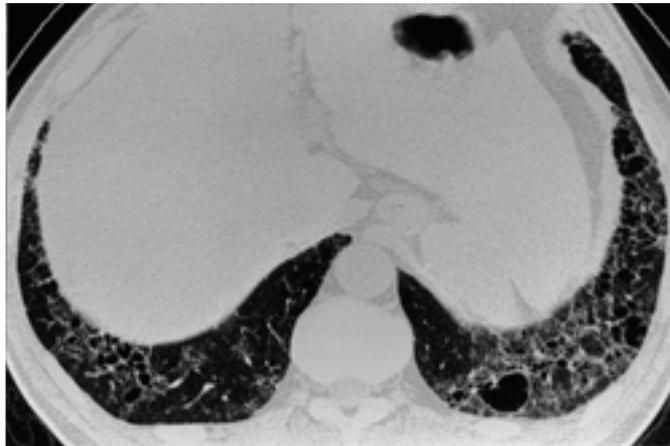


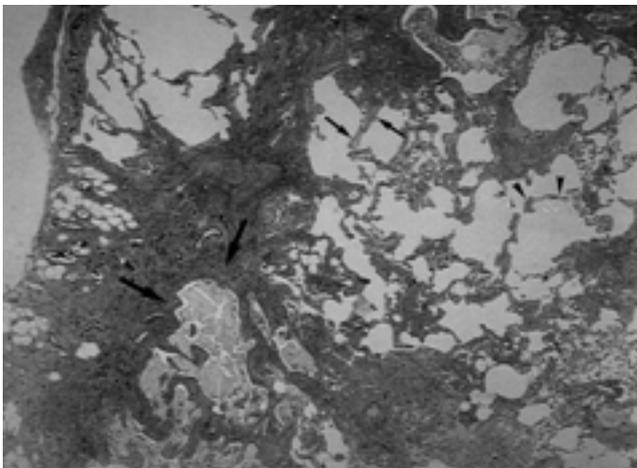
(7, 9).
 가 (10).
 (antinuclear antibody)
 (rheumatoid factor)
 (7).
 5 - 10
 가 (11 - 13).
 가 (14, 15).
 가 (15, 16),
 가 (17).
 UIP
 (Fig. 1).
 (tem -
 poral variegation)
 (18, 19).
 (honeycombing cyst)
 (1, 20, 21).
 (proteinaceous fluid) (cellu -
 lar debris) (macrophages)
 (neurtophils)가
 가 (22).
 (alveolitis) (cell mediated immunity)
 1 (type - I cytokine response)
 (humoral immunity) 2
 1
 (architectural distortion)
 2
 (fibroblast)가
 (extracellular
 matrix protein) 가 (23).



A



B



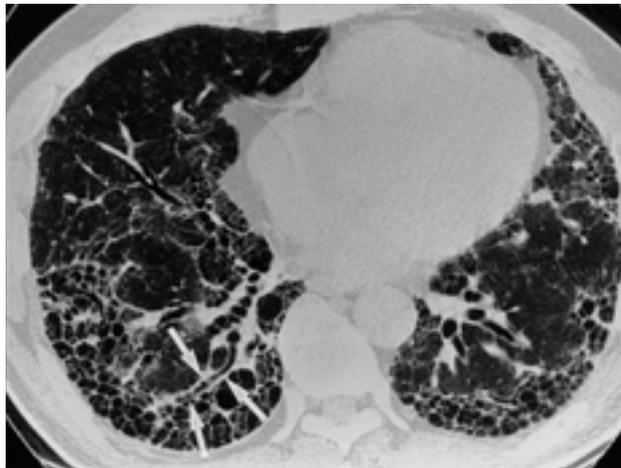
C

Fig. 1. Usual interstitial pneumonia in a 61 year-old man.
A. Chest radiograph shows reticular opacities in subpleural areas of both basal lungs.
B. High-resolution (1.0-mm collimation) CT scan obtained at level of liver dome shows multifocal patchy areas of ground-glass attenuation, irregular linear opacities, and honeycombing cysts at subpleural portion.
C. Low-magnification (H & E, $\times 12$) photomicrography of biopsy specimen from the right lower lobe shows temporally variegated appearance with alternating areas of active inflammation (small arrows), fibrosis (large arrows), and interspersed normal lung tissue (arrow heads).

