

# CLOSURE OF A BENIGN GASTROCOLIC FISTULA ON MEDICAL MANAGEMENT

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## ABSTRACT

*Gastrocolic fistulae secondary to un-operated benign gastric ulcers are rare. We report a case of a large benign gastrocolic fistula diagnosed by colonoscopy, which was found to have healed over a short period of 3 weeks, while the patient was being prepared for surgery. He was on parenteral nutrition and intravenous cimetidine. The available literature is reviewed and an attempt is made to explain the closure of the fistula on medical treatment. A trial of medical management may be justified in patients with benign gastrocolic fistulae who are poor surgical risks.*

*Keywords: Gastrocolic fistula, colonoscopy, medical treatment*

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## INTRODUCTION

Fistula formation between the stomach and the colon is rare. It has been described as secondary to a variety of gastrointestinal disorders, most commonly carcinoma of the stomach or the colon. It has also occurred as a complication of stomal ulcer following peptic ulcer surgery. It is better diagnosed in most instances by barium enema than by barium meal or gastroscopy. In most cases, surgery is required to remove the fistula. We report an unusual case of a benign gastrocolic fistula diagnosed by colonoscopy which upon surgery, was found to have healed during pre-operative medical treatment.

## CASE REPORT

A 51-year-old Indian man with well-controlled insulin dependent diabetes mellitus and hypertension, presented with persistent diarrhoea for 3 weeks, associated with vomiting, loss of weight and abdominal pain. The diarrhoea which started suddenly occurred 7 to 8 times a day, and was associated with central colicky abdominal pain. The patient had watery brown stools without mucus or overt blood. During this period, he also had multiple episodes of vomiting of partially digested food, but no faecal material. Medicines obtained from several general practitioners did not offer symptomatic relief. He denied ingestion of analgesics. Over the preceding 5 months, he had suffered nocturnal epigastric

pains relieved by antacids. He was a non smoker and non drinker.

Clinical examination revealed a pale and undernourished Indian gentleman. He was febrile (37.5°C), dehydrated and had foul smelling breath. No significant clinical findings were noted.

Stools were negative for enteric pathogens, amoeba and parasitic ova. Widal, Weil-Felix and amoeba serology were also negative. Haemoglobin was 8.9 g/dl, MCV 84.8 fl (N 77-91 fl). Iron studies, B<sub>12</sub> and folate levels were all normal. ESR was 41 mm/hr, urea 18 mg/dl, Na 123 mmol/l, K 3.3 mmol/l, Cl 93 mmol/l, creatinine 1.0 mg/dl.

## Fig 1 - Large gastrocolic fistula seen on colonoscopy.

The fistula was big enough to allow for passage of the Olympus LB3W colonoscope (external diameter 13.5 mm).



