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Pylorus Preserving Gastrectomy in the Treatment of Gastric Ulcer

Częściowe wycięcie żołądka z pozostawieniem odźwiernika w leczeniu wrzodu żołądka

Резекция желудка с сохранением привратника в лечении язвы желудка

A partial gastrectomy according to Billroth I — Rydygier or Billroth II with several modifications is in general practice and has a definite position in the treatment of gastric and duodenal ulcer. These methods guarantee a high percentage of permanent recovery. Yet some of the patients suffer from several disfunctions of the alimentary tract which are connected with the performed operation. Among these postgastrectomy complications the main problem is the dumping syndrome. According to several authors the syndrome appears in 4 to 20 per cent of the cases (2, 5). This divergence in percentage results from different appreciations of the symptoms, from the technique of the performed operation and from the extensiveness of the procedure, and methods of operation. The dumping syndrome still attracts the attention of research workers. Until now none of the gastric resection methods prevent the dumping syndrome.

There is no doubt that quick gastric emptying in cases after extensive gastrectomy according to Billroth II is the main and substantial cause of the dumping syndrome.

The removal of the pylorus is not necessary in the treatment of a gastric ulcer. The investigations revealed that the pylorus plays a role in peristalsis of the gastric muscles and this is necessary not only for the displacement of food but for the digestion and absorption in the bowels. Moreover the pylorus prevents the duodenal contents from pouring over into the stomach. The removal of the pylorus is connected with several postgastrectomy syndroms, the main being the dumping syndrome. It is well-known that the dumping syndrome is induced by the rapid gastric emptying of stomach contents into the jejunum. That complication was revealed in the absence of the pyloric function. Another disturbance in the absence of the pylorus is the malabsorption of fat, protein, vitamins, iron and calcium. Hence several investigations of new operative methods aiming at preventing this complication have been undertaken.

In 1967 Tetsuo Maki et al. (4) published a new method in the surgical treatment of gastric ulcer. The method is confined to a segmental resection of the distal part of the stomach including gastric ulcer with the preservation of the

pylorus along a 1.5 cm long segment of the pyloric antrum. The stumps are anastomosed end to end (Fig. 1). In the author's, opinion this method prevents the dumping syndrome. The preserving of the pylorus after partial gastrectomy makes rhythmic emptying of gastric contents and the emptying time is similar to that of healthy persons. That was confirmed by X ray examinations. The success of this method depends on the preservation of the pyloric innervation and this innervation is causing the normal function.

T. Maki (4) performed a pylorus preserving gastrectomy in 50 patients in cases of ulcer or polypus of the stomach. Three years of observation did not reveal ulcer recurrence or dumping syndrome. X ray examinations taken in different periods after the operation showed nearly normal gastric function. The emptying time was only half an hour shorter than that observed in controls.

Similar results were published by Liavag, Roland and Broch from Oslo (6). They performed 25 pylorus preserving gastrectomies.

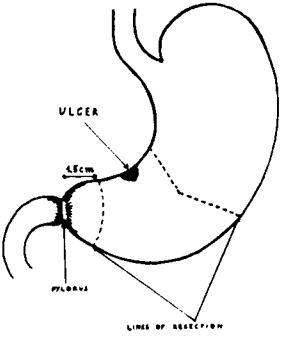

Fig. 1

In the Second Clinic of General Surgery, Surgical Institute, Medical Academy, Lublin pylorus preserving gastrectomy was started in 1970. Until May 1974 we performed 65 operations of this kind in cases of gastric ulcer. The patients' ages ranged between 28 and 75. There were 12 female patients. Taking into consideration the localization on the ulcer and gastric acidity segmental resections of the stomach covered 1/2 to 2/3 of its distal part. The main point of the operation was to leave 1.5 cm of the prepyloric part above the pyloric ring. The stomach was narrowed by resection of lesser curvature so that the remaining lumen in the stomach had the same size as the preserved prepyloric segment. The narrowing of the stomach should be so performed, that no narrow pipe is created. This complication is disadvantagous for gastric function as it leads to delayed gastric emptying and vomiting. The two parts of the stomach were then sutured to each other in two layers. Anastomosis was achieved first by approximating the corpus and duodenal mucosa by continous suture. Next the seromuscular coats were sutured with interrupted suturea (Fig. 2). This kind of suturing does not narrow anastomosis.

A nasal tube was inserted in to the stomach for a 2—3 day period. The tube decreases intraluminal pressure and decompresses anastomosis by drainage of gastric remains. At the time of the occurrence of peristalsis the nasal tube is removed. On the first postoperative day tea is given orally.

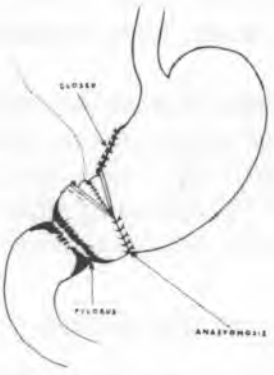

Fig. 2

No complications were found in the postoperative period. There were no deaths. The Follow-up period covered 1 to 5.5 years. No ulcer recurrence or dumping syndrome were encountered in any of the patients. They became ulcer asymptomatic, gained in body weight and resumed their regular jobs.

