

1

:
 :
 6
 , MRI가 5 , CT가 3 (whole body
 scintigraphy) 2 . CT MRI
 . MRI , CT
 MRI CT
 : (thigh)가 3 가 , (back)가 2 , 가 1 .
 5.2 cm . 4 가
 . (subcutaneous)가 4 , (intramuscular) 가 2
 가 2 , 가 1 .
 MRI 5 4 T1
 T2
 Tc-99 m MIBI 2
 가 가 .
 : 가 MRI CT
 가

가 4 9 48 21.5

가 (small round cell tumor) (Magnetic Resonance Imaging: MRI) 5 ,
 (Computed Tomography: CT) 3 . Tc-
 99m MIBI (whole body scintigraphy) 2

(1).
6

. MRI
 가 1.0 T
 SMT (Shimazu, Tokyo, Japan) , T1
 (TR/TE, 500 - 600 msec/25 - 30 msec) T2
 (TR/TE, 1600 - 2000/80 - 90 msec) , ,
 Gadolinium - DTPA (Gd -
 DTPA, Magnevist, Schering, Germany) 0.1 mmol/Kg
 T1 (TR/TE, 500 - 600
 msec/25 - 30 msec) .
 가 . MRI

1995 7 2004 3

6

2

가

. 가 2 ,

1

2004 12 8

2005 7 7

T1 T2
가

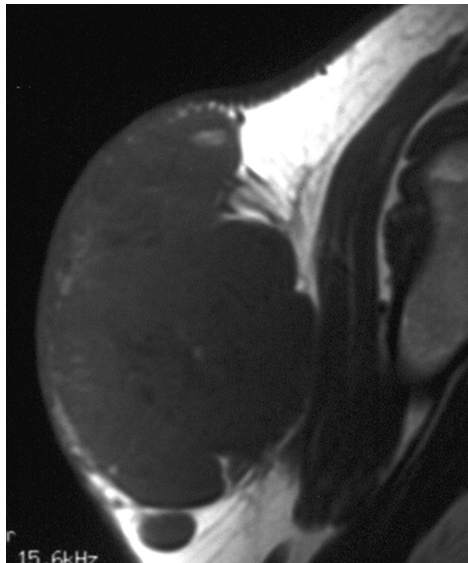
가

(thigh) 가 3 가 ,
(back), 1
5.2 cm (subcutaneous)
가 4 , (intramuscular)
(Table 1).

SCT 5000 - T (Schimadzu, Kyoto, Japan) 3 2
Ultravist(Schering AG, Berlin, MRI CT 4
Germany) 150 ml . CT 가 , 가
가 1 , 가 1



A



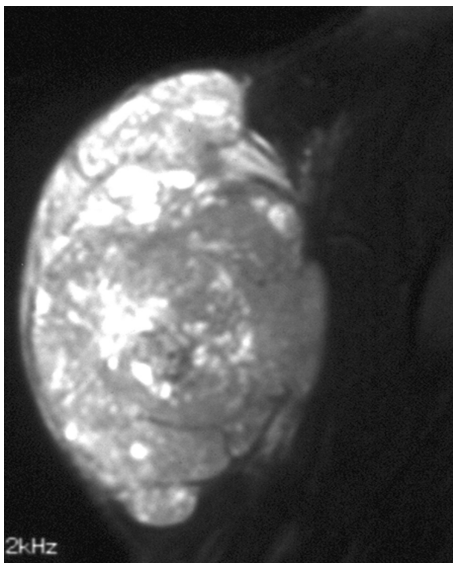
B

Fig. 1. A 16-year-old female patient with palpable mass at right shoulder for 3 years.

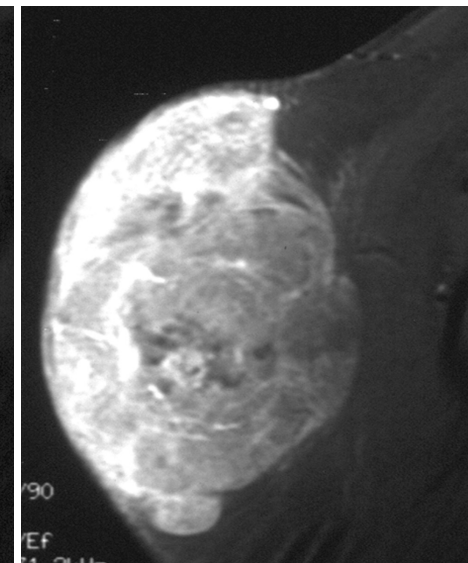
A. Conventional radiograph shows a large soft tissue mass at right shoulder. Periosteal reaction in the adjacent humerus is not found.

