases none of the patients had history of intake of MDT. A high bacillary index and delayed diagnosis and treatment could be the cause of such severe form of ENL in the current series.

Other differentials of bullous lesions in Hansen’s disease are Lucio phenomenon, necrotic ENL or as a presentation of sensory neuropathy.\(^17\) Lucio phenomenon is characterised by purpuric lesions and ulcers with irregular margins in the absence of constitutional features and histopathology demonstrating features of necrotising vasculitis, endothelial proliferation and presence of bacilli in the endothelial cells.\(^18\) Our cases were differentiated from the above entities by the clinical appearance of bullous lesions, associated systemic symptoms, and histopathological findings suggestive of bullous ENL.

Treatment of bullous ENL is similar to the classical form of ENL, however being the severe form, bullous ENL requires a more aggressive approach. In the present case series, all the patients were treated successfully by initial control of signs and symptoms with a high dose of systemic corticosteroids along with thalidomide, followed by rapid tapering of systemic corticosteroids after control of symptoms.

Coming across five cases of bullous ENL within a span of 6 months could be due to the fact that ours is an endemic zone for leprosy and our institute is a tertiary care centre in our locality. As in lepromatous leprosy, the skin lesions are not obvious, the cases are easily missed by health workers and hence the bacillary load continues to increase and later can present with severe form of Type 2 lepra reaction. We report the series to emphasize the importance of early diagnosis and treatment of lepromatous leprosy to prevent the occurrence of such severe forms of ENL.

References