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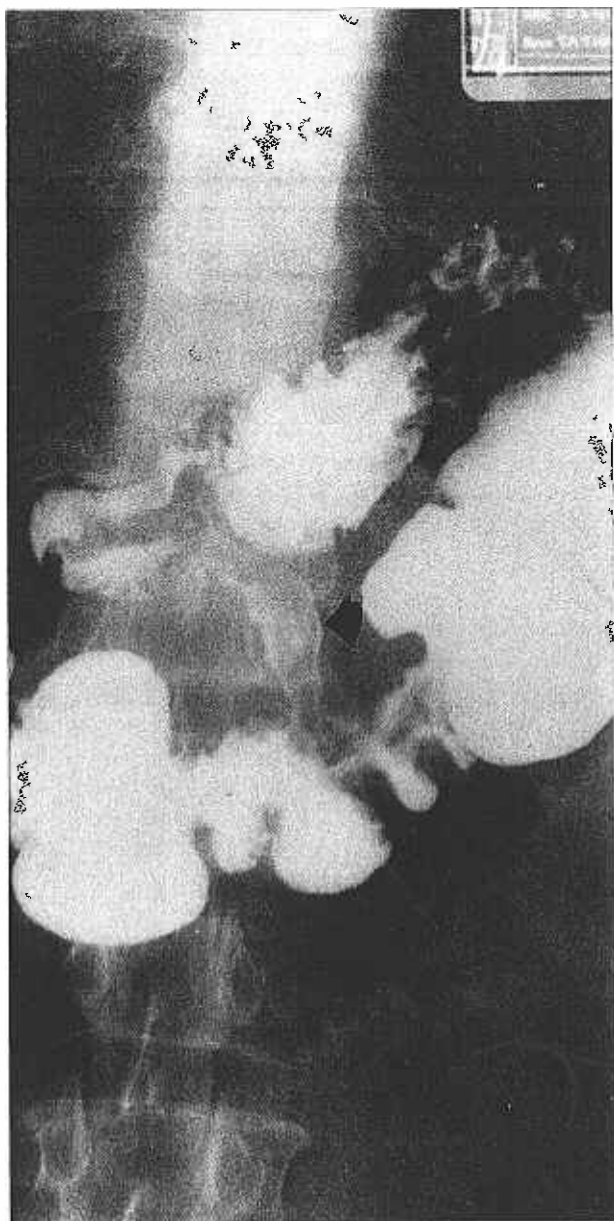
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In view of his age and prolonged symptoms a colonoscopy was scheduled. This revealed a fistulous tract between the proximal transverse colon and the stomach (Fig 1). The Olympus LB3W colonoscope (tip diameter 13.5 mm) passed easily through the fistula into the stomach. The fistula opening did not appear malignant, and the rest of the colon was normal. Subsequent gastroscopy revealed a 30 mm chronic ulcer in the anterior wall of the antrum of the stomach, with a large gastrocolic fistula. Biopsies of the colonic opening and the gastric ulcer showed no malignancy. A barium enema subsequently confirmed the endoscopic findings (Fig 2).

**Fig 2 - Confirmation of the gastrocolic fistula by barium enema**



Surgical resection was planned. Pre-surgical management involved total parenteral nutrition to restore nutritional status and to rest the gut. He was only allowed sips of water. Parenteral nutrition consisted of dextrose, amino-acids and intralipid, with vitamin supplements. Intravenous cimetidine 2.4 g per day was given. The anaemia and fluid and electrolyte imbalances were corrected.

The patient's diarrhoea and abdominal pain gradually resolved over 2 weeks of conservative management. Bowel preparation for surgery was commenced on the third week, with oral neomycin and flagyl, and saline colonic washouts.

At surgery, a 10 mm chronic gastric ulcer was found on the anterior wall of the antrum of the stomach along the greater curve. The serosa of the stomach was adherent to the transverse colon. The stomach was easily separated from the colon, and upon dissection, the fistulous connection was found to have closed completely. The colonic wall was intact. A partial gastrectomy and Billroth Type II reconstruction was performed without vagotomy. Histology of the resected ulcer confirmed that it was benign. Post-operative recovery was uneventful, and there was no recurrence of symptoms one year after surgery.

## DISCUSSION

There are numerous causes of gastrocolic fistulae. The commonest is due to carcinoma of the stomach or colon. In the days prior to vagotomy, gastrocolic fistulae usually complicated stomal ulceration following surgery for peptic ulcer<sup>(1)</sup>. Other causes have included lymphomas<sup>(2)</sup>, diverticulitis, tuberculosis, mycosis, inflammatory bowel disease<sup>(3)</sup>, chronic pancreatitis<sup>(4)</sup> and even a case of cytomegalovirus gastritis<sup>(5)</sup>.

Fistula formation from an un-operated benign peptic ulcer is very rare. The first case was reported by Firth in 1920<sup>(6)</sup> and to date 108 such cases have been reported<sup>(7)</sup>. It is possible that the incidence of gastrocolic fistulae due to un-operated benign gastric ulcer has been underestimated because they do not always produce alarming symptoms. Barium meals performed for upper gastrointestinal symptoms do not pick up fistulae in more than 40% of cases and those that go unnoticed may well heal with medical treatment only<sup>(8)</sup>. Among the reported cases, there are twice as many females as there are males with this condition<sup>(7)</sup>. The mean age at presentation is between the fifth and seventh decades<sup>(1,7)</sup>. The ingestion of steroids and non-steroidal anti-inflammatory drugs (NSAIDs) appears to predispose to the formation of gastrocolic fistulae secondary to gastric ulcers<sup>(1,7)</sup>.

