



Optimization of Surgical Tactics and Results of Surgical Treatment in Colonic Stomas

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ABSTRACT: The study included 127 patients with colonic stoma, the causes of which were urgent conditions of non – tumor origin, where it became necessary to perform Hartmann operations (2001–2020). According to the purpose and objectives of the study, the authors conventionally divided into two groups: the control group, which included 73 (57.5%) patients who were subject to retrospective analysis, and the main group, which included 54 (42.5%) patients, where surgical tactics and techniques of operations were optimized. An analysis of the results of colon restoration in the main group showed that a certain decrease in the overall frequency of complications was achieved – 18.5% (in the control group – 38.3%), as well as complications associated with the formation of anastomoses – 7.4% (in the control group – 12, 3%).

Thus, the optimization of surgical tactics in reconstructive and restorative operations and the widespread use of invaginated methods of bell anastomoses in patients with colonic stomas after Hartmann’s operation made it possible to improve the results of surgical treatment.

KEYWORDS: Intestinal stoma, Interintestinal invagination anastomosis, Hartmann operation, Reconstructive and restorative operations.

INTRODUCTION

Currently, the restoration of colon continuity in the elimination of colostomy is one of the urgent tasks of abdominal surgery [1, 2]. According to a number of authors, intestinal stoma in complicated colon pathology is formed in 50–80% of cases [3, 6]. Elimination of the stoma with subsequent restoration of intestinal continuity is the main therapeutic effect, however, complications from the anastomosis at any level of the intestinal tube are fraught with serious consequences and often, the death of the patient. Insufficiency of gastrointestinal anastomoses is the cause of postoperative peritonitis in 34–80% of patients and in 40–60% of cases is the cause of death, which was the reason for this study [7, 10].

AIM OF THE STUDY

Improving the results of reconstructive and restorative surgical interventions after Hartmann operations by optimizing surgical tactics and improving the methods and techniques for forming bell anastomoses.

MATERIAL AND METHODS

On the basis of the Department of Surgery with Urology of the ASMI and the surgical department of the Republican Scientific Center for Emergency Medical Care of the Andijan branch from 2001 to 2020, there were 169 patients with colonic stoma.

Of 169 patients in 42 cases, the cause of the formation of colonic stomas were tumor diseases. This contingent of patients had a likelihood of tumor recurrence, and also had a high age limit, which did not allow objective comparison of the results of the study. In this regard, in the future, this contingent of patients was not subject to scientific analysis.

In 127 cases, the causes of the formation of colonic stomas were urgent conditions of non–tumor origin, where it became necessary to perform Hartmann operations (volvulus of the sigmoid colon in 124 patients and stab wound in 4 patients). These patients were the subject of the present study.

According to the purpose and objectives of our study, we conditionally identified two groups:



– Control – from 2001 to 2010, including 73 (57.5%) patients with left-sided colonic stoma, who were subject to retrospective analysis;

– Main – from 2011 to 2020, including 54 (42.5%) patients with left-sided colonic stoma, where surgical tactics and techniques of operations were optimized.

Of the total number of patients (127), men accounted for 78 (61.4%) and women 49 (38.6%), with a ratio of 2:1. At the same time, there were 23 (18.1%) patients aged 20–44 years, 10 (58.8%) patients aged 45–59 years, and 33 (26.0%) patients aged 60 years and older. The age of the patients ranged from 22 to 79 years.

Our analysis showed that the main contingent consisted of patients of young and mature age – 94 (74.0%), that is, the most able-bodied part of the population. At the same time, a considerable part was made up of persons of elderly and senile age. The data obtained once again emphasize the medical, economic and social significance, as well as the excessive urgency of this problem.

All patients who were admitted in a planned manner, regardless of age and clinical signs of the disease, underwent a detailed examination using general clinical, laboratory and instrumental diagnostic methods (survey and contrast fluoroscopy, radiography, fibrocolonoscopy, irrigoscopy. According to ultrasound indications, computed tomography and laparoscopy).

The use of the above methods of examination at various stages of patient management allows to have a more complete picture of the patient's condition, as well as to optimize surgical tactics in patients with colonic stoma when choosing the method of reconstructive and restorative surgery (RRS) and managing the postoperative period.

RESULTS

Our clinical material, consisting of 127 patients, covers a rather large period of time (2001–2020). We would like to note that in the initial period of our work (2001–2010) in patients with colonic stoma after Hartmann operations, traditional interintestinal anastomoses were formed using double-row sutures. However, with the accumulation of practical experience in working with this group of patients (2011–2020) and dissatisfaction with its results, it prompted us to reconsider the issues of diagnosis, preoperative preparation and postoperative management.

We considered it expedient to carefully analyze the tactical and technical errors of the stages of operations in the traditional performance, which was the reason for optimizing surgical tactics and improving the methods and techniques for the formation of interintestinal invaginated bell anastomoses when performing RRS.

