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 : 20 (12 - 37 , 20.2, : = 15:5) , 22  
 (16 - 45 , 33.3, : = 8:14)  
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 Fisher exact test  
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 ) (2:21), (2:14),  
 (14:0), (11:2)  
 (p < 0.01). (17:17),  
 (10:15) 가 .  
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 15:5 , 22 16 - 45  
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 (7, 8). 3 , 2 , , 가  
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2 가

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360 T2 가 가

T2 가

가 가 Fisher exact test

p 0.05

20 22

Table 1

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( $p < 0.01$ ).

**Table 1.** Comparison of MR Imaging Findings in Chondroblastoma and Giant Cell Tumor

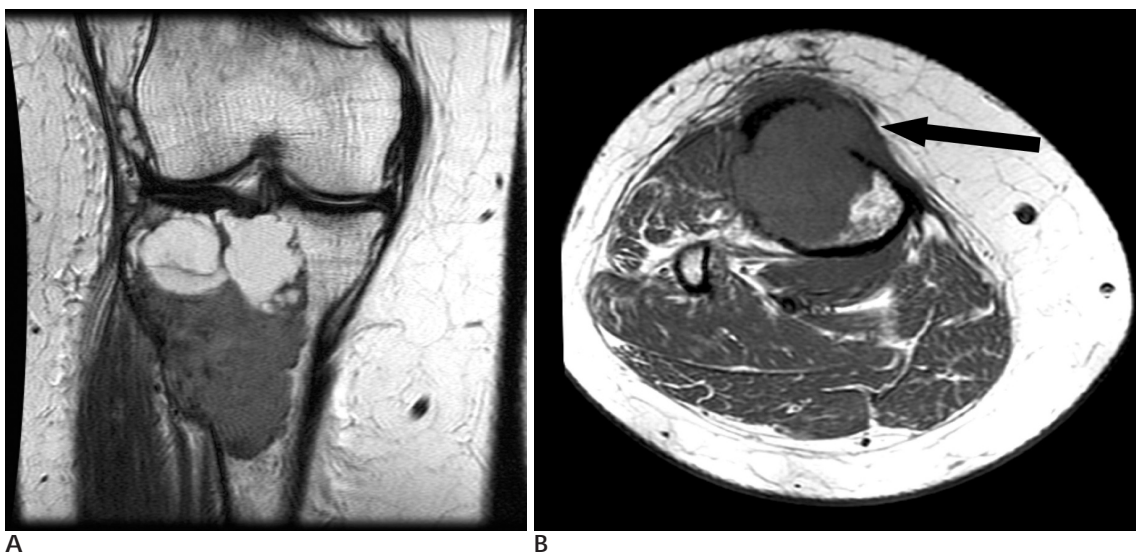
	Chondroblastoma	Giant Cell Tumor
Location*		
Epiphyseal dominant	18	1
Metaphyseal dominant	2	21
Signal intensity on T2-WI		
Homogeneous	3	5
Heterogeneous	17	17
Cortical change*		
Absent	9	0
Thinning	9	8
Disruption	2	14
BM edema*		
Absent	5	8
Partial	1	14
Extensive	14	0
Synovitis*		
Absent	9	20
Present	11	2
Cystic change		
Absent	10	7
Present	10	15

\*Statistically significant findings ( $p < 0.01$ )

BM: bone marrow

Partial: partial peritumoral bone marrow edema

Extensive: circumferential peritumoral bone marrow edema



**Fig. 1.** Giant cell tumor in a 38-year-old female.

**A.** Coronal T2-weighted image of the right knee shows a large mass involving proximal meta-epiphysis of the right tibia. More than half of the mass is located in the metaphysis.

