

신경근육재활 및 전기진단

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

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Sonographic Assessment of Palmar Cutaneous Branch of Median Nerve in Carpal Tunnel Syndrome patient

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Objective

To evaluate the characteristics of palmar cutaneous branch of the median nerve (PCBMN) in the carpal tunnel syndrome (CTS) patients using high-resolution ultrasound (HRUS)

Method

We included 17 wrists of 14 healthy volunteers and 41 wrists of 31 CTS patients defined by electrodiagnostic testing. All CTS patients were divided into three group, according to the severity of electrophysiologic CTS impairment: mild, moderate and severe (Table 1). Using HRUS, cross-sectional areas of PCBMN were measured at three different locations along its course: proximal wrist crease, bistyloid line and distal wrist crease (Figure 1). The largest value of CSAs measured in three different locations was defined as maximal CSA.

Result

The maximal CSAs of PCBMN of control, mild, moderate and severe CTS groups were 0.27 ± 0.08 , 0.30 ± 0.07 , 0.35 ± 0.10 and $0.47 \pm 0.13 \text{ mm}^2$, respectively. In severe CTS group, maximal CSA of PCBMN were significantly larger than other CTS and control groups (Figure 2).

Conclusion

We demonstrated that PCBMN could be affected concomitantly in the severe CTS patients, using HRUS. Additionally, the present findings may help explain why CTS patients often exhibit sensory symptoms beyond the median nerve dermatome.

Table 1. Baseline characteristics of study participants CTS, carpal tunnel syndrome; BMI, body mass index

	Control (n=17)	CTS group			<i>P-value</i>
		Mild (n=14)	Moderate (n=14)	Severe (n=13)	
Age (year)	41.23 ± 9.52	44.1 ± 3.68	48.1 ± 6.22	51.1 ± 7.62	0.152
Sex (female%)	62%	68%	57%	71%	0.291
Height (m)	1.58 ± 5.32	1.56 ± 4.37	1.60 ± 2.17	1.54 ± 6.32	0.325
Weight (kg)	53.23 ± 8.68	51.23 ± 7.61	52.23 ± 3.62	53.73 ± 4.36	0.110
BMI (kg/m ²)	22.67 ± 2.11	22.49 ± 3.12	21.77 ± 1.15	23.01 ± 7.11	0.412

Values are presented as mean ± standard deviation.

