

Subtotal Gastrectomy with Roux-En-Y Anastomosis for Gastroptosis in A 57-Year-Old Woman: A Case Report

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1. Abstract

Gastroptosis is a rare condition characterized by an abnormal downward displacement of the stomach. Its optimal management remains a matter of debate. Diagnosis is often challenging due to its nonspecific clinical presentation and limited recognition in contemporary practice. We describe the case of a 57-year-old woman who presented with chronic abdominal discomfort, intensifying in an upright position exacerbating postprandially. Pain led to fear of eating resulting in progressive weight loss. Extensive diagnostic investigations, including computed tomography, upper gastrointestinal endoscopy, manometry and gastric emptying test failed to establish a definitive diagnosis. However, a barium swallow examination revealed significant gastric descent, leading to the diagnosis of gastroptosis. Following multidisciplinary evaluation, the patient underwent laparoscopic subtotal gastrectomy with Roux-en-Y gastrojejunal reconstruction. Postoperative recovery was uneventful, with marked symptom relief and resumption of normal oral intake. At the two-year follow-up, the patient reported a sustained symptom resolution accompanied by satisfactory weight gain. This case highlights the diagnostic value of the barium swallow study, which-unlike conventional imaging modalities-is performed in an upright position. The vertical orientation of the patient is crucial to reveal gravitational gastric distension and caudal displacement, features that may remain unrecognized in the supine position. Subtotal gastrectomy with Roux-en-Y reconstruction may offer an effective treatment option for selected patients with persistent, symptomatic gastroptosis. Further research is needed to refine surgical approaches and to improve management outcomes for this uncommon condition.

1.1. Background

Gastroptosis, a rare condition characterized by abnormal downward displacement of the stomach, remains a topic of debate in the medical literature regarding its optimal management. Diag-

nosis is often challenging due to nonspecific clinical manifestations and the limited awareness of this entity in routine practice.

1.2. Case presentation

We report the case of a 57-year-old woman presenting with chronic postprandial abdominal discomfort, progressive weight loss, and dyspepsia. Extensive diagnostic work-up, including computed tomography, upper gastrointestinal endoscopy, and manometry, failed to yield a definitive diagnosis.

However, a barium swallow examination demonstrated marked gastric descent, consistent with gastroptosis.

Following multidisciplinary evaluation, the patient underwent laparoscopic subtotal gastrectomy with Roux-en-Y gastrojejunal reconstruction. Postoperative recovery was uneventful, with marked symptomatic improvement and successful resumption of oral intake. At one-year follow-up, the patient reported sustained symptom resolution, accompanied by appropriate weight gain.

1.3. Conclusion

This case underscores the diagnostic value of the barium swallow study, which-unlike conventional imaging modalities-is performed in an upright position. The vertical orientation of the patient is essential to demonstrate gravitational gastric distension and caudal displacement, findings that may remain undetected in the supine position. Subtotal gastrectomy with Roux-en-Y reconstruction may represent an effective therapeutic option for carefully selected patients with persistent, symptomatic gastroptosis. Further studies are warranted to refine surgical strategies and to improve clinical outcomes in this rare condition.

2. Introduction

Gastroptosis, commonly referred to as a “dropped stomach”, is a rarely reported condition characterized by the abnormal downward displacement or descent of the stomach within the abdominal cavity. Although gastroptosis is not considered a life-threatening condition, it can significantly impact an individ-

ual's quality of life due to the array of gastrointestinal symptoms it may cause. Patients commonly present with symptoms such as epigastric pain or discomfort, early satiety, reflux and nausea [1].

The etiology of gastropo-
tosis is idiopathic and multifactorial, involving a combination of anatomical, physiological, and mechanical factors. It arises from ligament and mesentery relaxation due to the weight of the stomach [2, 3]. This rare phenomenon is seen more frequently in women and especially women with a lower BMI [2, 4].

Diagnosis can be challenging with standard approaches like blood tests, endoscopy, and abdominal ultrasound. Yet, upper gastrointestinal series in standing position with barium frequently yield a clear diagnosis by visualizing the position and mobility of the stomach within the abdomen [5].

