

– Abstract –

Sympathetic Skin Response in Carpal Tunnel Syndrome

Eun-Kyoung Park, M.D., Myoung-Hwan Ko, M.D., Jeong-Hwan Seo, M.D.

*Department of Rehabilitation Medicine, Research Institute of Clinical Medicine,
Chonbuk National University Medical School*

Objective: To investigate dysautonomic symptom and to assess the viability of sympathetic sudomotor efferent fibers in the carpal tunnel syndrome (CTS) by sympathetic skin response (SSR).

Method: Seventeen patients showing symptoms and signs suggesting unilateral or bilateral CTS were enrolled. We recorded SSR from the affected hand. To evoke SSR, we stimulated the ulnar nerve and the median nerve at wrist contralateral to the hand of recording side. The stimulation intensity was 10-100 mA. The shortest latency of SSR were measured.

Results: The latency of SSR was 1.65 ± 0.24 sec. The SSR was not evoked in the three hands. Prolongation of SSR latency was shown in seventeen hands of twenty-seven hands. The autonomic symptoms were found in 17 hands (63%) of 27 hands. Of the 17 hands, 59% (16 hands) had swelling of the fingers, 37% (10 hands) had dryness, 15% (4 hands) had Raynaud’s phenomenon, 11% (3 hands) had blanching of finger.

Conclusion: In CTS patients, dysautonomic symptom and sympathetic nerve fiber involvement were frequent findings. We suggest that SSR can be helpful diagnostic tool of CTS with autonomic symptoms.

Key Words : Carpal tunnel syndrome, Sympathetic skin response

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Charmichaë

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Knezevic Bajede ⁶

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Address reprint requests to **Jeong-Hwan Seo, M.D.**

Department of Rehabilitation Medicine, Chonbuk National University Medical School

#634-18 Keumam-dong, Dukjin-ku, Chonju 561-756, Korea

TEL: 82-63-250-1797, FAX: 82-63-254-4145, E-mail: vivaseo@moak.ahonbuk.ac.kr

heneuc⁷ 가 Eli Gui-
 가 2.
 . Shahani³ 가 1)
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 15
 . Naomi⁸ 가
 가
 Reddeppa⁹ 가
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 Sener¹⁰ 가
 가 5
 30
 가
 1.
 가
 17 27 가
 53.1±7.7
 13 26
 57.6±7.3

Nicolet Viking IV
 (Nicolet Biomedical Inc., U.S.A)

(Fig. 1). 0.1 msec
 10 mA
 10 mA
 100 mA 가 . 100 mA

30 가 . 5

2)

1.

27 17 (63%)
 . 16 (59%)

Table 1. Autonomic symptom of patients with carpal tunnel syndrome

Symptom	Number (%)
Swelling	16 (59)
Dryness	10(37)
Raynaud 's phenomenon	4(15)
Blanching of finger	3(11)
Total	17(63)



Fig. 1. The Sympathetic skin response

10 (37%), 4 (15%), 3 (11%), 1.62±0.20 sec, 1.43±0.25 sec, 37가 가 4 (p<0.01)(Table 3). 1.85±0.08 sec, 2가 가 8, 1.74±0.22 sec, 1가 가, 5, 1.76±0.32 sec, 9, 1.48±0.16 sec (p>0.05)(Table 4). 가 3.

(Table 2).

2. 17, 15, 88%, 10, 8, 80%. 가 3. 1.65±0.24 sec, 1.40±0.20 sec (p<0.01)(Table 3).

Table 2. Autonomic symptom of patients with carpal tunnel syndrome

Number of symptoms	Number of subjects (hands)	Latency (sec)
4	0	
3	4	1.85 ± 0.08
2	8	1.74 ± 0.22
1	5	1.76 ± 0.32
0	10	1.48 ± 0.16

values are mean ± SD

Table 3. The SSR on ulnar and median nerve stimulation

	Ulnar nerve stimulation		Median nerve stimulation	
	CTS	Control	CTS	Control
Latency (Sec)	1.65 ± 0.24*	1.40 ± 0.20	1.62 ± 0.20*	1.43 ± 0.25
Not evoked	3	0	3	0

* p<0.01

values are mean ± SD

Table 4. Comparison of SSR on ulnar and median nerve stimulation

	Ulnar nerve	Median nerve
Latency (Sec)	1.65 ± 0.24	1.62 ± 0.20
Not evoked	3	3

values are mean ± SD

Uncini

Tanzer¹¹ 25 가 15
8

(plethysmography)

¹² Pal ¹³

36%

17

(63%)

¹⁸

2

5

^{18,19}

Elie Guiheneuc ⁷

B

80%

88%,

C

가

Shahani ^{3,14}

val Variation (RRIV)

53

, R-R Inter-

가

가

¹⁵

17 , 27

가

가

Knezevic Bajadã

1)

2)

Gutrecht¹⁶

(p<0.01).

3)

Uncini ¹⁷

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