Carpal tunnel syndrome and fibromyalgia

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Fibromyalgia (FM) is a diffuse musculoskeletal pain rheumatic syndrome characterized by allodynia and hyperalgesia[1]. Paresthesias have been reported in 26%-84% of FM patients and difficult the diagnosis of associated entrapment neuropathies[1]. Indeed some authors believe that carpal tunnel syndrome (CTS) is more common in FM patients than controls[1]. It is important to know if the patient's complaints are due to FM or to any associated CTS to avoid unnecessary investigation, thus providing a correct treatment.

After the Committee for Ethics in Research's approval and consent from all participants, we studied 41 (82 extremities) FM patients and 42 (84 extremities) controls for the presence of CTS, using measurement of median nerve area (MNA) by ultrasonography for diagnosis. Diagnosis of FM obeyed the 2010 ACR Criteria[2]; controls were obtained from hospital staff. Individuals <18 years old, diabetes mellitus and uncontrolled hypothyroidism, pregnant women, those with any neurological disorder, alcoholism, inflammatory rheumatic disease or trauma to the extremities were excluded. All included individuals were right handed and none performed repetitive activities. Patients and controls were paired for age (p=0.23), gender (p=0.26) and body mass index (BMI; with p=0.81). Participants were questioned for pain and numbness in the median nerve area. Physical examination included Phalen and Tinel's test[3] and the Boston Carpal Tunnel Questionnaire (BCTQ)[4] was used to measure hand function. Generalized pain was measured through a visual analogic scale (VAS) that ranged from 0 (none) to 10 (maximal). MNA was measured using a Toshiba, Xario®US equipment, with a multifrequential linear transductor of 12 MHz at volar distal surface of the wrist (at the level of pisiform and tuberosity of scaphoid) by a blind technician. Values >11.2 mm^2 were considered diagnostic of CTS[5].

Prevalence of CTS in FM was 8/41 (19.5%) and 13/42 (30.9%) in controls (p=0.20). FM patients with CTS did not differ from those without it in age (p=0.87), disease duration (p=0.23), BMI (p=0.15), VAS of pain (p=0.46) and BCQT results (p=0.40). Table I compares the clinical data.

FM patients did not have more CTS than controls presently. Our sample had a high prevalence of CTS, explainable by the high BMI of participants, as overweight is associated with higher CTS prevalence[3]. Our results agree with those of Sarmer *et al*[6] that studied CTS by electrophysiology in 50 FM and 50 controls and did not find statistical difference. They diverge from those of Nacir *et al*[1] that found a higher prevalence of CTS in FM (20.6%) than controls (2.82%). Yet these latter authors did not pair their samples for BMI and obesity is greater among FM patients compared to their counterparts[7]. Most interestingly, it was impossible to clinically distinguish FM patients with CTS from those without it.

Paresthesia in the extremities is common in FM, probably a result of an abnormal sensory perception due to central sensitization[1]. As FM patients show increased subjective sensitivity in response to multisensory stimulation and reduced tolerance to non-nociceptive sensory stimulation and this may interfere with

TABLE I. COMPARISON OF CLINICAL FINDINGS IN EXTREMITIES OF FYBROMIALGIA PATIENTS WITH AND WITHOUT CARPAL TUNNEL SYNDROME

	With CTS 14 extremities	Without CTS 68 extremities	P
Paresthesia complaints	11/14-78.5%	52/68-76.4%	1.00*
Tinel test	7/14-50%	24/68-35.2%	0.30*
Phalen test	9/14-64.2%	40/68-58.8%	0.70*

*Chi-square

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the interpretation of CTS paresthetic symptoms. This is significant as most hand surgeons approach the management of CTS using history and physical examination[8]. Early carpal tunnel interventions may cause unsatisfactory results if one fails to distinguish the correct cause of symptoms. It has been observed that steroid carpal tunnel infiltration and median nerve release surgery in FM patients have poor results[9]. Concomitantly, delaying diagnosis may bring on disease progression that causes irreversible neuronal loss[8]. The measurement of NMA by US may help in decisions; it's a cheap and easy test[10].

To conclude, we have found that FM patients do not have more STC than controls and that the usual CTS clinical evaluation should be interpreted carefully.

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