Management of gastropo-
tosis is primarily symptomatic by focusing on alleviating symptoms and improving the patient's quality of life. Conservative measures including changes in eating habits and pharmacotherapy, aimed at symptom control, constitute the cornerstone of treatment. In refractory and selected cases or those associated with significant functional impairment, surgical intervention may be considered to provide symptomatic relief [3]. Today, no standard surgical treatment can be found in the literature. A few case reports describe different techniques such as abdominal banding [5], (sub)total gastrectomy [6] or corrective gastro-duodenal and jejunal-jejunal anastomosis [7].

Given the diversity of clinical presentations and treatment modalities associated with gastropo-
tosis, a comprehensive understanding of its diagnostic approach and therapeutic options is essential for clinicians to effectively manage this condition and

optimize patient outcomes. This case report aims to contribute to the limited existing literature by presenting a unique case of gastropo-
tosis, discussing its clinical manifestations, diagnostic workup, and management strategies, and highlighting the challenges encountered in its diagnosis and treatment.

3. Case Presentation

A 57-year-old woman presented with a one-year history of chronic abdominal discomfort characterized by a constellation of symptoms, including a retrosternal sensation of blockage during meals, postprandial gastric heaviness, nausea exacerbated by large meals, pain in the left iliac fossa, a pressure sensation on the bladder-more pronounced while sitting-and abdominal bloating. These symptoms subsided after several hours but recurred with subsequent meals, eventually leading to a fear of eating. As a result, the patient experienced a significant weight loss of 22 kg over the recent months. Her body mass index (BMI) was 17.9 kg/m² at the initial consultation in our hospital.

3.1. Diagnostic Assessment

The patient had previously undergone extensive evaluations at multiple hospitals. Findings from computed tomography (CT), gastroscopy, and esophageal manometry revealed no significant abnormalities. Fecal calprotectin levels were slightly elevated, and a gastric emptying study demonstrated normal results. However, an upper gastrointestinal (GI) series with barium (Figure 1a) performed at our institution demonstrated features consistent with gastropo-
tosis, characterized by descent of the greater curvature of the stomach into the pelvic cavity, extending beyond the bilateral iliac crests.



Figure 1: Upper GI serie with Barium, pre-operative, prone position.

3.2. Differential Diagnosis

Because its nonspecific presentation and the rarity of the condition, establishing a diagnosis of gastropotosis is often challenging and delayed. In this case, diagnosis was postponed for more than one year despite multiple consultations with different specialists. The actual prevalence of gastropotosis remains uncertain [2,8]. It is important to consider gastropotosis in the differential diagnosis of patients presenting with vague abdominal complaints. The condition is frequently misdiagnosed as superior mesenteric artery syndrome, gastroparesis, inflammatory bowel disease, or endometriosis. Antiglomerular basement membrane disease (Goodpasture’s syndrome) should also be considered due to overlapping gastrointestinal symptoms [1,9].

3.3. Treatment

After multidisciplinary consultation with gastroenterologists, a consensus was reached to perform a laparoscopic subtotal gas-

trectomy with Roux-en-Y gastrojejunal reconstruction to address the patient’s severe postprandial symptoms and nutritional deterioration. Total parenteral nutrition was administered for one week preoperatively.

The surgical procedure was uneventful. A small gastric pouch of approximately 120 mL was preserved. Duodenal transection was performed 3 cm distal to the pylorus, and the excluded stomach was resected to relieve pain and pressure symptoms in the left iliac fossa. Roux-Y construction consisted of an alimentary and biliary limb length of respectively 50 and 40 cm. Intraoperatively, a markedly widened diaphragmatic hiatus was observed and repaired by approximation of the posterior diaphragmatic crura.

A postoperative barium swallow study (Figure 2b) showed unobstructed passage of contrast with no evidence of leakage. The surgical drains were subsequently removed, and the patient was discharged on postoperative day two in good clinical condition.



Figure 2: Upper GI series with barium before (a), after surgery (b), 1-year (c) and 2-year follow-up (d).

3.4. Postoperative Course and Follow-Up

Following the surgical procedure, the patient was gradually transitioned to a liquid diet during her hospitalization. This regimen was maintained until the first follow-up visit at two weeks postoperatively. At that time, she reported resumption of oral intake without pain and complete relief of the bladder pressure sensation. She progressively reintroduced solid foods through dietary experimentation to identify well-tolerated items.

