

Case Report

Open Access

Intestinal Tuberculosis in a Liver Transplant Patient

Rana M Ballo*, Benjamin Veenstra, David M Simon, Sheila Eswaran and Edie Y Chan

Rush University Medical Center, Division of Transplant Surgery and Section of Hepatology Chicago, Illinois, USA

Abstract

Intestinal tuberculosis (TB) is an uncommon manifestation of tuberculosis, especially in Western countries, and is most often seen in immigrant and immunosuppressed patients. The incidence of intestinal TB has not been well documented for liver transplant patients in Western countries. This case report discusses the complications of intestinal TB in a liver transplant patient and addresses the importance of identifying the necessity for and timing of surgery. Given the immunosuppressed state of these patients, the expedient diagnosis and treatment of this potentially fatal condition is critical.

Keywords: Intestinal tuberculosis; Lymphoma; Chest X-ray; Pulmonary lesions

Case Description

A 52 year-old Filipino male with a past medical history of Hepatitis B and C, who underwent orthotopic liver transplantation in 2009, was admitted three years post-transplant with abdominal pain and lower gastrointestinal bleeding. An upper endoscopy was performed which did not reveal a source of bleeding. On colonoscopy, an ileocecal valve (ICV) ulcer was found and biopsies demonstrated necrotizing granulomas with no malignancy, acid-fast bacilli or cytomegalovirus [1]. Initially his symptoms resolved, until six months later when he developed recurrent abdominal pain, diarrhea and increasing weight loss, and underwent repeat colonoscopy. The colonoscopy demonstrated a non-healing 25% circumferential ulcer at the ICV and biopsies again showed inflammation, no acid-fast bacilli or cytomegalovirus (Figure 1). A CT scan was performed demonstrating marked thickening with adjacent mesenteric inflammation and edematous changes of terminal ileum, cecum, appendix and proximal ascending colon. No other abnormalities were identified in the abdomen or pelvis. A chest x-ray demonstrated no lymphadenopathy or pulmonary lesions.

Given his persistent symptoms and the concern for primary malignancy, lymphoma, ischemia or infection, he underwent a right hemicolectomy. Intraoperatively, there were white nodular implants along the entire small bowel (Figures 2 and 3), which were biopsied and revealed no evidence of malignancy on frozen section. The ileocecal area had a firm mass, which was resected without complication. Final pathology of the ileocecal area showed severe and extensive transmural enterocolitis with numerous necrotizing granulomas (Figure 4). Cultures from the small bowel implants grew drug susceptible *Mycobacterium tuberculosis*. He was started on quadruple drug therapy for TB, including ethambutol 1200 mg daily, pyrazinamide 1500 mg

daily, isoniazid 300 mg daily, and rifampin 600 mg daily, in addition to pyridoxine 50 mg daily. His tacrolimus levels were monitored closely and adjusted given its increased metabolism while on rifampin.

The patient continued regular follow-up with Hepatology and Infectious Disease. His tacrolimus levels and liver function were monitored closely. The diarrhea he was experiencing before surgery improved within 1-2 weeks post-operatively. He completed two months of ethambutol and pyrazinamide, and nine months of isoniazid and rifampin. A colonoscopy performed one year after hemicolectomy demonstrated only post-surgical changes. Biopsy specimens from ileum and colon revealed unremarkable mucosa without granulomas. Tissue mycobacterial cultures were negative.

Discussion

Intestinal TB is the sixth most common extrapulmonary site of infection [2]. For patients who are immunosuppressed, such as transplant patients, the manifestations of this disease can be severe. Although any site of the gastrointestinal tract can be affected, the ileocecal area is the most common [2]. Patients can present with a variety of nonspecific symptoms, so it is important to keep this diagnosis in mind, especially

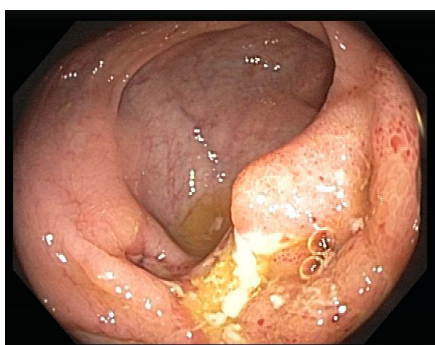


Figure 1: Colonoscopy with ileocecal valve ulcer.

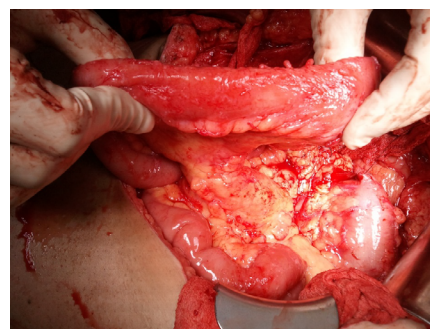


Figure 2: Intraoperative with numerous small bowel implants.

