

Case Study

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A Rare Case of Gastric Perforation by *Candida albicans*: A Case Report

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ABSTRACT

Gastric perforation due to fungal microorganisms are unusually rare. Most of the cases of gastric perforation results arising out of complications associated with peptic ulcer diseases (PUD), regular use of non-steroidal anti-inflammatory drugs (NSAID) and gastric cancer. Here we are report a case of a 70 years old male who presented with severe abdominal pain in epigastric region without any history of use of NSAIDs, peptic ulcer disease and gastric neoplasm. The patient underwent an emergency exploratory laparotomy and gastric perforation was repaired by modified Graham's repair. The gastric perforation wedge biopsy revealed presence of growth of *Candida* and its spores and invading pseudo hyphae. Postoperative period was uneventful. He was treated with fluconazole and was discharged from hospital. It is thus necessary, to rule out not only gastric neoplasms or ulcer but also opportunistic infection such as *Candida* infection when upper gastrointestinal perforation is seen in an elderly patient, to significantly reduce the mortality.

Keywords

gastrointestinal tract, haemoglobin, ceftriaxone, laparotomy, histopathological examination

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Introduction

Perforation peritonitis is one of the most common presenting complaints in surgical emergency. *Candida albicans* is a ubiquitous fungus present in healthy individual and is normal commensal of the gastrointestinal tract. *Candida* infections generally developed in immunocompromised hosts with malignant tumours, diabetes and those patients who have

been on long term steroid, non-steroidal anti-inflammatory drugs (NSAID) or any immunosuppressant drugs.¹ *Candida* infection of gastrointestinal tract is rare as its pH is low but following long-term use of antacids, *Candida* infection found in gastric ulcer in healthy person. Gastric perforation caused by *Candida albicans* is very rare and it is seen mainly in immune compromised and debilitated patients.

Case History

A 70 years old male presented in emergency ward with abdominal pain since 5 days with waxing and waning vomiting associated with abdominal distention and constipation. There was no history of hypertension, diabetes or tuberculosis. He was a non-smoker with occasional alcohol intake. On admission, he had the features of septicemia such as paleness, tachypnea, tachycardia (116 beats/min.), fever and hypotension. On abdominal examination, tenderness and guarding was present all over abdomen with absent liver dullness. The chest X-ray and X-ray abdomen in erect view demonstrated gas under right hemidiaphragm. An impression of secondary peritonitis was diagnosed. His pre-operative investigation were haemoglobin 10.2 gm/dl, total count was 15,400/cumm with predominance of neutrophil (81%), serum electrolyte concentration- sodium 138 mmol/L, potassium 4.1 mmol/L, bicarbonate 20 mmol/L and serological tests for HIV, hepatitis B and C were negative. After resuscitation with intravenous fluids and under the cover of intravenous ceftriaxone and metronidazole, emergency laparotomy was done. A perforation of size 0.5 cm x 0.5 cm in the antrum of stomach was repaired with modified Graham's repair. A perforation edge biopsy was done and tissue was sent for histopathological examination. 2.5 litres of bilious fluid was aspirated and sent for culture. Histopathological examination revealed the presence of fungal pseudohyphae. (Fig. 1) Periodic Acid Schiff's (PAS) staining showed a positive staining in these pseudo-hyphae suggestive of a Candida infection. Culture of the fluid in Sabouraud's dextrose agar revealed colonies of Candida species (Fig. 2) which was later identified as *Candida albicans*. (Fig. 3) Bacterial culture was sterile. Postoperative period was uneventful. Patient was eventually discharged on day 10 with

advice of anti-fungal fluconazole 150 mg once a week for 8 weeks.

Results and Discussion

Candida albicans being a ubiquitous fungus is rarely pathogenic in the gastrointestinal tract. In most cases, Candida infection develops as an opportunistic infection in immunocompromised patients. A fungal growth is encouraged by certain pH level and by the availability of sugar. Therefore, the patient who regularly use antacids and are diabetic are at increased risk. Some reports indicate that pH of 5-6 in the stomach is suitable for Candida proliferation. In our case, patient had a history of regular use of antacids, which might have been a predisposing factor for gastric perforation associated with Candidal infection.

