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Case Report

Bilateral Groove Sign in Lepromatous Leprosy with Type 2 Lepra Reaction – An Uncommon Presentation

DB Mistry[1], KS Parmar[2], BJ Shah[3], A Choudhary[4]

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A 35-year-old male patient presented with tingling and numbness over both extremities, skin lesions and buboes in bilateral inguinal region with the classical "sign of groove". Biopsy from the skin lesion as well as the lymph node aspirate was consistent with lepromatous leprosy with erythema nodosum leprosum (type 2 lepra reaction). This case report highlights the interesting observation of the "groove sign" with leprosy, as a result of lymph node involvement of inguino-femoral region.

Keywords : Groove Sign, Lepromatous Leprosy, Type 2 Lepra Reaction

Introduction

Erythema nodosum leprosum (ENL) is an immune-mediated inflammatory complication affecting approximately 50% of patients with lepromatous leprosy and 10% of borderline lepromatous leprosy (Kumar et al 2004, Pocaterra et al 2006). It is associated with diverse clinical features such as skin lesions, neuritis, arthritis, dactylitis, eye inflammation, osteitis, orchitis, lymphadenitis and nephritis.

The 'sign of groove' or 'groove sign of Greenblatt', formed by the inguinal ligament which separates the inguinal lymph nodes above and the femoral lymph nodes below, is an uncommon presentation of leprous lymphadenitis. We are reporting this case to highlight the uncommon presentation of bilateral "groove sign" with inguino-femoral lymph node involvement in lepromatous leprosy with type 2 lepra reaction.

Case Report

A 35-year-old male presented to the OPD with complaints of tingling and numbness over both extremities and skin lesions for the last 3 months. The patient gave history of intermittent low-grade fever associated with evanescent crops of reddish lesions, joint pain over both knees and elbows, and buboes in bilateral groins since last 2 months. He also complained of pedal oedema since the last 2 weeks and a single episode of epistaxis 1 week ago.

Initially, the lesions began as skin-coloured papules and nodules first over the face and then gradually spread to involve the entire body within a period of 3 months. The groin

[1] Dr DB Mistry, MD (Skin & V.D.), Senior Resident
[2] Dr KS Parmar, MD (Skin & V.D.), Professor
[3] Dr BJ Shah, MD (Skin & V.D.), Professor & Head
[4] Dr Ankita Choudhary, MBBS, Resident Doctor
Department of Dermatology, B. J. Medical College, Civil Hospital, Ahmedabad-380016, Gujarat, India.
Corresponding author : Dr. Ankita Choudhary, **Email :** ankita26061993@gmail.com

lesion first appeared as a raised slightly tender erythematous swelling initially on the right and then on the left inguino-femoral region. Within a course of two months it increased in size, but there was no history of rupture. At presentation, there were bilateral well-defined sausage-shaped tender buboes both above and below the inguinal ligament, with a prominent "groove sign" (Fig. 1). The overlying skin showed slight erythema. There was bilateral superciliary madarosis and dark xerotic skin seen over the bilateral extremities and trunk.

On sensory examination, there was loss of sensations (temperature, touch, pain) in glove and stocking pattern over both extremities. Nerve examination revealed bilateral grade 2 thickening (moderate / rope like thickening) of ulnar, posterior tibial and lateral popliteal nerves without any tenderness. On motor examination there was weakness of small muscles of the hands and feet.

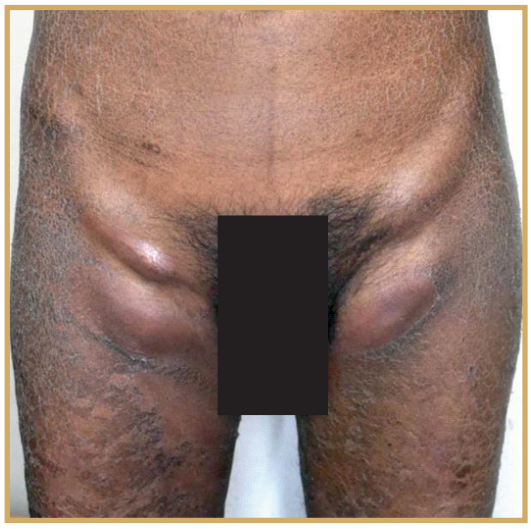

Fig. 1 : Bilateral well-defined sausage-shaped buboes both above and below the inguinal ligament, with a prominent "groove sign"

Routine examinations revealed anaemia (Hb 11gm/dl) and leukocytosis (22,900 cells/mm^3).

An ultrasound of the abdomino-pelvic region showed hepato-splenomegaly along with multiple varying sized abdominal lymph nodes and inguinal lymph nodes, with the largest conglomerated lymph nodes measuring 30 x 16 mm in the right iliac fossa. Slit skin smear taken from right ear lobule was positive for acid fast bacilli (AFB) – grade 6+ on Ridley scale (Over 1,000 bacilli and globi in an average microscopic field). Biopsy from skin lesion showed subepidermal clear Grenz zone and macrophage granulomas laden with AFB in the entire dermis superimposed with massive accumulation of acute inflammatory cells forming micro abscess. Inguinal lymph node aspirate revealed replacement of lymphoid tissue with lepra cells along with neutrophils.

Based on above clinical findings and investigations, a final diagnosis of lepromatous leprosy with type 2 lepra reaction with inguinal lymphadenopathy showing groove sign was made. Patient was started on adult multibacillary multi-drug treatment (MDT) along with tablet prednisolone (1mg/kg/day). Prednisolone was tapered by 5mg every week up to 10 mg, 10 mg was continued for the next 2 weeks, followed by 5mg for another 2 weeks before stopping. Patient showed gradual symptomatic improvement along with resolution of skin and inguinal lesions over a period of 6 months.

Discussion

The "groove sign" was first described by Greenblatt in 1943 as a characteristic sign in LGV (lymphogranuloma venereum) to denote the usually unilateral sausage shaped swelling of the inguinal lymph node above and the femoral lymph node below the inguinal ligament, the inguinal ligament forming a groove in between

the swellings (King et al 1980, Garido Neves & Lupi 1997). It has also been described in association with Non-Hodgkin's Lymphoma as well as Hodgkin's Lymphoma (Nair et al 2007, Khargoria et al 2020).

Conclusion and future perspective

Lepra reactions present with varied cutaneous and systemic manifestations. Involvement of inguinal lymph glands of both groins and such clinical features of lepromatous leprosy/ erythema nodosum leprosum are unusual which the clinicians practicing in leprosy endemic areas should be aware of. For those working in academic tertiary/ specialized centres dealing with sexually transmitted diseases and malignancies this knowledge of unusual presentations is even of greater importance.

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