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CT (Emotion
and Sensation; Siemens, Erlangen, Germany)
(Ultravist 300, Schering, Seoul,
Korea) 150 mL 3.5 mL
(Medrad, Pittsburgh, PA, U.S.A.)

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isoniazid (Yuhan - zid; Yuhan, Seoul, Korea),
 rifampin (Yuhan), ethambutol (Myambutol; Yuhan),
 pyrazinamide (Yuhan)

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Table 1. Features of 11 Patients with a Paradoxical Response to Antituberculous Medication for Abdominal Tuberculosis

Patient No./Age (y)/Sex	Features at Time of Initial Presentaion			Features of New Lesions at Follow-up		
	CT Findings	Biopsy Results	Interval (mo) between Initiation of Therapy and Detection Of New Lesions/ Improvement of New Lesions/ Final Follow-up	CT Findings	Biopsy Results	Final outcome
1/57/F	Ascites, mesenteric tuberculous lymphadenitis, bilateral pleural effusion, tuberculous meningitis	NA	First episode, 2/4/16 Second episode, 4/9/16	First episode, caseous abscess in the right perihepatic space, aggravation of mesenteric tuberculous lymphadenitis; Second episode, hepatic tuberculoma, colonic tuberculosis	NA	All disappeared
2/28/M	Tuberculous lymphadenitis in the retropancreatic, portocaval, common hepatic chains	NA	2/5/9	Aggravation of tuberculous lymphadenitis in the common hepatic chain, new occurrence in the deep mesenteric chain	Chronic inflammation	Disappeared
3/72/F	Tuberculous peritonitis	Epitheloid granuloma consistent with tuberculosis	10/16/57	Caseous abscess in the right subphrenic space, hepatic tuberculoma	NA	Left residual right hepatic caseous abscess
4/39/M	Tuberculous lymphadenitis in the retropancreatic, portocaval, common hepatic, mediastinal, bilateral hilar, and active pulmonary tuberculosis	NA	4/7/14	Aggravation of tuberculous lymphadenitis in the retropancreatic, portocaval, common hepatic	Epitheloid granuloma with caseous necrosis	Left residual nodal lesion
5/22/M	Tuberculous peritonitis	Epitheloid granuloma consistent with tuberculosis	4/8/12	Hepatic caseous necrosis	Caseous necrosis consistent with tuberculosis	Disappeared
6/40/M	Tuberculous peritonitis	Epitheloid granuloma consistent with tuberculosis	3/7/12	Caseous abscess in the right subphrenic space	Caseous necrosis consistent with tuberculosis	Disappeared
7/40/M	Tuberculous peritonitis, colonic and ileal tuberculosis	Epitheloid granuloma consistent with tuberculosis	3/6/12	Hepatic tuberculoma	Epitheloid granuloma consistent with tuberculosis	Disappeared
8/58/M	Ileal tuberculosis	Chronic granulomatous inflammtion	3/6/16	Cecal tuberculosis	Chronic granulomatous inflammtion	Disappeared
9/33/F	Tuberculous peritonitis, ileal tuberculosis, active pulmonary tuberculosis	Epitheloid granuloma consistent with tuberculosis	2/8/10	Aggravation of ileal tuberculosis	Epitheloid granuloma consistent with tuberculosis	Left residual ileal lesion
10/24/M	Tuberculous peritonitis, left pleural effusion	Epitheloid granuloma consistent with tuberculosis	4/9/10	Splenic tuberculoma	NA	Left residual splenic tuberculoma
11/70/F	Tuberculous peritonitis	Epitheloid granuloma consistent with tuberculosis	4/8/12	Caseous abscess in the right subphrenic space	NA	Disappeared

CT, computed tomography; F, female; M, Male; mo, months; NA, not applicable; y, year

16 (15.4%)

104

2

(8.0%)

10

3.8

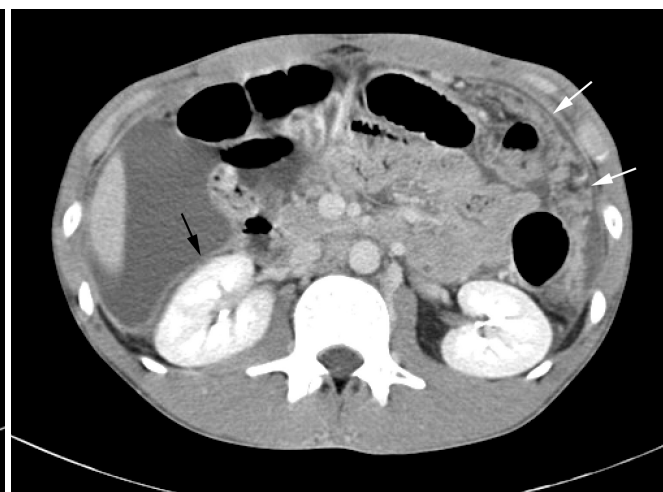
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A



B



C



D



E

Fig. 1. Patient 10. Paradoxical response to antituberculous medication for tuberculous peritonitis in a 24-year-old man.

