

Type 2 Lepra Reaction Presenting as Fever of Unknown Origin Identified on ^{18}F -fluoro-2-deoxyglucose Positron Emission Tomography/Computed Tomography

Sir,

A 25-year-old male, with no prior history of any illness, presented with high-grade fever for 2 weeks

and tender lymphadenopathy in the bilateral axilla/groin with 1-day history of erythematous lesions in dorsal aspect of both forearms. Routine laboratory

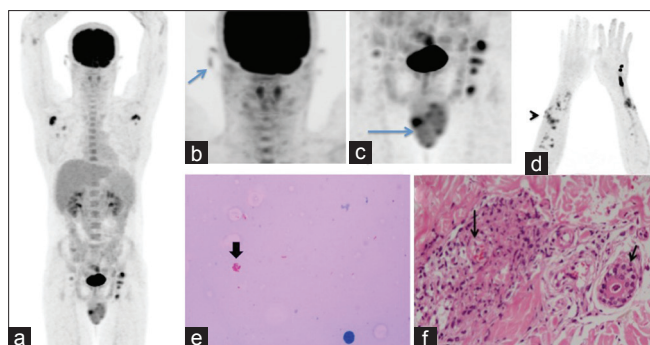


Figure 1: PET MIP images (a-d) increased FDG uptake in enlarged lymph nodes in the bilateral inguinal region and axilla (a) with diffuse FDG uptake in skin of bilateral pinna (b), skin of scrotum (c), skin lesions in bilateral forearm (d). Slit skin smear from pinna using modified ZN stain was positive for *Mycobacterium leprae* bacilli with bacillary index (BI) score 4+ (e). Biopsy from forearm lesions showed periadnexal and perivascular inflammation (f) – suggestive of erythema nodosum leprosum (ENL)

investigations for fever were negative, and positron emission tomography/computed tomography (PET/CT) was done for localization of infection. Maximum intensity projection images (Figure 1a-d) showed increased focal ^{18}F -fluoro-2-deoxyglucose (FDG) uptake in enlarged lymph nodes in the bilateral inguinal region and axilla (Figure 1a) with diffuse FDG uptake in skin of bilateral pinna (short blue arrow, (Figure 1b)), skin of scrotum (long blue arrow, (Figure 1c)), skin lesions in bilateral forearm (black arrowhead, (Figure 1d)), and marrow of axial skeleton. Slit skin smear (SSS) from the skin of pinna using modified Ziehl–Neelsen stain was positive for *Mycobacterium leprae* bacilli with bacillary index (BI) score 4+ (pink stain, bold black arrow, (Figure 1e)). Biopsy from forearm lesions showed periadnexal and perivascular inflammation with predominantly neutrophils with a few foamy histiocytes (black arrow, (Figure 1f)) – suggestive of erythema nodosum leprosum (ENL).

Contrary to the popular belief, leprosy is still highly prevalent in the developing countries.^[1] Type 2 lepra reaction/ENL is an immunological reaction that occurs in borderline/lepromatous spectrum. Arthus-like reaction with multiorgan immune complex deposition has been postulated as the most likely mechanism.^[1] Rarely, ENL may be the initial presenting symptoms with high-grade fever, arthritis, lymphadenopathy, and nephropathy, causing delay in clinical diagnosis.^[2] SSS is usually taken from cooler areas of the body such as ear lobules which yields higher BI as compared to other sites.^[3] Biopsy of skin lesions showing neutrophilic infiltration of vessel wall (vasculitis) differentiate type 1 from type 2 lepra reaction, in which lymphocytic infiltration is more common.^[4] PET/CT is a highly sensitive investigation in identifying site of infection/inflammation in patients with fever of unknown origin (FUO).^[5] In highly endemic

region, evidence of systemic inflammation and typical skin lesions on PET/CT, such as that described above, leprosy reactions should be included in one of the differential diagnoses of FUO.

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Conflicts of interest

There are no conflicts of interest.

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