



：

： 1997 1 2000 1

가 3 64 14 가 11 ,

19.5G 2

：

가 . 1

(n=2) (n=1) (n=4), (n=4), (n=3),

：

가

(1).

(2).

(4 - 6). Chandrasekhar (7)

가

(8)

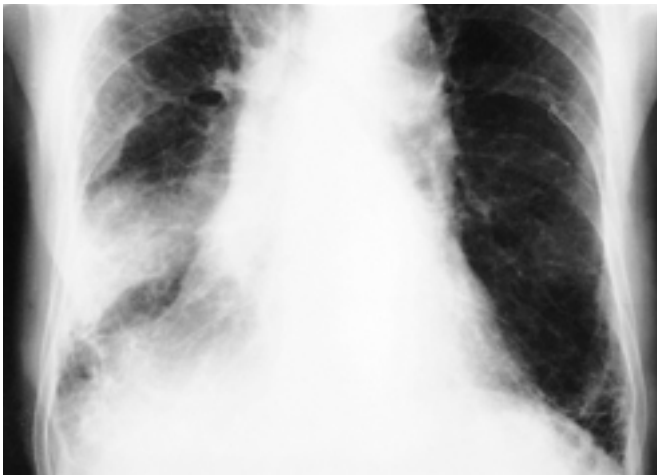
가 (3). Yang (9)

CT)

Diasonic Spectra (Diasonics, Miltipas, CA, U.S.A.)
3.5 MHz 5.0 MHz

1997 1 2000 1 CT

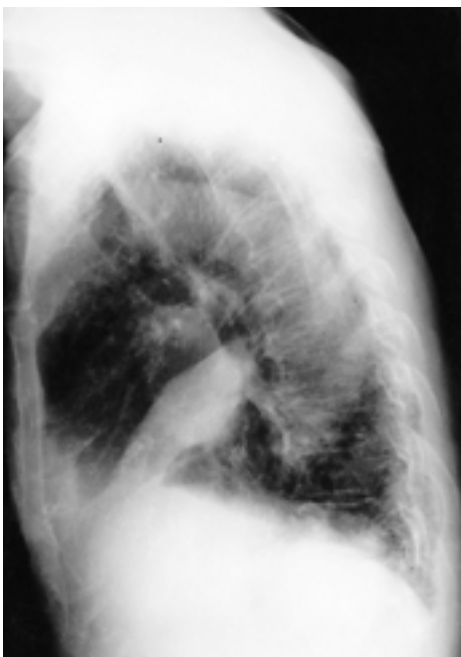
가 14 1 가
가 3 64 (45 -83) 11 가 (10),
CT GE 9800 (General Electric Medical System, Milwaukee, U.S.A.) (11)
10 mm 7 -
Iopromide (Ultravist 300, Schering, Berlin, Germany) 100 cc
(bolus injection) CT



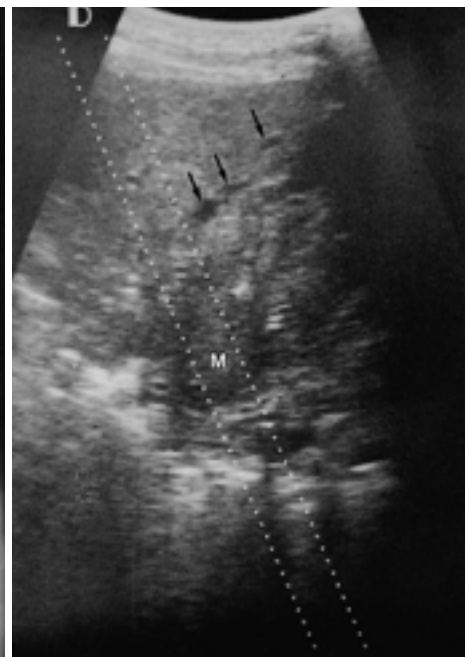
A



C



B



D

Fig. 1. Central lung mass with sonographic fluid bronchograms.
A. Posteroanterior chest radiograph shows a triangular shaped opacity in the right lower lung zone.
B. Lateral radiograph shows a triangular opacity in the right middle lobe.
C. CT scan obtained at left atrium level shows central mass (M) and consolidated lateral segment of right middle lobe (C).
D. Sonogram shows a hypoechoic mass in the hilar region (M) with sonographic fluid bronchograms (arrows) within consolidated lung.

19.5G

Auto - Vac (Angiomed, Karlsruhe, Germany)

가

가

(12 - 15).

7 ,

2 , 1 , 2 , 2

가,

가

. 8

가

(

가

) (Fig. 1). 5

(

).

가

(4).