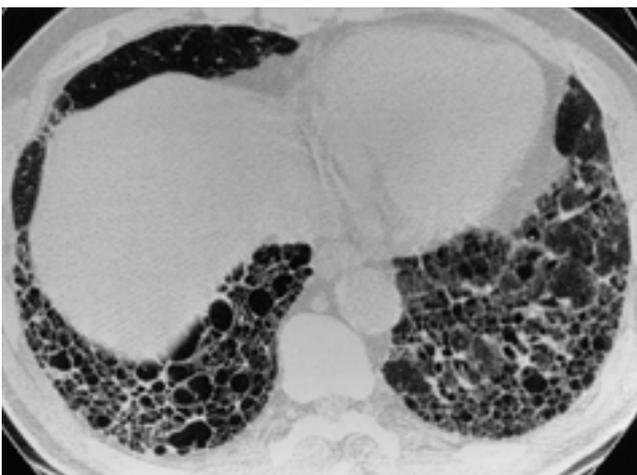
(1).
 (24), (air space)
 (fibroblastic foci), UIP
 (20, 21).
 2 (type
 II pneumocyte)가
 (20).
 (alveolar collapse),
 (overdistention of the alveolar ducts)
 (traction bronchiectasis)
 (22).
 (1).
 1.5 - 3 mm (15 - 29%)
 6% (1, 4). 5%
 (18, 19).
 (profusion),
 (severity),
 가
 UIP



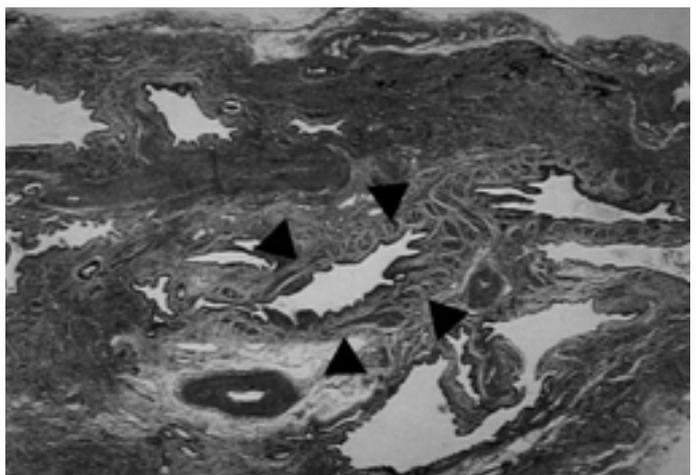
A



B



C



D

Fig. 2. Usual interstitial pneumonia (end-stage fibrosis) in a 57 year-old man.
A. Chest radiograph shows coarse, irregular, linear opacities and honeycombing in subpleural areas of both lower lung zones.
B, C. High-resolution (1.0-mm collimation) CT scans obtained at level of bottom of left atrium and liver dome show extensive honeycombing cysts, irregular linear opacities, and traction bronchiectasis (white arrows) at both subpleural and central lung zones.
D. Low-magnification (H & E, $\times 12$) photomicrography of biopsy specimen from the right lower lobe shows marked interstitial thickening with fibrosis and bronchiectasia (arrow heads).

(physiologic index)

(25). Akira (28) 가 , , (29, 30).

(Fig. 1). 가 1cm (Fig. (31). (32)

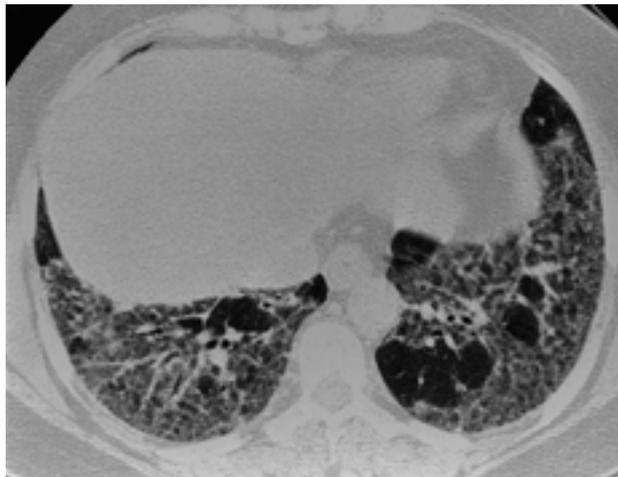
2) (1). CT (82%), 가 , (65 - 76%), (96%), (68 - 90%) 가 가 . (50%) (79%) (Fig. 1, 2). 가 (4). (saroidosis)

