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Ileal Ulcer Perforation Caused by Non-Tuberculous Mycobacterial Infection in HIV Infected Patient: A Case Report

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Abstract

Introduction: **One of the common opportunistic infections in HIV infected patients in Thailand is Mycobacterium Tuberculosis. The most common manifestation is pulmonary infection. In HIV infected patients with acute abdominal condition, gastrointestinal tuberculosis is usually one of the differential diagnoses, and sometimes can mislead the diagnosis of non-tuberculous mycobacterial (NTM) infection.**

Case Report: **A 36-year-old male presented at Bamrasnaradura Institute with chronic diarrhea, fever and weight lost. He was a homosexual and had had history of HIV infection for 2 years without treatment. The provisional diagnosis was chronic diarrhea with HIV infection. His stool was sent for modified acid fast staining and culture for mycobacterium. The modified acid fast staining result was positive. Gastrointestinal tuberculosis was then diagnosed and he was treated by anti-tuberculosis drugs. After four weeks of anti-tuberculosis drugs, he was started on anti-retroviral drugs. Five months after the treatment, he came back with severe abdominal pain and signs of generalized peritonitis. He underwent emergency abdominal exploration which revealed a short segment of ileal stricture, a perforated ileal ulcer 3 feet proximal to ileo-caecal valve with multiple mesenteric lymphadenopathy. Right half colectomy was performed. The patient went home seven days later without complications. Histopathological examination revealed subacute ulcerated areas with perforation in the terminal ileum. Chronic caseating granulomatous inflammation suggestive of mycobacterial infection was also found. After reviewing this patient's medical records and laboratory results, we found that his stool culture for mycobacterium on his first visit was positive for non-tuberculous mycobacterium.**

Discussion: **Non-tuberculous mycobacterial gastrointestinal infection can cause similar manifestations as of Mycobacterium Tuberculosis gastrointestinal infection. Stool examination for modified acid fast staining only may not be enough to give the correct diagnosis. Stool culture or stool PCR for Mycobacterium Tuberculosis should be performed to confirm the diagnosis of gastrointestinal mycobacterial infection, because the medications are different for different species of Mycobacterium.**

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Introduction

One of the common opportunistic infections in HIV infected patients in Thailand is Mycobacterium Tuberculosis. The most common manifestation is pulmonary infection. Other manifestations of tuberculosis and coexisting infection with other diseases can also be found.[1,2] In HIV infected patients with acute abdominal condition, gastrointestinal tuberculosis is usually one of the differential diagnoses, and sometimes can mislead the diagnosis of non-tuberculous mycobacterial (NTM) infection. We reported here a case of Ileal ulcer perforation caused by non-tuberculous mycobacterial infection in HIV infected patient.

Case Report

A 36-year-old male presented to the out-patient clinic at Bamrasnaradura Institute with chronic diarrhea and fever for 2 months duration. He lost 4 kgs during the previous month. He was a homosexual and had had history of HIV infection for 2 years without taking any anti-retroviral drugs. Physical examination revealed a well built male with moderate degree of dehydration. The provisional diagnosis was chronic diarrhea with HIV infection. His stool was sent for modified acid fast staining and culture for mycobacterium. The modified acid fast staining result was positive (Figure 1). Gastrointestinal tuberculosis was then diagnosed and he was treated by anti-tuberculosis drugs (I300R600Z1500E8000). He developed drug induced hepatitis two weeks after treatment with anti-tuberculosis drugs. The anti-tuberculosis drugs were then changed to E800O600. I300 was re-challenged one week later. After four weeks of anti-tuberculosis drugs, he started on anti-retroviral drugs (GPOVIR). His baseline CD4+ was 17 cumm (1%).

Five months after the treatment and with regular follow-up, he came back with severe abdominal pain for one day with signs of generalized peritonitis. His acute abdominal films revealed intra-abdominal free air below the diaphragm (Figure 2, 3). He underwent emergency abdominal exploration. Intra-operative finding revealed a short segment of ileal stricture, a perforated ileal ulcer 3 feet proximal to ileo-caecal valve, with multiple mesenteric lymphadenopathy (Figure 4). Right half colectomy was performed. The patient went home seven days later without complications. Histopathological examination revealed subacute ulcerated areas with perforation in the terminal ileum. Chronic caseating granulomatous inflammation suggestive of mycobacterial infection was also found (Figure 5).

