

(Kidney transplantation)

: 1990 1 1999 12 10 393

23

18 , 5 가 (consolidation), (nod-  
ule), (ground-glass opacity), (thickening of intersti-  
tium)

: (4/4), (1/1), (1/2),  
(Varicella) (1/1) , (3/4),  
(4/4), (1/2), (1/1) 66.7%  
(4/6) , 33.3%(2/6)

가 , 1 , 1 ,  
5 , 4 ( ) 1  
가 가 23  
(1-3). 29.9 ( : 2-91 ) ,  
32.1 ( : 2-91 ) , 22  
(4). ( : 5-39 )

1990 1 1999 12 10 13 23 (com-  
393 , puted tomography, CT) . 4  
, 1 , 4  
, 2 , 1  
23 1 CT가 . CT  
15 , 8 Somatom IV plus scanner (Siemens, Erlangen,  
Germany) 8 mm scan CT가  
, 19 69 ( : 44 ). 13 9 CT가  
, 18 , 6 , 2  
4 , 4 ( ) , 2  
(high-resolution computed tomography, HRCT)  
CT

2002 9 26

2003 2 28

(consolidation), (nod-  
ule), (ground-glass opacity).  
(thickening of interstitium) 4가 가  
가

( 3, 1)  
(Fig. 3) 1 ,  
23  
(Fig. 4A), CT  
(Fig. 4B)  
CT

CT가 13 1 12  
CT 가  
가 1 , CT CT  
CT  
(4/4), (1/1),  
(1/2), (1/1),  
(4/4), (4/4), (1/2),  
(1/1) (Ground  
glass opacity) 6 4  
(66.7%), 가 6  
2 33.3%  
CT (Fig. 1)  
1 CT 가 2  
3 CT  
(Fig. 2).  
1 CT (fungal ball)  
(air space consolidation)



Fig. 2. Invasive aspergillosis in a 42-year-old woman who received renal transplantation 3 years ago. Chest radiograph shows multifocal air-space consolidations in both lungs.



Fig. 1. Cytomegaloviral infection in a 61-year-old man who received renal transplantation 4 years ago. HRCT image at level of right bronchus intermedius shows ground-glass opacities in both lungs (arrows) as predominant pattern. Also note multifocal consolidations.

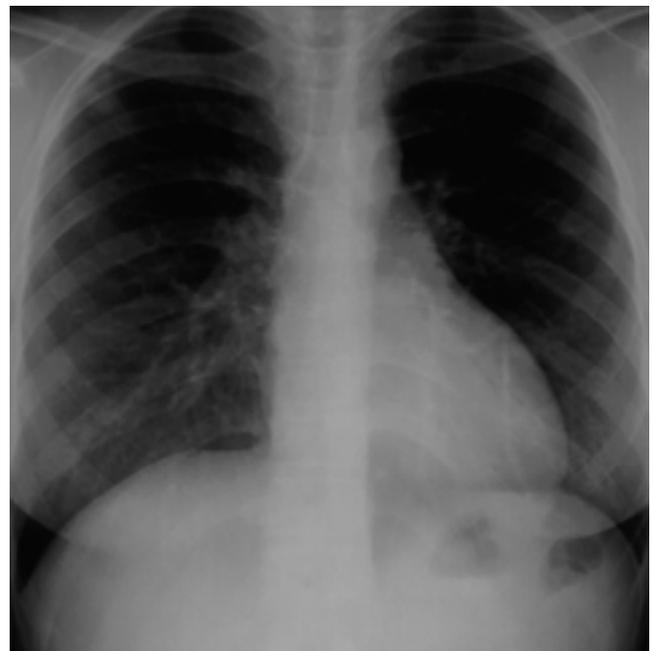


Fig. 3. Pulmonary tuberculosis in a 44-year-old man who received renal transplantation a year ago. Chest radiograph shows air-space consolidation in both upper and right lower lungs.

2.5cm  
 phangitic metastasis)  
 lar septal thickening)  
 5).  
 CT 가  
 6).

(lym-  
 (interlobu-  
 lar septal thickening)  
 가 (Fig.  
 가 (Fig.

(pathogenic) (nonpathogenic)  
 (5). 가  
 (7).

