Evolution of Modern Surgery
For Peptic Ulcer

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THEODOR BILLROTH, Professor of Surgery and Director of the first Surgical Clinic at the University of Vienna, and his pupils introduced surgical treatment for gastric and duodenal ulcers and the impetus given to gastric surgery by the great Billroth has continued to the present day. Woelfler first performed an anterior gastrojejunostomy in 1881. At this time knowledge of the motor and secretory physiology of the stomach was very meager and the idea back of the operation was that the new opening in the dependent portion of the stomach would permit the gastric content to escape readily into the jejunum, so the ulcer in the duodenum would be shielded from the mechanical and chemical trauma of the partially digested food. Because of difficulties in gastric emptying attributed to the compressive effect of the distending colon on the afferent and efferent limbs of the gastrojejunostomy, in 1885 von Hacker modified the operation by anastomosing the first portion of the jejunum to the posterior wall of the stomach, made accessible by an opening constructed in the mesentery of the transverse colon. Czerny in 1901 insisted on making this posterior gastroenterostomy close to the ligament of Treitz, and this short-loop posterior gastroenterostomy was soon widely adopted by surgeons all over the world. A great many men contributed to the technical perfection of this operation and among them should be mentioned Pean, Moyni.
han, John B. Murphy, William Mayo, and many others. As a result of their efforts the risk of the operation from leakage of gastric content or peritonitis from soiling was reduced to the vanishing point. One definite conclusion that can be drawn from the many thousands of gastroenterostomies that have been performed, is that this operation exerts a profound beneficial effect on the healing of both duodenal and gastric ulcers. The frequent healing of gastric ulcers after gastroenterostomy was perhaps not anticipated at first since it was not clear how the new opening could afford protection to a lesion in the body of the stomach.

In 1892 Jaboulay suggested that the second portion of the duodenum could be mobilized by the Kocher procedure and a side-to-side anastomosis made between the duodenum 2 or 3 inches distal to the pylorus and the antrum of the stomach. This operation was later used quite extensively by Wilkie and undoubtedly has a merit in that it diverts the gastric content into the duodenum rather than into the jejunum. However, surgeons who made careful follow-up studies on their patients soon learned that whereas the duodenal ulcers usually healed after gastrojejunostomy or gastroduodenostomy, new ulcers appeared in the duodenum or in the jejunum adjacent to the anastomosis in 30 to 40 per cent of the patients. The Jaboulay type of gastroduodenostomy appealed to me as being a more physiologic operation than gastrojejunostomy and I performed it in 30 patients with duodenal ulcer. When 8 of these patients returned with new ulcers in the duodenum near the stoma, I abandoned the operation.

However, before the high incidence of gastrojejunal ulceration began to plague the surgeon, he had other difficulties with the operation of gastrojejunostomy to contend with. One of these difficulties was stasis of food in the stomach with persistent vomiting after the operation. This vomiting of bile-stained material was attributed to a vicious circle brought about by the return of duodenal content into the stomach through the new stoma. In order to correct this difficulty two operations were devised, both unsuccessful, but both of which were destined to cast significant light on the physiology of gastric secretion. Doyen in 1893 and von Eisselberg in 1895 suggested that the pylorus be closed when anterior gastroenterostomy is done for the treatment of duodenal ulcer. This operation gave disastrous results and was soon abandoned. We know now that the closed pylorus makes possible prolonged