After reviewing this patient's medical records and laboratory results, we found that his stool culture for mycobacterium on his first visit was positive for non-tuberculous mycobacterium.

Discussion

Mycobacterium is a large family of bacteria, with only Mycobacterium tuberculosis (MTB) that usually

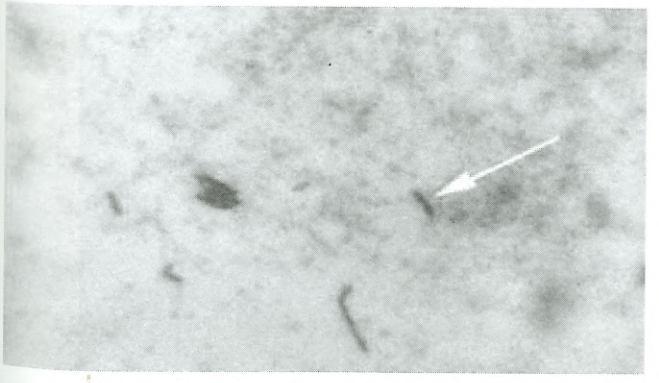

Figure 1 Stool exam revealing positive modified acid fast staining

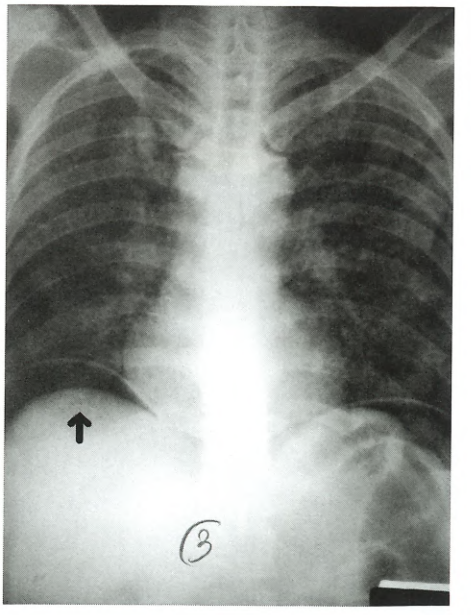

Figure 2 Acute abdomen films showing intra-abdominal free air below diaphragm

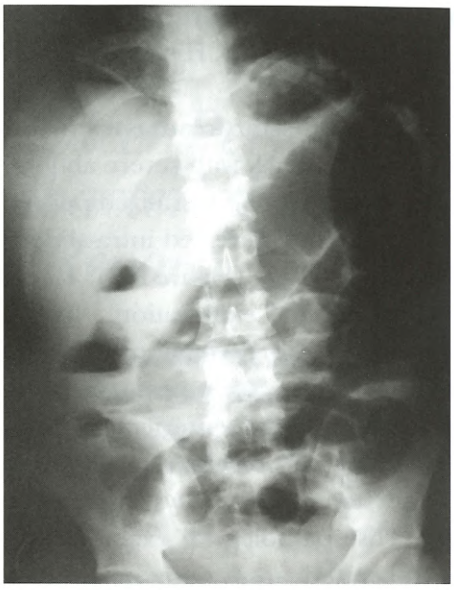

Figure 3

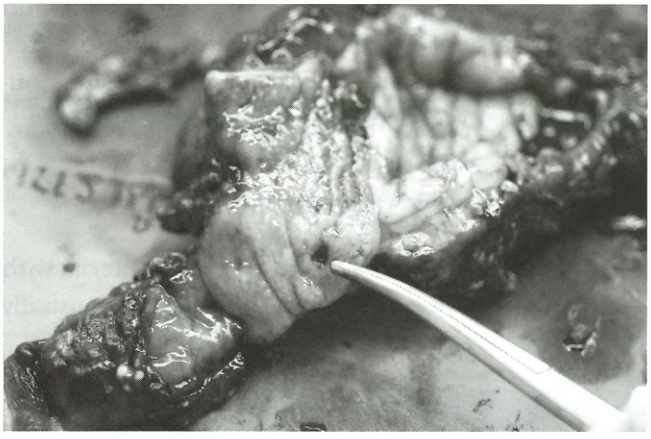

Figure 4 Specimen of right hemicolectomy showing ileal ulcer

causes disease in human. However, in HIV era, non-tuberculous mycobacterium can also cause a disease in AIDS patients. In gastrointestinal infection, one of the commonly found species is atypical mycobacterium, which is usually synonymous with Mycobacterium avium complex (MAC).[3] The gold standard in the diagnosis of tuberculosis is by cultural identification of MTB in liquid (2 to 4 weeks) or solid (3 to 5 weeks) media. A culture will be considered negative only if no bacteria are identified after 6 to 8 weeks. Non-tuberculous mycobacterium usually grows much faster than MTB and can be identified in a specialized laboratory oftenly within two weeks. For rapid diagnosis, mycobacterial DNA can be detected by PCR in biological specimens.[4-6] In uncomplicated cases, tuberculosis can be treated successfully with a standard 6-month course. First-line drugs include rifampin, isoniazid, ethambutol, pyrazinamide and streptomycin.