

Metabolic surgery in Korea : Remission of hyperglycemia with modified mini-gastric bypass for the patients with BMI less than 30 kg/m²

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Background: Type 2 Diabetes mellitus (T2DM) has become an epidemic health problem. Compared to western countries, Asian T2DM occurs in patients with lower body mass index (BMI) due to central obesity and decreased pancreatic β -cell function. The efficacy of laparoscopic mini-gastric bypass (LMGB) in obese patients with T2DM is proven by numerous studies. Treatment outcomes of LMGB for non-obese T2DM patients are also estimated to be excellent. The aim of our pilot study was to evaluate the efficacy and safety of LMGB in non-obese T2DM patients (BMI < 30 kg/m²).

Methods: Eighty-eight patients underwent LMGB at Soonchunhyang University Hospital from August 2009 to November 2010. Preoperative data including glycosylated hemoglobin (HbA1c), fasting plasma glucose (FPG), and 2-hour post prandial glucose (2-hr PPG) were compared with data collected at 1, 3, 6 and 12 months postoperatively.

Results: All procedures were completed laparoscopically. Mean age was 47.1 years, mean BMI was 25.3 kg/m², mean operative time was 96.2 minutes, and mean postoperative hospital stay was 4.6 days. Neither mortality nor major complications occurred. Mean preoperative HbA1c, FPG, 2-hr PPG, and C-peptide level were 9.7%, 222 mg/dl, 343 mg/dl, and 2.78 ng/ml, respectively. 12months follow-up was possible in 13 patients. HbA1c, FPG, 2-hr PPG, and C-peptide level at 12th post-operative month were 6.3%, 124 mg/dl, 194 mg/dl, and 2.18 ng/ml, respectively.

Conclusion: The present preliminary study demonstrated resolution of hyperglycemia in non-obese T2DM patients (BMI < 30 kg/m²). Although long-term follow-up data are required, early operative outcomes were satisfactory in terms of glycemic control and safety of the procedure.