

- Abstract -

Carpal Tunnel Syndrome: Clinical and Electrophysiologic Changes in Long-Term Follow-up

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Objectives : This study was designed to evaluate the clinical and electrophysiologic changes of the non-operated carpal tunnel syndrome (CTS) patients.

Methods : Nineteen patients (35 lesions) with electrodiagnostically confirmed CTS syndrome were recruited and the follow-up electrophysiologic examination was performed 5 to 29 months (mean, 18.3 months) after the first examination. In the follow-up examination, information on the type of conservative management and the level of clinical recovery were obtained. The level of clinical recovery was defined as the patient's present symptoms compared to symptom intensity at the first examination.

Results : The reduction of symptoms was significant: complete symptom relief was noted in 11.4% and slight improvement in 60%. Distal latency and amplitude of median motor and sensory responses were not significantly improved in the follow-up examination. Comparison between the level of clinical improvement and electrophysiologic change was not statistically significant.

Conclusion : In the follow-up examination, clinical improvement was observed in the 24 nonoperated carpal tunnel syndrome cases but neurophysiological variables of median nerve had not changed significantly. These findings suggest that the follow-up EMG study may be needed to evaluate the pathologic process of median nerve.

Key Words : Carpal tunnel syndrome, Conservative management, Electrophysiologic changes

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. Todnem⁷

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50%

5 uV

50%

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VAS(visual analoge scale)

1.

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SPSS

(version 9.0)

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) 35

19 (, 16 ; , 3

t-test

paired

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Chi-square

2.

18.3 ± 7.8 (

, 5~29)

latency) 8 cm
(amplitude)
3

(distal

35 4 (11.4%),

25 (60%),

5 (14.3%)

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(Table 1).

VAS 2.6 ± 1.4

5

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Dantec Counterpoint MK2

2~10,000 Hz,

2

msec/division,

2 mV/division

가 4 , 4가

가 1 ,

2가

20~2,000 Hz,

가 5

1 msec/division,

20 μ V/division

가 8

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34.0

AAEM Minimomonograph #268

(p<0.05)(Table 2).

Table 1. Clinical Recovery without Surgery at the Follow-up

Symptoms	No.(%) of hands
Complete symptom relief	4(11.4%)
Slight improvement	21(60%)
No change	5(14.3%)
Worse	5(14.3%)
Total	35(100%)

Table 2. Comparison between Treatment and Clinical Improvement

	I	II	III	IV
No Treatment	1	6	5	2
Treatment	2	16	-	3

p < 0.05 by Chi-square test

I. Complete symptom relief; II. Slight improvement; III. No change; IV. Worse

(p>0.05)(Table 3).

(p>0.05).

(p>0.05)(Table 4).

Table 3. Comparison between the Initial Study and Follow-up

Variables	Initial Study	Follow-up
DML ¹ (msec)	4.8±1.4	4.8±1.3
MA ² (mV)	8.4±3.8	8.1±2.7
SOL ³ (msec)	3.8±0.8	3.7±0.8
SPL ⁴ (msec)	4.6±0.9	4.5±1.0
SA ⁵ (uV)	18.3±13.3	18.3±11.9

p > 0.05 by paired t-test

1. distal motor latency; 2. motor amplitude; 3. sensory onset latency; 4. sensory peak latency; 5. sensory amplitude.

Table 4. Comparison of Severity of Carpal Tunnel Syndrome (CTS) at the Initial Examination and the Level of Clinical Improvement

Severity of CTS	Clinical improvement			
	I	II	III	IV
Mild	-	8	3	2
Moderate	3	10	1	-
Severe	-	4	1	3

p > 0.05 by Chi-square test

I. Complete symptom relief; II. Slight improvement; III. No change; IV. Worse

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Todnem ⁷

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Nathan ^{5,6}

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nem ⁷

52 9 (17%),
28 (54%) 71%

4 (11.4%)

21 (60%) 71.4%

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