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(Neuropack 8, Nihon Kohden, Tokyo, Japan)

26

2 (II-W), 3

(III-W), (P-W), III-P

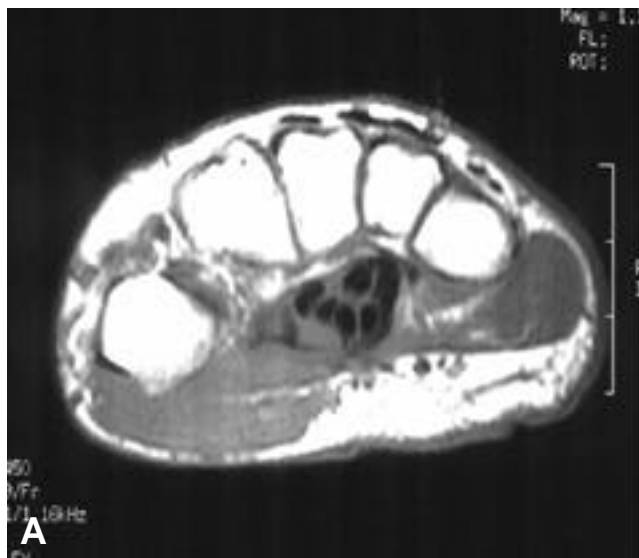
F-W 41.26 m/sec, P-W

34.05 m/sec, III-P/P-W 1.1

(1.5T, CVI, GE, Milwaukee, U.S.A.)

axial 2 mm T1 (TR; 500, TE; 22 msec) T2 (TR; 4000, TE; 89.5 msec)

T2



가

가

가

가 0 ()~10 5가

(, , ,)

0 50 (Global symptom score, GSS)⁵ 2 , 1 , 6

14

(26) 3 , 11

47 (28~60) 가 2 ,

가 12 GSS 28.6

(24~36) 2 ,

1 , 1 , 10

(Table 1).

1.

26 20 (77%) T2 (Fig. 1), 8 (30%)

(Fig. 2).

가

가 6 (23%) 3 (12%) (Fig. 3).

1 1 2

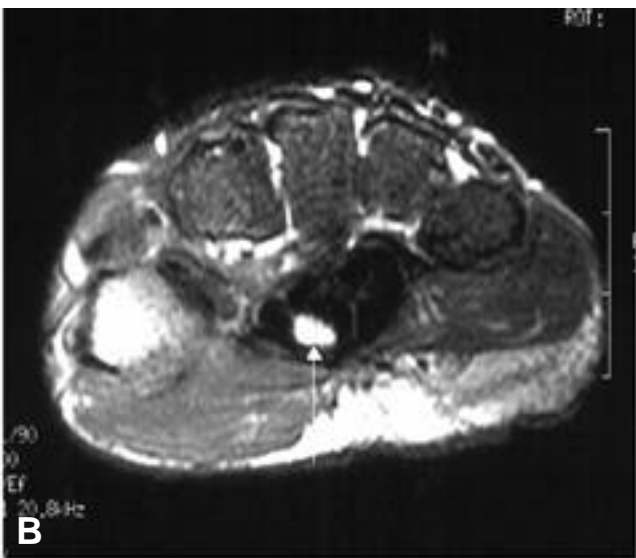


Figure 1. Axial T1-weighted (A) and T2-weighted (B) image. Wrist MR image shows hyperintense and swollen median nerve (arrow).

0.8×0.6×1.3 cm
(case 1, Fig. 4).

2. 1956 Simpson

26 21

GSS 27.7
2 11.2, 1 11.6, 6 11.0

5 3 (2)
2 (1, case 7)

205.9 mm²

(Table 1).

