



## A rare co-existence of helicobacter pylori, candida albicans and candida kefir in a giant gastric ulcer

To the Editor,

A 55-year-old man with hematemesis and melena was admitted to our endoscopy unit. The history of the patient was remarkable for dyspeptic symptoms for the 3 most recent months. An upper gastrointestinal endoscopy revealed a giant gastric ulcer (4 cm in diameter) with an oozing visible vessel on its dirty yellow base in the corpus region (Figure 1). Bleeding was managed by sclerotherapy and Ankaferd blood stopper (Ankaferd blood stopper® ampoule, 2 mL, İstanbul, Turkey) spray. Biopsy specimens from the ulcer showed *H. pylori* and positive periodic acid schiff (PAS) and Grocott staining for fungal microorganisms with hyphae and spores. *Candida albicans* and *Candida kefir* ( $>10^5$  CFU/mL) grew in the ulcer specimen culture using Sabouraud's dextrose agar (Hi-Media, Mumbai, India) and were sensitive to amphotericin B and fluconazole. Fluconazole 400 mg (Triflucan 200 mg capsule, Pfizer İlaç Sanayi, İstanbul, Turkey) oral on the first day, followed by 200 mg once daily for 2 weeks and esomeprazole magnesium 40 mg (AstraZeneca LP Wilmington, DE, 19850) oral once daily for 1 month were prescribed for the patient. The patient experienced dramatic symptomatic relief from the dyspeptic symptoms in 2 days after the start of treatment. The follow-up of the patient on a weekly basis for 3 weeks revealed normal renal and liver function tests. Control endoscopy at the third week showed almost complete healing of the ulcer (Figure 2).

Two months after healing of the giant ulcer, *H. pylori* was eradicated by triple therapy (amoxicillin 1 g twice daily (Largopen 1g Tablet, Bilim İlaç Sanayi, İstanbul, Turkey), clarithromycin 500 mg (Klasid MR, 500 mg Tablet, Abbott S.p.A. Campoverde di Aprilia (LT), Italy) twice daily, and esomeprazole 40 mg once daily) for 10 days. The control endoscopy at 4 months after first admittance of the patient was entirely normal. *H. pylori* was

not detected by either endoscopic biopsy or stool antigen test.

*Candida* is a commensal mucosal inhabitant for some parts of the gastrointestinal tract and is found in the mouth, pharynx, and colon but not in the esophagus, stomach, and small intestine (1). Fungal colonization has been shown in patients with 36% of gastric ulcer, 2% of non-ulcer dyspepsia, and 56% of large ulcer (larger than 2 cm) (2). Co-existence of fungi and *H. pylori* has a synergistic effect on ulcer pathogenesis (3).

Detection of the fungus species qualitatively by microscopy is not enough to show a relationship between the fungus and ulcer. But, the presence of fungus of more than  $10^5$  CFU/mL and quick healing of the ulcer with PPI plus antifungal medication implies the etiologic relation of the ulcer with fungal presence in our case. The treatment of candidal ulcer includes two alternative medications, including acid suppressants and anti-fungal therapy. The duration of treatment is usually 6-8 weeks with acid suppressants and 2-3 weeks with antifungal drugs (4,5). Although fluconazole has the potential for hepatotoxicity, which requires periodic blood work follow-up, it is usually reversible on discontinuation of therapy. We used esomeprazole and fluconazole simultaneously in our patient and noticed that the healing time of the ulcer was shortened up to 20 days without adverse effects of the drugs. We deferred treatment of *H. pylori* due to concern over drug interactions and candidal overgrowth that the treatment of *H. pylori* might have caused.

In conclusion, a giant gastric ulcer caused by the co-existence of *C. albicans*, *C. kefir*, and *H. pylori* is a rare finding by endoscopy. The management of this kind of ulcer with combination treatment of fluconazole and proton pump inhibitors may confer the advantage of early pain relief and rapid healing of the ulcer in the patient.

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**Figure 1.** Giant gastric ulcer in the corpus region.

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**Figure 2.** Complete healing of the gastric ulcer after combination therapy.

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