The general preparation for the reconstructive operation was aimed at eliminating paracolostomy complications, normalizing the main clinical and laboratory parameters, and restoring the patient's trophological status.

All surgical interventions were performed under standard combined endotracheal anesthesia. Due to the fact that one surgical school prevailed in both clinics, many important aspects of the operation in patients of the main group did not differ from each other. In particular, all types of reconstruction of the colon after Hartmann's operation were performed by open access, by means of a wide median laparotomy. According to the generally accepted technique, the colostomy was eliminated and the afferent colon was isolated. Regardless of the method of anastomosis, the operation ended with drainage of the abdominal cavity and decompression of the rectum. The management of the postoperative period was also the same for all patients of the main group.

One of the main objectives of the study was to elucidate the causes of early postoperative complications. To solve this problem, conditionally constant indicators were identified and groups of variable indicators were identified.

To conditionally constant indicators, we attributed the same indications for surgery, almost the same terms and volumes of reconstructive surgery, the same approaches to preoperative preparation and postoperative management.

Variable indicators included the data of topographic and anatomical relationships and variations of the chosen surgical tactics (type and method of anastomosis formation). It should be noted that of all indicators, the surgeon can only actively influence the choice of tactics.

When choosing a method for the formation of RRS, an important role is played by the time elapsed from the time of the primary operation. Thus, in the first 3–6 months, 33 (26.0%) patients were admitted for RRS. Of these, patients in the control group were 16 (21.9%), and the main group 17 (31.5%).

In terms of 7–12 months, 85 (66.9%) patients were admitted for RRS. Of these, patients in the control group were 51 (69.9%), and the main group – 34 (63.0%).



Patients admitted within a period of 1 year or more, for the implementation of RRS amounted to only 9 (7.1%). Of these, patients in the control group – 6 (8.2%), and the main – 3 (5.5%). At the same time, among patients admitted in terms of more than a year, in 1 patient the period from the primary operation to the moment of performing RRS was 3 years and in 1 – 6 years.

When determining the indications for the operation to restore the continuity of the interintestinal anastomosis, first of all, the nature of the operation performed and the reason were taken into account. The distance between the adductor loop of the large intestine and the stoma was also taken into account, which was established according to an extract from the medical history and according to instrumental examination, as well as the location and condition of the stoma and the initial state of the patient.

Along with this, in the control and main groups, in 39 (30.7%) cases, upon admission of patients for RRS, we diagnosed concomitant therapeutic diseases. In general, in both groups, concomitant therapeutic pathologies in the form of diseases of the cardiovascular system were diagnosed in 21 (16.5%) patients, respiratory organs in 6 (4.7%), liver in 3 (2.4%), kidneys in 2 (1.6%) and anemia in 7 (5.5%) patients.

When diagnosing concomitant therapeutic diseases, consultations were held with the relevant specialists, followed by its correction, which reduced the risk of surgery and the course of the postoperative period. Also, we diagnosed combined surgical pathologies (chronic calculous cholecystitis – 5 and postoperative ventral hernia – 3).

A comparative analysis of interintestinal traditional and invaginated anastomoses in both groups found that a number of parameters are identical: the main diagnosis, which was the cause of bowel resection; urgency of surgical intervention; resection of a pathologically altered part of the intestine; methods and types of interintestinal anastomoses; nature of combined surgical and therapeutic pathologies.

According to the classification of Vasiliev V.S. (1984) stump diastasis – stoma 10 cm or more was found in 65.3% of patients, less than 10 cm – in 34.7% of cases. According to irrigoscopy data, a long post–colostomy section was found in 37.0% of patients, an average length in 55.2%, and a short post–colostomy section was found in 7.8%. The distribution of patients in the control and main groups, depending on the method of formation of the interintestinal anastomosis, is presented in table 1.

Table 1. Distribution of patients depending on the method of formation of interintestinal anastomosis

The methods of formation of interintestinal anastomosis	Groups					
	Control		Main		Total	
	abs	%	Abs	%	abs	%
– “end to end”	9	12,3	5	9,3	14	11,0
– “end to side”	6	8,2	3	5,5	9	7,1
– “side to side”	48	65,8	7	13,0	55	43,3
– “invaginative”	10	13,7	39	72,2	49	38,6
Total:	73	100	54	100	127	100

As can be seen from Table No. 1, taking into account the above data, in 14 patients an interintestinal anastomosis was formed according to the “end to end” principle (in the control – 12.3%; in the main – 9.3%). RRS according to the principle “end to side” – in 9 patients (in the control – 8.2%, in the main – 5.5%). Bell and colorectal anastomoses according to the “side to side” principle were formed in 55 patients. Moreover, in the control in 65.8%, and in the main – 13.0% of patients, i.e. there was a clear trend towards a decrease in the number of patients with the formation of this method of inter–intestinal fistula.