40%

가

(Fig. 1)

(16, 17).

2 × 3 cm

8 × 8 cm

5cm

9

, 5 cm

5

2

(Fig. 2), 3

. 1

(9, 18).

, 1

(n=4),

(n=4),

(n=3),

가

(n=2)

(n=1)

(Table 1).

(10),

8

Table 1. Sonographic Appearance, US-guided Aspiration Biopsy Results of 14 Lung Tumors Associated with Obstructive Pneumonitis

Patient No.	Age/sex	Location of lesion	Size of lesion (cm)	Sonographic pattern		Histologic finding
				Homogeneity	Echogenicity	
1	45/M	RUL	3 × 3	homogeneous	hypoechoic	squamous carcinoma
2	75/F	RUL	2 × 3	homogeneous	hypoechoic	squamous carcinoma
3	54/F	RUL	5 × 6	heterogeneous	hyperechoic	small cell carcinoma
4	58/M	RUL	3 × 3	homogeneous	hypoechoic	large cell carcinoma
5	51/M	RUL	6 × 7	homogeneous	Isoechoic	adenocarcinoma
6	70/M	RUL	6 × 6	heterogeneous	Isoechoic	non-small cell carcinoma
7	73/M	LLL	3 × 4	homogeneous	hypoechoic	adenocarcinoma
8	60/M	LUL	8 × 5	heterogeneous	hyperechoic	small cell carcinoma
9	72/F	RML	4 × 4	homogeneous	hypoechoic	small cell carcinoma
10	71/M	RUL	2 × 3	homogeneous	hypoechoic	adenocarcinoma
11	83/M	RML	4 × 4	homogeneous	hypoechoic	squamous carcinoma
12	62/M	LUL	4 × 5	homogeneous	hypoechoic	adenocarcinoma
13	49/M	LLL	2 × 3	homogeneous	hypoechoic	non-small cell carcinoma
14	68/M	RLL	8 × 8	heterogeneous	hyperechoic	squamous carcinoma

RUL = right upper lobe, RLL = right lower lobe, LLL = left lower lobe, RML = right middle lobe, LUL = left upper lobe

