

Case Report

Mucormycosis of stomach

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ABSTRACT

Gastrointestinal mucormycosis is invasive fungal infection with very high mortality if not treated. Early diagnosis is critical. We managed a case of mucormycosis of stomach which was a diagnostic challenge. As symptoms are not specific an upper gastrointestinal endoscopy plays the most important role in the diagnosis of mucormycosis of stomach. Upon endoscopy it may be confused with food material (bread) or a foreign body (Bezoars). Diagnosis is easily missed unless there is very high index of suspicion. Surgical resection of involved organ in combination with systemic administration of amphoterecin B is treatment of choice.

Keywords: Mucormycosis, Gastrointestinal mucormycosis, Upper GI bleed, Stomach mucormycosis

INTRODUCTION

Mucormycosis is invasive fungal infection also known as zygomycosis. It is a serious life threatening infection. Mucormycosis predominantly affects immuno-compromised patients, diabetes being strongest risk factor. It is seen more commonly in males in their 4th decade. The disease is associated with very high mortality, more than 70%. The genera most commonly found in human infections are *Rhizopus*, *Mucor*, and *Rhizomucor*.¹

CASE REPORT

Our patient was 36 year old gentleman. Who was also a known case of uncontrolled diabetes mellitus diagnosed one month prior to the presentation and was put on metformin tablets then. Patient presented at emergency care with history of massive upper gastrointestinal bleeding. He also had complains of pain in the abdomen and frequent hiccups for one and half months. His appetite and weight were decreasing and had feeling of abdominal fullness and satiety.

On examination

Patient was conscious, oriented to time, place and person. Afebrile, malnourished (BMI 16) Pallor was present. Pulse- 105/min, Bp - 149/95 mm hg patient was also known case of hypertension. His abdomen was scaphoid; there was no swelling or tenderness. His renal functions and liver function tests were within normal limits. His hemoglobin was 7.0 gm/dl.

Hospital course

Patient was provided with emergent medical care including 2 units of packed RBC transfusion, nasogastric intubation and saline wash followed by upper GI endoscopy. Upon endoscopy reduced distensibility of stomach seen with food material. A large deep ulcer seen along greater curvature. White bread like material extending upto D2. Plan was to put patient on liquid diet for two days and repeat endoscopy. Upon repeat procedure, so called Bezoar was seen extending upto D2. Removal of bezoar attempted but failed.



Figure 1: Endoscopy showing foreign body/bezoar later confirmed as mucormycosis in final histopathology.



Figure 4: Gross specimen showing Mucormycosis involving posterior gastric wall.



Figure 2: Endoscopy showing ulcerated posterior gastric wall.

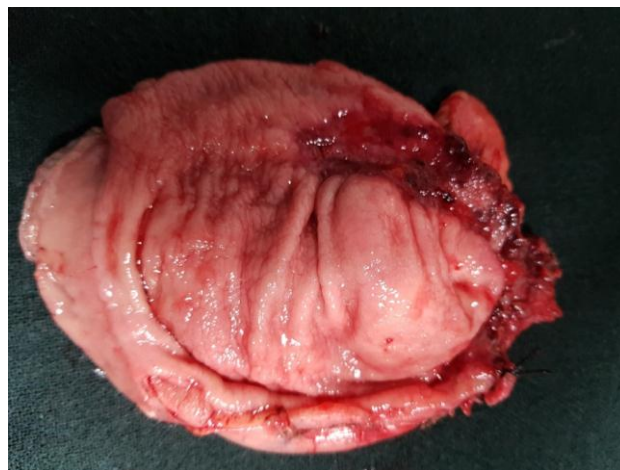


Figure 5: Cut open gastrectomy specimen.

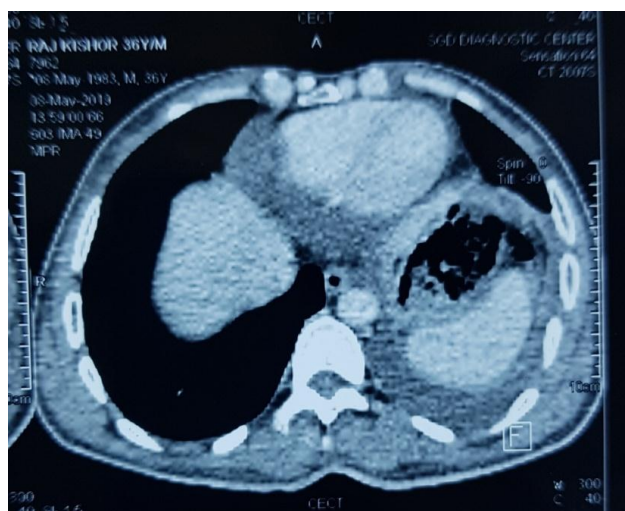


Figure 3: CT showing mild hepatosplenomegaly, left side pleural effusion and dilated portal vein.