가 (4 - 15%), (10%), UIP CT , 가 (26). Nishmura (27) UIP CT CT 가 UIP

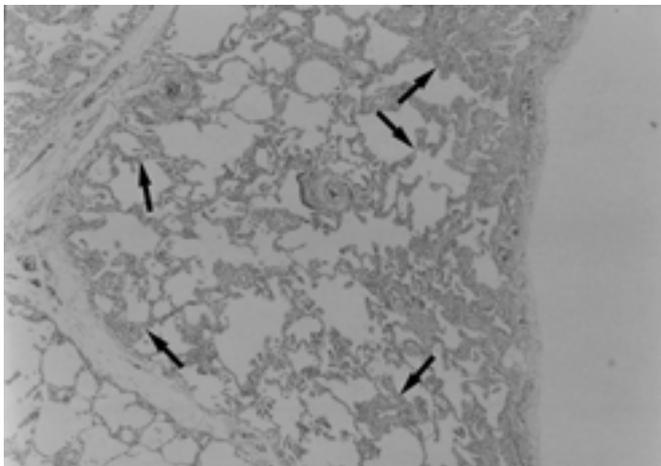
가 , 가 , 가



A



B



C

Fig. 3. Nonspecific interstitial pneumonia (group I) in a 54 year-old woman.
A. Chest radiograph shows areas of ground-glass opacities at both middle and lower lung zones.
B. High-resolution (1.0-mm collimation) CT scans obtained at level of liver dome shows geographic areas of ground-glass attenuation in subpleural portion of both lower lobes.
C. Low-magnification (H & E, × 12) photomicrography of biopsy specimen from the right lower lobe shows diffuse areas of inflammation with lymphocytic infiltration (arrows).

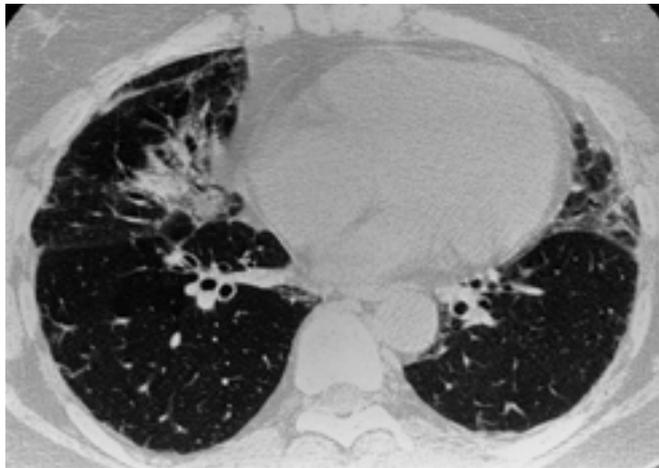
(Nonspecific Interstitial Pneumonia)
 1994 Katzenstein Fiorelli가
 (7), UIP, DIP, AIP
 (wastebasket term) . Katzen - stein
 (16%),
 (17%),
 (8%) 가 (7).
 Naghai (32) NSIP UIP
 가

50 UIP (7),
 (4).
 (9.7%),
 (Bronchoalveolar lavage, BAL)
 가 T - CD4:CD8 UIP
 (32). NSIP
 가 11% (8). 50%

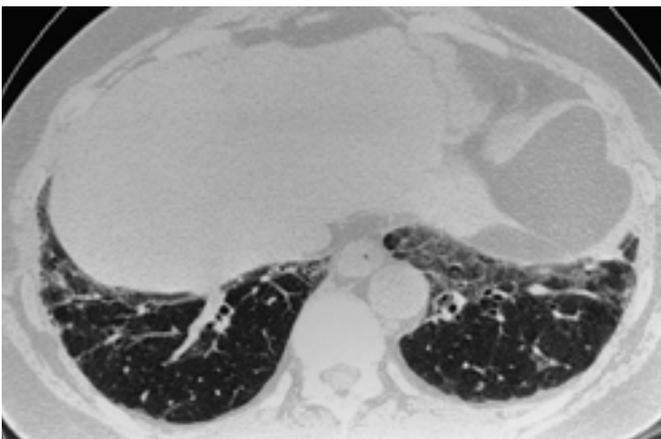
가



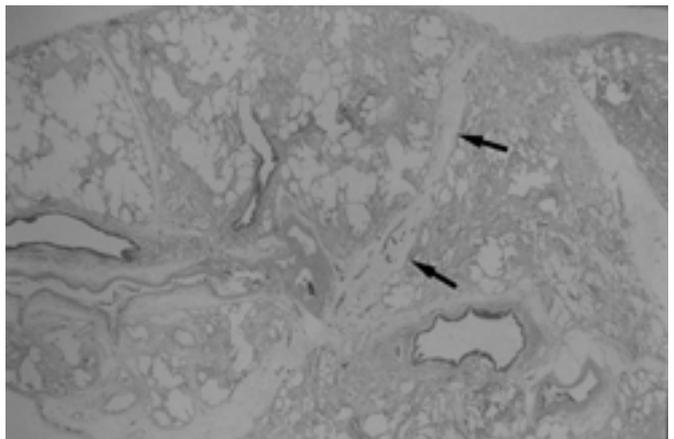
A



B



C



D

Fig. 4. Nonspecific interstitial pneumonia (group II) in a 46 year-old woman.

