

HRCT 1

2

HRCT

HRCT 11

. 3 , 3 , 2 , 1 , 2

. HRCT 2

: HRCT (n=11), (n=7), (n=10),
(n=6), (n=5)

: HRCT 가

(1-5).

25

가 (6).

CT

11

11 (10 1 ;
70 , 45) HRCT

(1,7-10). CT

11

(11),

(bronchoalveolar lavage)

(12).

CT Kang

. 11 가

(13)

, McGuinness (14)

가 2 ,

가 1 ,

가 1 ,

가 1 ,

가 1 ,

가 2 ,

CT

14

(9)

CT

HRCT

(4,7,11-13),

HRCT

CT,

11

HRCT

HRCT GE CT/T 9800 Quick scanner(GE, Milwaukee, U.S.A.) Somatom Plus S(Siemens, Erlangen, Germany)

1.5mm(140 KVp, 170 mAs, 2 or 3 seconds),

10mm

(high-spatial-resolution algorithm)

1
2

1999 6 7

1999 9 16

(window width) 1500 HU, (window level) -700
 ~ -750HU
 HRCT 2
 (predominant finding)
 CT
 10 mm

HRCT Table 1
 11
 가 6
 가 3 1
 1
 HRCT 11 6
 (Fig. 1). 1 (Fig. 2)
 6
 7 3

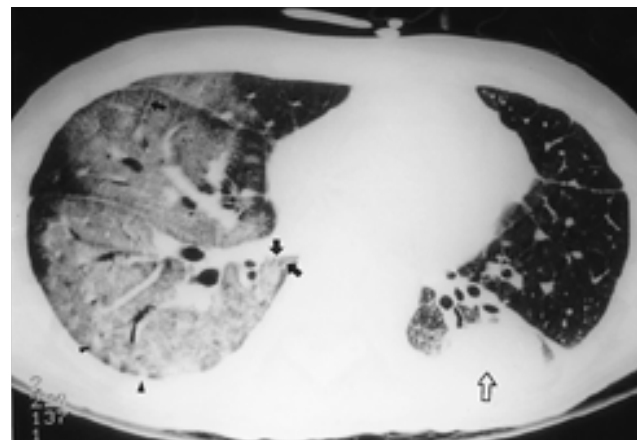
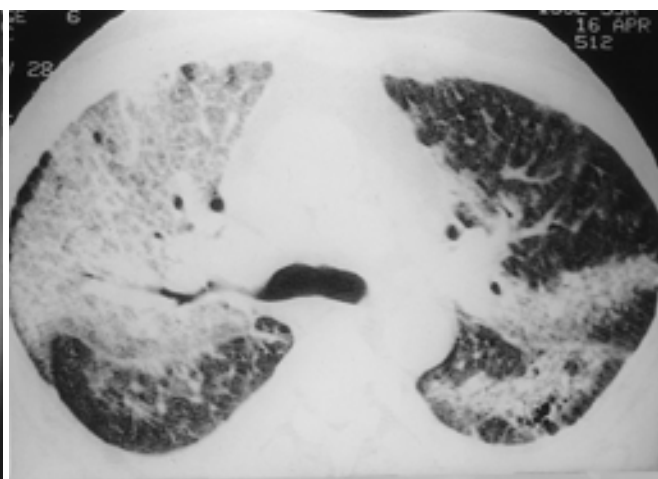


Fig. 2. CMV pneumonia in a 13-year-old man with neuroblastoma(case 6).

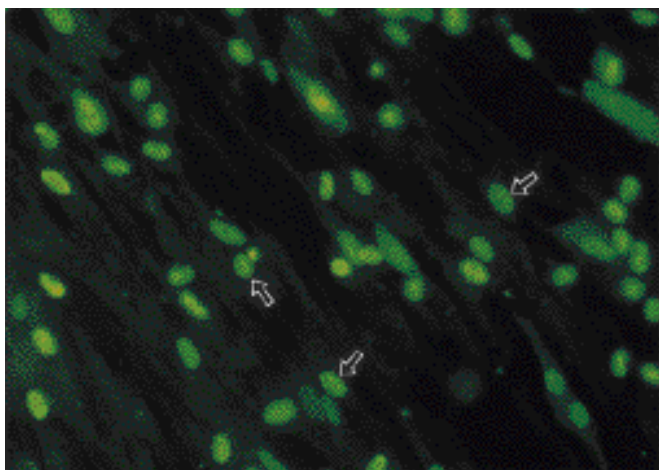
High-resolution CT scan show diffuse ground-glass opacity in right all lobes. Scattered interlobular septal thickening(arrows) and peripheral nodules(arrow heads). Note metastatic mass in left lower lobe(open arrows).



