

- Abstract -

Malignant Tumor of the Hand

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Malignant tumors of the hand are very rare. Between 1989 and 1998, 17 patients with malignant tumors of the hand were evaluated for clinical features, prevalence, treatment and results. The mean age was 45 years and median duration of follow-up was 38 months. A painless mass was the most common symptom and the most common lesion was the digit. Fifteen cases of soft tissue and 2 cases of bone tumor were diagnosed. On pathology, soft tissue tumors were comprised of 8 cases of malignant melanoma, 2 cases of angiosarcoma and 1 case each of malignant fibrous histiocytoma, malignant peripheral nerve sheath tumor, extraskeletal chondrosarcoma, and squamous cell carcinoma. Bone tumors were metastatic tumors and each originated from the rectal cancer or lung cancer. Lymph node involvements were noted in 4 cases of malignant melanoma and 1 case of squamous cell carcinoma. Six cases of metacarpo-phalangeal joint disarticulation and 4 cases of phalanx amputation were performed. Wide excision, ray amputation and below-elbow amputation were also performed. Three cases expired due to metastasis and progression of the original lesion. Among the surviving 14 cases, a malignant melanoma had metastasis on the axillary lymph node and 13 cases showed no local recurrence or metastasis during the follow-up.

Key Words : Hand, Malignant Tumor

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*
43

6,8,15) 10 , 56 38 , 20 가
6

가

5).

1.

1.2) (35%), 4 (24%), 가 6
(17%), 2 (12%), 3
가 2 (12%) , 가 가

6.1 (2 ~ 13) .
가 14 (78%) 가
가 8 , 가 1 , 가 5 ,
(web space) ,
1 (Table 2).

1989 1 1998 12 10
227 18

2.

가 가 1 2 15
(malignant melanoma)
17 12 , 5 8 가 (angiosarcoma)
20 가 1 , 30 1 , 2 , (rhabdomyosarcoma),
40 8 , 50 2 , 60 2 , 70 3 (malignant fibrous histiocy-
, 45 (Table 1). toma), (malignant
peripheral nerve sheath tumor),
(extraskeletal chondrosarcoma),
(squamous cell carcinoma) 1
2

Table 1. Age and Sex distribution

	Male	Female	Total (No.)
20~30	1	0	1
30~40	1	0	1
40~50	4	4	8
50~60	2	0	2
60~70	2	0	2
70~80	2	1	3
Total (No.)	12	5	17

(Table 2).

Table 2. Clinical data from 17 patients with malignant tumors of the hand

Case	Sex/Age (years)	Symptom	Location	Pathology	Metastasis*	Operative treatment	Adjuvant therapy	Duration of follow up (mos)	Local recurrence	Outcome
1	M/63	Mass	2nd finger prox. phalanx	Angiosarcoma	None	MPJ [†] disarticulation	None	61	No	NED*
2	M/50	Mass	1st web space	Angiosarcoma	None	Ray amputation	None	13	No	NED
3	M/33	Painful swelling	Thumb prox phalanx	Extracranial chondrosarcoma	None	Excision	None	14	No	NED
4	M/45	Ulceration	Thumb tip	Mal. melanoma	Axillary LN and LN dissection	MPJ disarticulation radiotherapy	Post-op	13	No	NED
5	M/64	Ulceration	3rd finger distal phalanx	Mal. melanoma	Axillary LN	Amputation and LN dissection	Post-op radiotherapy	17	No	NED
6	M/75	Pain	Thumb tip	Mal. melanoma	None	MPJ disarticulation	None	16	No	Died of stomach metastasis, 17mos [‡]
7	M/47	Pigmentation	Thumb prox. phalanx	Mal. melanoma	None	Excision	None	13	No	NED
8	M/28	Ulceration	Thumb tip	Mal. melanoma	Axillary LN	Amputation and LN dissection	None	15	No	Axillar metastasis, 12mos [‡]
9	M/79	Painful swelling	Carpal bone	Metastatic bone tumor	Rectal cancer origin	None	None	19	No	NED
10	M/48	Pain	Thumb phalangeal bone	Metastatic bone tumor	Lung cancer origin	MPJ disarticulation	None	29	No	Died of original cancer
11	M/41	Mass	3rd finger distal phalanx	MFH [‡] (low grade)	None	Excision → amputation	None	56	No	NED
12	F/40	Mass	Palm	MPNST [§]	None	B-E amputation	Pre-op CTX ^{***} and Post-op CTX ^{***}	20	No	NED
13	F/40	Mass	5th finger prox. phalanx	Rhabdomyosarcoma	None	Excision	None	96	No	Died of pulmonary metastasis, 20mos [‡]
14	F/75	Ulceration	Thumb prox. phalanx	Squamous cell ca	Axillary LN and LN dissection	MPJ disarticulation	Post-op radiotherapy	82	No	NED
15	F/44	Mass	Thumb prox. phalanx	Mal. melanoma	None	Ray amputation	None	84	No	NED
16	M/59	Pigmentation	3rd finger middle phalanx	Mal. melanoma	Axillary LN and LN dissection	Amputation radiotherapy	Post-op	81	No	NED
17	F/42	Pigmentation	Thumb prox. phalanx	Mal. melanoma	None	MPJ disarticulation	None	15	No	NED