**B.** Axial T1-weighted image shows a focal cortical disruption (arrow) at the anteromedial side of the right tibia.

가 18 (90%) (64%) ( $p < 0.01$ ) (Fig. 1).  
 가 21 (95%) 14 (64%) 15 (75%),  
 1 (Fig. 1). = 0.51). ( $p$   
 T2 17 (85%), 15 14 360  
 17 (77%) 가 ( $p = 0.70$ ).  
 가 가 18 (90%) ( $p < 0.01$ ) (Figs. 2, 3).  
 2 가 14 (Fig. 2), 11 (55%)  
 2 (9%)

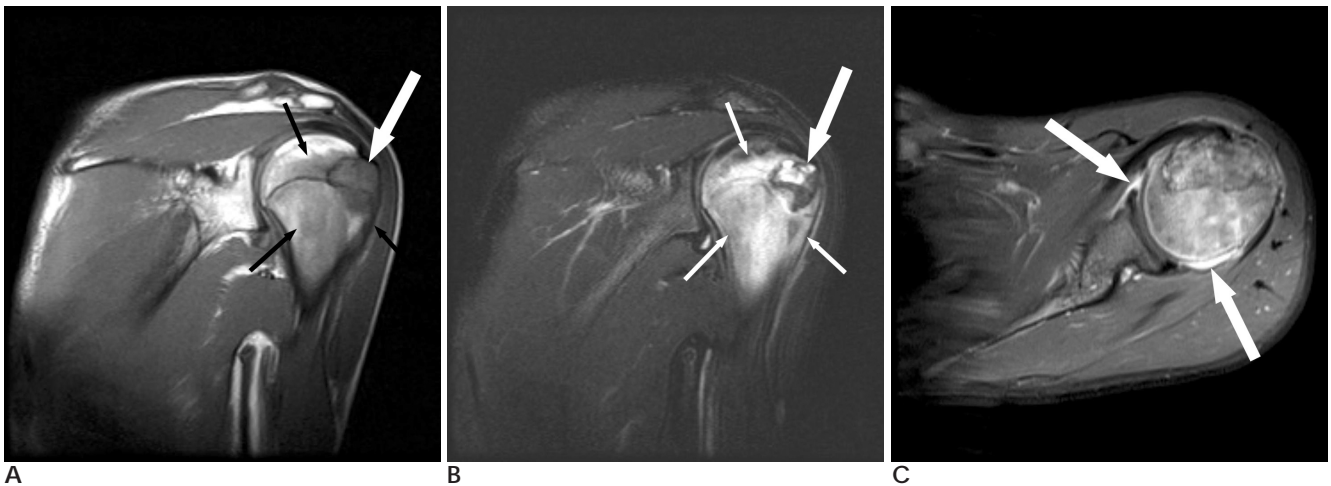


Fig. 2. Chondroblastoma in a 17-year-old female.

A. Coronal T1-weighted image of the left shoulder shows a mass (arrow) with epiphyseal dominant involvement in the left proximal humerus. Extensive bone marrow edema (thin arrows) is seen around the mass.

B. Coronal fat suppressed T2-weighted image shows extensive bone marrow edema (thin arrows) around the tumor again. The area (arrow) of bright signal within the mass is suggestive of cystic change.

C. Axial fat suppressed gadolinium-enhanced image shows extensive bone marrow enhancement and synovial enhancement (arrows) in the glenohumeral joint.