A study done by Ears *et al.*, found gut mycosis in 4.35% between the study period 1960-1964.² A similar study by Tsukamoto *et al.*, reported gut mycosis in 5.9% between the study period of 1971 to 1983.³ In both these cases, the most commonly effected organ was oesophagus followed by stomach, the small intestine and the large intestine. Minoli *et al.*, reported stomach candidiasis in 0.96% of the upper intestinal endoscopies.⁴

Scotts *et al.*, reported that the disruption of the stomach mucus membrane was sufficient to cause gastric candidiasis.⁵ On other hand Nelson *et al.*,⁶ and Minoli⁷ *et al.*, reported that some cases of stomach candidiasis were idiopathic. Kamiya *et al.*, reported that *Candida* secondarily invaded and proliferated in the ulcer base in most cases.⁸

It is difficult to determine whether the gut candidiasis is idiopathic or secondary, because *Candida* species are part of normal flora of gut in healthy person.

Fig.1 Histopathological examination showing fungal hyphae (H & E x 400)

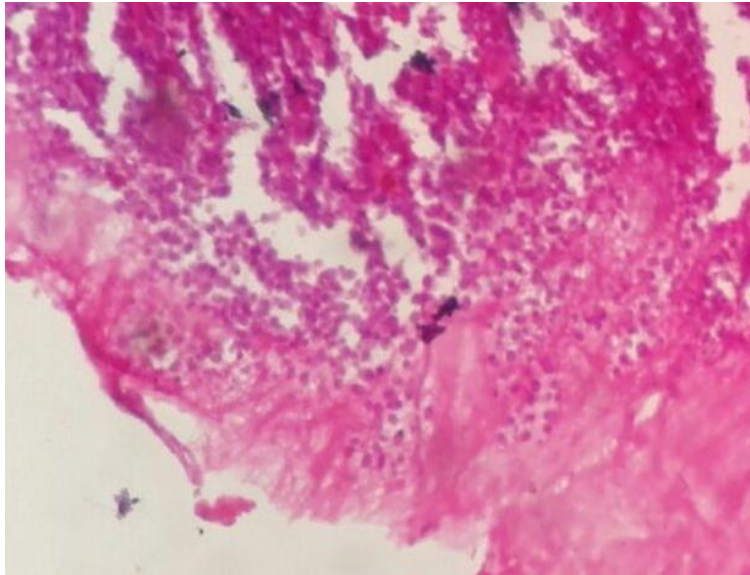


Fig.2 Growth of *Candida albicans* in Sabouraud dextrose agar (SDA)