* At the time of diagnosis

† Metacarpal-phalangeal joint

‡ Malignant peripheral nerve sheath tumor

§ No existing disease ** Chemotherapy (Ifosfamide 1.5g/m², Etoposide 120mg/m², Cisplatin 100mg/m²) † From the time of diagnosis

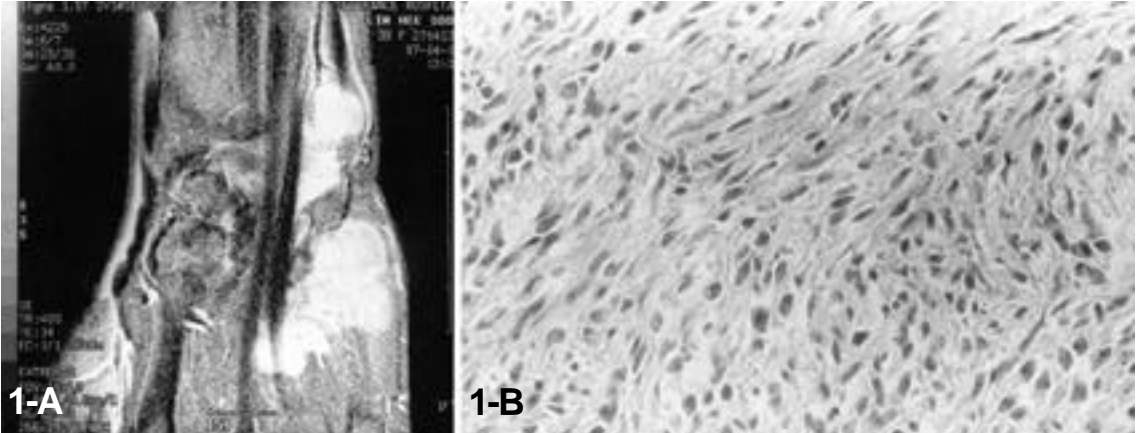


Fig. 1-A. Enhanced coronal T1WI of the preoperative MRI shows a soft tissue mass with high signal intensity about the flexor carpi ulnaris tendon insertion site at distal ulna and palm.

Fig. 1-B. (HE stain x 400) Cells of malignant peripheral nerve sheath tumor showing wavy or buckled shape of nuclei and indistinct borders.

3.

1.

6 , 4 40

3 , (ray

amputation) 2 , 1

2 1

1

가

5

4 (Fig. 1-A).

Ifosfamide,

Etoposide, Cisplatin

1 Ifosfamide, Etoposide, cisplatin

3

17 20 18.5

2 (Fig. 1-B),

1 3

14 가 1 , 9

가 , 13

Methotrexate, Adriamycin

(Table 2). 5 , 8

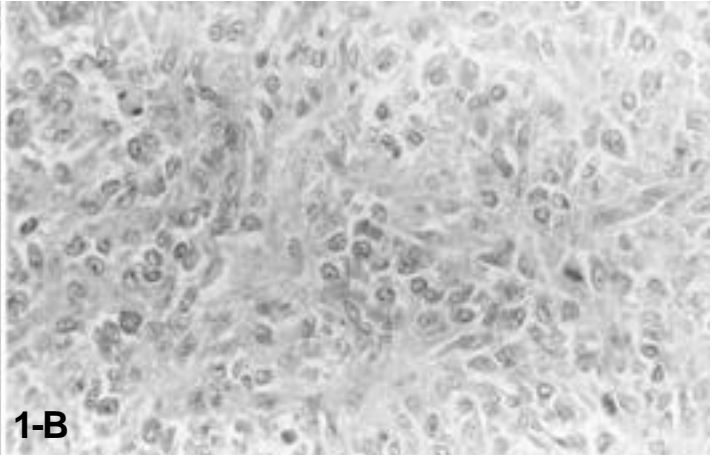


Fig. 2-A. Preoperative MRI shows a soft tissue mass with intermediate signal intensity and rim enhancement in outer portion of flexor pollicis longus tendon about first web space on coronal T1WI.