1980

T1

T2

T2

80~95%

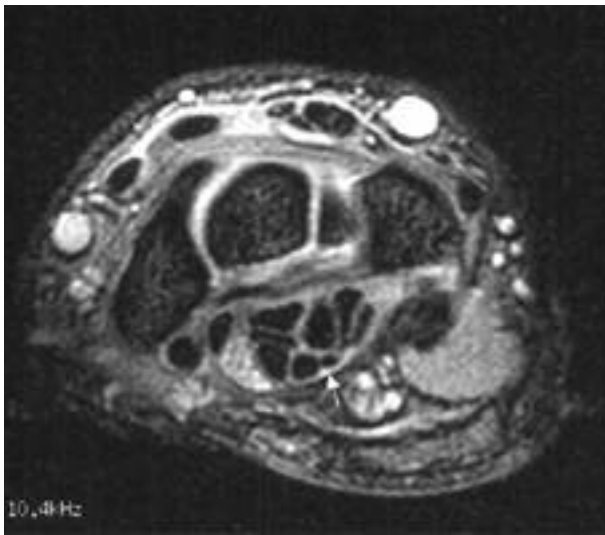


Figure 2. T2-weighted axial image show hyperintense median nerve and tenosynovitis (arrow)

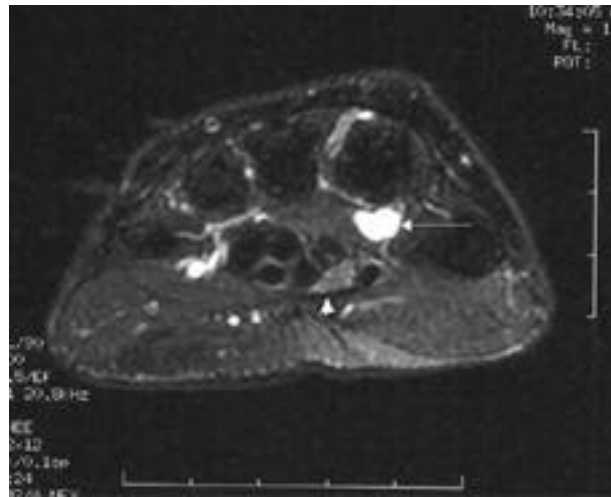


Figure 4. MR image shows median nerve (short arrow) and ganglion cyst (long arrow).

