Gastric Mucormycosis Presenting as Perforated Gastric Ulcer in Pregnancy: A Case Report

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Gastrointestinal mucormycosis is being diagnosed recently with increasing incidence. It has a subtle onset, but it is rapidly progressive, often overlooked until it runs its fatal course. We report a case of a 36 weeks primigravida, without any comorbidities who presented with fever and abdominal pain. Clinical examination was unremarkable and initial labs revealed altered liver function tests and coagulation profile. A diagnosis of acute fatty liver of pregnancy was made and managed. Emergency lower segment Cesarean section was done, but the patient developed haematemesis post-operatively. As initial measures for haematemesis failed, an emergency laparotomy was done which revealed a perforated gastric ulcer and gastrectomy with jejunostomy was done. A biopsy was confirmed as mucormycosis. She was started on amphotericin B and broad spectrum antibiotics. After a prolonged course, despite surgical intervention, and antifungal therapy, the patient succumbed to the disease.

Keywords: Amphotericin B, Gastric ulcer, Gastrectomy, Mucormycosis, Pregnancy

INTRODUCTION

Mucormycosis is an invasive fungal infection of the order mucorales, whose incidence has increased considerably. Depending on its portal of entry and the eventual organ infected, it is categorized into rhino-orbital, pulmonary, gastrointestinal (GI), and other systems involvement is uncommon. There are several factors which make a patient susceptible to mucor infection such as diabetic ketoacidosis, neutropenia, and malnourishment.1 Mucormycosis of the GI tract may occur as the result of ingestion of fungal spores, with stomach being the common site.2 The underlying diseases of patients with GI mucormycosis have been diabetes mellitus, treatment with glucocorticoids, prematurity, and malnutrition in infants.

Mucormycosis invades the blood vessels locally thereby reducing tissue blood supply leading to eventual necrosis of the area, which further promotes growth. The fungal spores are normal environmental contaminants, but the central determinants which make a person susceptible to this infection are factors which prevent the body from eliminating the fungus and factors which help the fungus grow. The factors which prevent elimination of the fungus are those which impair phagocytosis such as steroids, elevated sugars, and malnutrition. The factors which promote growth are those who make free iron available to the fungus such as in diabetic ketoacidosis, other acidic states, and desferrioxamine treatment. Free iron is taken up by a substance produced by the fungus called rhizoferrin which is utilized for growth and metabolic function of the fungus.3

Various factors in pregnancy could necessarily make them susceptible to mucormycosis.4 Rhinocerebral mucormycosis in pregnancy has been reported in the literature.5–7 Pregnancy is an immunosuppressed state. Even though iron stores are depleted, free iron is more and oral iron supplements are provided.8 The incidence of gestation diabetes mellitus and malnourishment make them susceptible to GI form of mucormycosis. This explains the possible pathogenesis in pregnancy, but clinically the incidence in pregnancy is uncommon.

We report a case of gastric mucormycosis presenting as a gastric ulcer in a pregnant woman with no identifiable underlying predisposing factor.

CASE REPORT

A 29-year-old primigravida at 35 weeks presented with complaints of fever and difficulty in breathing...
for 2 days with preceding abdominal pain and dark colored urine for 1 week. She had associated sensation of decreased fetal movements with no history of skin rashes, cough with expectoration, bleeding per vaginum, loose stools, vomiting, reduced urine output, or any drug intake. Her first two trimesters were uneventful, with no evidence of elevated sugars or blood pressure, with timely immunization, and nutritional supplements. Examination revealed icterus and tenderness in the lower abdomen with uterus corresponding to 34 weeks. Initial labs revealed elevated total counts with altered liver function tests (elevated bilirubin, liver enzymes, and international normalized ratio). A diagnosis of acute fatty liver of pregnancy was made (with suggestive features in ultrasound abdomen, viral markers negative, and fever panel being normal). An emergency cesarean section was done. On the 3rd post-operative day, the patient had episodes of hematemesis. After resuscitative measures, an urgent upper GI endoscopy was done which revealed the presence of a giant ulcer (10 cm × 8 cm) in the lesser curvature of the stomach. After attempts to arrest bleeding failed, the patient underwent subtotal gastrectomy with gastrojejunostomy, jejunojejunostomy with feeding jejunostomy. Subsequently, the aspirate and the biopsy taken during the procedure revealed the presence of mucormycosis and amphotericin B was initiated with dose titration. Figure 1 reveals the resected stomach with a giant ulcer, Figure 2 reveals the sporozoites in lactophenol cotton mount and Figure 3 depicts the characteristic broad aseptate hyphae on microscopy.

In the subsequent course, the patient’s wound, urine, and blood cultures grew Klebsiella pneumoniae and antibiotics were initiated as per sensitivity pattern. Despite antibiotics, antifungal, and supportive measures the patient’s condition continued to deteriorate. She developed ascites and pleural effusion and on the 32nd post-operative day, the patient succumbed to the illness.

**DISCUSSION**

Mucormycosis in pregnancy is uncommon. Gastric mucormycosis in pregnancy with a giant ulcer is a rare occurrence. The present case was highlighted in view of an atypical presentation. Case reports of massive upper GI bleed with mucor have been published.9 Reports in a pregnant female is rare.10 Mucorales have the remarkable property to grow and germinate at extremely rapid rates when provided with the augmenting substrate. Mucormycosis at occult sites such as GI tract makes early diagnosis a near impossibility until the lesion presents itself explosively as by perforation or bleed. Furthermore, this case is remarkable on the count that the patient had no identifiable predisposing factor for mucormycosis infection. Once the diagnosis is established, aggressive treatment has to be initiated with surgical debridement and antifungal therapy. Identifying and treating the precipitating factors...
also plays a crucial role in the fight against this silent yet lethal infection.

CONCLUSION

This case highlights the need for swift early diagnosis with aggressive management. This also raises the question of the possibility of an unidentified factor, making apparently healthy patients susceptible to this malady.

REFERENCES