A. Transverse contrast-enhanced abdominal CT scan obtained at initial presentation shows ascites (black arrow) and omental thickening (white arrow) in the left upper peritoneal cavity. The spleen shows no focal lesion.

B. CT scan 9.5 cm caudal to (A) shows thickening of greater omentum with increased attenuations (white arrows) and thickened parietal peritoneum (black arrow).

C. CT scan obtained at the same level as (A), 4 months after initiation of antituberculous medication shows new occurrence of a small, ill-margined, hypoattenuating lesion in the spleen (arrow).

D. CT scan obtained at the same level as (B), 4 months after initiation of antituberculous medication shows complete resolution of omental thickening and ascites.

E. CT scan obtained at the same level as (C), 9 months after same medication shows small residual lesion in the spleen (arrow).



Fig. 2. Patient 2. Paradoxical response to antituberculous medication for tuberculous lymphadenitis in a 28-year-old man. **A, B.** Transverse contrast-enhanced T1-weighted images obtained at initial presentation show enlarged lymph nodes with non-enhancing necrotic components in the common hepatic and retropancreatic region (arrows). **C.** CT scan obtained at the same level as (B), 2 months after initiation of antituberculous medication shows slight decrease of retropancreatic lymphadenopathy (black arrow) and new occurrence of deep mesenteric lymphadenopathy (white arrow). **D.** CT scan obtained at the same level as (C), 5 months after same medication shows complete resolution of deep mesenteric lymphadenopathy and more decrease of retropancreatic lymphadenopathy.

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(5).

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(highly active

antiretroviral therapy)

- 604

Paradoxical Response During Antituberculous Treatment for Abdominal Tuberculosis¹

Ji Young Kim, M.D., Jung Hyeok Kwon, M.D., Mi Jeong Kim, M.D., Hyuk Won Chang, M.D.,
Jae Seok Hwang, M.D.², Kwang Bum Cho, M.D.², Kyung Sik Park, M.D.²,
Byoung Kuk Jang, M.D.², Woo Jin Chung, M.D.²

¹Department of Diagnostic Radiology, Dongsan Medical Center, Keimyung University School of Medicine

²Department of Internal Medicine, Dongsan Medical Center, Keimyung University School of Medicine

Purpose: The purpose of our study was to evaluate clinical and CT findings of paradoxical response during treatment for abdominal tuberculosis.

Materials and Methods: Authors reviewed the patient records of 138 patients with abdominal tuberculosis during a recent 6-year period and we selected 11 patients with a paradoxical response. The CT findings and pathologic findings of the initial lesions and new lesions were reviewed. The intervals between initiation of therapy and the detection of new lesions, improvement of new lesions and the final follow-up were evaluated.

Results: At the initial presentation, we identified tuberculous peritonitis in 8 patients, tuberculous lymphadenitis in 3 patients and ileocolic tuberculosis in two patients. New lesions were identified at 2 - 10 months (mean: 3.8 months) after the initiation of therapy and following improvement of the initial lesions. The new lesions were perihepatic caseous abscess ($n=4$), hepatic tuberculoma ($n=3$), hepatic caseous abscess ($n=1$), tuberculous lymphadenitis ($n=3$), ileocolic tuberculosis ($n=3$), and splenic tuberculoma ($n=1$). Improvement of new lesions was noted at 4 - 14 months (mean: 7.6 months). At the final follow-up of seven patients, the new lesions disappeared and four patients still had small residual lesions.

Conclusion: New lesions that develop in a patient with initial improvement should be considered a paradoxical response that will ultimately improve with continuation of the original medication.

Index words : Tuberculosis
Tuberculosis, gastrointestinal

Address reprint requests to : Jung Hyeok Kwon, M.D., Department of Diagnostic Radiology, Dongsan Medical Center,
Keimyung University School of Medicine, 194 Dongsan-dong, Jung-gu, Daegu 700-712, Korea.
Tel. 82-53-250-7770 Fax. 82-53-250-7766 E-mail: kjh2603@dsmc.or.kr