Fig. 2-B. (HE stain x 400) Angiosarcoma composed of rounded epithelial-like cells around vascular structure.

2. ^{6,8,12,15)} Clifford Kelly 30

50 7 1 0.62% ⁹⁾

Haber 25 5.6%

¹¹⁾ 10

227 18

7.9%

1cm x 2cm 가

159U/L

C- (wound puncture)

(Fig. 2-A), ^{2,12)} 가

1

(Fig. 2-B). 13 Memorial Sloan-Kettering Cancer Center 가 가

가

¹⁵⁾ 가 36% 가

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31 (primary epith-

eloid sarcoma) 10 가 , ,
(rhabdomyosarcoma), (synovial
sarcoma), (fibrosarcoma) 5).

6), 가 Bogumill 4)
5), (ray amputation)

가 , , 가 ,
, , , 3cm
, 가

1% Brien 5)
10), 가 (negative margin)

Frassica 10) 65 22 가 가 ,
가 가 (positive margin)

가
Mayo clinic 23 7 . Frassica 10)

(chondrosarcoma) 4 가 6),

Frassica 10) , ,
(hemangioendothelioma), (osteosarcoma),
(Ewings sarcoma)

, 2 (extracompartmental metacarpal lesion)
(triple ray amputation)

0.2%

3,7),

가

13).

1

가

(felon)

가 가

가

가

1). 가 가

40%

4

1

3,7,13),

3

2

가 17),

16),

9,12).

14).

REFERENCES

- 1) Brennan MF, Healey JH : Treatment of soft tissue sarcomas of the hand. *J Bone Joint Surg*, 77-A:564-571, 1995.
- 2) Bryan RS, Soule EH, Dobyns JH, Pritchard DJ, Linscheid RL : Primary epithelioid sarcoma of the hand and forearm. *J Bone Joint Surg*, 56-A:458-465, 1974.
- 3) Amadio PC, Lombardi RM : Metastatic tumors of the hand. *J Hand Surg*, 12-A: 311-316, 1987.
- 4) Bogumill GP, Sullivan DJ, Baker GI : Tumors of the hand. *Clin Orthop*, 108: 214-222, 1975.
- 5) Brien EW, Terek RM, Geer RJ, Caldwell G, Bunkis J, Mehrhof AI, Stayman JW : Metastatic lesions of the hand and foot. *Orthop Rev*, 9:97-101, 1980.
- 6) Carroll RE : Osteogenic sarcoma in the hand. *J Bone Joint Surg*, 39-A: 325-331, 1957.
- 7) Clifford RH, Kelly AP : Diagnosis and treatment of tumors of the hand. *Clin Orthop*, 13:204-212, 1959.
- 8) Frassica FJ, Amadio PC, Wold LE, Dobyns JH, Linscheid RL : Primary malignant bone tumors of the hand. *J of Hand Surg*, 14-A:1022-1028, 1989.
- 9) Haber MH, Alter AH, Wheelock : Tumors of the hand. *Surg Gynecology and Obstetrics*, 13:1073-1080, 1965.
- 10) Kendall TE, Robinson DW, Master FW : Primary malignant tumors of the hands. *Plast Reconstr Surg*, 44:37-43, 1969.
- 11) Kerin R : Metastatic tumors of the hand. *J Bone Joint Surg*, 40-A:263-278, 1958.
- 12) McCarthy WH, Shaw HM, Cascinelli N, Santinami M : Elective lymph node dissection for melanoma. *World J Surg*, 16:203-213, 1992.
- 13) Trek RM, Brien EW : Soft tissue sarcomas of the hand and wrist. *Hand Clinics*, 11(2):287-305, 1995.
- 14) Tseng JF, Tanabe K, Gadd A, et al. : Surgical management of primary cutaneous melanomas of the hands and feet. *Ann Surg*, 225:544-553, 1997.
- 15) Warso M, Gray T, Gonzales M : Melanoma of the hand. *J Hand Surg*, 22-A:354-360, 1997.