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## Ultrasound evaluation of the tibial nerve in leprosy patients

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### ABSTRACT

**Introduction:** Brazil is the second country in the world in cases of leprosy. Early diagnosis of neural involvement is one of the most important goals of treatment. Traditionally, clinical examination is used for diagnosis; however clinical palpation has limitations that can lead to a delay of diagnosis. Ultrasonography (USG) provides objective measurements of neural thickening. The most important parameter in the USG is the cross-sectional area (CSA) of the nerve. To our knowledge, studies evaluating leprosy of the tibial nerve through the USG have not yet been performed. This work aims to analyze USG as a method of evaluation of the posterior tibial nerve in leprosy patients.

**Methods:** This is a nonrandomized, prospective study in patients with leprosy of the tibial nerve, comparing the findings of the USG performed with clinical data for these patients.

**Results:** Sixteen tibial nerves were evaluated in 8 patients, with a mean age of 53.4 years; the highest CSA was 24.6mm<sup>2</sup> with an average of 15.0mm<sup>2</sup>, 75% had sensitivity alterations, 33.3% had anesthesia, 16.7% had loss of deep sensitivity, 25% had loss of protective sensitivity and another 25% had decreased sensitivity. Clinically, 25% of the patients had claw toe and 18.75% plantar ulcer.

**Discussion:** USG demonstrated increased CSA of the tibial nerve in 87.5% of the cases; there was considerable variation in CSA size for patients with thickening palpation, which could represent different levels of neural involvement for the same clinical finding. We observed a greater loss of sensation in patients with higher CSA of the tibial nerve, as well as the presence of claw toe and plantar ulcer.

**Conclusion:** USG is a suitable method for assessing neural thickening in leprosy patients. Other studies are necessary for a better correlation of CTA with clinical data and the determination of clinical conducts.

**Keywords:** Leprosy; Neural ultrasonography; Leprosy neuropathy.

