Turk J Gastroenterol *2017; 28: 75-6*

Sudden-onset sarcoidosis with severe dyspnea developing during pegylated interferon and ribavirin combination therapy for chronic hepatitis C

To the Editor,

A 37-year-old woman with chronic hepatitis virus C (HCV) (genotype 2, 5.8 log IU/mL) was admitted with high fever and severe dyspnea without skin or ocular lesions. Laboratory data are shown in Table 1. Three months earlier, she had been under therapy with pegylated interferon and ribavirin with normal chest radiograph. She had a remote history of intravenous drug abuse.

Plain computed tomography revealed small, diffuse, reticular small nodular lesions, ground glass appearance, mediastinal and bilateral hilar lymphadenopathy, and bilateral pleural effusion (Figure 1a).

All stains and cultures of bronchoalveolar lavage were negative for fungal, acid-fast bacilli, and other bacterial infections.

In this case, disseminated infection including miliary tuberculosis and fungal infection, drug-induced interstitial pneumonia, intravenous talc granulomatosis, extrinsic allergic alveolitis, and pneumoconiosis needed to be differentiated; however, a definite diagnosis was made by the histological finding of non-necrotizing epithelioid granuloma with multinucleated giant cells (Figure 1b). Emergency oxygen (15 l/min) and intravenous steroid pulse therapy was continued for 7 days followed by oral steroid tapering therapy.

At the 4-week follow-up, she recovered completely with almost normal chest radiograph finding (Figure 1c). The diagnosis of sarcoidosis necessitates appropriate chest radiograph findings, clinical symptoms, and histologic findings, as well as exclusion of other infections and neoplastic causes (1).

Not a few cases of sarcoidosis manifesting lung lesion due to IFN therapy have been reported since first recognized case in 1987 (2); however, most have shown gradual and chronic clinical courses (3-5). In our case, emergency therapy including oxygenation and steroid pulse therapy was needed. Although the exact pathogenesis of sarcoidosis remains unclear, a number of immune modulators have been implicated, including IFNs and HCV (3,4).

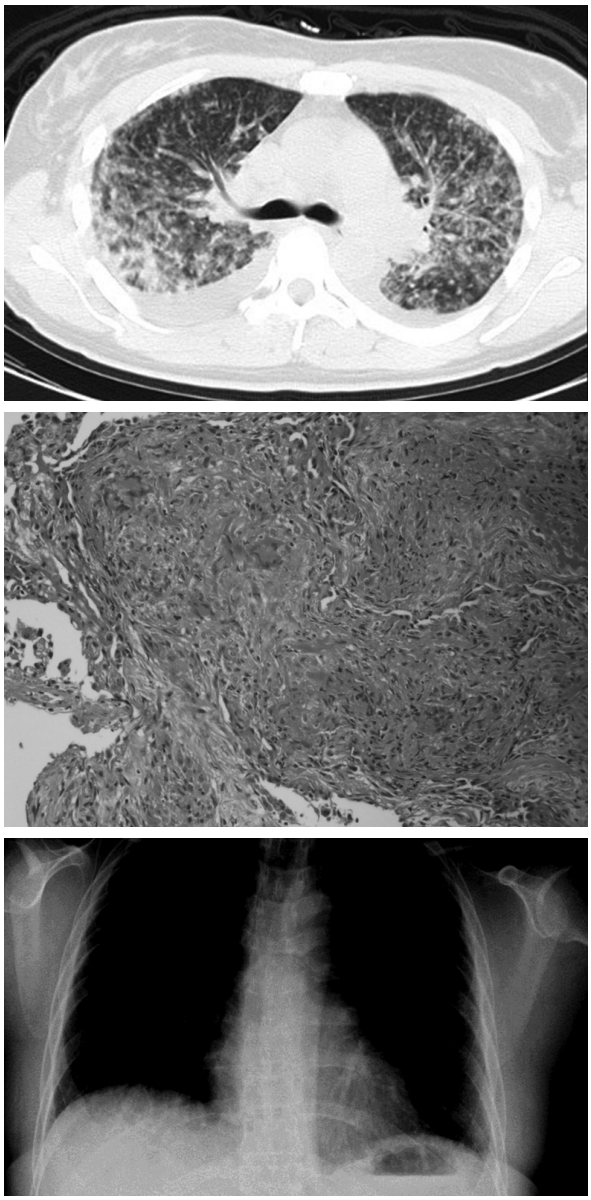

Figure 1. a-c. (a) Chest CT scan finding. Diffuse reticular small nodular lesions, ground glass appearance, mediastinal and bilateral hilar lymphadenopathy, and bilateral pleural effusion are observed. (b) Histological finding (HE staining). Non-necrotizing epithelioid granuloma with multinucleated giant cells is observed. (c) Chest radiograph finding. Almost normal finding is observed