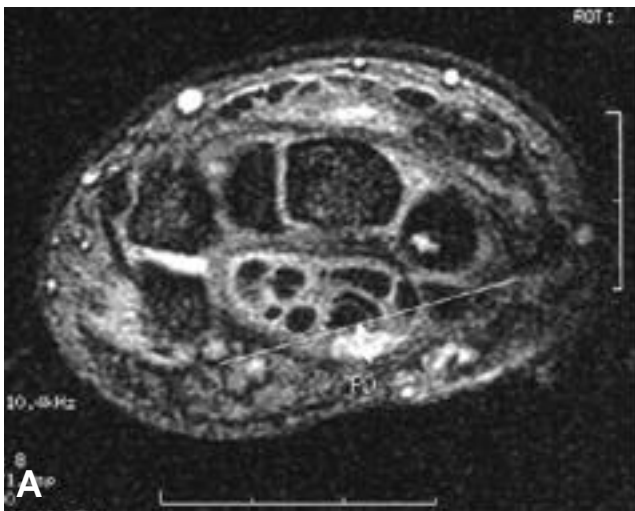
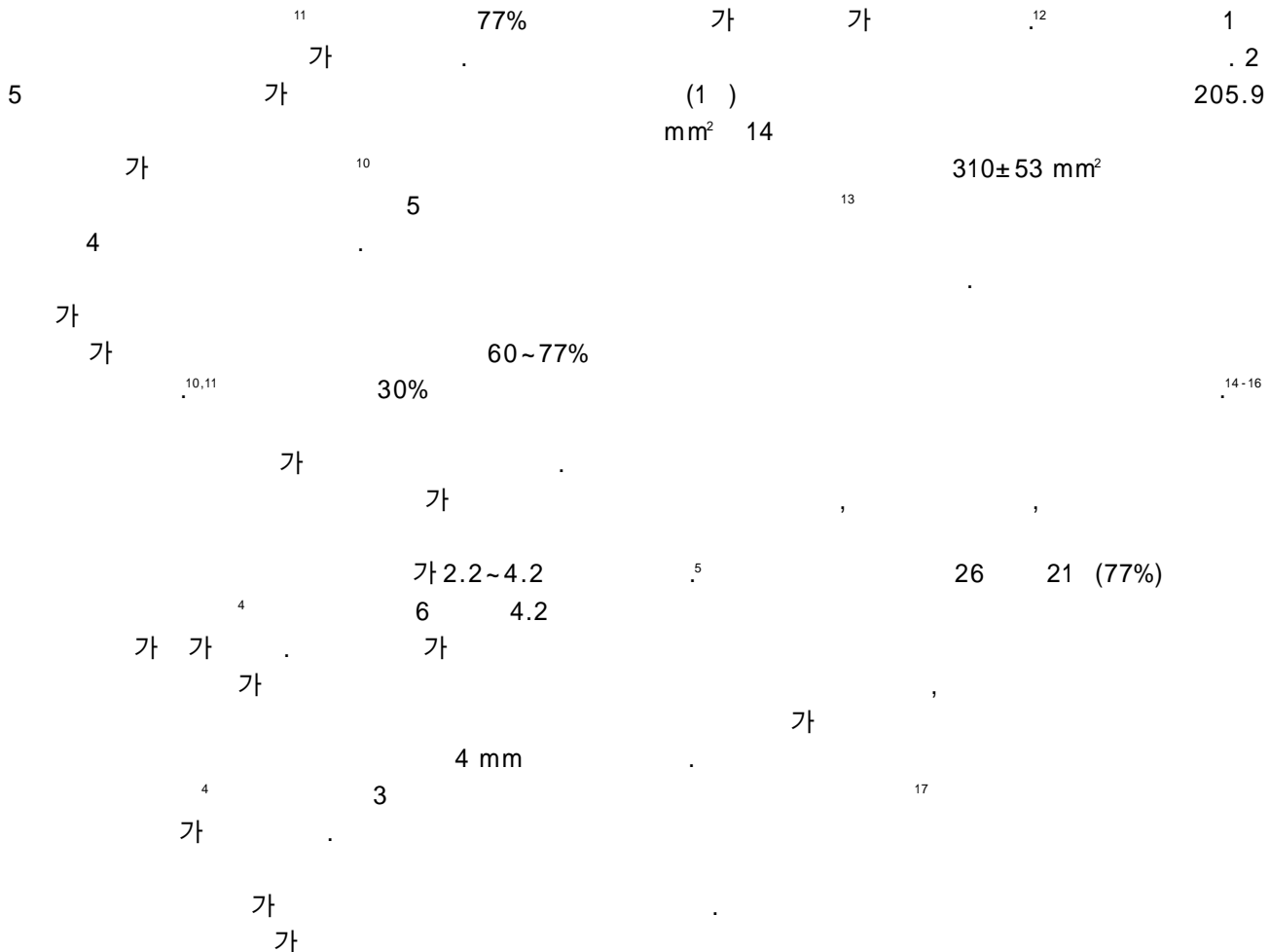


Figure 3. **A.** T2-weighted axial image shows bowing and palmar displacement (PD) of the flexor retinaculum (arrow). **B.** T2-weighted image shows flattening of the median nerve (a/b ratio is above 4.2).

Table 1. Patients' information

No.	Sex/Age	Risk factor occupation	involved wrist	Global symptom score				MR findings*	Treatment
				baseline	2 wks	1 month	6 months		
1	F/55	house wife	both	31	10	9	9	Rt : T2H, ganglion, F, B. Lt : T2H, T.	operation on right wrist
2	M/35	white color	Left	24	9	10	9	Rt : T2H, T.	steroid injection
3	F/54	house wife	Right	27	11	12	10	Rt : T2H.	steroid injection
4	F/45	house wife	both	36	24	22	23	Both : no significant findings.	oral steroid
5	F/53	house wife	both	23	11	11	11	Both : T2H.	NSAIDs
6	F/57	DM	both	32	11	12	15	Both : no significant findings.	steroid injection
7	F/48	RA	both	31	30	28	28	Both : small canal size, F.	operation on both wrists
8	F/45	hypothyroidism	both	26	16	15	15	Rt : No significant finding. Lt : T2H, T.	NSAIDs
9	M/52	trauma	both	24	5	5	4	Rt : T2H, T. Lt : T2H, T.	steroid injection
10	F/34	DM	both	30	24	18	15	Both : T2H.	NSAIDs
11	F/40	house wife	both	34	10	10	8	Both : T2H, F, B.	operation on both wrists
12	F/60	house wife	both	30	9	9	8	Rt : T2H. Lt : F.	steroid injection
13	F/46	house wife	both	25	7	7	6	Both : T2H.	steroid injection
14	M/28	programmer	both	28	7	6	6	Both : T2H, T.	steroid injection