Gastrocolic fistulae usually present with weight loss, acute change in the character of epigastric pain, diarrhoea and the appearance of faecal vomiting. Sometimes, they may present with gastrointestinal bleeding, halitosis and pain due to colonic perforation<sup>(7)</sup>. The classical triad of diarrhoea, weight loss and faeculent vomiting was seen in only 30% of patients with fistulae caused by benign gastric ulcer<sup>(9)</sup>. Diarrhoea and weight loss are generally thought to be due to reflux of colonic flora into the small intestine through the stomach, causing injury and functional abnormalities<sup>(3,7)</sup>. It is also possible that reflux of gastric juice through a large fistula into the colon can result in diarrhoea.

Barium enema is highly sensitive in the diagnosis of gastrocolic fistula while barium meal and gastroscopy are unreliable<sup>(1,7,10)</sup>. The pressure gradient that exists from the colon to the stomach makes it difficult for barium to flow through the fistula into the colon easily. A fistulous opening hiding in the depths of an ulcer crater, or deep within mucosal folds may be invisible on gastroscopy. Initial diagnosis by colonoscopy has not been previously reported. In all cases, gastroscopy and colonoscopy should still be performed following diagnosis of the fistula by barium enema for the purpose of obtaining biopsies of both ends of the fistula. The location of the gastric ulcer causing the fistula is usually on the posterior wall of the distal two-thirds of the stomach<sup>(3)</sup>.

Surgery is the treatment of choice for this condition. Operation should be performed even in cases due to benign gastric ulcers in order to prevent recurrence of the ulcer and the fistula. Although en block resection of the fistula together with the affected parts of the stomach and colon have been recommended, simple closure of the colonic wall with interposition of omentum between the two organs can be considered thus avoiding resection of the large intestine<sup>(11)</sup>.

Despite the acceptance of surgery as the definitive mode of treatment, there have been rare cases of gastrocolic fistulae that have healed on medical management alone, either because surgery was contraindicated, or during pre-operative preparation. Rivera reported a case that spontaneously healed without any kind of treatment<sup>(12)</sup>. Strang and his colleagues reported a case that healed on carbenoxolone sodium treatment and parenteral nutrition while awaiting surgery<sup>(13)</sup>. Good healing was reported in four other patients using cimetidine; three of them took oral cimetidine at doses ranging from 800 mg to 1 g a day<sup>(8,14)</sup> and one was on intravenous cimetidine 300 mg four times a day<sup>(15)</sup>. The time taken before healing was proven radiologically or endoscopically in these cases ranged from 2 to 16 weeks, with no apparent correlation with the mode of treatment. Rivera's patient, without any treatment, took 6 weeks to heal. It is not known whether any of the above patients had recurrent gastrocolic fistula.

Our patient is interesting in several respects. He presented primarily with prolonged diarrhoea, which lead to colonoscopy being the mode of diagnosis in the first instance. The fistula was very large, easily admitting a 13.5 mm diameter colonoscope, and was associated with a large benign gastric ulcer. It was thought unlikely that it would close on conservative management and surgery was planned for the patient. However, the pre-operative preparation involving total parenteral nutrition and intravenous cimetidine healed the fistula within a very short time of 3 weeks. Healing was confirmed at surgery. Total parenteral nutrition was used in only one of the six reported cases of non surgical healing of gastrocolic fistulae<sup>(13)</sup>. Nutritional support is an established adjunctive therapy for gastrointestinal fistulae although the exact mechanism of its action is far from understood<sup>(16)</sup>. Total

parenteral nutrition is useful for resting the gut and restoring nutritional status, especially in those patients who have become very undernourished. Nutritional support in combination with resting of the gut and the ulcer healing effect of cimetidine probably contributed to the closure of the huge gastrocolic fistula in our patient.

All gastrocolic fistula should be operated on, especially if the cause is unknown or when malignancy is suspected. If, however, the patient is a very poor surgical risk and a benign gastric ulcer can be proven with certainty, medical management with a H<sub>2</sub> antagonist and perhaps adjuvant total parenteral nutrition is in order.

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