A



B



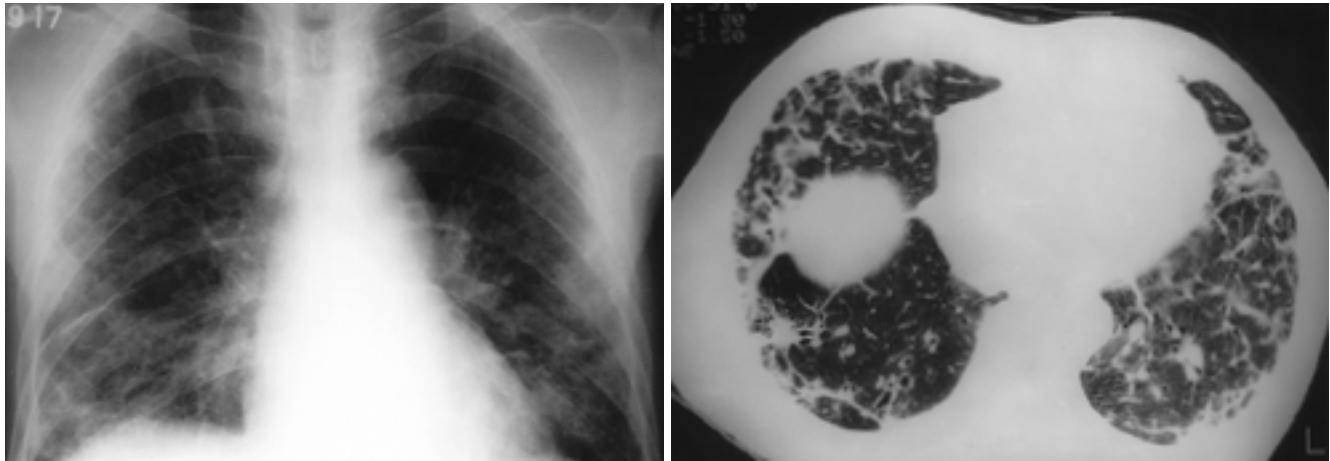
C

Fig. 1. CMV pneumonia in a 35-year-old man with metastatic brain tumor(case 1).

A. Chest radiograph shows extensive bilateral air space consolidation with air-bronchogram.

B. High-resolution CT scan shows diffuse ground-glass opacity and interstitial reticulation, with patchy area of consolidation.

C. Demonstration of CMV early antigens in the nuclei(open arrows) of infected MRC-5 cells following shell vial culture and immunofluorescence assay staining. Magnification, X 400.



A

B

Fig. 3. CMV pneumonia in a 56-year-old man with pancytopenia(case 10).

A. Chest radiograph shows widespread linear shadowing of interstitial type and some consolidation.

B. High-resolution CT scan shows extensive reticulation and scattered areas of ground-glass opacity, bronchiectasis.

Table 1. Study Data for 11 Patients with CMV Pneumonia

Case no./ Age/Sex	Underlying Diagnosis	Previous Infection History	Location	CT Findings					
				GGO	Consolidation	Reticulation	Nodules	Mass	Miscellaneous
1/35M	Metastatic brain tumor		All lobes	P	+	+			Adenopathy, pleural effusion Pleural effusion, bronchiectasis
2/23M	BMT	Fungal pneumonia	LUL, BLL	+	P	+	+	+	
3/36M	KT		Right all lobes & LUL	P			+		
4/39F	SLE	Bacterial pneumonia	BLL	P	+	+	+		Bronchiectasis
5/64M	Lymphoma	Fungal pneumonia	All lobes	P		+			
6/13M	Neuroblastoma		Right all lobes	P		+	+		
7/45m	KT		RML,BLL	+	P	+	+		Bronchiectasis, bronchial wall thickening
8/70M	IPF		BLL	P		+			
9/53M	AIDS	PCP	LUL,BLL	+	P	+			Bronchiectasis, bronchial wall thickening Bronchiectasis
10/56M	Pancytopenia	Fungal pneumonia	Right all lobes & LLL	+	+	P			
11/51M	AIDS		All lobes	+	+	+	P	+	Pneumothorax

GGO: ground-glass opacity, P: predominant finding, + : Present, BMT: bone marrow transplantation, KT: kidney transplantation, SLE: systemic lupus erythematosus, IPF: idiopathic pulmonary fibrosis, AIDS: acquired immunodeficiency syndrome, PCP: pneumocystis carini pneumonia, LUL: left upper lobe, BLL: both lower lobes, RML: right middle lobe, LLL: left lower lobe