가 (4).  
 23 18  
 가

50%  
 (5). 가  
 100 가

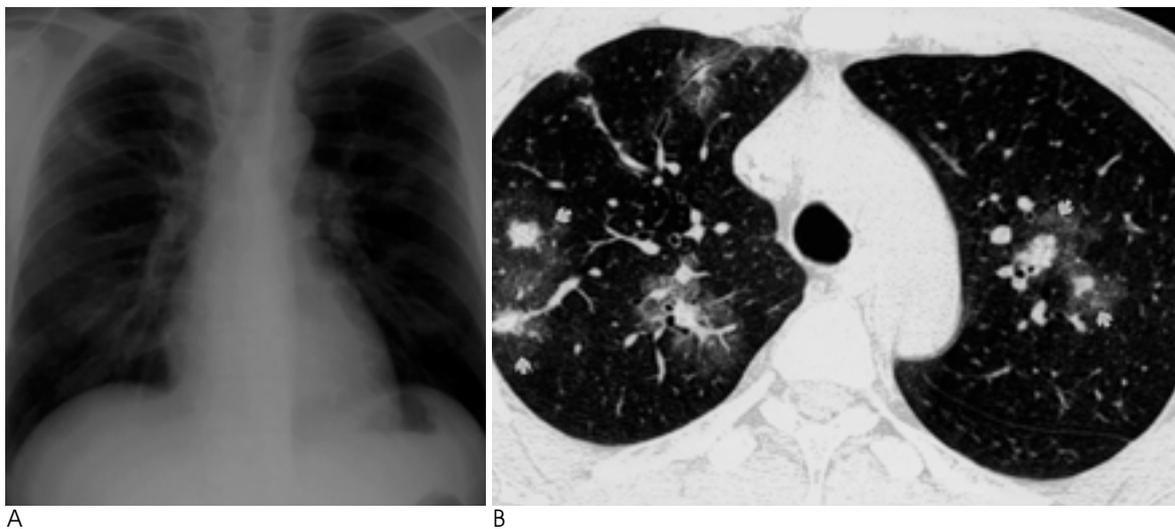


Fig. 4. Varicellar infection in a 33-year-old man who received renal transplantation 8 years ago.  
 A. Chest radiograph shows multifocal ill-defined increased opacities in both lungs.  
 B. HRCT scan at level of aortic arch shows multiple nodules with halo sign in both lungs (arrows).



Fig. 5. Lung cancer (adenocarcinoma) in a 69-year-old woman who received renal transplantation a year ago. HRCT scan at level of right bronchus intermedius shows pulmonary nodule (arrow) in right lower lobe and diffuse interstitial thickening in both lungs.

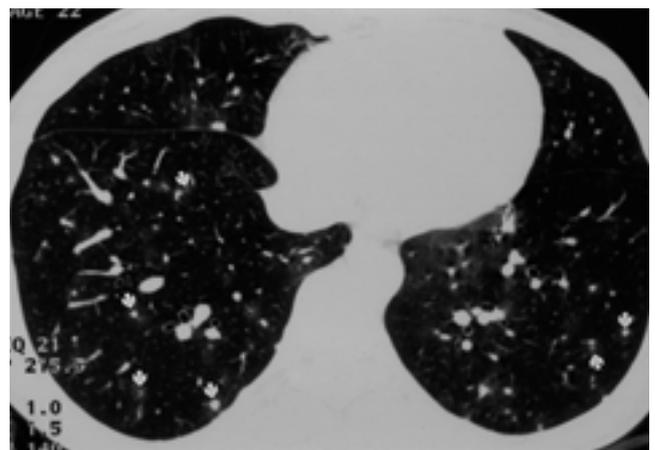


Fig. 6. Kaposi's sarcoma in a 29-year-old woman who received renal transplantation 5 months ago. HRCT scan at level of basal lungs shows multiple small nodules with CT halo sign (arrows).

가 (3). 23 Austin (14)

5 4 (8-10) 가 가

(4). (23 7, 30%) (23 10, 가 가 CT

44%) 가 가 가 400 23

가 가 가 가

1 CT (11) , HRCT CT

가 가 가

(4). 4 가

(5, 6) 4 가

(危害)

(4). 3 (75%) HRCT

가 (fibrotic bands),

'tree-in-buds'

(5). 가 . Leung (12)

Graham (13)

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## Pulmonary Complications in Renal Transplantation<sup>1</sup>

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**Purpose:** To evaluate the radiographic and CT findings of pulmonary complications other than pulmonary edema arising from renal transplantation.

**Materials and Methods:** Among 393 patients who had undergone renal transplantation at our hospital during a previous ten-year period, 23 with pulmonary complications other than pulmonary edema were included in this study. The complications involved were infection caused by CMV ( $n=6$ ), bacteria ( $n=4$ ), fungus ( $n=4$ ), tuberculosis ( $n=2$ ), varicella ( $n=1$ ) or chlamydia ( $n=1$ ), and malignancy involving lung cancer ( $n=4$ ) or Kaposi's sarcoma ( $n=1$ ). Two chest radiologists reviewed all images.

**Results:** The complications manifesting mainly as pulmonary nodules were lung cancer (4/4), tuberculosis (1/2), and Kaposi's sarcoma (1/1). Pulmonary consolidation was a main feature in bacterial infection (4/4), fungal infection (3/4), tuberculosis (1/2), chlamydial infection (1/1), and varicellar pneumonia (1/1). Ground-glass attenuation was a main CT feature in CMV pneumonia (4/6), and increased interstitial marking was a predominant radiographic feature in CMV pneumonia (2/6).

**Conclusion:** The main radiologic features described above can be helpful for differential diagnosis of the pulmonary complications of renal transplantation.

**Index words :** Kidney, transplantation  
Lung, infection  
Lung, neoplasms

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