A. Chest radiograph shows areas of ground-glass opacities at subpleural portion of both lower lobes.

B, C. High-resolution (1.0-mm collimation) CT scans obtained at level of left atrium and liver dome show irregular linear opacities and patchy areas of ground-glass attenuation at subpleural portion of both lower lungs, and areas of air-space consolidation with bronchiectasis at the right middle lobe.

D. Low-magnification (H & E, $\times 12$) photomicrography of biopsy specimen from the left lower lobe shows temporally uniform mixed areas of interstitial inflammation and fibrosis. Also noted interlobular septal thickening (arrows).

(temporal uniformity)

(BOOP)

10% (1). 가

Katzenstein (7) NSIP (cellular interstitial pneumonia) 1 (Fig. 3-5). (6%)

50% (Fig. 3). 2 (5%) . 6-14%

가 (1). CT 가 ,

40% (Fig. 4). 3 (Fig. 3-5) (35, 36).

가 10% UIP ,

35% (36). CT ,

Travis (34) NSIP Katzenstein (cellular pattern) 1 2 3

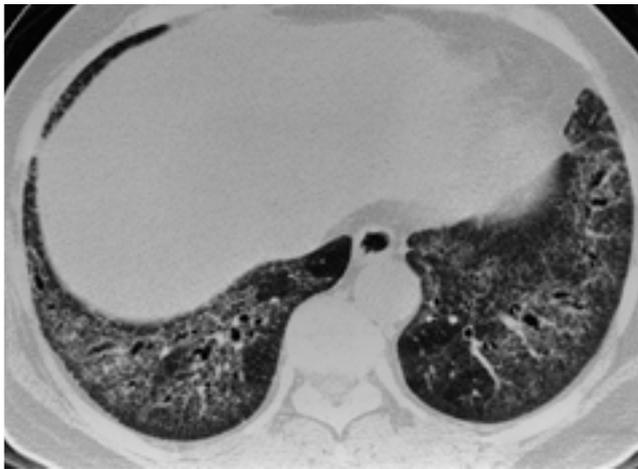
(fibrosing pattern) NSIP DIP (foamy cell) , NSIP CT

5 , 10 , 10 , 5 ,

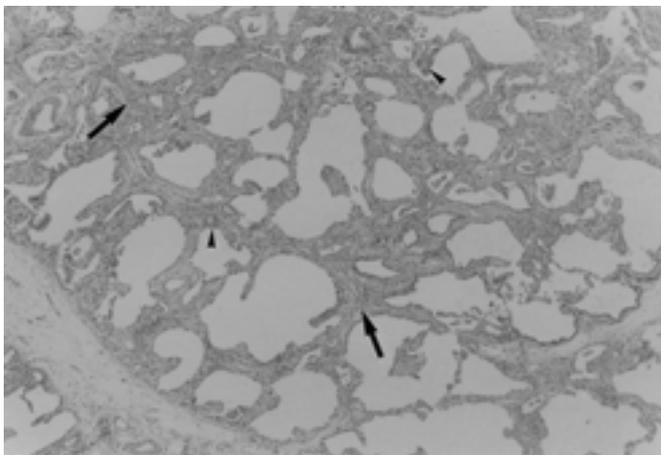
NSIP UIP NSIP 가 , 가



A



B



C

Fig. 5. Nonspecific interstitial pneumonia (group III) in a 50 year-old woman.

A. Chest radiograph shows reticular opacities and patchy areas of ground-glass opacities in subpleural portion of both lower lung zones.

