

## Benign duodenocolic fistula as a complication of peptic ulcer disease

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### ABSTRACT

A 44-year-old man with upper abdominal pain, diarrhea and 25 kg weight loss since 3 months ago was admitted. He had a history of dyspepsia and peptic ulcer disease 4 months before admission.

Gastroduodenal endoscopy and upper gastrointestinal series with barium study were done. Biopsies and CT-scan ruled out malignancies. Endoscopy and radiology studies revealed a duodenocolic fistula. He underwent right hemicolectomy, fistula en bloc excision, and distal gastrectomy surgery with gastrojejunostomy and ileocolic anastomosis. Radiologic modalities are necessary before surgery. Surgery is the only curative treatment in benign cases and reconstruction method is dependent on patient's situation.

**Keywords:** Benign duodenocolic fistula; Peptic ulcer disease, GI symptoms.

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### Introduction

Duodenocolic fistula is a rare complication of benign and malignant bowel disease. Benign duodenocolic fistula is a fistula between the duodenum and colon with no malignancy of either section. Several different etiologies may cause benign duodenocolic fistula. Peptic ulcer disease is common in developing countries. However, the duodenocolic fistula complication of peptic ulcer has not been reported in the Middle East. The passage of duodenal content into colon is shorter than intestinal transit time. The symptoms are diarrhea, feculent vomiting and foul smelling eructation. Diagnosis of duodenocolic fistula is always established with upper and lower gastrointestinal tract contrast studies. Regardless

of the cause of duodenocolic fistula the best treatment is surgical modality.

Here, the case of a patient who was diagnosed with a duodenocolic fistula secondary to duodenal peptic ulcer underwent extended right hemicolectomy and duodenal wall en bloc resection is reported.

### Case Report

A 44-year-old Caucasian male with a history of chronic upper abdominal pain, diarrhea and 25 kg weight loss in three months was admitted. No other systemic symptoms were presented. The patient had a history of dyspepsia and upper gastrointestinal (GI) bleeding 4 months before admission. Gastroduodenoscopy demonstrated a small ulcer in the lesser curvature and a large ulcer in duodenal bulb.

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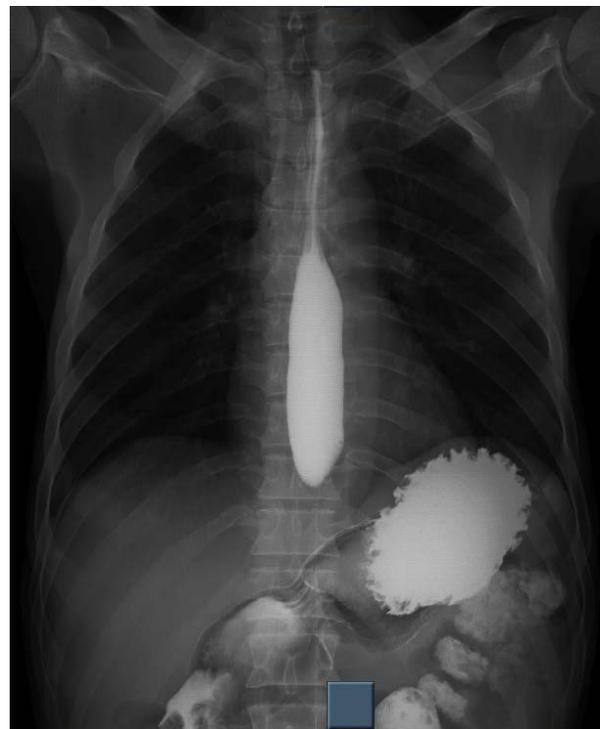
Physical examination revealed cachexia, pale conjunctiva and scaphoid abdomen, with no palpable mass. Laboratory evaluations were in normal ranges except 10.1 gr/dl Hb and 2.6 gr/dl albumin. Second gastroduodenal endoscopy was performed. No obvious mass was observed in the entrance of scope from first part of the duodenum (D1) into the colon and biopsies revealed no malignancy.

Colonoscopy was normal with no evidence of malignancy or inflammatory bowel disease. Upper GI series with barium study revealed a duodenocolic fistula (Figure 1). Abdominal CT scan with oral contrast showed duodenal deformity without evidence of malignancy.