Table 1. Laboratory data on admission

Hb (11.3~16.6)	**10.4x10⁴ µL**	**β-D-glucan (>20 pg/mL)**	**<6.0 pg/mL**
WBC (3500~9200)	6300 µL	Cryptococcosis-AG	(-)
PLT (15.0~36.5)	29.6X104 µL	T-spot TB	(-)
CRP (<0.3)	6.28 mg/dL	ANA	1:40
AST (9~38)	23 IU/L	Homogeneous type	(-)
ALT (4~36)	10 IU/L	Speckled type	(-)
Ca (8.4~10.2)	8.0 mg/dL	Centromere type	(-)
HTLV-1	(-)	Nucleolar type	(-)
IgG (800~1700)	1036 mg/dL	Peripheral type	(-)
IgA (100~400)	143 mg/dL	Granular type	(-)
IgM (40~240)	108 mg/dL	Total cell count of bronchoalveolar lavage fluids	6.8x105/mL
IgE (20~140)	32 mg/dL		
RF (<10.0)	12 U/mL	Proportion of T lymphocyte CD3	86%
CEA (<5.0)	2.3 ng/mL	CD4 50%	
KL-6	<500 U/mL	CD8 35%	
CYFRA (<2.0)	3.3 ng/mL	CD4/CD8 ratio	1.4
HCV RNA	Not detected	Blood gas values Ph	7.446
ACE (7.7~29.4)	14 I/U	PaO_2 32.6 mmHg	
Sil-2R (122~496)	2720 U/mL	$PaCO_2$ 36.1 mmHg	

Hb: Hemoglobin; WBC: white blood cell (count); PLT: Platelet; CRP: C-reactive protein; AST: aspartate aminotransferase; ALT: alanine aminotransferase; Ca: calcium; HTLV-1: Human T-cell Leukemia Virus Type 1; IgG: Immunoglobulin G; IgA: Immunoglobulin A; IgM: immunoglobulin M; IgE: immunoglobulin E; RF: rheumatoid factor; CEA: carcinoembryonic antigen; KL-6: Sialylated carbohydrate antigen KL-6; CYFRA: cytokeratin-19 fragments; HCV RNA: hepatitis C virus ribonucleic acid; ACE: angiotensin-converting enzyme; Sil-2R: soluble interleukin-2 receptor; β-D-glucan, Beta-Glucan; ANA: antinuclear antibody

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Kobe Asahi Hospital.

Informed Consent: N / A.

Peer-review: Externally peer-reviewed.

Author Contributions: Kim SK compiled the manuscript; Hayashi Y examined pathology of the specimen; Kim SR, Imoto S and Kim CW observed the clinical course of the patient.

Acknowledgements: We are indebted to Dr Akihiko Ikeda for valuable scientific advice, and Ms Mika Matsui for assistance in the preparation of the manuscript.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

Soo Ki Kim[1], Soo Ryang Kim[1], Susumu Imoto[1], Chi Wan Kim[1], Yoshitake Hayashi[2]

[1]Department of Gastroenterology, Kobe Asahi Hospital, Kobe, Japan
[2]Division of Molecular Medicine and Medical Genetics, Department of Pathology, Kobe University Graduate School of Medicine, Kobe, Japan

REFERENCES

1. Baughman RP. Sarcoidosis. Usual and unusual manifestations. Chest 1988; 94: 165-70.
2. Abdi EA, Nguyen GK, Ludwig RN, Dickout WJ. Pulmonary sarcoidosis following interferon therapy for advanced renal cell carcinoma. Cancer 1987; 59: 896-900. [CrossRef]
3. Ravenel JG, McAdams HP, Plankeel JF, Butnor KJ, Sporn TA. Sarcoidosis induced by interferon therapy. AJR Am J Roentgenol 2001; 177: 199-201. [CrossRef]
4. Trien R, Cooper CJ, Paez D, Colon E, Ajmal S, Salameh H. Interferon-alpha-induced sarcoidosis in a patient being treated for hepatitis C. Am J Case Rep 2014; 15: 235-8. [CrossRef]
5. Goldberg HJ, Fiedler D, Webb A, Jagirdar J, Hoyumpa AM, Peters J. Sarcoidosis after treatment with interferon-alpha: a case series and review of the literature. Respir Med 2006; 100: 2063-8..

Address for Correspondence: Soo Ryang Kim
E-mail: asahi-hp@arion.ocn.ne.jp
Received: October 3, 2016 **Accepted:** October 9, 2016
Available Online Date: December 21, 2016

• Available online at www.turkjgastroenterol.org • DOI: 10.5152/tjg.2016.0433