



Primary Results of Laparoscopic Gastric Resection in a Technically Optimized Version of the Operation

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Annotation: The article presents an analysis of the primary results of laparoscopic gastric resection in a technically optimized version of the operation. Studied Immediate Results this surgical intervention.

Keywords: gastric stump anastomosis, endovideosurgery, minilaparotomy, gastroenteroanastomosis, endovisual surgery.

Relevance. In gastric surgery, many different surgical methods of treatment have been developed and implemented, with resection methods occupying a leading place. These methods are based on the principles of restoring the continuity of the gastrointestinal tract, by anastomosing the stump of the stomach and duodenum, or by performing jejunogastrostomy. They were the basis for creating a large number of different modifications of gastric resections. However, most surgeons note the advantage of resection with the formation of an anastomosis of the stump of the stomach and duodenum, which allows you to maintain the physiological sequence of the gastrointestinal tract, reduce the likelihood of post-gastroresection syndromes. Recent years are characterized by particularly rapid development of endovideosurgery. Having shown its advantages over open laparotomic interventions in a number of diseases, a new direction - endosurgery has not bypassed gastric resection. The first successful operations were carried out by P. Goh with a team of like-minded people in 1992. The authors performed laparoscopic resection of the stomach with the formation of gastrojejunostomy: These operations have shown their reliability and effectiveness, revealing certain advantages over the "open" technique of intervention. Until today, most surgeons perform laparoscopic resections of the stomach of the Billroth-2 type, due to the lack of a proven technique for applying gastroduodenoanastomosis and the surgeons' ideas about the sufficient complexity of laparoscopic implementation of this technique. E.I. Segal and JI. E. Slavin (2001) noted that the methods of laparoscopic resection according to the Billroth-1 type in diseases of the stomach and duodenum 1 are undeservedly deprived of attention, although they are more physiological.

Foreign authors also reported on single operations of resection of the stomach of the Billroth-1 type, while most of them used minilaparotomy to create hardware gastroduodenoanastomosis.

In practical surgery, bleeding during mobilization along the greater curvature often forces conversion. Methods for preventing the risk of bleeding have not yet been developed and are an urgent problem in endovisual surgery.

Unfortunately, the technical and methodological aspects of this operation have not been worked out to date, the operations are still laborious and are performed in a small number of patients and in individual clinics. All this prompted us to study this problem closely.

Target of our study is to improve the results of surgical treatment of duodenal ulcer by optimizing endovisual technologies.



Material and methods

The patients were hospitalized at the multidisciplinary clinic of the Tashkent Medical Academy for the period from 2019 to 2022. The study included 34 patients with duodenal ulcer complicated by pyloric stenosis. Women made up 12 (30%), men 22 (70%). The age of the patients ranged from 28 to 64 years, while the average age was 46±16. Patients underwent standard clinical and laboratory examinations, including the barium passage of the gastrointestinal tract to the standard. After research, in 19 (67%) cases, subcompensated and in 15 (33%) decompensated stages of pyloric stenosis were identified, as well as 6 (%) patients with signs of grade 2 and 3 (%) grade 3 gastropotosis. 27 (72%) patients suffered from stage 2-3 obesity, and type 2 diabetes mellitus was diagnosed in 5 (15%) cases.

All patients underwent laparoscopic resection of the stomach according to Billroth-2 in the Hofmeister-Finstrer modification on a short loop with an optimized technical version of the operation.

Laparoscopic resection of 2/3 of the stomach with the application of GEA was carried out as follows. Under general anesthesia, a trocar with optics was inserted in the navel area, while taking into account the degree of gastropotosis. In the presence of gastropotosis of the 1st degree, the optics were inserted along the lower edge of the umbilical ring, at the 2nd degree below 2 cm, at the 3rd degree 4 cm below and 2 cm laterally. After the revision, the working trocars were introduced as follows: the second 5 mm trocar was inserted 4 cm above the optics along the mid-subclavian line on the left. The third trocar 5 mm at the level of the optics along the anterior axillary line on the left. The fourth trocar 12 mm at the level of the umbilicus along the mid-subclavian line on the right and the fifth trocar 5 mm 2 cm above the fourth along the anterior axillary line on the right. When establishing trocars, the landmark is marked after the introduction of the optics. In order to prevent active bleeding, temporary occlusion of the splenic artery at the level of the lesser curvature was performed; for this, a De Bekey vascular clamp was temporarily applied. The stomach was mobilized along the greater and lesser curvature using the Sonosition ultrasonic dissector and the LigaSu bipolar coagulator. The duodenum was cut off with a 60 mm Echelon linear stapler through a 12 mm trocar. Mobilization of the Treitz ligament, while the position of the patient in Trendelenburg. Creating a "window" in the mesocolon. Laparoscopic resection of 2/3 of the stomach. Imposed gastroenteroanastomosis according to Billroth-2 in the modification of Hofmeister-Finsterer linear stapler Echelon 60 mm on a short loop. The anastomosis is fixed to the created window on the mesentery of the transverse colon with an intracorporeal suture with a Vicril thread No. 2.0. Produced minilaparotomy 4 cm in the epigastrium, to evacuate the resected part of the stomach. Seams for punctures. Ac. stickers.