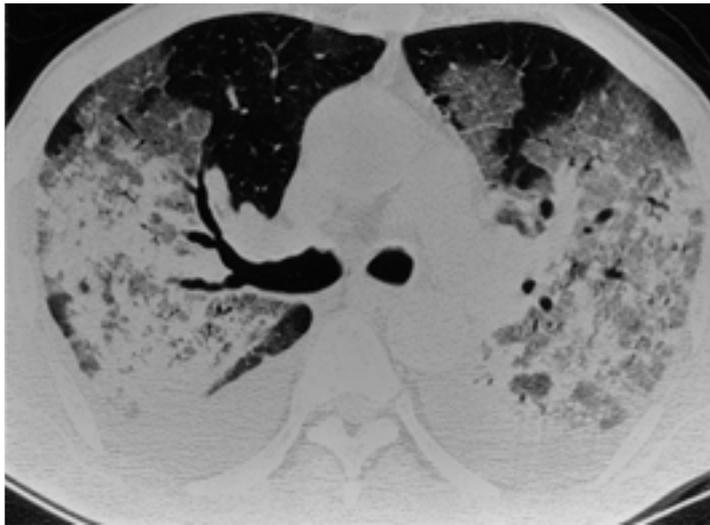
B. High-resolution (1.0-mm collimation) CT scan obtained at level of liver dome shows irregular linear opacities, ground-glass attenuation, and traction bronchiectasis with temporal homogeneity.

C. Low-magnification (H & E, $\times 12$) photomicrography of biopsy specimen from the right lower lobe shows relatively homogeneous areas of diffuse interstitial fibrosis (arrows) with mild chronic inflammation (arrow heads).

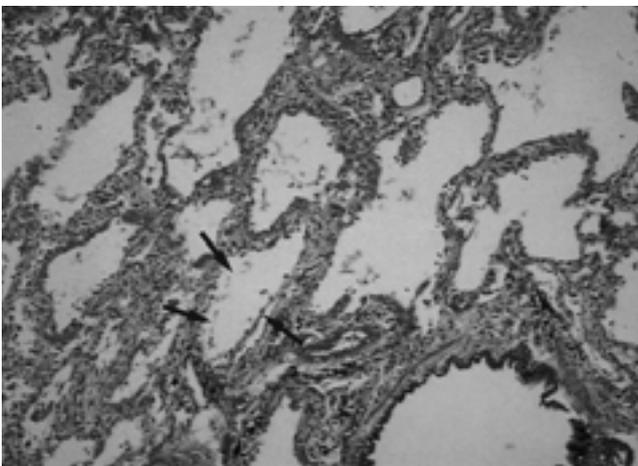
(1).
 BOOP, CT, DIP, UIP, (4, 41). AIP
 (Acute Interstitial Pneumonia)
 가 (4).
 가
 (diffuse alveolar damage, DAD) (37 - 39),
 1944 Hamman Rich가 (40).
 UIP 가 (accelerated form) (38, 42).
 UIP (15, 40).
 (hyaline membrane) (38),
 (idiopathic (38). (4, 39).
 acute respiratory distress syndrome) (1). (38).
 7 - 77



A



B



C

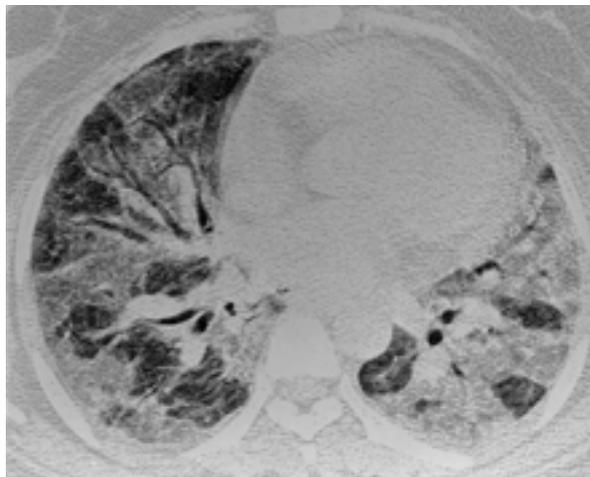
Fig. 6. Acute interstitial pneumonia (exudative phase) in a 63 year-old woman.
A. Chest radiograph shows bilateral asymmetric air-space consolidation and areas of ground-glass opacities.
B. High-resolution (1.0-mm collimation) CT scan obtained at level of right main bronchus shows bilateral diffuse areas of air-space consolidation, ground-glass attenuations with crazy-paving appearance, and bilateral pleural effusions.
C. Low-magnification (H & E, × 12) photomicrography of biopsy specimen from another 58 year-old woman shows scattered hyaline membrane lining alveolar septa (arrows) and mononuclear cell infiltrations.