Invaginated interintestinal anastomoses were formed in 49 patients (in the control – 13.7%, in the main – 72.2%), i.e. in the main group there was a clear trend towards an increase in the number of patients with this type of interintestinal anastomosis.

The data obtained indicate that end–to–end and end–to–side interintestinal anastomoses were rarely used (11.0% and 7.1%, respectively). In RRS after Hartmann operations, preference was given to interintestinal anastomoses of the “side–to–side” type and the invagination method (43.3% and 38.6%, respectively). With the accumulation of clinical experience and study of the results, in the main group, we have significantly expanded the indications for the technique of inter–intestinal invagination anastomosis.

Planning a method for restoring the continuity of the colon – the type of anastomosis, the method of anastomosis, should be carried out even during the period of examination and preoperative preparation. The obtained results of the analysis made it possible



to formulate the conditions for the optimal choice of the anastomosis option for restoring the continuity of the colon after the Hartmann operation.

A patient with a known length of the post-colostomy stump, diastasis between the stoma and the stump of less than 10 cm with a movable adductor segment of the intestine: any of the above methods of forming an interintestinal anastomosis can be used to restore the continuity of the colon. The type of anastomosis ("end-to-end", "end-to-side", "side-to-side" and invagination) depends on the ratio of the diameters of the anastomosed sections of the intestine. At the same time, we preferred the invagination method of anastomosis.

A patient with a known length of the post-colostomy stump, a diastasis between the colostomy and the stump of more than 10 cm, with a movable adductor section of the intestine: to restore the continuity of the colon with good mobilization of the anastomosed sections of the colon, it is advisable to expand the indications for the formation of anastomosis by the invagination method.

A patient with a short post-colostomy stump (from 6 to 10 cm), diastasis between the colostomy and the stump less than 10 cm, with an inactive adductor segment of the intestine due to a pronounced adhesive process. The preferred choice of anastomosis is invagination. In a similar situation, but with an ultrashort post-colostomy stump, the operation of choice is end-to-end anastomosis.

In preoperative preparation, along with generally accepted measures, special attention was paid to the prevention of thromboembolic and purulent-septic complications. The specific volume and content of therapeutic measures is determined depending on the form of intestinal disease, the severity of the process, the age of the patients, the presence of concomitant therapeutic or surgical pathology. However, with individual differences in the training program, the installation requirements must be observed.

A favorable outcome of the operation is also predetermined by the management of the early postoperative period. Along with generally accepted measures, much attention was paid to the early activation of patients and stimulation of the intestines. In order to timely restore the motor-evacuation function of the intestine, on the second day after the end of the operation, the patient is prescribed the first session of intestinal stimulation (bisacodyl suppositories, constant decompression of the stomach and fistula area, raglan, cerucal, gymnastic exercises on the bed).

The management of the postoperative period should be considered as a continuation of a single program of therapeutic measures initiated during the preoperative preparation and the operation itself. With some conventionality in the complex of therapeutic measures of the postoperative period, the restoration of the internal environment of the body, which is solved by adequate, rational infusion therapy, is of particular importance.

We conditionally divided all postoperative complications into complications associated with the formation of anastomosis and surgical complications of a general nature, not associated with the formation of anastomosis. Such a subdivision was carried out on the basis of an assessment of the nature of the complications that arose in our patients, and in our opinion, it fully allowed us to analyze the results of the operations performed.

In the control group, complications were diagnosed in 28 (38.3%) patients. Of the 28 (38.3%) patients in 12 (16.4%), we diagnosed postoperative complications with a fatal outcome in 9 (12.3%) cases. At the same time, wound complications were diagnosed in 10 (13.7%) and general complications in 6 (8.2%) patients.

In the main group, complications were diagnosed in 10 (18.5%) patients. Of these, in 4 (7.4%), we diagnosed postoperative complications caused by the formation of an interintestinal anastomosis with a fatal outcome in 3 (5.5%) cases. At the same time, wound complications were diagnosed in 4 (7.4%) patients and general complications in 2 (3.7%) patients.

CONCLUSION

An analysis of the results of colon restoration in the main group showed that a certain decrease in the overall frequency of complications was achieved – 18.5% (in the control group – 38.3%), as well as complications associated with the formation of anastomoses – 7.4% (in the control group – 12, 3%).

Thus, the optimization of surgical tactics in RRS and the widespread use of invaginated methods of bell anastomoses in patients with colonic stomas after Hartmann's operation made it possible to improve the results of surgical treatment.



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Cite this Article: Madazimov M.M., Botirov A.K., Botirov J.A., Turgunboev A.A. (2022). Optimization of Surgical Tactics and Results of Surgical Treatment in Colonic Stomas. International Journal of Current Science Research and Review, 5(10), 3883-3887