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LETTER TO THE EDITOR

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A novel technique for reconstruction of the proximal alimentary tract after bowel transplantation for intestinal pseudo-obstruction

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Sir: Chronic intestinal pseudo-obstruction is a term used for a syndrome in which there are symptoms and signs of bowel obstruction without evidence of a structural obstructing lesion. Idiopathic pseudo-obstruction results from impaired gut motility [1, 3]. The two pathophysiologic types of this motility disorder are myopathic and neuropathic. The latter may affect extrinsic or intrinsic neural control of gut motility [1, 3]. Long-term survival is possible with careful attention to modern methods of nutrition, be they enteral or parenteral [2]. However, liver failure or a lack of vascular access may limit the possibilities of total parenteral nutrition. In such cases, an intestinal transplant may be indicated. This has, in fact, already been carried out in several cases [4]. In addition to the enormous immunological problems invariably associated with bowel transplantation, this procedure is rendered even more complex by the fact that the underlying motility disorder may affect all parts of the gastrointestinal tract, i.e., the esophagus, the stomach, and the colon [1].

After revascularization of an intestinal allograft, the proximal end of the grafted gut is usually anastomosed to the first loop of the recipient jejunum and the distal end exteriorized for biopsy monitoring [5]. For restoration of the alimentary tract, sufficient gastric emptying must be achieved. For patients in whom the disease directly affects the gastric motor activity, total gastrectomy with anastomosis of the esophagus to the proximal end of the transplant could solve the problem. In such a situation, however, major problems may arise when the graft is irreversibly rejected and must therefore be removed. We thus searched for a technique that would enable us to overcome the problem of insufficient gastric emptying and permit us to restore the upper alimentary tract in such a way that distal exteriorization of the esophagus could be avoided in case of graft loss.

An entire small bowel plus right colon transplantation was performed in a 51-year-old male suffering from visceral neuropathy. Pretransplant tests including manometry and radioscintigraphy, had revealed achalasia of the lower esophageal sphincter, no contractile activity of the stomach or small bowel, and an absence of the recto-anal-reflex.

After median laparotomy, the second loop of the enormously dilated jejunum was transected. Then, the entire small and large bowel was resected down to the rectum. After an end-to-end anastomosis of the superior mesenteric vein of the recipient to that of the graft, the superior mesenteric artery, which had a Carrel patch, was anastomosed to the infrarenal aorta. Following reperfusion, a colorectostomy was performed in two layers using absorbable suture material, Then, the patient's jejunum and the proximal end of the grafted jejunum were brought out as a stoma.

Under FK 506 together with low-dose steroids, the postoperative course was uneventful, apart from one episode of viral enteritis. Interestingly, the patient showed no evidence of delayed emptying of the gastric stump or anorectal dysfunction. Eleven weeks after transplantation, both stomas were dissected and the proximal end of the graft closed in two layers. The stomach was then transected, as shown in Fig.1 . The distal portion of the stomach was subsequently closed and fixed in place with several sutures. The proximal stump was then partially closed. A gastrojejunostomy was created and the patient's jejunum hooked up to the graft in a Roux-en-Y fashion. The postoperative course was again completely uneventful, and the patient was allowed to take food orally only 1 week later. Soon thereafter, he was discharged free of parenteral nutrition.

Fifteen out of a total of 178 intestinal transplants (8 %) reported to the international registry up until the end of June 1995 were performed for pseudo-obstruction [4].

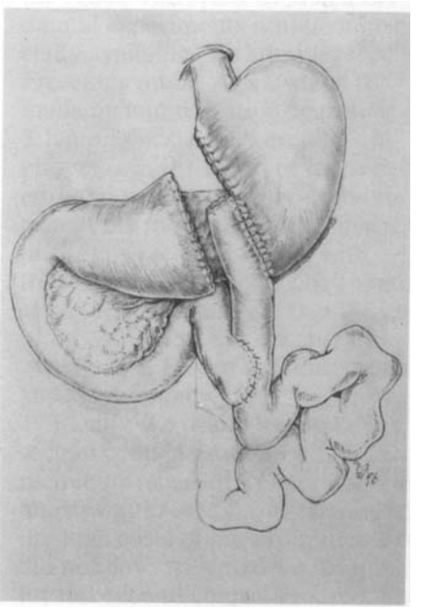

Fig. 1 Restoration of upper gastrointestinal tract after small bowel transplantation. The stomach is transected, its distal stump closed, and the proximal stump anastomosed with the proximal end of the graft

Since not only the gut but also the esophagus, stomach, colon, and anorectum in these patients are frequently affected by motility disorder, replacement of the small bowel may not solve the entire problem. Not only would resection of the upper gastrointestinal tract (including the stomach and duodenum in order to cope with delayed gastric emptying and reconstruction with the transplanted bowel) be a major surgical undertaking, but it would also make survival difficult in case of later graft removal for rejection. Because of the immunological risk associated with intestinal transplantation, long-term graft survival cannot yet be expected in the majority of patients. For this reason, it is necessary to search for techniques that facilitate survival after graft loss.

Although gastric motility was severely impaired in our patient, the technique applied for the first time in this patient for reconstruction of the gastrointestinal tract proved to be effective. In the case of graft removal, both gastric stumps can be reanastomosed and the first loop of jejunum brought out again as a stoma. This novel surgical technique is thus recommended for patients suffering from intestinal pseudo-obstruction with gastroparesis who undergo intestinal transplantation.

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