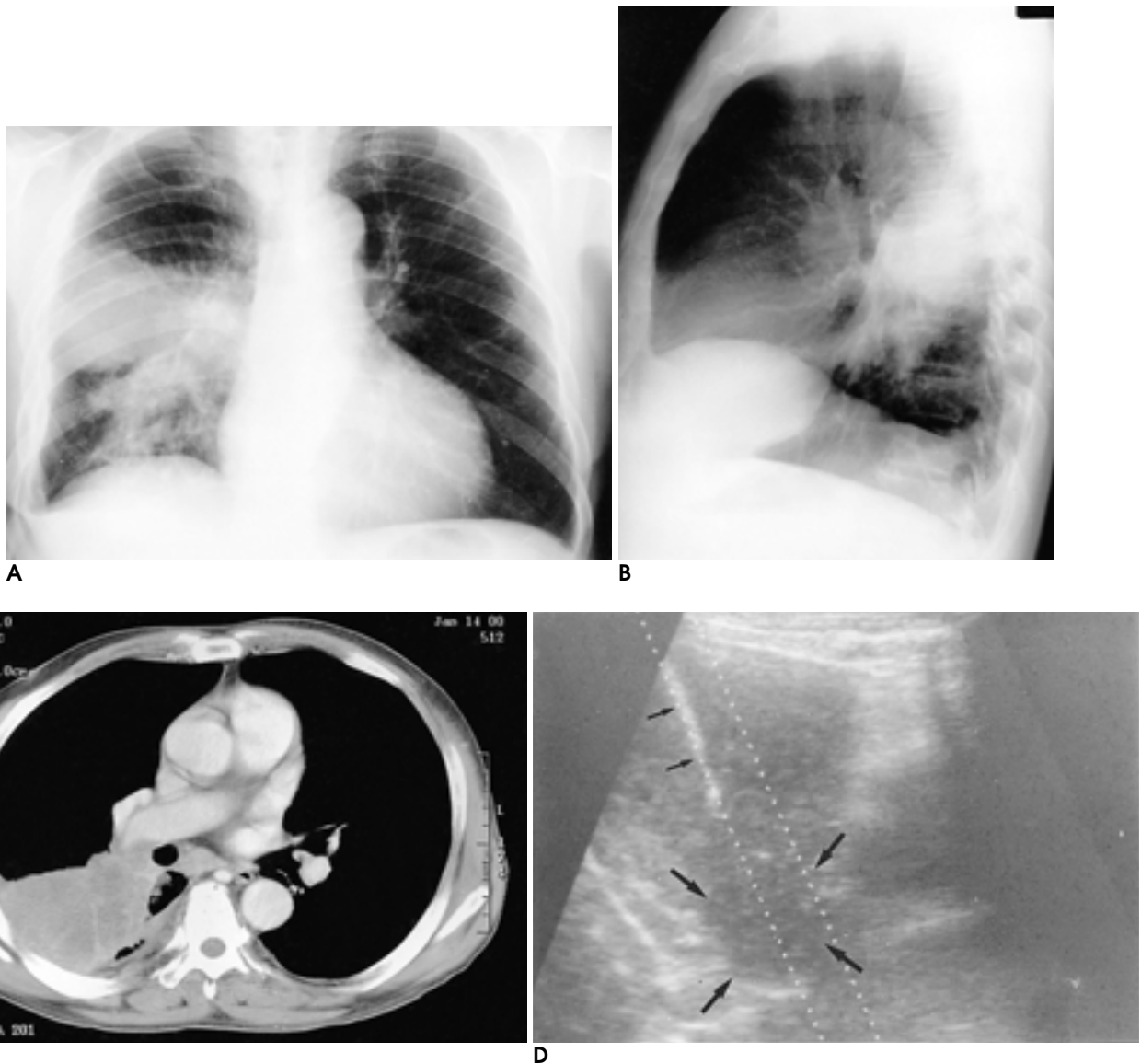


Fig. 2. Isoechoic lung mass in transthoracic needle biopsy.

A. Posteroanterior chest radiograph shows a wedge shaped parahilar opacity in the right middle lung zone.

B. Lateral radiograph shows a wedge shaped opacity in the superior segment of right lower lobe.

C. CT scan obtained at bronchus intermedius level shows obstructive consolidation in the superior segment of right lower lobe with ill defined mass-like lesion at its apex.

D. Sonogram shows an isoechoic mass (large arrows) within a wedge shaped hypoechoic consolidated lung. Note the biopsy needle (small arrows) through the consolidated lung in front of the isoechoic mass.

가
(11),

(18). Yang

(9)

5

5cm

(14).

, 5 cm

(19). 5 cm

(9).

(10),

5 cm

9

, 5 cm

5

2

, 3

가 가

가

(20).

(21).

가

transducer (linear

convex transducer),

(9).

Ikezoe (20)

Yang

90%, 67%,

(19) 84%, (8)

61.5% . Yang (6, 19)

95% 95%

가

14 13

93%

Yang (6, 19) . Yang (22)

70%

14 12 가 86%

가

가

가

1%

(23).

(24).

(8, 9).

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Central Lung Tumors with Obstructive Pneumonitis: Ultrasonographic Findings and Usefulness of Ultrasound-guided Biopsy¹

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Purpose: To determine the ultrasonographic findings and assess the usefulness of ultrasound (US)-guided biopsy of central lung tumors in patients with obstructive pneumonitis.

Materials and Methods: Fourteen patients with central lung tumors causing obstructive pneumonitis, as seen on chest radiographs and chest CT scans, were examined between January 1997 and January 2000. In no patient conclusive histologic diagnosis obtained by means of bronchoscopic biopsy or sputum cytology. Eleven patients were men and three were women, and their ages ranged from 45 to 83 (mean, 64) years. For all examinations, real-time, linear-array, convex US units with a 3.75- and a 5.0-MHz transducer were used. The images obtained were analyzed for evidence of consolidation or atelectasis in the lung, demonstrable tumors, and tumor size and echogenicity. For US-guided percutaneous transthoracic biopsy, 19.5G automatic biopsy devices, were employed.

Results: Lung consolidation due to a wedge-shaped, homogeneous, hypoechoic lesion was revealed by sonographic fluid bronchograms, air bronchograms, air alveolograms, and visualization of intraparenchymal pulmonary vessels, which showed appropriate motion with respiration. The tumor presumed to be causing obstruction was seen as a hypoechoic nodule near the hilum or as a well-defined hyperechoic mass inside the partially consolidated lung. Pleural effusion was observed in one case. The cytologic findings indicated the presence of squamous cell carcinoma (n=4), adenocarcinoma (n=4), small cell carcinoma (n=3), non-small cell carcinoma (n=2) and large cell carcinoma (n=1). The success rate was 100%, and there were no complications.

Conclusion: In patients with central lung tumors causing obstructive pneumonitis, chest ultrasonography and US-guided biopsy are useful adjunctive diagnostic modalities and techniques.

Index words : Lung neoplasms, US
Lung, biopsy
Ultrasound (US), guidance
Biopsies, technology

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