

1

가 , (1, 2). (Fig. 1A).  
가 2 (forced  
vital capacity ; FVC) 1.10 L(36%), 1  
(forced expiratory volume in 1 sec ; FEV1) 0.93 L(38 %),  
FEV1/FVC 85% (restrictive)  
(1, 3).

CT) X Computed Tomography(  
(2).  
1  
6  
가 , pH  
6.16, <10 ng/dl, (lactate dehydrogenase  
; LDH) > 12,000, 4.2 g/dl (exudate)

10 CT  
2 5 CT (Fig. 1B)  
가 ,

67 가 2 가 (Fig. 1C).

1 30  
, 47  
. 21 44

37-38.5  
80

(WBC) 12,900/mm<sup>2</sup>,  
(Hb)가 9.3g/dl 가 pH 7.47,  
PCO<sub>2</sub> 33mmHg, PO<sub>2</sub> 85mmHg, PaO<sub>2</sub> 97%

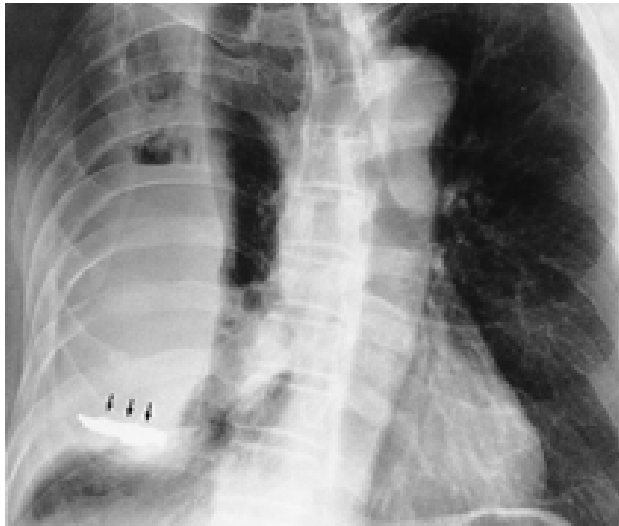
가 (Fig. 1D, E).