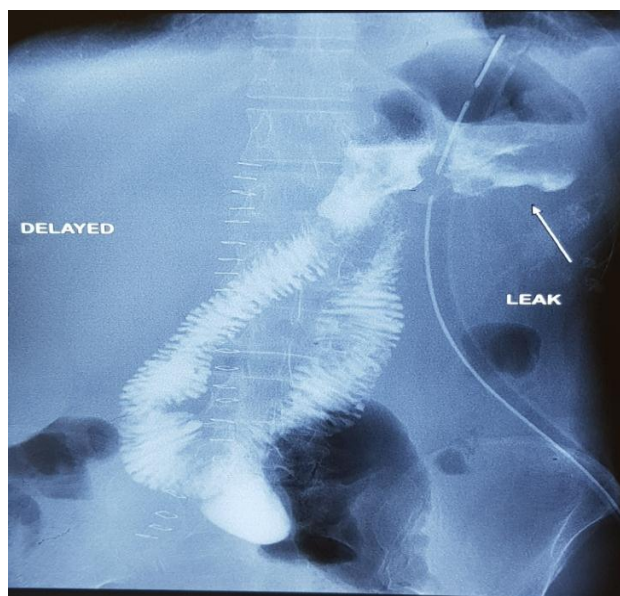


Figure 6: Gastrograffin study showing small leak.

Biopsy report (twice) showed presence of inflammatory granulation and no evidence of underlying malignancy. After multiple endoscopy and biopsy with working diagnosis of bezoar / malignancy patient was referred to surgery outpatient clinic.

To rule out malignancy contrast enhanced CT scan was performed which showed mild hepatosplenomegaly, left side pleural effusion and dilated portal vein and collaterals.

In view of inconclusive CT findings PET CT was performed, which showed non FDG avid subtle concentric thickening at gastro-esophageal junction and no metabolically active lesion.

With such findings of endoscopy, imaging and histopathology examinations decision to perform exploratory laparotomy was made. There was strong suspicion of gastric carcinoma in our mind.

Midline laparotomy was performed. There was no ascitis, lymphadenopathy. Liver was grossly normal. There were adhesions at the level of proximal stomach, GE junction with anterior abdominal wall and omentum. On separating the adhesions there was large perforation at the fundus, stricture at midbody and necrosed posterior wall of stomach posteriorly. Shiny yellowish white material which was reported as "Bread or Bezoar" was found constituting the entire posterior wall of stomach.

Nealy 80% of stomach was resected and gastrojejunostomy reconstruction was performed. Final histopathology showed feature compatible with mucormycosis of stomach. Patient was started on amphotericin B liposomal formulation. Patient also developed postoperative mild (50 ml) bile leak from the posterior wall of the stomach which was being managed non operatively by Nasojejunal feed.

DISCUSSION

Mucormycosis is life threatening invasive infection with very high mortality rate aggressive surgical debridement combined with intravenous amphotericin B treatment is treatment of choice. Rhino-orbital mucormycosis is most common invasive mucormycosis (44%) seen followed by cutaneous and renal mucormycosis (14-15%). Gastrointestinal mucormycosis is rare presentation (4%).^{2,3} During last 70 years, 200 cases of gastrointestinal mucormycosis have been reported. Among those reported cases intestine (64%) followed by stomach (33%) were most common organ affected. Other study mentioned stomach to be most common site of gastrointestinal mucormycosis.⁴ Proper surgical debridement combined with amphotericin B therapy offers best and only chance of cure. Even after surgical treatment and antifungal treatment mortality remains high (60-70%).⁵ In the past many antifungals have been tried but mucorales are resistant to each one. Only Amphotericin B is active

against the mucorales.⁶ Atleast 6 weeks of intravenous therapy is required. Nephrotoxicity is serious issue considered while on Amphotericin therapy. Nausea, vomiting, fever, hypertension may be common but daily potassium monitoring is mandatory due to the risk of severe hypokalemia.⁷ Our patient had frequent hypokalemia corrected by potassium syrup. Patient started developing rising creatine levels. We stopped Amphotericin by the end of 4 weeks and switched to alternate drug of choice posaconazol. Posaconazol is the alternate drug of choice with good response rate (upto 60%).⁸

Our patient was male 36 years of age, diabetic (sever uncontrolled). Who presented with hemetemesis, one of the sign of angio-invasive mucormycosis. Endoscopically, thought to have some Bezoar material and also suspicion of carcinoma due to presence of large ulcer. Had there been index of suspicion of angio-invasive mucormycosis in view of his comorbidity, presentation and gross endoscopic findings, preoperative diagnosis would have been possible. Patient is doing well after discharge from hospitals.

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Ethical approval: Not required

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