가 (architectural distortion)

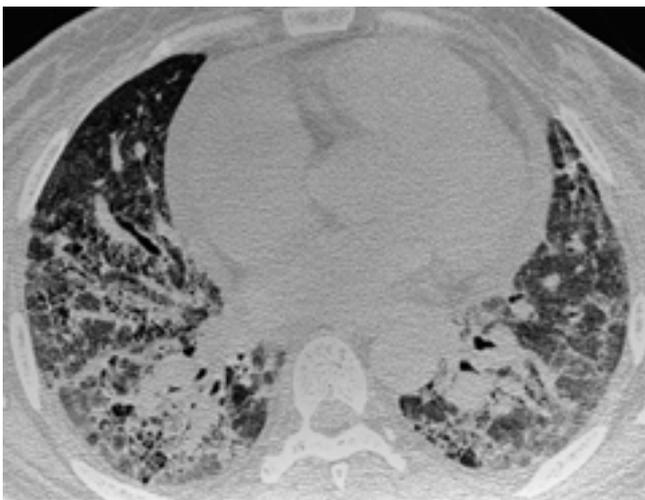
(acute exudative phase) UIP
(organization) AIP
(subacute proliferative phase) UIP
(basement membrane) (38).
(chronic fibrotic phase) UIP
(43, 44). 가 UIP



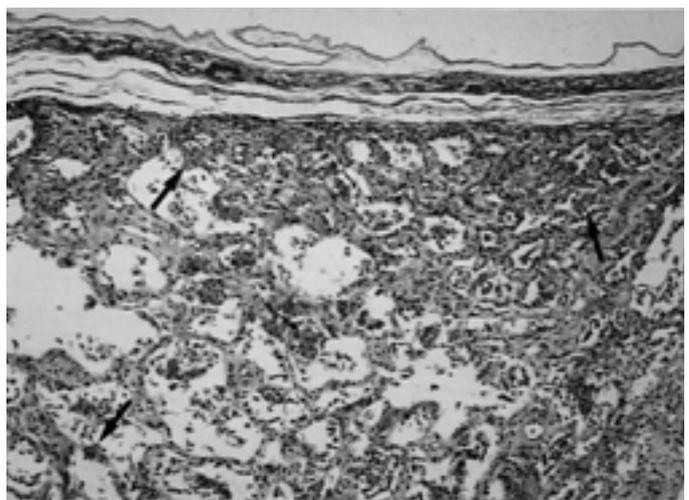
A



B



C



D

Fig. 7. Acute interstitial pneumonia (proliferative phase) in a 43 year-old woman.
A. Chest radiograph shows mixed areas of air-space consolidations and ground-glass opacities at bilateral lungs.
B. High-resolution (1.0-mm collimation) CT scan obtained at level of aortic root shows bilateral geographic areas of ground-glass attenuations, air-space consolidation, and mild bronchiectasis.
C. Follow up High-resolution (1.0-mm collimation) CT scan 22 months after initial examination shows irregular linear opacities, ground-glass attenuations, and honeycombing cysts at subpleural portion of both lower lobes.
D. Low-magnification (H & E, $\times 12$) photomicrography of biopsy specimen from the right lower lobe shows extensive fibroblast proliferation (arrows), mainly within the interstitium, with a few residual intra-alveolar exudates.

(Fig. 6, 7) (43).
 CT (67%) (67%) (33%) (non-dependent portion)
 4). 가 (1,
 (44). CT (juxta - septal alveoli) (collapse) lung disease, RB - ILD), DIP
 (organization) . Ichikado (43) 가 . 1974
 가 (small airway) , 1987
 가 . RB - ILD DIP
 (Fig. 7). (45, 46).