X 가

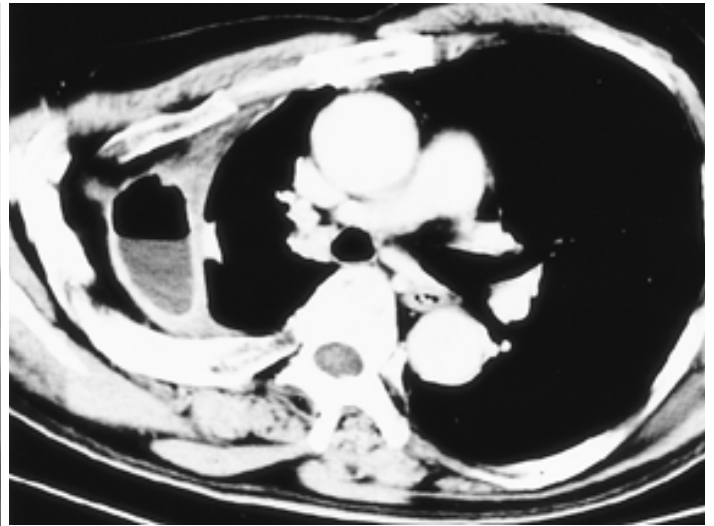
50

1  
2

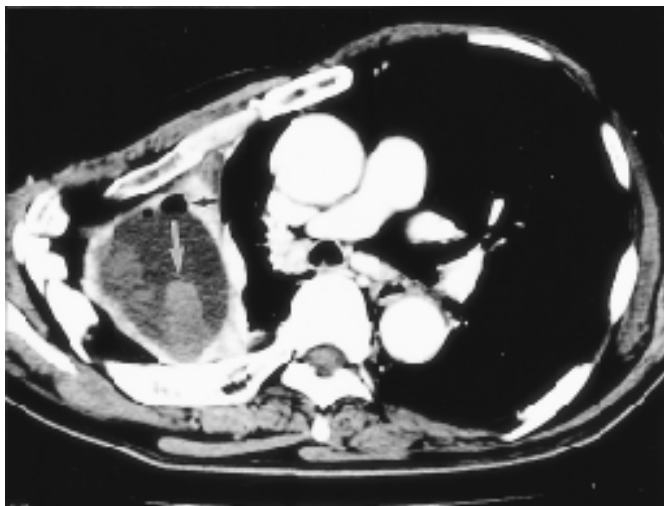
1999 8 10 1999 11 5



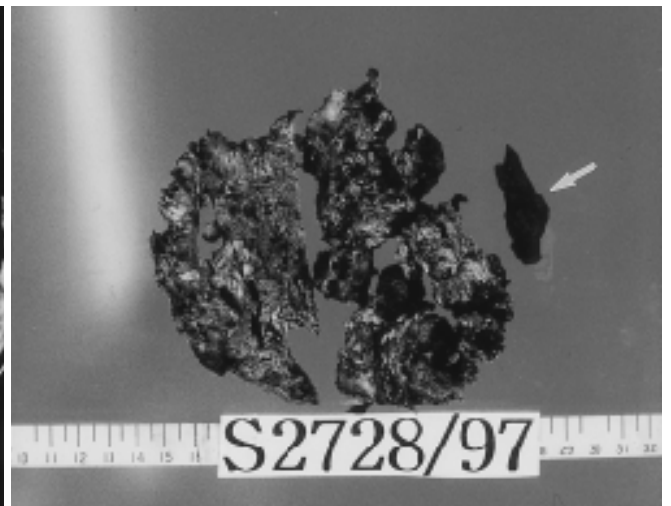
A



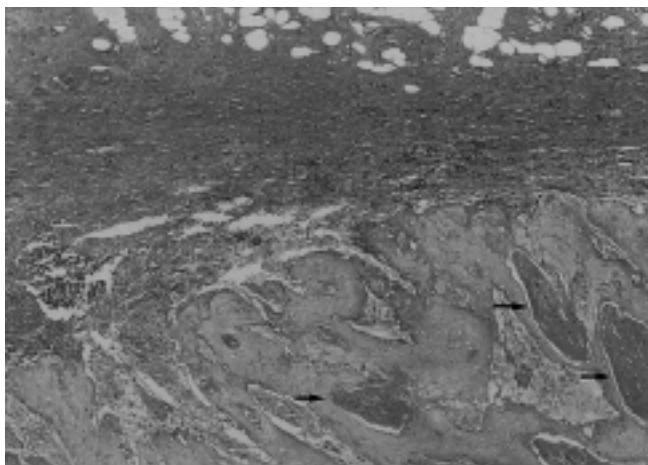
B



C



D



E

Fig. 1. A. Chest PA shows huge empyema sac with air-fluid level and calcified rim occupying right hemithorax. Amorphous metallic foreign body is noted in right lower thoracic cage (arrows).

B. Contrast enhanced CT scan performed at 2 years before admission shows lentiform shaped pleural fluid collection with thick enhancing wall.

C. Contrast enhanced CT scan on admission shows increased volume of lentiform pleural fluid collection with irregular solid mass (large white arrow) and bronchopleural fistula (small black arrow) between right middle lobe and right pleural space.

D. Photography of gross specimen shows about  $12 \times 7 \times 1.7$  cm sized irregularly fragmented pieces of firm and thick fibrotic tissues with fat globules and  $5.0 \times 1.5 \times 1.0$  cm sized dark colored metallic foreign body (arrow).

E. Photomicroscopy shows well differentiated squamous cell carcinoma with keratin pearl formation (arrows) arising from the pleura (hematoxylin and eosin stain,  $\times 40$ ).