During this period, she experienced a single episode of hypoglycemia and dumping syndrome, which resolved after dietary modification. At one-year follow-up, the patient remained asymptomatic (Figure 2c). No further episodes of hypoglycemia or dumping occurred, and all postprandial abdominal symptoms had completely resolved. After a brief period of physiological adaptation to the altered gastrointestinal anatomy, her weight development demonstrated a favourable trend (Figure 3).

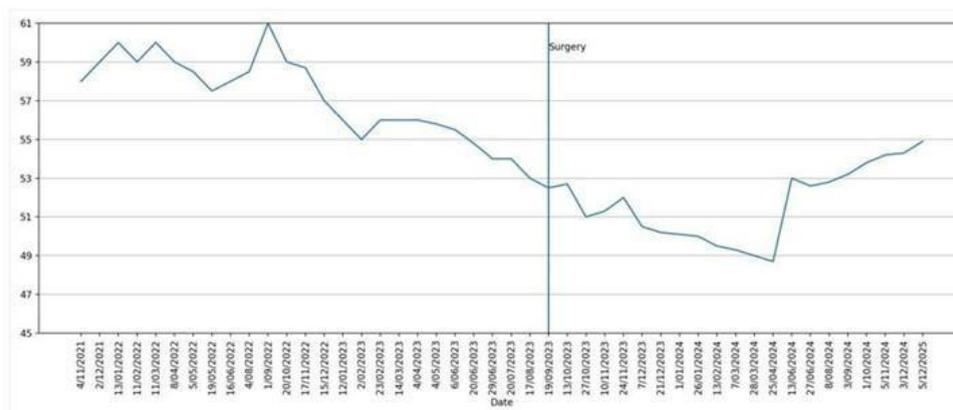


Figure 3: Weight evolution (in kilograms) before and after surgery.

4. Discussion

Visceroptosis, also known as Glenard's disease, refers to the prolapse or downward displacement of the abdominal viscera below their normal anatomical position due to ligamentous laxity. When the stomach is affected, the condition is termed gastroptosis. It is defined radiographically as the descent of the greater curvature of the stomach below the level of the iliac crest while the antrum remains in its usual position [8,13]. To date, there is no consensus regarding the degree of displacement that constitutes clinical significance, and only a limited number of gastroptosis cases have been reported in the literature.

The first report of gastroptosis was published by Glenard in 1833. Since then, only a handful of cases were reported in medical literature [8]. Up to now, incidence numbers are not available.

Current evidence suggests that the condition predominantly affects women aged 20–50 years, particularly those with low body weight or postural abnormalities [2]. Gastroptosis has also been associated with Ehlers–Danlos syndrome, in which connective tissues exhibit abnormal elasticity [10,11]. In our case, genetic testing for Ehlers–Danlos syndrome was negative, yet the patient was clinically diagnosed with hypermobility syndrome, suggesting that a ligamentous laxity may have contributed to the development of gastroptosis.

Gastroptosis remains a rare and frequently misdiagnosed cause of chronic abdominal pain due to its nonspecific presentation and the absence of standardized diagnostic criteria [13].

This case highlights the diagnostic and therapeutic challenges inherent to the condition and underscores the importance of comprehensive evaluation and individualized treatment planning.

The patient presented with a constellation of upper gastrointestinal symptoms-retrosternal blockage during meals, postprandial heaviness, nausea exacerbated by large meals, left iliac fossa pain, bladder pressure, and abdominal bloating. Although not life-threatening, gastroptosis is often associated with abdominal discomfort, vomiting, dyspepsia, anorexia, belching, and constipation. These symptoms typically intensify postprandially [3] and may lead to a fear of eating with consequent severe weight loss.

From a pathophysiological perspective, the abnormal caudal displacement of the stomach in gastroptosis alters the orientation and length of the mesenteric and gastric vessels, which may lead to elongation, torsion, or partial compression of these structures. Such anatomical distortion can compromise postprandial splanchnic blood flow, as evidenced by reduced flow in the portal vein and major abdominal arteries in patients with visceroptosis [12]. The resulting relative ischemia of gastric and splanchnic tissues may explain the characteristic postprandial discomfort and pain, suggesting that impaired regional perfusion could play a key role in symptom generation.

