Preliminary evaluation of the sural nerve using 24-MHz ultrasound: A new approach to evaluate sural neuropathy of Sjogren's syndrome patients

F. Liu1, J. Zhu1, S. Zhang1, D. Li1, F. Liu1, W. Li1, Y. Liu1. 1Peking University People's Hospital, Department of Ultrasound, Beijing, China

Background: Peripheral neuropathy is one of the most frequent extraglandular manifestations of primary Sjögren’s syndrome (pSS). The diagnosis of peripheral neuropathy complications of pSS is based primarily on careful neurologic examination and electrodiagnostic tests. The value of ultrasound in peripheral nerve has been recognized. However, little clinical researches have focused specifically on cutaneous nerve of pSS.

Objectives: To evaluate the morphological changes of sural nerve in patients with pSS by high-frequency ultrasound.

Methods: The prospective study subjects consisted of 31 consecutive pSS patients underwent sural nerve biopsy and 30 healthy volunteers as controls. The ultrasonic presentations of the fascicle, perineurium, epineurium of sural nerve were observed, and the cross-sectional areas (CSA) of the sural nerves were measured.

Results: Among the 21 sural nerves confirmed by pathology, all showed the thickening of the perineurium and epineurium (Figure 1-2), and abnormal blood flow signal in perineurium or epineurium in 14 cases (Figure 2). The mean CSAs were (1.41±0.44) mm² for the control group, and (1.58±0.48) mm² for the case group (P>0.05). In addition, the abnormal blood flow signal in sural nerve correlated with disease activity.

Conclusion: This study indicated that high-frequency ultrasound may be a valuable tool for evaluating cutaneous nerve neuropathy of Sjögren’s syndrome patients.

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