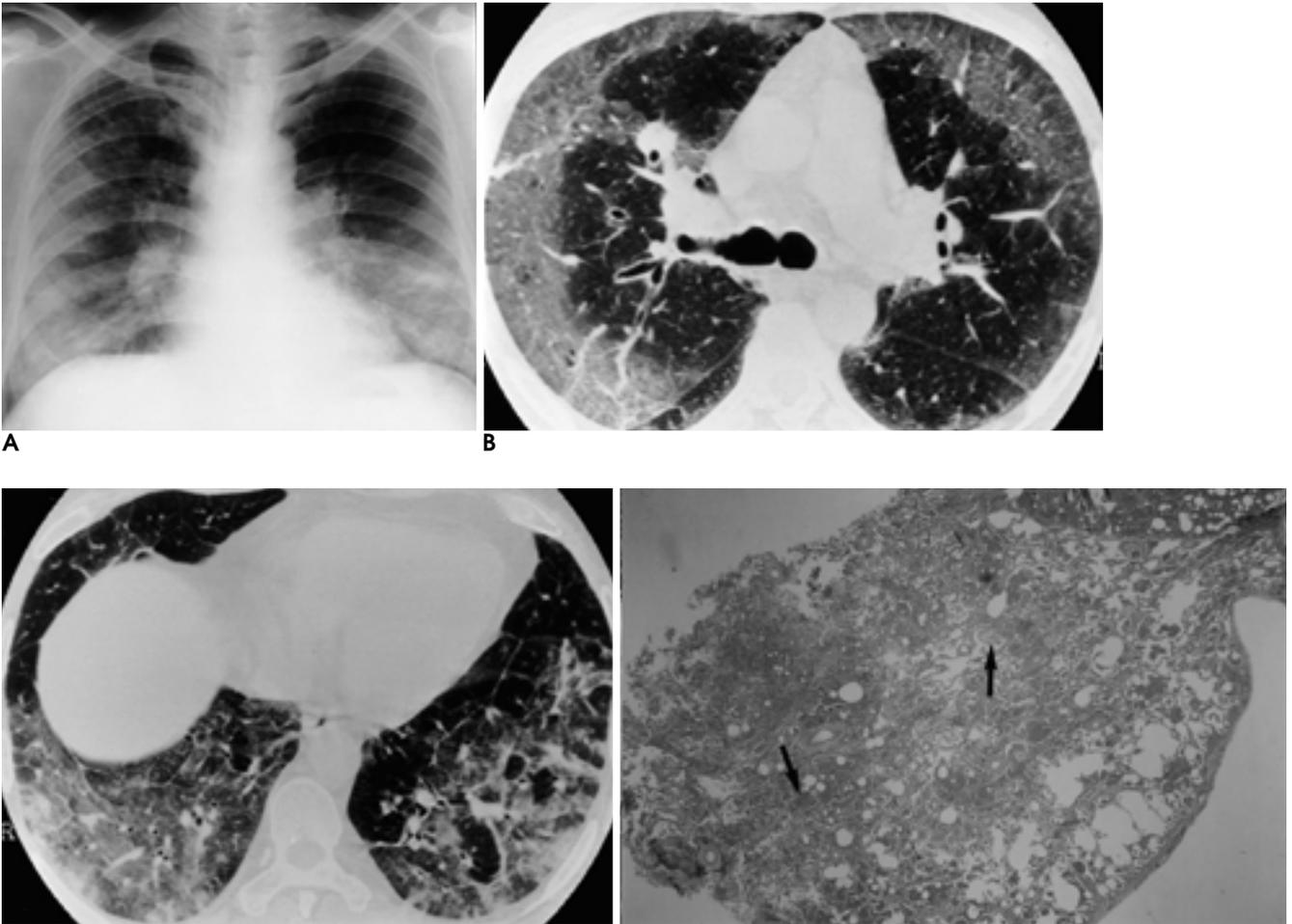
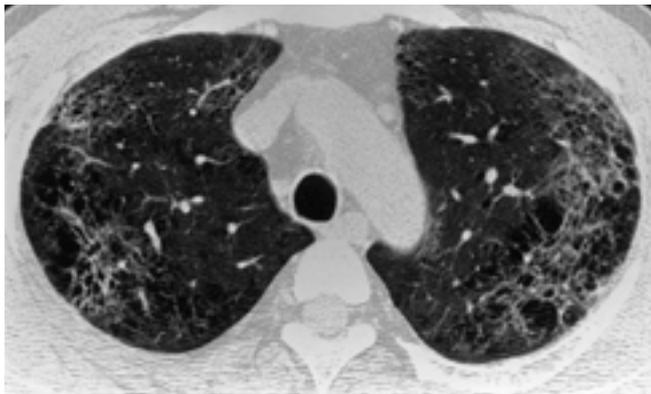


Fig. 8. Desquamative interstitial pneumonia in a 49 year-old man.
A. Chest radiograph shows diffuse areas of ground-glass opacities in subpleural portions of both middle and lower lung zones.
B, C. High-resolution (1.0-mm collimation) CT scans obtained at level of right main bronchus and liver dome show diffuse areas of ground-glass attenuations and focal air-space consolidations in subpleural portions of both lungs.
D. Low-magnification (H & E, × 12) photomicrography of biopsy specimen from the right middle lobe shows diffuse intra-alveolar accumulation of macrophages (arrows).