* T2H : median nerve high signal in T2 weighted image, F : Flattening of median nerve, B : reticular bowing.
T : tenosynovitis.



REFERENCES

1. Cheadle A, Franklin G, Wolfhagen C, et al. Factors influencing the duration of work-related disability: A population-based study of Washington State workers' compensation. *Am J Public Health* 1994;84:190.
2. Mesgarzadeh M, Schenck CD, Bonakdarpour A. Carpal tunnel. MR imaging part I. Normal anatomy. *Radiology* 1989;171:743-748.
3. Mesgarzadeh M, Schenck CD, Bonakdarpour A, Mitra A, Conaway D. Carpal tunnel. MR imaging part II. Carpal tunnel syndrome. *Radiology* 1989;171:749-754.
4. Buchberger W. Radiologic imaging of the carpal tunnel. *European J Radiol* 1997;25:112-117.
5. Herskovitz S, Berger AR, Lipton RB. Low-dose, short-term oral prednisone in the treatment of carpal tunnel syndrome. *Neurology* 1995;45:1923-1925.
6. Simpson JA. Electrical signs in the diagnosis of carpal tunnel and related symptom. *J Neurol Neurosurg Psychiatry*. 1956;19:275-280.
7. Weiss KL, Beltran J, Sharman OM, et al. High-field MR surface-coil imaging of the hand and wrist. *Radiology* 1986;160:143-146.
8. Middleton WD, Kneeland JA, Kellman GM, et al. MR imaging of the carpal tunnel: Normal anatomy and preliminary findings in the carpal tunnel syndrome. *AJR* 1987; 148:307-316.
9. Horch RE, Allmann KH, Langer M, Stark GB. Median nerve compression can be detected by MR imaging of the carpal tunnel. *Neurosurgery* 1997;41:76-82.
10. Jarvik JG, Yeun E. Diagnosis of carpal tunnel syndrome: electrodiagnostic and magnetic resonance imaging evaluation. *Neurosurg Clin N Am* 2001;12:241-253.
11. Jarvik JG, Yeun E, Haynor DR, et al. MR nerve imaging in a prospective cohort of patients with suspected carpal tunnel syndrome. *Neurology* 2002;58:1597-1602.
12. Kerrigan JJ, Bertoni JM, Jaeger SH. Ganglion cyst and carpal tunnel syndrome. *J Hand Surg* 1988;13:763-765.
13. Monagle K, Dai G, Chu A, Burnham RS, Snyder RE. Quantitative MR imaging of carpal tunnel syndrome. *AJR* 1999; 172:1581-1586.
14. Quality Standards Subcommittee of the American Academy of Neurology. Practice parameter for carpal tunnel syndrome (summary statement). *Neurology* 1993;43:2406-2409.
15. American Academy of Neurology, American Association of Electrodiagnostic Medicine and Rehabilitation. Practice parameter for electrodiagnostic studies in carpal tunnel syndrome (summary statement). *Neurology* 1993;43:2404-2405.
16. Olney RK. Carpal tunnel syndrome: Complex issues with a "simple" condition. *Neurology* 2001;56:1431-1432.
17. Fleckenstein JL, Wolfe GI. MRI vs EMG: which has the upper hand in CTS? *Neurology* 2002;58:1583-1584.