(Fig. 3). 10
1
4 cm
4
1
(Fig. 4).
1 cm
가 2
가 1
1
11
10
11
3

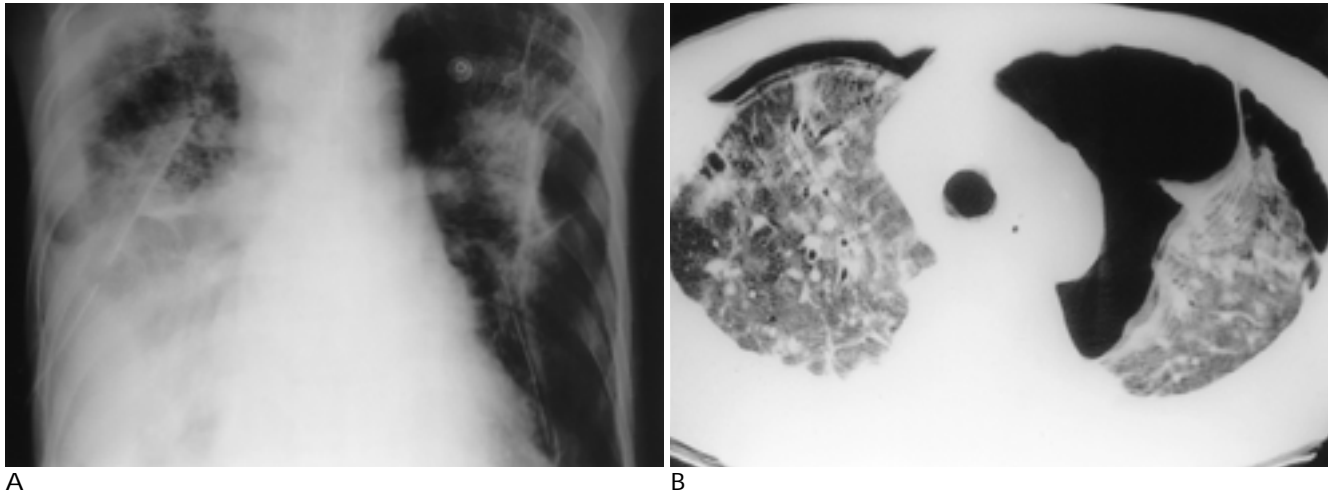


Fig. 4. CMV pneumonia in a 51-year-old man with AIDS(case 11).

A. Chest radiograph shows bilateral air space consolidation and multiple micronodules, and bilateral hydropneumothorax.

B. High-resolution CT scan shows diffuse distributed micronodules and some areas of ground-glass opacity, consolidation and reticulation.