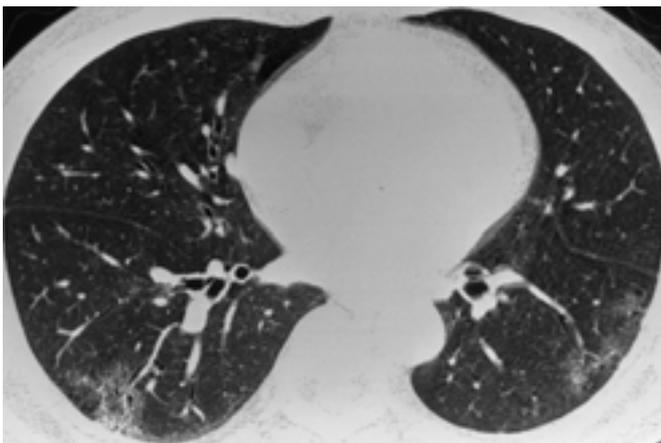
RB-ILD DIP 가 , DIP DIP
 가 , (45). (45, 48).
 30-50 UIP 가
 90% DIP (41). UIP DIP
 (1, 4). (Fig. 8) (49).
 UIP 가 UIP
 12 , 27% UIP 가 UIP
 60%가 (3, 10). UIP
 가 UIP DIP UIP
 DIP가 UIP 가 DIP
 (47). (1, 4).
 (RB) , RB-ILD



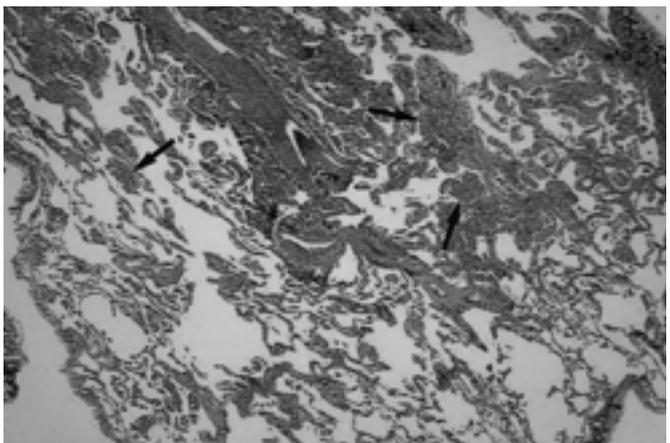
A



B



C



D

Fig. 9. Respiratory bronchiolitis-Interstitial pneumonia in a 48 year-old man.
A. Chest radiograph shows bilateral subpleural areas of subtle opacities and linear opacities in the middle lung zones.
B, C. High-resolution (1.0 - mm collimation) CT scans obtained at level of aortic arch and inferior pulmonary vein show bilateral areas of ground-glass attenuation in subpleural and peribronchial portions. The findings of centrilobular and panlobular emphysema are also seen.
D. Low-magnification (H & E, × 12) photomicrography of biopsy specimen from the left lower lobe shows accumulation of intra-alveolar macrophages which are patchy in distribution and localized to peribronchiolar parenchyma (arrows).

(50). (Fig. 50)
 , 2
 . DIP RB -ILD (bron -
 chocentricity) ,
 RB -ILD ,
 (46, 48).
 가
 (10). DIP
 25 - 33% (1).
 (15%), (12.5%)
 , (Fig. 9). 3 -
 22% 가 CT (4, 10).
 가 86%
 (73%). 59%가 가
 , 32% .
 (4). DIP CT UIP
 DIP
 (4). 가 RB -ILD CT
 가 (centrilobular nod -
 ule), , (atelectasis),
 (bleb) (Fig. 9)
 (46, 48).

Cryptogenic organizing pneumonia, Acute interstitial pneumonia, Respiratory bronchiolitis interstitial lung disease, Desquamative interstitial pneumonia, Lymphoid interstitial pneumonia (Am J Respir Crit Care Med 2002;165:277 - 304).

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Idiopathic Interstitial Pneumonias: Radiologic-Pathologic Correlation¹

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Idiopathic interstitial pneumonias are at present classified as one of four types: usual, nonspecific, acute, or desquamative. The acute form has the worst prognosis, followed by the usual and the nonspecific form; it is in desquamative cases that prognosis is best. At high-resolution CT, usual interstitial pneumonia, the most frequent type, manifests as patchy subpleural areas of ground-glass attenuation, irregular linear opacity, and honeycombing, which the nonspecific type, the second most frequent, appears as subpleural patchy areas of ground-glass attenuation with associated areas of irregular linear opacity. Acute interstitial pneumonia demonstrates extensive bilateral airspace consolidation and patchy or diffuse bilateral areas of ground-glass attenuation in middle and lower lung zones.

Index words : Lung fibrosis
Lung diseases
Pneumonia, interstitial with fibrosis

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