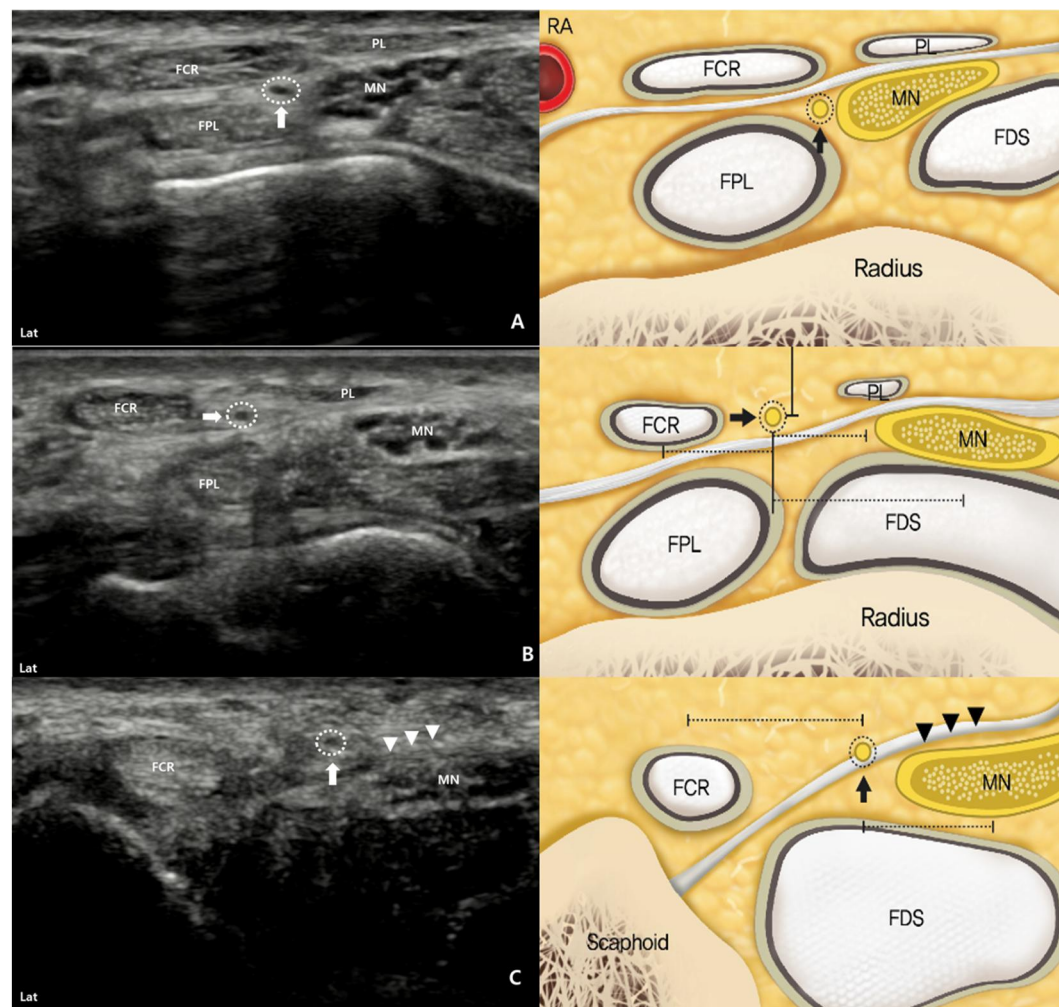


Figure 1. Cross-sectional sonogram of PCBMN and its schematic diagram at three different location (A to C) (A) Proximal wrist crease (B) Bistyloid line (C) distal wrist crease RA, radial artery; MN, median nerve; FCR, flexor carpi radialis; PL, palmaris longus; FDS, flexor digitorum superficialis; FPL, flexor pollicis longus; Lat, lateral

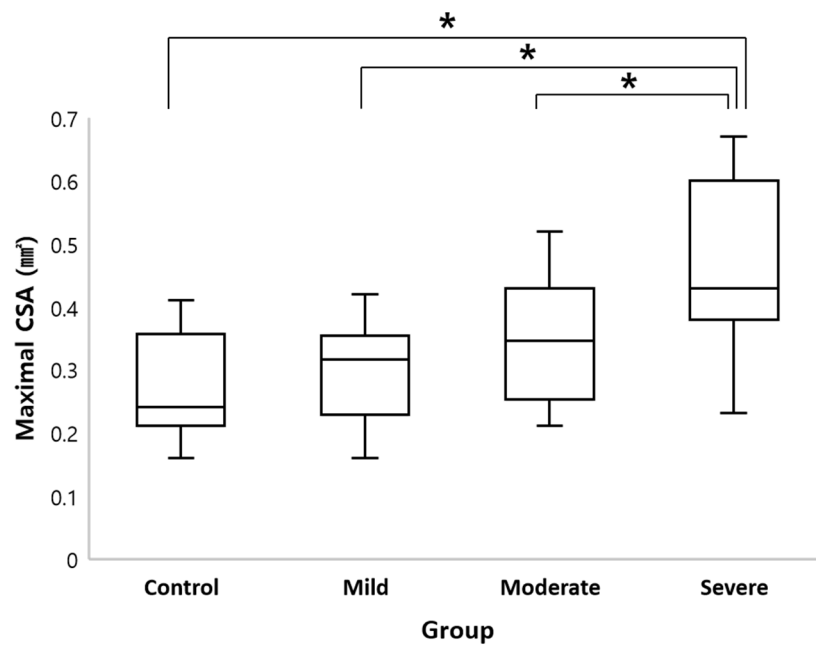


Figure 2. Distribution of maximal CSA of PCBMN according to the severity of CTS CSA, cross-sectional area; PCBMN, palmar cutaneous branch of the median nerve; CTS, carpal tunnel syndrome