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Commentary; Long-term Resolution of Type-2 Diabetes after Biliopancreatic Diversion and Duodenal Switch Procedure: A Retrospective Analysis from a High-Volume Institution

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DESCRIPTION

Obesity is a chronic disease. Several metabolic conditions are predisposed from obesity such as diabetes, cardiovascular disease high blood pressure etc. Early interventions to address obesity and thus reducing the incidence of other comorbid conditions will be beneficial. Recent data from CDC demonstrates that over 40% of the US population has obesity [1]. The annual estimated medical cost of obesity was nearly 173 billion dollars in 2019. Diabetes currently affects over 37 million people in the US (over 11% of the total population). Medical costs for people with diabetes are over 327 billion dollars [2]. So clearly early intervention has huge health and economic benefit.

Non-surgical methods to address obesity mostly have had short-term benefits. Bariatric surgery has been proven to be very effective in the treatment of obesity and related diseases [3, 4]. There are a few different types of bariatric operations that are currently offered. Some are most restrictive in nature such as sleeve gastrostomy or gastric banding. But some also offer reduced absorption such as in gastric bypass or duodenal switch operations. The procedure with intestinal connections seems to have more impact on the patient's metabolic profile. So, patients with metabolic diseases such as diabetes are more likely to get benefit from those operations of all the bariatric operations the duodenal switch is the most complex. It is very robust in terms of achieving more weight loss and resolution of other conditions such as diabetes. It entails having a sleeve gastrostomy where approximately 2/3rd of the stomach is removed.

Then the first portion of the duodenum is transacted. The ileum is then brought up and anastomosed to the resected proximal duodenum. A second ileo-ileal anastomosis is then made to create the common channel where the bilio-pancreatic juices meet with food. The mechanisms behind the improved glycemic controls are not fully understood. It could potentially be from selective activation of intestinal receptors that regulate such metabolic pathways. Especially the concentrations of GLP-1(Glucagon-Like Peptide) and PYY (Peptide YY) have been

Increased following bariatric operations.

These hormonal changes potentially could explain the fact that glucose control is seen in the immediate postoperative period where not much weight loss has been seen. This is currently the largest study that investigated the impact of bariatric surgery, more specifically Bilio-Pancreatic Diversion and Duodenal Switch (BPD-DS), on diabetes [5]. The study has a population of over 150 patients and a follow-up period of 10 years. The study demonstrated that almost 97% of patients had either complete or partial resolution or improvement of diabetes following BPD-DS. In patients who were on insulin preoperatively the study demonstrated the rate of discontinuation of insulin is 83% after the duodenal switch procedure. Patients who undergo bariatric surgical procedures will achieve not just weight loss but also significant improvement in other comorbidities. Bilio-pancreatic diversion and duodenal switch procedures have been demonstrated the highest resolution rates of diabetes based on the current literature. More studies in the future evaluating the efficacy of such operations in comorbidity resolution will help reinforce the findings.

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