가 , Willen (8)  
(squamous metaplasia) . Deaton (9)  
가 가 .  
가 ,  
(ingrowth)  
가  
가 ,  
(non-Hodgkin's lymphoma) 26 , (squamous cell carcinoma) 20 , (mesothelial cell carcinoma) 12 , (malignant fibrous histiocytoma) 3 , (adenocarcinoma), (hemangioendothelioma), (liposarcoma), (rhabdomyosarcoma) (angiosarcoma) 1 .  
, 1989 61  
Minami (1) 1991 6  
, 1996 Hsu  
(4) 2  
Rutter (5) Prabhaker (6)  
(3) T-cell 1  
Minami (1)  
가 ,  
CT  
X  
가  
가  
가 , 가 ,  
(fat plane)  
CT  
가 , 가  
가 . MR CT  
Gadolinium  
가  
Leung (7)  
, 1cm  
가

가 , Willen (8)  
(squamous metaplasia) . Deaton (9)  
가 가 .  
가 ,  
(ingrowth)  
가  
가 ,  
(non-Hodgkin's lymphoma) 26 , (squamous cell carcinoma) 20 , (mesothelial cell carcinoma) 12 , (malignant fibrous histiocytoma) 3 , (adenocarcinoma), (hemangioendothelioma), (liposarcoma), (rhabdomyosarcoma) (angiosarcoma) 1 .  
, 1989 61  
Minami (1) 1991 6  
, 1996 Hsu  
(4) 2  
Rutter (5) Prabhaker (6)  
(3) T-cell 1  
Minami (1)  
가 ,  
CT  
X  
가  
가  
가 , 가 ,  
(fat plane)  
CT  
가 , 가  
가 . MR CT  
Gadolinium  
가  
Leung (7)  
, 1cm  
가

1. Minami M, Kawauchi N, Yoshikawa K. et al. Malignancy associated with chronic empyema : Radiologic assessment. *Radiology* 1991; 178 :417-423
2. Peter Armstrong, Paul Dee. *Bacterial parapneumonic pleural effusions and empyema*. In Peter Armstrong, Alan G. Wilson, Paul Dee, David M. Hansell. *Imaging of Diseases of the Chest*. St. Louis : Mosby, 1995:166-170
3. , , , , : . T-cell 1993;29:738-741
4. Hsu NY, Chen CY, Pan ST, Hsu CP. Pleural non-Hodgkin's lymphoma arising in a patient with a chronic pyothorax. *Thorax* 1996; 51:103-104
5. Rutter JR, Heinzl S. Squamous-cell carcinoma of the pleura. *Thorax* 1977;32:497-500
6. Prabhaker G, Mitchell IM, Guha T, Norton R. Squamous cell carcinoma of the pleura following bronchopleural fistula. *Thorax* 1989; 44:1053-1054
7. Leung AN, Muller NL, Miller RR. CT in differential diagnosis of diffuse pleural disease. *AJR* 1990;154:487-492
8. Willen R, Bruce T, Dahlstrom G, Dubiel WT. Squamous epithelial cancer in metaplastic pleura following extrapleural pneumothorax for pulmonary tuberculosis. *Virchows Arch A Path Anat and Histol* 1976;370:225-231
9. Deaton WR. Carcinoma arising in chronic empyema cavity. *Dis Chest* 1962;42:563-566

## **Squamous Cell Carcinoma Associated with Chronic Empyema Caused by Metallic Foreign Body : A Case Report<sup>1</sup>**

Wan Tae Kim, M.D., Seon Young Yoo, M.D., Hyun Ja Shin, M.D., Jeong Rye Kim, M.D.<sup>2</sup>

<sup>1</sup>*Department of Radiology, Korea Veterans ' Hospital*

<sup>2</sup>*Department of Pathology, Korea Veterans ' Hospital*

Malignant neoplasm associated with chronic empyema is rare. Most squamous cell carcinomas of the pleura may occur in association with chronic persistent empyema, with or without pleurocutaneous fistula. We report a case of squamous cell carcinoma associated with chronic empyema caused by a metallic foreign body.

**Index words** : Pleura, CT  
Pleura, neoplasm  
Pleura, empyema

Address reprint requests to : Seon Young Yoo, M.D., Department of Radiology, Korea Veterans Hospital,  
#6-2 Dunchon-dong Kangdong-gu, Seoul, 134-060, Korea,  
Tel. 82-2-2225-1426 Fax. 82-2-2225-1488