B, C. T1-weighted(B) and T2-weighted(C) sagittal MR images show a round, well-demarcated mass in the subcutaneous tissue of the right shoulder. The mass is hypointense to muscle on T1-weighted(B) and hyperintense to muscle on T2-weighted image(C).

D. Postcontrast T1-weighted image at the same level as B shows heterogeneous contrast enhancement of the mass.



C



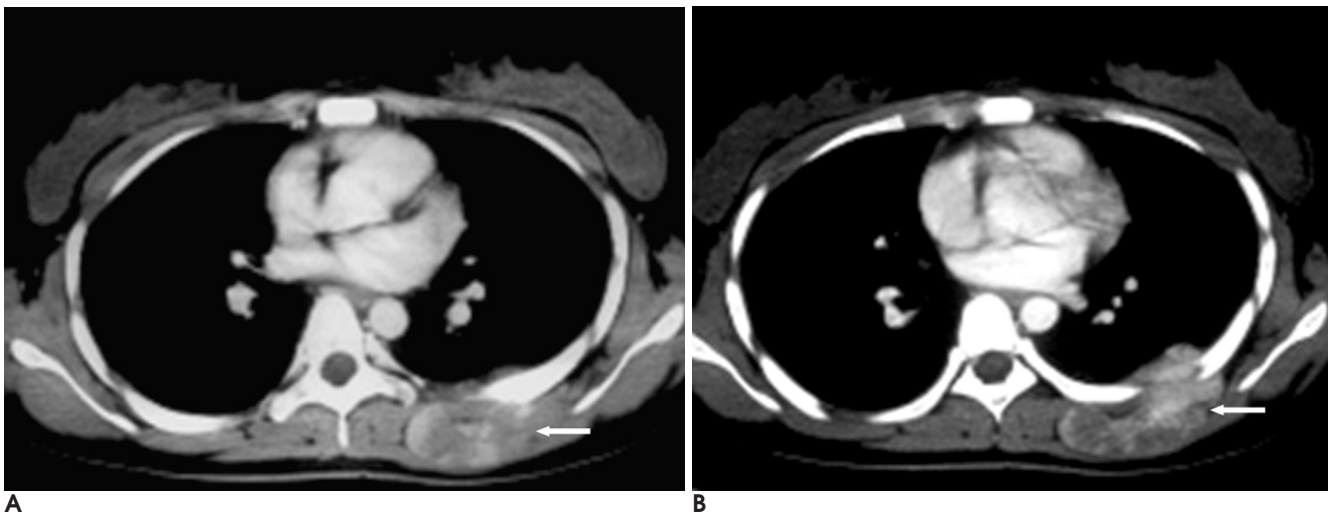
D

. MRI 5 4 T1
, 1 tumor) (desmoplastic small round cell
lymphoma), (lymphoblastic
T2
. Gd - DTPA T1
(Fig. 1). CT 3 (1).
(Fig. 2). MRI CT 가
. Tc - 99m MIBI (, t(11;22)
2 (q24;q12)) 가 (Ewing's
가 가 . 1 family of tumor) (3).
(Fig. 3), 가 2 . Askin ,
(primitive peripheral neuroectodermal
tumor)
MIC2 가
(CD99) 가 (4).
20 (2). 가
5). Angervall (6) 39 36
가 3
Peters (7) 가
PAS
6 4 가

Table 1. Summary of Patients with MRI and CT Findings

No	Age/Sex	Sites	Location	Margin	Homogeneity	Enhanced CT	T1WI	T2WI	Gd-T1WI
1	48/M	thigh	IM	well defined	heterogeneous	heterogeneous enhancing	iso	high	heterogeneous
2	16/F	back	IM	partially ill defined	heterogeneous	heterogeneous enhancing	low	high	heterogeneous
3	10/F	thigh	SC	partially ill defined	heterogeneous		low	high	heterogeneous
4	9/M	back	SC	well defined	heterogeneous		low	high	heterogeneous
5	16/M	upper arm	SC	well defined	heterogeneous		low	high	heterogeneous
6	30/F	thigh	SC	well defined	heterogeneous	heterogeneous enhancing			

IM = intramuscular, SC = subcutaneous

**Fig. 2.** A 10-year-old girl with palpable mass in the left back.

A, B. Chest CT scans reveal a soft tissue tumor (arrow) at left back with heterogeneous enhancement. The adjacent musculature and bone are involved.