***Corresponding author:** Rana M Ballo, Rush University Medical Center, Division of Transplant Surgery and Section of Hepatology Chicago, Illinois, USA, Tel: +1 312-942-5000; E-mail: Rana_Ballo@rush.edu

Received May 08, 2014; **Accepted** May 28, 2014; **Published** May 30, 2014

Citation: Ballo RM, Veenstra B, Simon DM, Eswaran S, Chan EY (2014) Intestinal Tuberculosis in a Liver Transplant Patient. J Clin Case Rep 4: 364. doi:[10.4172/2165-7920.1000364](https://doi.org/10.4172/2165-7920.1000364)

Copyright: © 2014 Ballo RM, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



Figure 3: Gross specimen with ulceration in ileocecal junction.

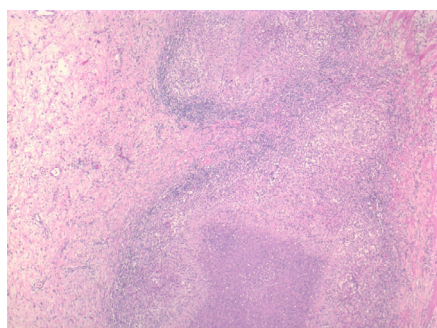


Figure 4: Histopathology with necrotizing granulomas.

in transplant and other immunosuppressed patients.

Making the diagnosis of intestinal TB can be challenging. Symptoms can be non-specific, including abdominal pain, fever, weight loss, diarrhea and anorexia [3]. Colonoscopy can reveal a non-specific ulcer, and pathology typically reveals non-caseating granulomas, not always with the presence of acid-fast bacilli. Therefore, it can be difficult to definitively obtain a diagnosis of intestinal TB using conventional histopathology and culture. As a result, molecular analysis techniques have been used to try and improve the efficiency and accuracy of diagnosis. There has been literature published on detecting tubercle bacilli DNA by polymerase chain reaction, as well as success with *M. tuberculosis* monoclonal antibody staining [4,5].

It is not uncommon to have isolated intestinal TB with no signs of infection elsewhere in the body. The incidence of active TB infections in liver transplant patients is estimated around 1%, with this subset of patients having an 18-fold increased prevalence compared to the general population [6]. Most cases of active tuberculosis that occur post liver transplant represent reactivation disease from old foci of infection. Identifying patients at risk for reactivation disease is very important to determine whether treatment for latent TB infection should be pursued pre-transplant and is standard of care. The risks of post-transplant treatment include risk of drug-induced hepatotoxicity, specifically from isoniazid, which was reported to be as high as 39% in one case series [7].

Intestinal TB in liver transplant patients is extraordinarily rare. There is only one previous case report in the literature of a patient admitted with abdominal pain, fever and diarrhea [8]. She was diagnosed with intestinal TB after a bowel resection was performed. She was started on anti-TB therapy, but died of septic shock post-operatively. Our patient is the only reported liver transplant patient who survived after surgical resection was performed for intestinal TB.

This case illustrates that tuberculosis should be considered in the differential diagnosis in liver transplant recipients with ileocecal obstruction. Identifying the need for surgery to prevent potentially fatal complications is crucial in this immunosuppressed population. Surgery can also aid in obtaining a definitive diagnosis, which is important given the effects of anti-TB drug therapy on liver function and immunosuppressive medication levels.

References

1. Chatzicostas C, Koutroubakis IE, Tzardi M, Roussomoustakaki M, Prassopoulos P, et al. (2002) Colonic tuberculosis mimicking Crohn's disease: case report. BMC Gastroenterology 2:10.
2. Giouleme O, Paschos P, Katsaros M, Papalexi F, Karabatsou S, et al. (2011) Intestinal tuberculosis: a diagnostic challenge – case report and review of the literature. Eur J Gastroenterol Hepatol 23: 1074-1077.
3. Misra SP, Misra V, Dwivedi M, Gupta SC (1999) Colonic tuberculosis: Clinical features, endoscopic appearance and management. J Gastroenterol Hepatol 14: 723-729.
4. Jin XJ, Kim JM, Kim HK, Kim L, Choi SJ, et al. (2010) Histopathology and TB-PCR kit analysis in differentiating the diagnosis of intestinal tuberculosis and Crohn's disease. World J Gastroenterol 16: 2496-2503.
5. Ihama Y, Hokama A, Hibiya K, Kishimoto K, Nakamoto M, et al. (2012) Diagnosis of intestinal tuberculosis using a monoclonal antibody to *Mycobacterium tuberculosis*. World J Gastroenterol 18: 6974-6980.
6. Holty JE, Gould MK, Meinke L, Keffe EB, Ruoss SJ (2009) Tuberculosis in liver transplant recipients: a systematic review and meta-analysis of individual patient data. Liver Transplantation 15: 894-906.
7. Bodro M, Sabé N, Santín M, Cruzado JM, Lladó L, et al. (2012) Clinical features and outcomes of tuberculosis in solid organ transplant recipients. Transplant Proc 44: 2686-2689.
8. Ozbülül NI, Ozdemir M, Turhan N (2008) CT findings in fatal primary intestinal tuberculosis in a liver transplant recipient. Diagn Interv Radiol 14: 221-224.