The patient placed on parenteral nutrition for fourteen days after he underwent exploratory laparotomy. Intraoperative findings were duodenocolic fistula between D1 and transverse colon with no mass in stomach, duodenum or colon. Right hemicolectomy, fistula en bloc excision and distal gastrectomy were performed. Reconstruction was performed with gastrojejunostomy and ileocolic anastomosis. The patient experienced an uneventful postoperative course. Pathologic examination of the specimen showed moderate mononuclear cells infiltration with no malignancy transformation. The patient had complete relief from symptoms after surgery with a six months follow-up.

## Discussion

Benign duodenocolic fistula almost always occurs in adults (1). On 1863 Sanderson reported the first case of duodenocolic fistula (2). He found a fistula between duodenum and the mid-transverse colon, which was due to duodenal diverticulum. Since then about 169 benign duodenocolic fistula cases have been reported in western countries.



**Figure 1.** Barium leakage through colon without small bowel enhancement in upper GI series.

The most common reported etiology is duodenal ulcer. McPeak reported the first case of duodenal ulcer with fistula between duodenum and transverse colon. He described two cases with D1 and D2 fistula and managed them with excision of fistula (3). Since then, about 40 cases of duodenocolic fistula as a complication of peptic ulcer have been reported. However, no benign duodenocolic fistula cases are reported from the Middle East. Many other cases with rare etiology were also reported. Further cases were due to previous typhoid ulceration, ulcerative colitis, tuberculous mesenteric adenitis, duodenal diverticulum, iatrogenic trauma, spontaneous fistula, colon diverticulum, foreign body penetration, acute pancreatitis, acute appendicitis, hydatid cyst and acute cholecystitis.

Patients usually suffer from chronic colicky abdominal pain, which is located in the epigastric region or the right hypochondrium. Diarrhea is the most common symptom in these patients. This symptom is usually severe and cause weight loss

(4,5). Patients usually have weight loss due to bacterial overgrowth, steatorrhea, malnutrition, malabsorption and electrolyte disturbances. Almost always patients experience predominant motion of colonic contents through the fistula to the duodenum. Such a reflux causes microbial overgrowth and electrolyte disturbances resulting in malabsorption. Besides mentioned reflux, fecal vomiting is usually rare in these patients. This is probably due to pyloric act as a barrier of retrograde flow of feces from duodenum to the stomach (6). Although the patient in the studied case had chronic abdominal pain, severe diarrhea with food particles and overt weight loss during 3 months, he had no obvious duodenocolic fecal reflux.

The important role of colonoscopy and gastroduodenoscopy is obtaining tissue sample for suspicious malignancy in the colon or duodenum. The diagnosis of fistula is usually confirmed with radiologic studies. The diagnosis of duodenocolic fistula may be made by upper GI study. Barium enema is the most reliable with a sensitivity of over 90% than approximately 25% accuracy in upper GI studies (7). Upper and lower endoscopies were performed because of patient's previous history and alarm signs. The endoscopist incidentally reported duodenocolic fistula with normal tissue samples. It was confirmed with upper GI barium study. Due to endoscopic findings, barium enema was excluded. CT-scan was also done for excluding malignancy.

Duodenocolic fistula patients are usually malnourished and they usually need parenteral nutrition before surgery. Before introduction of parenteral nutrition, outcome of such patients were not satisfactory (5). Successful palliation of diarrhea with octreotide has been reported in malignant duodenocolic fistula (8) but the treatment of choice in benign duodenocolic fistula is surgery. The most commonly performed procedure is colectomy with en bloc excision of the fistula. The duodenal defect is either closed

primarily or repaired with serosal patch, depending on the defect size. Primary closure of the duodenum defect is the preferred treatment in the literature (9). Other procedures include Roux-en-Y duodenojejunostomy, partial duodenal excision with gastrojejunostomy (10). In malignant cases more extensive resection is usually needed. In some cases of Crohn's disease and tuberculosis, fistula closed spontaneously after medical treatment (11, 12). Right hemicolectomy was performed with en bloc excision of fistula. Primary closure of duodenum was possible and reconstruction with gastrojejunostomy was performed.

Although peptic ulcer disease is not uncommon, it's a rare complication; duodenocolic fistula has not been reported in Iran previously. Due to identical clinical presentation of duodenocolic fistula and malignancy, variant radiology modalities and endoscopy with biopsies are necessary before surgery. Surgery is the only curative treatment, after resection, reconstruction method is dependent on patient's situation. Partial colectomy with en bloc excision of fistula and partial duodenectomy is the preferred treatment in most of these patients.

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