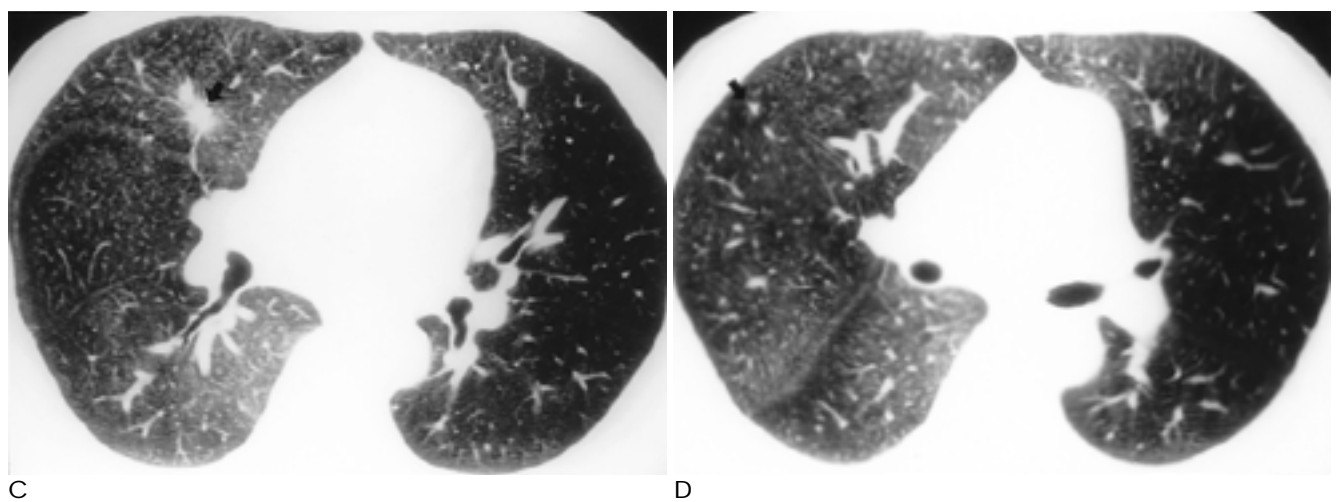
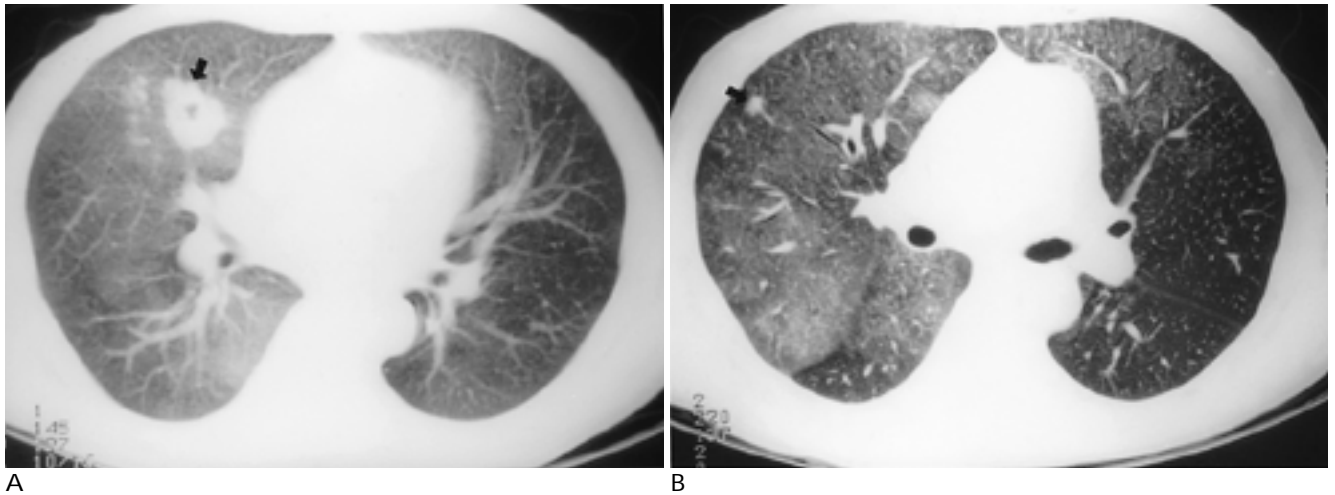


Fig. 5. CMV pneumonia in a 36-year-old man with kidney transplantation(case 3).

A, B. High-resolution CT scans show diffuse ground-glass opacity and multiple nodules(arrows).

C, D. Follow-up high resolution CT scan obtained at approximately the same level as A and B after 2 weeks of antiviral therapy demonstrate improvement of nodules(arrows) and ground-glass opacity.

가 1cm McGuinness
(4) , 가
가 3
1 3cm
가 Kang (13)
(mononucleosis syn-
drome) ,
(n=5), 1
(15).
(1),
14), (4-6)가
(1-3,
(4). CT (4,7,13), 가
(inclusions)
HRCT
(5,15). 가
(4). 가
가 ,
HRCT
(4,5). 가
가 ,
11 8
CT
(4,7,13). (n=10) Kang
(13) 가 1cm
가 CT ,
CT
(n=8) Aafedt (7)
가 ,
1
(n=21) McGuinness (4)
CT , 1-3cm 가
21 12 4
11
가 ,
가 CT가 HRCT
HRCT
11 6

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Cytomegalovirus Pneumonia in Immunocompromised Patients: HRCT Findings¹

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Purpose : The purpose of this study was to describe the HRCT findings of cytomegalovirus (CMV) pneumonia in immunocompromised patients.

Materials and Methods : Eleven immunocompromised patients with proven CMV pneumonia underwent HRCT scanning. Three had undergone a transplant, three had a malignant tumor, two had undergone steroid therapy, one had pancytopenia and two had AIDS. In all patients, CMV was diagnosed by bronchoalveolar lavage culture. HRCT scans were retrospectively reviewed by two radiologists for disease distribution and patterns.

Results : HRCT findings included ground-glass opacity(n= 11), consolidation(n= 7), reticular opacity(n= 10), multiple small nodules or mass(n= 6), and bronchiectasis or bronchial wall thickening(n= 5). Ground-glass opacity was usually distributed bilaterally and diffusely. Consolidation was most marked in the lower lobes, and reticular opacity and nodules or mass showed a variable, nonsegmental distribution.

Conclusion : The HRCT findings of CMV pneumonia in immunocompromised patients were variable and nonspecific. The most common patterns included diffuse ground-glass opacity and consolidation, combined with variable reticulation.

Index words : Cytomegalovirus
Lung, infection
Lung, nodule

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