

Case Report

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Diabetic Gastroparesis Refractory to Medical Therapy Requiring Gastrojejunostomy: A Case Report from a Resource-Limited Setting

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ABSTRACT

Diabetic gastroparesis is a challenging complication that can become refractory to medical therapy. We report a 36-year-old man with poorly controlled type 2 diabetes who presented with persistent vomiting, early satiety, and 13-kg weight loss over three months. Despite maximal pharmacological therapy and nasojejunal feeding, symptoms persisted. Gastric scintigraphy confirmed delayed gastric emptying with 45% retention at four hours. Following multidisciplinary evaluation, an open gastrojejunostomy was performed, resulting in complete resolution of vomiting, weight gain, and improved glycemic control. This case highlights the value of surgical intervention for refractory diabetic gastroparesis in resource-limited settings.

Keywords: *Diabetic gastroparesis, gastrojejunostomy, refractory disease*

INTRODUCTION

Diabetic gastroparesis affects 5-12% of patients with type 1 diabetes and 1-2% of those with type 2 diabetes, representing a significant cause of morbidity and healthcare utilization [1,2]. The condition results from complex pathophysiological mechanisms including autonomic neuropathy, enteric nervous system dysfunction, interstitial cells of Cajal loss, and smooth muscle abnormalities [3]. Clinical manifestations typically include nausea, vomiting, early satiety, postprandial fullness, and unpredictable glycemic control [4].

Management follows a stepwise approach beginning with dietary modifications, prokinetic

agents, and antiemetics, progressing to interventional procedures and ultimately surgical options for refractory cases [5]. Gastrojejunostomy, while not commonly performed, has emerged as an effective surgical option with reported success rates of 70-85% for symptom improvement [6].

In resource-limited settings, managing complex gastroparesis presents additional challenges including limited access to specialized testing, advanced therapeutics, and experienced surgical expertise. This case illustrates successful management of refractory diabetic gastroparesis requiring surgical intervention in such a setting.



CASE REPORT

A 36-year-old male computer operator with poorly controlled type 2 diabetes for 14 years presented with three months of persistent postprandial vomiting, early satiety, and 13-kg unintentional weight loss. He also had chronic pancreatitis diagnosed radiologically. Symptoms occurred 1–1.5 hours after meals, and vomitus contained undigested food. No abdominal pain or

gastrointestinal bleeding was noted. He appeared cachectic with mild dehydration. BMI had decreased from 27 to 22 kg/m². Orthostatic hypotension and erectile dysfunction suggested autonomic neuropathy. Neurological examination showed distal sensory neuropathy. Laboratory tests revealed hyponatremia (serum sodium 132 mEq/L) and poor glycemic control (HbA1c 9.2%). Inflammatory markers were normal. (Table 1).

Table 1: Serial Laboratory Investigations

Parameter (Normal Range)	Admission	Week 2	Pre-Surgery	Post-Surgery (1 month)	4-Month Follow-up
Hemoglobin (13-17 g/dL)	12.8	11.9	12.2	13.1	13.6
Sodium (135-145 mEq/L)	132	134	138	140	139
Potassium (3.5-5.0 mEq/L)	3.8	3.9	4.1	4.0	4.2
Creatinine (0.6-1.2 mg/dL)	0.9	0.8	0.9	0.8	0.9
Albumin (3.5-5.0 g/dL)	3.2	3.0	3.4	3.8	4.1
HbA1c (%)	9.2	-	8.8	8.1	7.4
CRP (<3.0 mg/L)	0.5	0.3	0.4	0.2	0.3

Upper gastrointestinal endoscopy showed pangastritis without obstruction. Gastric scintigraphy demonstrated markedly delayed gastric emptying with 45% retention at four hours, confirming gastroparesis. CECT abdomen showed mild pancreatic atrophy without obstruction. Autonomic function testing revealed abnormal heart rate variability. MRI brain was normal.

He received intravenous metoclopramide, domperidone suppositories, erythromycin, mosapride, ondansetron, and intravenous pantoprazole. Mirtazapine was given for appetite stimulation and depression.

Due to persistent vomiting a nasojejun tube was inserted for enteral feeding. Nutrition was optimized with micronutrient supplementation and constipation was managed with polyethylene

glycol and enemas. Basal–bolus insulin therapy was adjusted frequently due to variable absorption.

Despite six weeks of intensive medical therapy, only partial improvement occurred while on nasojejun feeding. A multidisciplinary team recommended surgical intervention. An open retrocolic isoperistaltic gastrojejunostomy was performed without complications.

Postoperatively, he tolerated diet advancement well, with complete cessation of vomiting. At one month, he had gained 4 kg and HbA1c had improved to 8.1%. By four months, his weight had increased by 11 kg, symptoms had resolved (Gastroparesis Cardinal Symptom Index reduced to 0.8), and glycemic control had improved further (HbA1c 7.4%). He eventually returned to full-time employment with no complications

DISCUSSION

This case illustrates diabetic gastroparesis in a relatively young patient without typical microvascular complications such as retinopathy or nephropathy. The presence of autonomic dysfunction evidenced by orthostatic hypotension and erectile dysfunction supported the diagnosis of gastroparesis (3). The diagnosis was confirmed using gastric scintigraphy according to current consensus criteria, which showed 45% gastric retention at 4 hours (7). The concurrent chronic pancreatitis raised diagnostic complexity, as pancreatic disorders can independently cause gastric motility dysfunction (8). However, normal pancreatic enzyme levels and characteristic autonomic features supported primary diabetic gastroparesis.

Managing complex gastroparesis in resource-limited settings presents unique challenges. This case required innovative approaches such as utilization of available prokinetic agents in combination, improvised nutritional support protocols, multidisciplinary team coordination despite limited resources and a cost-effective surgical approach. The decision for gastrojejunostomy was based on failure of comprehensive medical therapy and temporary improvement with bypass feeding [8,9]. Alternative surgical options considered included gastric electrical stimulation which was not available locally [6], pyloroplasty which is less effective for gastroparesis, and subtotal gastrectomy, which is known to cause excessive morbidity [6,9]. Gastrojejunostomy offered the optimal balance of efficacy and safety in a resource-limited setting, with reported success rates of 70-85% for symptom improvement [9].

This case contributes to existing literature in several ways, since it details successful gastroparesis management in resource-limited settings, illustrates early diabetic gastroparesis without other microvascular complications, validates open gastrojejunostomy as an effective intervention and emphasizes the importance of multidisciplinary care coordination [8,9]. However, several limitations exist, including single-case design, short follow-up, limited diagnostics, and absence of formal quality-of-life assessment. In

resource-limited settings, surgical cost-effectiveness is crucial. Gastrojejunostomy successfully relieved symptoms and improved nutrition and quality of life, highlighting the importance of early recognition, exhaustive medical therapy, multidisciplinary care, careful patient selection, and long-term follow-up for refractory diabetic gastroparesis.

Author declaration

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GAMC: Manuscript writing, literature reviewing; ST: Manuscript editing, literature reviewing.

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The authors declare that there is no financial or non-financial conflict of interest.

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Written informed consent was obtained from the patient before they participated in the case, ensuring their understanding of the purpose, procedures, and potential implications involved.

Statement on data availability:

All data are available upon request.

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