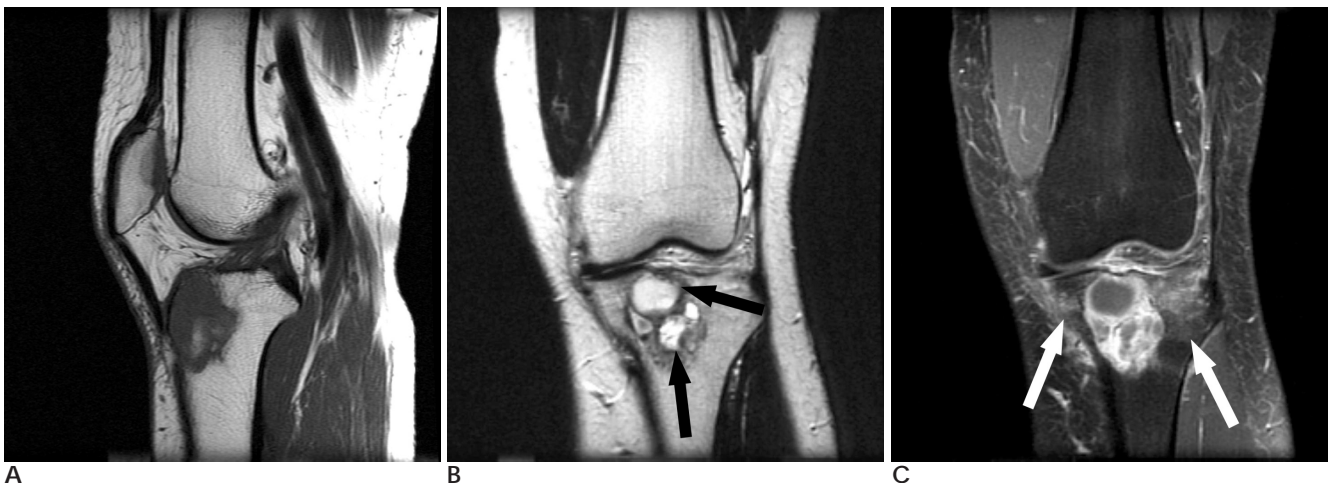


Fig. 3. Giant cell tumor in a 45-year-old female.

A. Sagittal T1-weighted image of the left knee shows a proximal tibial mass involving meta-epiphysis and the tibial tuberosity.

B. Coronal T2-weighted image shows cystic lesions (arrows) within the mass.

C. Coronal fat suppressed gadolinium-enhanced image shows partial peritumoral bone marrow enhancement (arrows) at the medial and lateral sides but not at inferior side of the mass.



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## A Chondroblastoma Versus a Giant Cell Tumor: Emphasis on the MR Imaging Features<sup>1</sup>

Jee Won Chai, M.D., Sung Hwan Hong, M.D., Ja-Young Choi, M.D., Na Ra Kim, M.D.,  
Jung-Ah Choi, M.D., Heung Sik Kang, M.D.

<sup>1</sup>Department of Radiology and Institute of Radiation Medicine, Seoul National University College of Medicine

**Purpose:** To assess the MR imaging features in differentiating a chondroblastoma (CB) from a giant cell tumor (GCT), with an emphasis on the accompanying peritumoral bone marrow edema.

**Materials and Methods:** MR imaging findings in 20 patients with CB were compared with the imaging features of 22 patients with GCT. The location of the lesion, signal intensity, adjacent cortical change, degree of accompanying bone marrow edema, synovitis in the adjacent joint and cystic change were analyzed. The findings of CB and GCT were examined statistically with use of Fisher's exact test.

**Results:** The incidence ratios of MR imaging findings were as follows (CB:GCT). Metaphyseal dominant involvement (2:21), partial cortical disruption (2:14), extensive bone marrow edema surrounding the tumor (14:0) and synovitis in the adjacent joint (11:2) were statistically different in incidence between CB and GCT ( $p < 0.01$ ). The inhomogeneous signal intensity (17:17) and cystic change (10:15) were not different in incidence between a CB and a GCT.

**Conclusion:** The presence of metaphyseal dominant involvement and cortical disruption favors a diagnosis of a GCT rather than a CB. In contrast, extensive bone marrow edema surrounding the tumor and synovitis in the adjacent joint are highly indicative of a CB.

**Index words :** Chondroblastoma  
Giant cell tumors  
Magnetic resonance (MR)

Address reprint requests to : Sung Hwan Hong, M.D., Department of Radiology, Seoul National University College of Medicine,  
28 Yongon-dong, Chongno-gu, Seoul 110-744, Korea  
Tel. 82-2-2072-3217 Fax. 82-2-743-6385 E-mail: drhong@snu.ac.kr