A clinical examination was carried out in all patients. The gastric function was estimated by × ray examination. Basic gastric acid secretion and secretion after stimulation with histamine (0.04 mg/kg of the body weight) was estimated. The X ray examination in individual operated cases revealed the motoric function of the stomach and pylorus and defined the emptying time. For this purpose the patients had been given a mixture of myxobar, groats and water in the quantity of 400 g. The × ray pictures were taken immediately after the barium meal and after 30, 60, 120 and 180 minutes. In individual cases the gastric emptying lasted 1.5 to 2.5 hours. The X ray examination revealed rhythmic function of the pylorus and the contrast meal was passing into the duodenum in succesive portions. No rapid or quick gastric emptying occurred. The first barium meal portions quickly got into the duodenum. The whole quantity of meal passed only in separate portions. There were no basal HCl secretion and the secretion after stimulation with maximal dose of histamine were lower than those observed before the operation. In individual cases in this group in the late period anaciditas was observed. These patients were treated with HCl orally. X ray examinations and estimation of the

gastric juice were performed twice; the first 12 days after operation and the next at a later period. The results were similar.

We do not reveal malabsorption of fat and proteins. All patients gained in body weight. Some of the patients gained up to 10 kg in body weight during 2 or more years after the operation. No ulcer recurrence, anemia or dumping syndrome were observed. Generally our patients are not on special diet. They smoke, have normal stools and resumed their regular jobs.

In the light of clinical observations and examinations of the patients it seems that pyloric preserving gastrectomy leaving 1.5 cm of the prepyloric part above the pylorus ring leaves the physiologic of alimentary tract almost undisturbed. This operiaton secures recovery, lowers hypepatient from several postgastrectomy syndroms.

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STRESZCZENIE

Wycięcie żołądka z pozostawieniem odźwiernika i zachowanym unerwieniem odźwiernika (wg metody Maki z r. 1967) wykonano u 65 chorych z wrzodem żołądka. Główna zasada operacji polegała na pozostawieniu 1,5—2 cm części przedodźwiernikowej i zespoleniu obu kikutów żołądka koniec do końca.

Wiek chorych wahał się w granicach 28—75 lat. Nie było śmiertelności, a okres obserwacji pooperacyjnej wynosił 1—5,5 lat. Okres obserwacji pooperacyjnej u 15 chorych wynosił ponad 5 lat, u 10 chorych — 4 lata, u 15 chorych — 3 i u 25 chorych — 2 lata.

U wszystkich chorych przeprowadzono badania kliniczne włączając w to badanie rentgenowskie i badanie treści wydzielniczej żołądka. Nie obserwowano nawrotu wrzodu ani zespołu po wycięciu żołądka. Wszyscy nasi chorzy nie mieli objawów choroby wrzodowej, przybrali na wadze i podjęli swoją pracę zawodową.

Biorąc pod uwagę obserwacje i wyniki badań, autorzy dochodzą do wniosku, że wycięcie żołądka z pozostawieniem odźwiernika przewyższa inne metody lecze-

nia operacyjnego wrzodu żołądka. Przywrócenie normalnej drogi przechodzenia pokarmu z żołądka do dwunastnicy i zachowanie czynności odźwiernika przemawia na korzyść tej metody. Zabezpiecza to chorego przed zespołem po wycięciu żołądka, a wartości wydzielanego kwasu solnego przez żołądek są niższe niż obserwowane przed tego rodzaju operacją.

РЕЗЮМЕ

Резекцию желудка с сохранением его привратника и сохраненной иннервацией привратника желудка (по методу Маки от 1967 г.) провели у 65 больных язвой желудка. Главный принцип операции состоял в сохранении от 1,5 до 2 см допривратниковой части и в анастомозе обоих концов культей желудка.

Возраст больных колебался между 28 и 75 годами. Не наблюдалось смертности, а период послеоперационного наблюдения продолжался от 1 до 5,5 лет. У 15 больных период послеоперационного наблюдения продолжался свыше 5 лет, у 10 — 4 года, 15 — 3 и у 25 больных — 2 года.

Все больные прошли клинические обследования, включающие рентгеновские исследования и исследования содержимого желудка. Рецидив язвы и послеоперационный синдром не наблюдался ни у одного из оперированных. Также и симптомы язвенной болезни не наблюдались ни у одного из больных, все они прибавили в весе, вернулись к своей профессии.

Учитывая наблюдения и результаты исследований, авторы приходят к заключению, что иссечение желудка с сохранением его привратника превышает другие методы операционного лечения язвы желудка. Полезность этого метода состоит в восстановлении нормального пути перехода пищи из желудка в двенадцатиперстную кишку и в сохранении функции привратника желудка. Это предохраняет больного от синдрома после резекции желудка. Кроме того, количество выделенной желудком соляной кислоты оказывается меньше, чем перед такого рода операцией.