INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

DIAGNOSTIC VALUE OF ULTRASONOGRAPHY OF ULNAR AND COMMON PERONEAL NERVES IN LEPROSY NEUROPATHY

C P Tittagalla Gamage [1] - J K K Seneviratne [2] - W Warnasuriya [2] - C Sirigampola [3] - S D Abeynayake [3]

Post Graduate Institute Of Medicine, Dermatology, Colombo, Sri Lanka [1] - Health Ministry, Dermatology, Colombo, Sri Lanka [2] - Health Ministry, Radiology, Colombo, Sri Lanka [3]

INTRODUCTION: Leprosy primarily affects peripheral nerves with secondary skin infection. Ultrasonography(USG) readily visualizes peripheral nerve structure especially ulnar nerve(UN) and common peroneal nerve(CPN).

OBJECTIVE: The aim of this study was to evaluate the diagnostic usefulness of ultrasound measures of UN and CPN in leprosy neuropathy.

MATERIALS AND METHODS: A descriptive cross sectional study was carried out at North Colombo Teaching Hospital of Sri Lanka for six month period. Study compared 90 leprosy patients (mean age 45.67 ± 17.59, range 13-77 years) and 91 healthy volunteers (mean age 50.99 ± 15.27, range 14-79 years). Cross sectional area (CSA), site of maximum nerve involvement, nerve thickening pattern were measured by USG using 4-11MHz linear transducer in UNs and CPNs in both cases and controls.

RESULTS: Mean CSA of UN at cubital groove was high in cases (6.91 ± 3.06 mm2) compared to controls (4.98 ± 0.66 mm2, p<0.001). In cases, the maximum CSA of UN was found at 6.20 ± 7.66 mm proximal to the medial epicondyle. Mean CSA of UN at the maximum enlargement was 8.22 ± 3.89 mm2. 48.3%, 30.9%, 20.8% had fusiform, nodular and uniform thickening pattern respectively in UN of leprosy patients.
Mean CSA of CPN at the radial groove in cases was high (3.72 ± 1.44 mm2) when compared to controls (2.21 ± 0.25 mm2, p<0.001).
Receiver operating characteristic curve analysis showed that a CSA cut off value of 4.72mm2 (sensitivity, 0.88; specificity, 0.66) and 2.52mm2 (sensitivity, 0.90; specificity, 0.78) were the best discriminators for ulnar and common peroneal nerves respectively.

CONCLUSIONS: USG provides objective measures to evaluate the involvement of UN and CPN in leprosy neuropathy even with 4 - 11MHz linear transducer, which is available at any low resource setting. Therefore, ultrasonography without high resolution can be used to detect nerve enlargement in leprosy patients.