In our patient, postprandial dyspepsia, early satiety, gastric

heaviness, and regurgitation predominated-symptoms are indicative of delayed gastric emptying. We hypothesize that this impairment results from anatomical distension of the gastric corpus descending into the lesser pelvis, while the antrum remains fixed. This configuration produces a siphon-like mechanism in which food accumulates in the dependent portion of the stomach. Because the overstretched muscular fibers of the corpus cannot generate adequate contractile force, gastric emptying is hindered, leading to food stagnation and increased bladder pressure.

Diagnosis is further complicated by the elasticity of the stomach, which behaves like a spring. In the fasting or supine position, the stomach returns to its normal anatomical location, masking the displacement. Consequently, imaging modalities such as CT and gastroscopy-performed in the supine position-often fail to detect the abnormal descent. In contrast, an upright barium swallow enables visualization of the stomach under physiological gravitational conditions and is therefore the most informative diagnostic tool in suspected gastroptosis.

In our patient, the barium swallow performed in an upright position clearly demonstrated gastroptosis, while the same test in the supine position appeared normal, confirming that the diagnosis would have been missed without positional imaging.

Given its nonspecific presentation, gastroptosis is frequently mistaken for gastritis, peptic ulcer disease, superior mesenteric artery syndrome, gastroparesis, pancreatic neoplasm, food allergies or psychomatic disorders [3], resulting in delayed diagnosis and suboptimal management. Clinicians should therefore include gastroptosis in the differential diagnosis of chronic or unexplained upper abdominal symptoms.

Conservative treatment-including dietary adjustments, prokinetic therapy, and physical rehabilitation - to strengthen abdominal muscles-is generally the first-line approach [8,9]. However, in cases refractory to conservative measures, or when symptoms severely impair nutritional status and quality of life, surgical intervention may be warranted. In this case, persistent postprandial symptoms, significant weight loss, and fear of eating prompted a subtotal gastrectomy with Roux-en-Y gastrojejunal reconstruction, which effectively restored alimentary continuity and relieved mechanical and vascular strain. Although there are no standardized surgical guidelines for gastroptosis, prior reports indicate that subtotal gastrectomy and gastropexy may be viable options in select cases [6,7].

The subtotal gastrectomy was deemed necessary to prevent postoperative persistence of ischemic stretch pain and bladder pressure that could have been caused otherwise by the persistent gastroptosis of the excluded stomach.

Our patient's postoperative recovery was uneventful, and she achieved sustained symptom resolution, weight gain, and normalization of oral intake.

Transient hypoglycemia and dumping syndrome, well-recognized complications following gastrectomy [6], occurred briefly

but were successfully managed through dietary modification. This underscores the necessity of postoperative nutritional counseling and close long-term follow-up to monitor for potential nutritional deficiencies or altered gastrointestinal motility. Encouragingly, the patient's weight development and clinical course remained favorable one year postoperatively.

Two years after undergoing a subtotal gastrectomy for debilitating gastroparesis, the patient exhibits a favorable postoperative trajectory (Figure 3). Body weight has remained stable with a modest annual increase, and oral intake is well tolerated without evidence of dumping syndrome. Postprandial hyperinsulinemic hypoglycemia is largely mitigated through adherence to regular meal patterns. Gastrointestinal function has improved with pancreatic enzyme replacement therapy in the form of Creon. Bone densitometry demonstrates osteopenia, for which calcium and vitamin D supplementation has been initiated. Mild elevations in ferritin and LDL-cholesterol persist but are clinically manageable. No new alarm symptoms have emerged. Overall, these findings indicate that the surgical intervention has conferred a sustained and clinically meaningful benefit.

5. Conclusion

This case underscores the need for heightened clinical awareness of gastroparesis as a potential cause of chronic abdominal discomfort, postprandial pain, and unexplained weight loss. It illustrates the diagnostic limitations of conventional imaging modalities performed in the supine position and highlights the diagnostic value of an upright barium study in detecting gastric descent.

Furthermore, this report demonstrates that subtotal gastrectomy with Roux-en-Y gastrojejunostomy reconstruction can serve as an effective therapeutic strategy for patients with severe, refractory gastroparesis. By restoring normal anatomical alignment, preventing vascular strain, and reestablishing physiological gastric emptying, this approach can result in substantial symptom relief and improved nutritional outcomes.

A multidisciplinary approach-integrating gastroenterology, radiology, surgery, and nutrition-is essential for optimal management of this rare condition. Further research and accumulation of clinical experience are warranted to refine diagnostic criteria and to standardize surgical treatment strategies for gastroparesis.

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