

Sural nerve involvement accompanying peroneal nerve palsy

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Backgrounds: The pathway of the sural nerve (SN) is variable, but usually divided into medial and lateral sural branches joining the posterior tibial nerve (PTN) and the peroneal nerve (PN). The sural nerve may be affected by PN palsy. The frequency or the severity of SN involvement in peroneal palsy is not known. The purpose of the study is to investigate the frequency and the severity of the SN involvement by the peroneal nerve palsy.

Methods: Total 85 patients were included with peroneal palsy. Amplitudes of distal peroneal, sural, and superficial peroneal nerves (SPN) were compared between normal and paralyzed sides. The frequency and severity of SN involvement by peroneal palsy were investigated.

Results: Mean age was 48.4 ± 17.4 years old at the time of the test. Peroneal palsy was right side in 32, left in 38, and bilateral in 15 patients. Mean amplitudes of affected distal PN, SPN, and SN were 1.51 ± 1.64 mV, 3.50 ± 4.86 μ V, and 10.42 ± 6.59 μ V in right side, and 1.19 ± 1.57 mV, 4.38 ± 5.67 μ V, and 11.06 ± 6.87 μ V in left side, respectively. Sensory nerve action potential (SNAP) amplitude of the SN in the affected side was average $73.7 \pm 33.1\%$ of normal, which was significantly lower than that in the normal side ($p < 0.01$). The decrease of the sural SNAP amplitude was more than 15% in 39 out of 70 patients with unilateral peroneal palsy. Peroneal compound muscle action potential (CMAP) amplitude was not correlated with the amplitude of the sural SNAP. By complete peroneal palsy, SN SNAP amplitude was decreased to 4% of SNAP and $57.7 \pm 31.8\%$ of that in normal side.

Conclusions: PN injury without PTN involvement may induce reduction of sural SNAP amplitude. Because of the anatomic variation of SN, the electrophysiological findings are variable. It should be considered to interpret the location of the PN lesion.

Key words: Sural nerve, Peroneal nerve palsy, Nerve conduction study

가, 1/3, 가, 1-2, (medial sural cutaneous nerve, MSCN) (lateral sural cutaneous nerve, LSCN)

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가

가

가
MSCN

가

1.

1995 3 2004 2

MSCN

121

4.

SPSS 7.0

Paired-sample t - test

p<0.01

가

85

Pearsons correlation

2.

Nicolet Viking IV

1.

85

50

35

31°C

48.4±17.4

0.1 msec

32

38

15

0.2 msec

100 mA

가

(Table 1).

0.5 mV

0.1 μV

Table 2

가 (extensor digitorum brevis muscle)
가 (extensor hallucis brevis muscle)

가

2.

가 (tibialis anterior muscle)
가

70

73.7±33.1%

70

39

가

15%

(Table 3).

(p>0.01).

3 cm

(biceps short

32

Izzo

4%

57.7±31.8%

head)

18.5±8.2 μV,

17.7±9.0

3.

μV

9.3±7.0 μV, 9.7±7.3 μV

85

MSCN

43.7±32.2%,

24.2±24.7%

AAEM

가

.

가

가

가

가

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