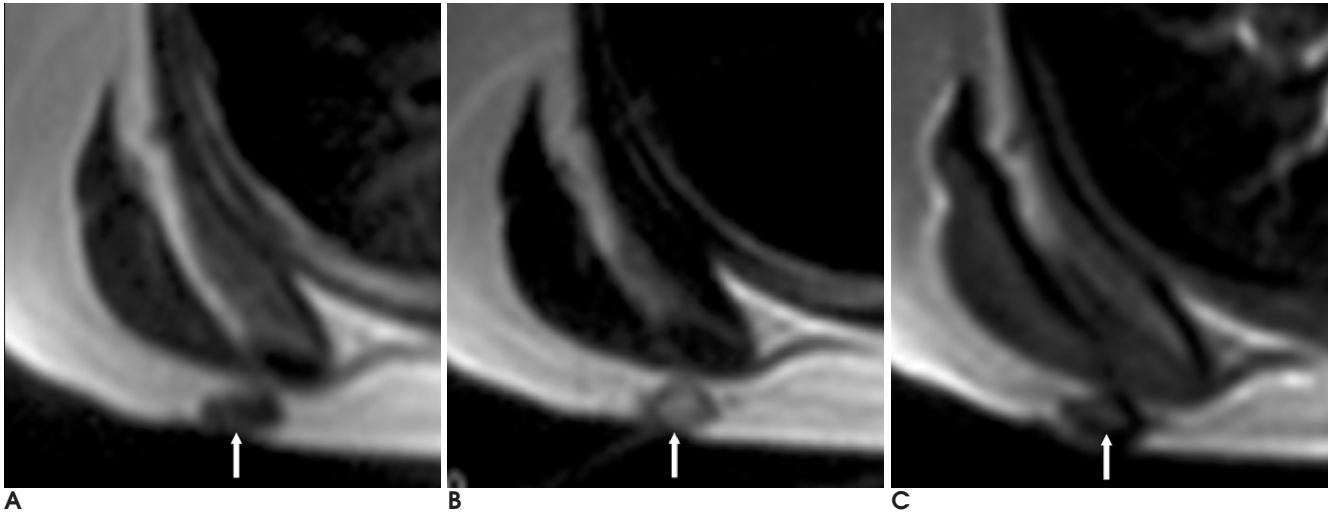


Fig. 3. A 9-year-old man with extraskeletal Ewing 's sarcoma in right back 1 years ago.

A, B. Follow up T1-weighted (A) and T2-weighted (B) axial MR images, obtained 1 year after excision, show a soft tissue mass(arrows) at previous operation site. The mass is hypointense to muscle on T1-weighted (A) and hyperintense to muscle on T2-weighted image (B).

C. Postcontrast T1-weighted image at the same level as A shows heterogeneous enhancement of the mass(arrow).

(primary B-cell lymphoma), (squamous cell carcinoma), (malignant melanoma),

가 (8)

가

가 (pseudocapsule) 가

CT MRI

(9). Allam (10) L1 level (paraspinal mass) MRI

T2

T1

. MRI

가

1 , 가 2 가 가

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Radiologic Findings of Extraosseous Ewing's Sarcoma¹

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Purpose: The purpose of this study is to evaluate the radiologic findings of the extraosseous Ewing's sarcoma.

Materials and Methods: Six patients with pathologically confirmed extraosseous Ewing's sarcoma were retrospectively reviewed. Patients included two men and four women with an average age of 21.5 years (age range 9 - 48 years). Plain radiographs (six patients), magnetic resonance (MR) images (five patients), computed tomographic (CT) scans (three patients) and whole body scintigraphy (two patients) were reviewed and analyzed. Images were evaluated with regard to lesion location, size, margin, muscle or bone involvement and intrinsic imaging characteristics on CT and MRI.

Results: The tumors were located in the thigh (three patients), back (two patients) and upper arm (one patient). The tumors ranged in size from 2.3 cm to 7.5 cm (mean, 5.2 cm), were mainly well circumscribed and showed no evidence of calcification prior to treatment. Margins were well defined in four out of the six patients. Four patients had subcutaneous lesions and the other two patients had intramuscular lesions. Muscle (two patients) and bone invasion (one patient) were present. The masses were heterogenous low signal intensity on T1 weighted images and heterogeneous high signal intensity on T2 weighted images compared with muscle. Heterogeneous enhancement within the lesion was observed in all patients on CT and MRI. Whole body scintigraphy using Tc-99 m MIBI showed increased uptake in the masses of two patients.

Conclusion: Extraosseous Ewing's sarcomas were frequently seen as a well-circumscribed ovoid mass with nonspecific findings on CT and MRI. Despite being a relative rare tumor, it should be included in the differential diagnosis of a non-calcified soft-tissue mass, especially in subcutaneous tissue.

Index words : Soft tissue, neoplasm
Ewing Sarcoma

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