Acute Colonic Perforation with Septic Shock Secondary to Disseminated Histoplasmosis in a Autologous Bone Marrow Transplant Recipient

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Background

- *Histoplasma capsulatum* is an opportunistic pathogen which can lead to a wide variety of clinical presentations in the immunocompromised host.
- Post-transplant histoplasmosis in hematopoietic cell transplant recipients is exceedingly rare with an **incidence of <1%**.
- We present a case of acute caecal perforation resulting from disseminated histoplasmosis in a patient who had undergone autologous bone marrow transplant for plasma cell dyscrasia.

Case

- 71-year-old male with a past medical history of hypothyroidism, multiple myeloma status post autologous bone marrow transplant in 2018 presented with a chief complaint of progressive weakness associated with shortness of breath.
- Review of systems was pertinent for anorexia, fatigue, and shortness of breath. Patient denied any fevers, chills, or cough.
- Patient denied any similar symptoms in the past and denied any aggravating/alleviating factors.

Decision-Making

- Chest Xray on admission was largely unremarkable, revealing minimal subsegmental atelectatic changes at the right lung base but no focal areas of acute airspace disease. (Figure 1)
- Given patient's history of malignancy and high clinical suspicion for pulmonary embolus (PE), a CT angiogram of the chest/thorax was obtained which was negative for PE but did reveal a **small cavitary lesion in the left lower lobe**. (Figure 2)
- Patient was empirically initiated on cefepime and micafungin due to suspicion for disseminated fungal infection. On hospital day 3, patient acutely decompensated and went into **septic shock**. Physical exam findings were consistent with an **acute abdomen**.
- CT imaging of the abdomen and pelvis revealed free intra-abdominal air concerning for bowel perforation. (Figure 3) Patient was taken for emergent exploratory laparotomy with right hemicolectomy for perforated cecum.
- Post-operative pathology evaluation revealed **diffuse *Histoplasma capsulatum*** involving the cecum. (Figures 4 and 5)

Relevant Imaging Findings

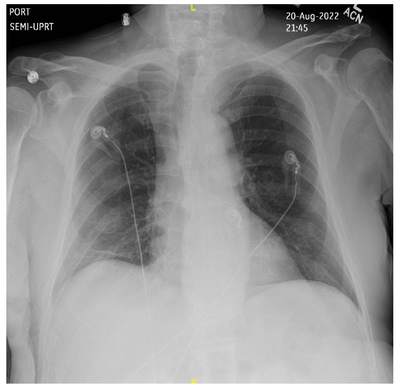

Figure 1: Chest x-ray on day of admission.

Figure 2: CT chest demonstrating small cavitary lesion in the left lower lobe (arrow).

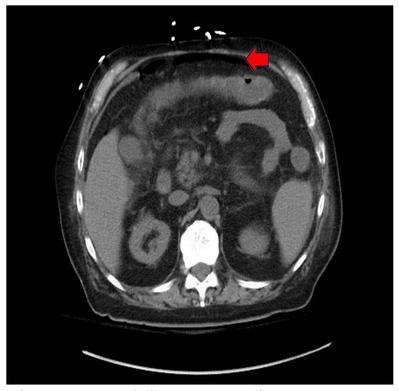

Figure 3: CT abdomen revealing intraabdominal free air (arrow).

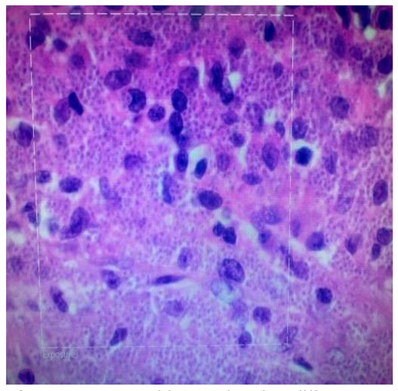

Figure 4: Cecum biopsy showing diffuse Histoplasma capsulatum (H&E stain).

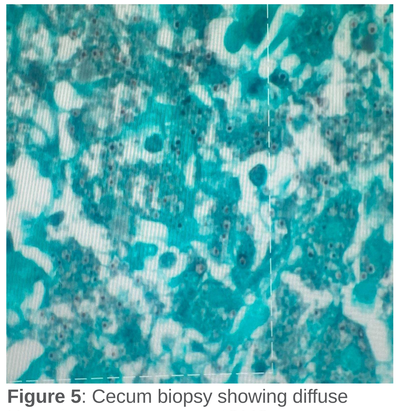

Figure 5: Cecum biopsy showing diffuse Histoplasma capsulatum (GMS stain).

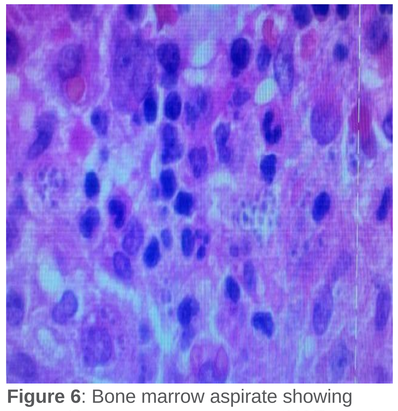

Figure 6: Bone marrow aspirate showing diffuse Histoplasma capsulatum (H&E stain).

Decision-Making (contd)

- Subsequent bone marrow aspiration also revealed diffuse *Histoplasma capsulatum*. (Figure 6)
- Patient's post-operative course has been complicated by the **persistence of septic shock and metabolic encephalopathy**.

Discussion

- Histoplasmosis infection in immunocompetent patients is typically asymptomatic whereas immunocompromised patients can often experience **severe, life-threatening disease**.
- Endemic areas within the continental United States include the Mississippi and Ohio river valleys.
- Disseminated Histoplasmosis is an exceedingly rare pathology in patients who have previously undergone autologous hematopoietic cell transplant.
- Acute colonic perforation has been rarely reported in immunocompromised patients and should be in the differential of patients who are **septic and immunocompromised**. Occasionally, life threatening fungal disease may present in non endemic areas, such as in this patient residing in the Southwestern United States.
- Current IDSA guidelines recommend treatment with amphotericin B for 1-2 weeks, followed by oral itraconazole for at least the following 12 months. The American Society of Transplantation guidelines also recommend a treatment duration of at least 12 months.
- **Prognosis for patients with disseminated histoplasmosis remains grim despite maximal intervention**.

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