

Gastric-bypass surgery and hypoglycemia

Gastric-bypass surgery is an increasingly common intervention in the US, where obesity has been described as an epidemic. The procedure has been linked to postprandial symptoms such as dizziness and flushing, which, until recently, have been blamed on the swift emptying of the gastric contents—so-called ‘dumping syndrome’. A new report provides an alternative explanation, however; gastric-bypass surgery might lead to the hyperfunction of pancreatic islets, resulting in postprandial hypoglycemia.

Service *et al.* studied six patients aged 39–54 years who underwent gastric-bypass surgery for obesity. Within 6 months to 8 years of surgery, five of the patients reported episodes of hypoglycemia, occurring 1–3 h after eating. The sixth patient had experienced these symptoms before surgery, but noted that they became more severe afterwards.

Venous blood samples were obtained from the patients during spontaneous episodes, and laboratory analysis confirmed endogenous postprandial hyperinsulinemic hypoglycemia in each case. Selective arterial calcium-stimulation testing pointed to hyperfunction of the pancreatic islets (in one, two, or three arterial distributions), in each case. These findings were used as a basis for partial pancreatectomy in all six patients. All the resected specimens showed evidence of nesidioblastosis; additionally, functional insulinomas were found in one case. During follow-up, the symptoms of postprandial hypoglycemia were reduced in one patient and eliminated in five.

The authors hypothesize that beta-cell trophic factors might be stimulated by gastric-bypass surgery, leading to the observed hypertrophy of the pancreatic islets and the development of hypoglycemia.

Ruth Kirby

Original article Service GJ *et al.* (2005) Hyperinsulinemic hypoglycemia with nesidioblastosis after gastric-bypass surgery. *N Engl J Med* 353: 249–254

Laparoscopic mini-gastric bypass is simple and safe

Laparoscopic Roux-en-Y gastric bypass (LRYGB) is a technically difficult procedure and

the safety of laparoscopic mini-gastric bypass (LMGB) still remains unclear; therefore, both warrant further investigation. In a prospective, randomized, controlled, clinical trial Lee *et al.* compared the safety and effectiveness of LRYGB and LMGB in the treatment of morbid obesity.

Overall, 80 patients were enrolled in the study, who had at least a 5-year history of obesity and BMI >40 kg/m² (or >35 kg/m² with comorbidities). They were randomized to either LRYGB (40 patients) or LMGB (40 patients). Surgery was successfully completed in 100% and 97.5% of patients in the LMGB and LRYGB, groups, respectively. The LRYGB group experienced a longer hospital stay and larger cumulative doses of analgesic medication compared with the LMGB group. Six minor and two major complications, relating to anastomotic leakage, occurred in the LRYGB group, compared with only three minor complications in the LMGB group. In addition, weight loss was significantly greater in the LMGB group at 1 year (64.9%) compared with LRYGB (58.7%); however, there was no statistical difference between the two groups at 2 years of follow-up.

The authors further note that 56% of patients who were diagnosed with metabolic syndrome before either form of surgery were completely cured within a year. The authors conclude that LMGB is an acceptable alternative treatment to LRYGB and has proven to be a simple and safe procedure for the treatment of morbid obesity.

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Original article Lee WJ *et al.* (2005) Laparoscopic Roux-en-Y versus mini-gastric bypass for the treatment of morbid obesity: a prospective randomized controlled clinical trial. *Ann Surg* 242: 20–28

Testosterone increases extracellular fluid in hypopituitary men

The effects of growth hormone (GH) on sodium retention and extracellular fluid (ECF) are well established. The mechanisms are not clear, but are thought to involve the GH/IGF-I (insulin-like growth factor I) axis. Men and women differ in their ECF and this contributes to men's higher fat-free mass. Johannsson *et al.* investigated the effects of testosterone in natriuresis, and showed that this hormone significantly increases ECF, an effect that is augmented by GH.