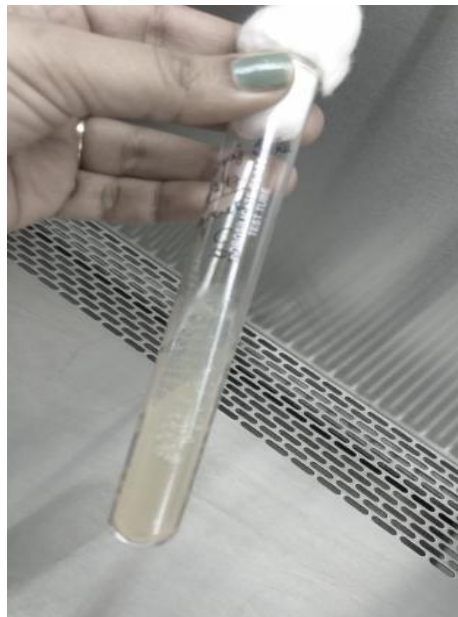
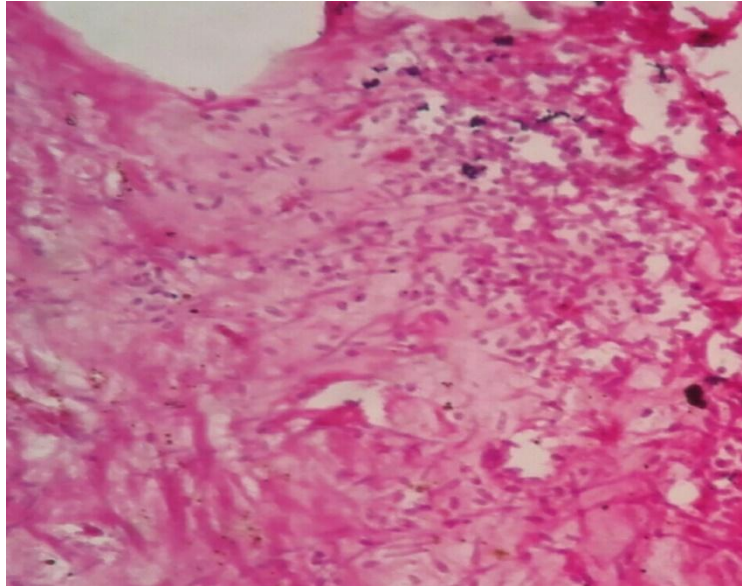


Fig.3 Light microscopy showing fungal hyphae (PAS stain x 40)



Under normal circumstances, beneficial bacteria control the level of *Candida*. However, if the bacterial-fungal balance is deranged by usage of antibiotics or if the immunosystem is compromised, an overgrowth of *Candida* can occur resulting in an infection.⁹

In our case, the patient presented with shock and acute abdominal pain and X-ray revealed gas under right hemidiaphragm suggesting gastrointestinal perforation. An exploratory laparotomy was done which revealed gastric perforation. It was repaired by modified Graham's repair. Postoperative period was uneventful. After biopsy and culture report, tablet fluconazole 150 mg once a week started for 2 months.

Here we experienced a rare case of gastric perforation associated with *Candida* infection. The fungal infection should always be kept in mind as aetiology for gastric perforation, as early detection is necessary to treat *Candida* infection. It is thus necessary, to rule out not only gastric neoplasms or ulcer but also opportunistic infection such as *Candida*

infection when upper gastrointestinal perforation is seen in an elderly patient, to significantly reduce the mortality.

References

- Bakhshi GD, Borisa AD, Shaikh AS, Thadeshwar NR, Kher Y, Kapadnis LA *et al.*, Invasive gastric candidiasis with perforation. *BombayHospital Journal* 2011;53(2) :264-65.
- Ears P, Goldstein M, Sherlock P. *Candida* infections of the gastrointestinal tract. *Medicine* 1972; 51(5): 367-79.
- Tsukamoto H. Clinicopathological studies on fungal infections of the digestive tract. *Jpn J Gastroenterol* 1986;83:2341-50.
- Minoli G, Teruzzi V, Butti G, Frigerio G, Rossini A. Gastric candidiasis: an endoscopic and a histological study in 26 patients. *Gastrointestinal endoscopy* 1982;28:59-61.
- Scott BB, Jenkins D. Gastro-oesophageal candidiasis. *JAMA* 1987;240:2181-2182.
- Nelson RS, Bruni HC, Goldstein HM *et al.*,

- Primary gastric candidiasis in uncompromised subjects. *Gastrointest Endosc* 1975;22:92-94.
- Minoli G, Terruzzi V, Rossini A *et al.*, Gastrointestinal candidiasis occurring without underlying diseases. *Endoscopy* 1979; 1:18-22.
- Kamiya T, Morishita T, Tsutiya M *et al.*, Radiologic and endoscopic features on gastric peptic ulcer associated with *Candida* infection and its follow-up study. *Gastroenterol Endosc* 1981;23:1080-1086.
- Nalini Gupta A. Rare cause of gastric perforation- *Candida* infection: A case report and review of the literature. *Journal of Clinical and Diagnostic Research*. 2012;6 (9):1564-1565.

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