

# Hepatosplenic candidiasis during cancer chemotherapy

## Introduction

A 42-year old male with B-cell acute lymphoblastic leukemia on cytotoxic chemotherapy presented with high grade fever and fatigue. He had received daunorubicin, L-Asparaginase, vincristine and prednisolone as part of chemotherapy maintenance protocol 2-months back. In his last review 2-weeks back he had pancytopenia with an absolute neutrophil count of  $200/\text{mm}^3$ , but was asymptomatic. On examination he was febrile with a temperature of  $103^{\circ}\text{F}$  and was hemodynamically stable. Physical examination revealed severe pallor and mild hepatomegaly. Investigations showed a hemoglobin of  $6.6\text{g/dL}$ , WBC count of  $1600/\text{mm}^3$  with 44% polymorphs and 46% lymphocytes, neutrophil count of  $700/\text{mm}^3$  and platelet count of  $7000/\text{mm}^3$ . His alkaline phosphatase was remarkably high with  $345\text{IU/L}$ , while rest of the liver function tests were normal. Blood cultures were sterile. An ultrasound of the abdomen was normal. He was started on piperacillin-tazobactam and amikacin, but had little response. A computed tomography (CT) of the abdomen was done and showed numerous non-enhancing lesions in the liver and spleen with few of them showing conglomeration and subcapsular extension (Figure 1). A biopsy from the lesions was deferred due to thrombocytopenia. The clinical and radiological features were suggestive of hepatosplenic candidiasis. He was started on IV Amphotericin-B  $50\text{mg}$  IV once daily and supported with blood transfusions. His fever subsided, alkaline phosphatase values returned to normal level and cytopenias resolved. He was later discharged on oral fluconazole.

Hepatosplenic candidiasis is due to disseminated infection by candida. It occurs in patients receiving cytotoxic chemotherapy, who have just recovered from a neutropenia.<sup>1</sup> Candida are normal commensals of the gastrointestinal tract. Neutropenia together with break in mucosal integrity during chemotherapy facilitates candida to enter the bloodstream from the gastrointestinal tract to reach the portal system, liver and spleen. High spiking temperature in a patient who just recovered from neutropenia with elevation in alkaline phosphatase should alert the clinician to the possibility of hepatosplenic candidiasis. As the neutrophil counts recover, a strong inflammatory response occurs around the fungi causing immune reconstitution inflammatory syndrome.<sup>2</sup> CT or magnetic resonance imaging reveals classical fungal microabscesses, together with the clinical background is sufficient to make the diagnosis. Biopsy is the gold standard to establish the diagnosis, but is often not possible due to thrombocytopenia as in our patient. Prolonged treatment with antifungal agents is often necessary for complete cure.<sup>3</sup>

## Acknowledgments

None.

## Conflicts of interest

The author declares there is no conflicts of interest.

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Volume 8 Issue 6 - 2018

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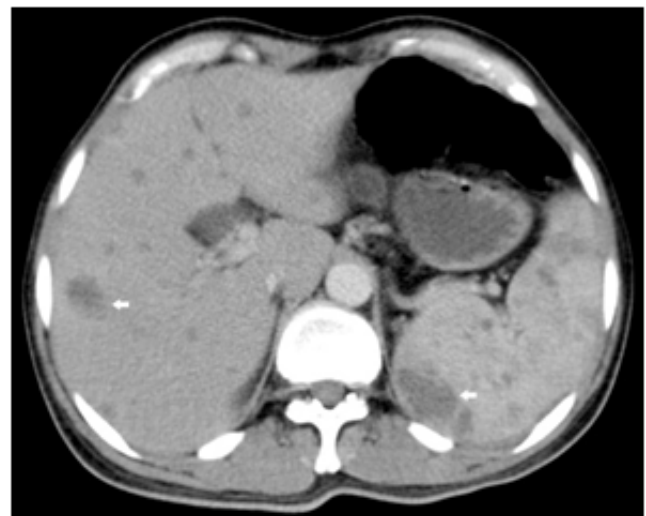
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**Received:** April 26, 2018 | **Published:** November 27, 2018



**Figure 1** Computed Tomography in Hepatosplenic Candidiasis. Axial contrast enhanced CT showing numerous non-enhancing hypodense lesions in the liver and spleen typical of hepatosplenic candidiasis (arrows).

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