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# Pyloroplasty for Refractory Diabetic Gastroparesis After Renal Transplantation

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**G**astroparesis (GP) is a symptomatic delay in gastric emptying in the absence of mechanical obstruction. Symptoms can be subjectively reported by the validated Gastroparesis Cardinal Symptom Index (GCSI).<sup>1</sup>

Gastroparesis is common in patients with diabetes. Although GP can improve after transplantation,<sup>2,3</sup> many cases remain severe and refractory to medical therapy. These refractory cases may be associated with recurrent hospitalizations and difficulty in complying with posttransplant medication regimens.

Pyloric dysfunction plays a role in GP.<sup>4</sup> This case report features 2 patients with type I diabetes status after renal transplantation who underwent pyloroplasty for refractory GP. Both patients demonstrated subsequent reduction in symptoms, acceleration of gastric emptying scintigraphy (GES), and decreased hospitalizations.

## CASE 1

The first patient is a 33-year-old man with type 1 diabetes status after renal transplantation in 2009. The patient had refractory GP for many years and reported 22 hospitalizations for nausea and vomiting. Preoperative gastric emptying study showed significant retention of ingested radiotracer with 58% retention at 4 hours (normal, <10%). The patient reported “severe” in all 9 areas of the GCSI for a total score of 45. He underwent laparoscopic pyloroplasty without complications and was discharged to home on postoperative day 3.

By 3 months postoperative, the patient tolerated a regular diet and was nearly symptom free with a total GCSI score of

2. The GES at 11 months postoperatively normalized with 9% retention at 4 hours (normal, <10%). Almost 2 years after the pyloroplasty, the patient had not had any additional hospitalizations for nausea and vomiting and was not taking any prokinetic agents.

## CASE 2

The second patient is a 47-year-old woman with diabetes status after renal transplantation in 2002 and 2 failed pancreatic transplants. She had been experiencing worsening nausea and vomiting because of GP, and previous treatment modalities had failed. Preoperative GES showed severely delayed gastric emptying, and time to half emptying was not reached during the study (normal T  $\frac{1}{2}$  <90 minutes). The preoperative GCSI score totaled 35. The patient underwent open pyloroplasty without complications and was discharged on postoperative day 4.

Outpatient follow-up was characterized by increased ability to tolerate small frequent meals. At 1 year, she had not required further hospitalizations for GP exacerbations. Postoperative GES performed 19 months postoperatively had normalized with 1% retention at 4 hours (normal <10%). Self-assessed postoperative GCSI had decreased to a total score of 5.

In GP, pyloric dysfunction and decreased pyloric compliance mimic a surgical postvagotomy state.<sup>4,5</sup> Pyloroplasty renders the pyloric valve incompetent and is long recognized as an effective drainage procedure in vagotomized stomachs.<sup>6</sup>

In these 2 diabetic posttransplant patients, pyloroplasty resulted in reduction of symptoms, accelerated GES, and decreased resource utilization. These findings are consistent with a recently published study reporting that laparoscopic pyloroplasty provided significant symptom reduction and accelerated GES in patients with GP.<sup>6</sup> Pyloroplasty can be safely offered in the face of immunosuppressive therapy and should be considered as a treatment option in transplant patients who suffer from refractory diabetic GP.

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