Results and discussion.

Evaluate endo-visual interventions with traditional ones in a comparative aspect, of course comparable. However, in order to show the effectiveness of laparoscopic interventions on the organs of the gastrointestinal tract, we studied retrospective indicators of gastric resection in 44 patients with traditional methods.

Table

Complication group		TRS	LRS before improvement	LRS after improvement
Operation duration		4±0.25h	3±0.20 h	2±0.12 h
Intraoperative complications	Trocar rearrangements	-	6	2
	Severe bleeding from the vessels of the stomach	8	4	0
	Damage to nearby organs	2	1	0
	Vagus nerve injury	2	0	0
Post-operative complications	Failure of the stump 12 of the duodenum	1	0	0
	Anastomositis	3	1	0
	Bleeding from the anastomosis	1	0	0
	Pulmonary embolism	1	0	0
	Wound hematomas	2	0	0
	Suppuration of the wound	1	0	0
	Adhesive intestinal obstruction	1	0	0
	Post-operative hernia	1	0	0
	Total	16	13	2



One of the important results of the evaluation of the technical performance of the LRS is the duration of the operation. With the traditional resection of the stomach, the duration of the operation is on average 4 ± 0.25 hours. The duration of LV before the development of technical improvement of the technique averaged 3 ± 20 hours, the cause of which was bleeding during the mobilization of the curvature of the stomach, which was carried out with a conventional bipolar coagulator without temporary occlusion of the splenic artery. Spent more time repositioning trocars due to their intraoperative conflicts during interventions. As the instrumentation and surgical technique improved, the duration of LRS execution decreased to an average of 2.5 ± 10 hours. The use of such devices as Harmonic (Sonicision) and LigaSure (Maryland) played a special role in reducing the operation time. Thanks to the development of an improvement in the technical stages of the operation, this indicator decreased to an average of 2 ± 0.12 hours.

Intraoperative acute bleeding from the vessels of the stomach during its mobilization along the curvature in the traditional way amounted to %, the development of the method of temporary occlusion of the splenic artery allowed a sharp reduction in this indicator to %. Damage near the lying organs was not noted by us with an improved LRS.

In the immediate postoperative period, only (%) of one patient after LRS, before the development of a technically improved technique, was diagnosed with signs of anastomosis - manifesting pain in the epigastric region after taking food according to the scheme for 3 days, which was successfully cured by conservative antiulcer therapy. We did not observe any complications from the wound in LRS in the postoperative period, since low trauma is the main advantage of endovisual surgery.

The rehabilitation period also took no more time with LRS, the patients had already returned to their normal life activities on the 10th day after the operation, the obligatory observance of the diet prescribed after the operation period. In the long term after traditional surgery, 1 (%) patient had signs of intestinal obstruction and postoperative ventral hernia, which required surgical intervention.

According to Sorokin !!!, traditional gastric resection has more advantages over endovisual ones, since, firstly, the operating area is large, and secondly, the prevention of bleeding by laparoscopic means is not always immediately agreed due to the sharp large volume of blood added to the operating field. Supporters of laparoscopic technology present a contradiction in this article, with their positive results of the operation. According to Pavlov!!

There is a decrease in the proportion of intra and postoperative complications from 23% to 9%, with a lethal outcome up to 0.3%.

Many foreign authors write that during resection of 2/3 stomachs, there is the greatest risk of damage to the pancreatic head when the pylorus is exposed due to the presence of perifocal inflammation. Thanks to high-tech endosurgical instruments, namely the use of high-frequency narrow-breasted - Harmonic (Sonicision), ultra-short safe excision near lying organs during gastric resection has been possible. In many studies, the results of resection success are assessed by the frequency of occurrence of post-resection syndrome. Ivanov!!! in his publications of the results evaluates the scoring system for the calculation of symptoms that have arisen after surgery and conducts tests for acidic conditions of the stomach after resection. The study of histo-biochemical changes in the stomach after surgery also has a great role in the development of science in this area.

Thus, LRS in duodenal ulcer is a more effective method due to the significantly less traumatic operation compared to traditional ones. The use of modern technologies in LRS improves the quality of the functional capabilities of the organ in the postoperative period. Improving the technical aspects of LRS allows reducing the number of intra and postoperative complications, thereby improving the quality of life of patients.

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