inflammatory arthritis may behave differently from normal peripheral blood PMN, either because of changes in responsiveness to stimuli, or because PMN apoptosis may alter the pattern of enzyme release.

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Carpal tunnel syndrome as initial manifestation of inflammatory connective tissue diseases

Carpal tunnel syndrome (CTS) is the most common entrapment neuropathy presented at rheumatology consultation. Most CTS are considered idiopathic or related to activities that require repetitive flexor handwork.[1] However, it is well known that CTS may also occur in the context of inflammatory connective tissue diseases (ICTD),[1–3] and may precede other manifestations of these associated inflammatory disorders by weeks or months.[4 5] In order to determine how frequently CTS appears as the first manifestation of ICTD, we undertook a prospective study of patients referred to our unit with suspected CTS.

From January 1983 to December 1992, 324 consecutive patients were evaluated and included in the study. CTS was defined by the presence of a suggestive clinical picture together with a positive Tinel or Phalen sign, or characteristic electrodiagnostic findings. Patients with previous or concomitant inflammatory rheumatic disease were excluded. All patients underwent anamnesis, physical examination, blood cell count, urine analysis, elemental biochemistry, proteinogram, serum rheumatoid factor assay and electrodiagnosis. Thyroid hormones were determined only if hypothyroidism was suspected clinically or by typical laboratory findings (hypercholesterolaemia or increased creatine phosphokinase). Of the 324 patients initially studied, only 201 fullfilled the inclusion criteria and were followed during a mean period of 13·6 months (range 6–24).

Aetiologies of carpal tunnel syndrome

Aetiology	*No*	*%*
Idiopathic	122	60·7
Hand work associated	24	11·8
ICTD (n = 18)		9
RA	12	
Primary SS	2	
UCTD	2	
CREST	1	
HLA-B27	1	
Diabetes	17	8·5
Hypothyroidism	15	7·5
CCPD	2	1
Ganglion	2	1
Lymphoedema	1	0·5
Total	201	100

ICTD = Inflammatory connective tissue diseases; RA = rheumatoid arthritis; SS = Sjögren's syndrome; UCTD = undifferentiated connective tissue disease; CREST = calcinosis, Raynaud's phenomenon, oesophageal dysmotility, sclerodactyly, telangiectasia; CCPD = calcium pyrophosphate dihydrate crystal deposition disease.

The mean age of the population was 52·8 (SD 10·3) years; 92% were women. Patients had suffered symptoms of CTS for a mean period of 38 (22) weeks before their first consultation in our clinic. The table summarises the different aetiologies. In 18 patients CTS was the first manifestation of ICTD, with a mean period of 10·4 months (range 1–34) between the onset of CTS symptoms and the definitive diagnosis of related ICTD. Rheumatoid arthritis was the inflammatory disease detected most commonly in the follow up of CTS patients. It was initially defined following the 1958 American Rheumatism Association (ARA) criteria.[6] During the last four years of the study, the 1987 ARA criteria[7] were used and previous rheumatoid arthritis diagnoses were reviewed.

Of the different parameters tested, only serum rheumatoid factor and period of evolution before diagnosis were significantly different between the ICTD and non-ICTD groups. Serum rheumatoid factor was detected in 50% of the ICTD group, compared with 3·2% of the non-ICTD group ($p < 0·001$, Fisher test). Symptoms before diagnosis were present for 23·1 (21·4) weeks and 39·4 (21·8) weeks in the ICTD and non-ICTD groups, respectively ($p < 0·01$, Student's t test), probably reflecting a more severe clinical picture in ICTD patients.

In conclusion, our study found CTS to be the first manifestation of ICTD in 9% of cases (95% confidence interval 5 to 13·2%). In addition, serum rheumatoid factor could be a marker of those patients with CTS who may progress to ICTD, having a positive predictive value of 69·1% and negative predictive value of 96·9%. Thus we propose that seropositive CTS patients should be followed for a period of 10–12 months because of their high risk of developing an inflammatory rheumatic disease.

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