[7] The treatment of MAC infection detected from culture is complex. Similar to tuberculosis, monotherapy does not suffice. Since 1996, many clinicians prefer the combination of a macrolide (clarithromycin or azithromycin) with ethambutol and rifabutin (Shafran 1996).[8-11] In the past, this treatment was given lifelong. Today it is generally considered sufficient to treat for at least six months and until a highly active antiretroviral therapy (HAART)-induced increase in the CD4 count to above 100 cells/cumm has been achieved.[12,13]

From the above, treatments of two types of Mycobacterium are different. There are only some kinds of drugs that can treat both species. Incorrect diagnosis may mislead to different antibiotics used. In

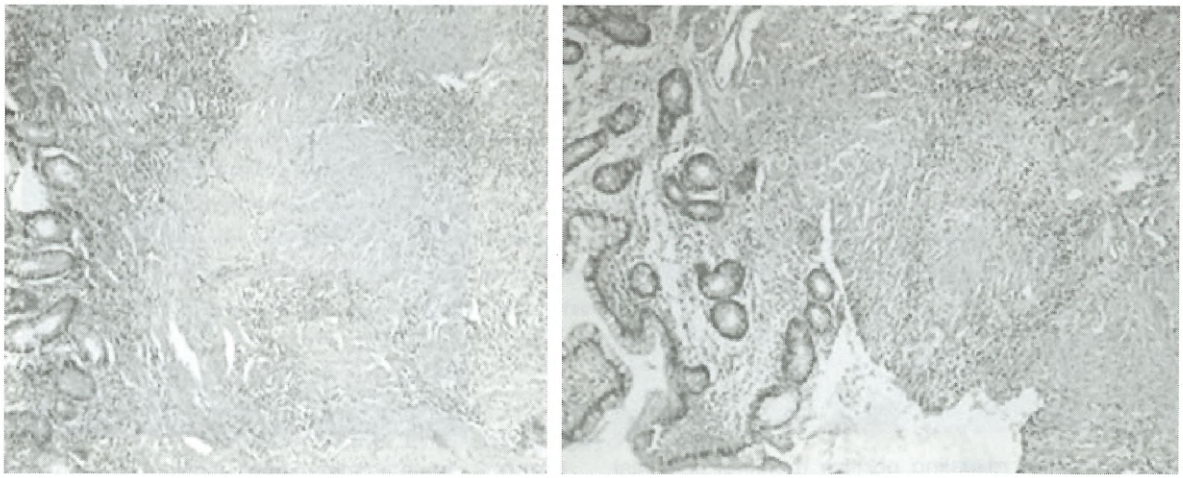

Figure 5 Chronic caseating granulomatous inflammation suggestive of mycobacterial infection

this case report, the patient had received antibiotics for the treatment of Mycobacterium tuberculosis, but he was infected by non-tuberculous mycobacterium. The course of the disease ran down and finally he developed ileal ulcer perforation.

Conclusions

Non-tuberculous mycobacterial gastrointestinal infection can cause similar manifestations as of Mycobacterium Tuberculosis gastrointestinal infection. Stool examination for modified acid fast staining only may not be enough to give the correct diagnosis. Stool culture or stool PCR for Mycobacterium Tuberculosis should be performed to confirm the diagnosis of gastrointestinal mycobacterial infection, because the medications are different for different species of Mycobacterium.

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