



A CASE REPORT OF ASYMMETRIC BRACHIAL PLEXUS INVOLVEMENT IN LEPROSY NEUROPATHY DEMONSTRATED BY MAGNETIC RESONANCE IMAGING

Radio-Diagnosis

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ABSTRACT

Leprosy is a chronic granulomatous disease primarily affects the peripheral nerves and skin .Sometimes, the disease has an unusual presentation, crippling complications, and can be contagious, so its timely diagnosis and management are extremely important. In this case report 29-years-old male a case of biopsy proven Hansens disease-borderline tuberculoid type on MDT. Patient with complains of weakness of left upper limb and pain in the neck radiating to left upper limb since 1 month . MRI is commonly used for evaluating the plexus,brain and spinal cord Brachial plexus involvement is commonly seen in borderline tuberculoid variant .Thickening may be due to cell mediated immune response. A possibility of drug resistant leprosy was considered and adviced to continue MDT.Patient was treated as a case of bilateral brachial plexitis and transverse myelitis secondary to IRIS .Patient was managed with medication then improved.

KEYWORDS

Leprosy , MRI .

INTRODUCTION

Leprosy, also known as Hansen's disease, is a chronic granulomatous disease caused by the bacteria *Mycobacterium leprae*. It primarily affects the peripheral nerves and skin[1]. Depends on host immune response Ridley-Jopling classification of leprosy is Lepromatous leprosy (LL), Borderline Lepromatous leprosy (BL), Borderline leprosy (BB), Borderline tuberculoid leprosy (BT), Tuberculoid leprosy (TT). Leprosy is the leading infectious cause of disability, and the neurological involvement may commence before, during, or after treatment, leading to significant functional impairments and deformities (2,3). Sometimes, the disease has an unusual presentation, crippling complications, and can be contagious, so its timely diagnosis and management are extremely important [4]. Peripheral nerve involvement are more common, easily evaluated by Ultrasound. MRI is commonly used for evaluating the plexus, brain and spinal cord. In MRI presentation may vary. It may be bilateral/unilateral, symmetric/asymmetric thickening, smooth /irregular involvement of the divisions and cords (5-13). Brachial plexus involvement is commonly seen in borderline tuberculoid variant. Thickening may be due to cell mediated immune response.

AIM

It is to provide an up-to-date overview of the role of radiological modalities in the study of nerve function impairment and its musculoskeletal complications in patient with leprosy.

Magnetic Resonance Imaging

Magnetic resonance imaging protocol. Magnetic resonance imaging was performed on 1.5 or 3.0 Tesla machines, and the protocol consisted of T1 and T2 axial and sagittal images of the spine and coronal short inversion time inversion recovery (STIR) sequences for the plexus. For the brain, it was T1 axial, T2 sagittal and axial, diffusion-weighted imaging (DWI), and post-contrast T1 magnetization-prepared rapid gradient-echo (MPRAGE).

Case Presentation

In this case report 29-years-old male came from Vellore , Tamilnadu presented to the out-patient department of Sri Narayani Hospital&Research Centre ,Sripuram,Vellore, on 23 August 2022. He was known case of biopsy proven Hansens disease-borderline tuberculoid type on MDT since 7 months regularly. Patient with complains of weakness of left upper limb with anesthetic patch over left hand, Motor functions normal in both upper and lower limbs. Investigation :CSF Fluid analysis were normal. Serum electrolytes, Urea, creatinine –within normal limits. CBC-Profile: within normal limits. CECT chest was done in view of suspicion of sarcoidosis and there was no lymphadenopathy.

In MRI CERVICAL SPINE (Plain & Contrast) shows, (Sequence used are Axial-T2, Sagittal-T1, T2 & Coronal-STIR, pre and post contrast coronal, T1 axial with fat sat) shows asymmetric smooth

thickened & enhancement of brachial plexus noted at C6-D2 level, upto division /cord on both sides. Focal intramedullary T2 hyperintense lesion in left half of the cord with central enhancement seen at C6-C7 level.

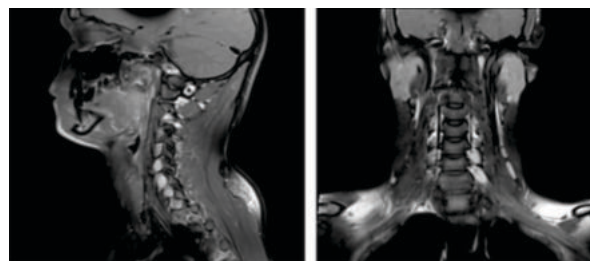


Fig:1 (a) Sagittal

Fig:1 (b) Coronal

Figure:1 (a)&(b)-sagittal & coronal post contrast fat sat :Bilateral asymmetric smooth thickening & enhancement of brachial plexus (Left more than the right)

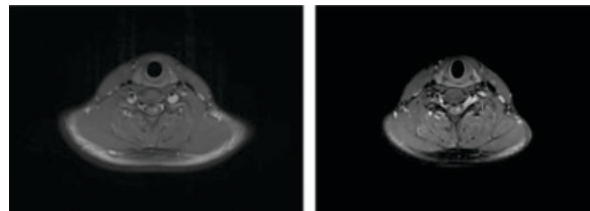


Fig:2 (a)

Fig:2 (b)

Figure:2-(a&b) Axial T1 contrast with fat sat (a) shows bilateral thickened and enhancing brachial plexus (b) shows focal enhancing intramedullary lesion in left cervical cord.

DISCUSSION & CONCLUSIONS

Leprosy, which was a major public health problem. However, the incidence of new cases and prevalence rate has increased now. Because of the rare incidence of new cases of leprosy and in the presence of an unusual presentation, the differential diagnosis of leprosy may not be in the list. This may mislead the treating physician to search for other probable diagnoses.

Soft-tissue Abnormalities such as NEURITIS Leprosy-related neuritis presents as a tender enlargement of the peripheral nerves at sites of predilection. It can be caused by acute or sub-acute neuritis that occurs as part of the leprosy infection, and also as a result of Type 1 (reversal reaction) and Type 2 (erythema nodosum leprosum) reactions. (15,16) The ulnar, radial, median, posterior tibial, and peroneal nerves are commonly involved in the extremities, but the facial nerves can also become affected. A possibility of drug resistant leprosy was considered and dermatology opinion was obtained and adviced to continue MDT. Patient was treated as a case of bilateral brachial plexitis and transverse myelitis secondary to IRIS .Patient

was managed with pulse steroids ,analgesics,PPT s and other supportive measures were given.Patient improved symptomatically and discharged with advised medication.Early detection of neuritis (at diagnosis or during a leprosy reaction) is important so that adequate treatment can be started to prevent further nerve function impairment.

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