



ALGORITHM OF MANAGEMENT OF PATIENTS WITH COMPLEX RECTAL FISTULAS

Kodir Usmonkulovich Sherkulov

<https://orcid.org/0009-0000-4081-3039>

Samarkand State Medical University. Samarkand, Uzbekistan.

Salim Sulaymonovich Davlatov

<https://orcid.org/0000-0002-3268-7156>

Bukhara State Medical Institute. Bukhara, Uzbekistan.

Kosim Erdanovich Rakhmanov

<https://orcid.org/0000-0002-3898-504X>

Samarkand State Medical University. Samarkand, Uzbekistan.

Bakhtiyor Zarifovich Khamdamov

<https://orcid.org/0000-0003-3569-6688>

Bukhara State Medical Institute. Bukhara, Uzbekistan.

Muhayyoxon To`xtasinovna Hamdamova

<https://orcid.org/0000-0003-3128-6120>

Bukhara State Medical Institute. Bukhara, Uzbekistan.

Ilkhom Bakhtiyorovich Khamdamov

<https://orcid.org/0000-0001-6614-4806>

Bukhara State Medical Institute. Bukhara, Uzbekistan.

1 - Samarkand State Medical University. Samarkand, Uzbekistan.

2 - Bukhara State Medical Institute. Bukhara, Uzbekistan.

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ABSTRACT.

Purpose of the study is to improve the results of treatment of rectal fistula patients by improving the technical aspects of fistula excision.

Materials and methods of research. A total of 134 cases were selected for a prospective dynamic active study. The first group, the Control group, included 56 (41.0%) patients in whom fistulas were dissected using conventional methods. The second group, the main group, included 78 (59.0%) patients in whom fistula dissection was performed using modified instruments. In the main group of patients sphincter-saving operations were performed.

Results of the study. Patients who underwent LIFT surgery with the use of modified guides and without disruption of the muscle fibers of the anal ileum have a significant reduction in the level of pain syndrome in the postoperative period and after acts of defecation. This reduction in pain reduces the need for narcotic analgesics and significantly improves the quality of life of patients.

Conclusions. The use of sphincter-saving surgical methods in the main group differs from traditional operations on fistula excision with subsequent suture of the sphincter, causing a shorter period of temporary disability - 18.9 ± 3.6 days compared to 32.7 ± 4.6 days; more favorable postoperative course with lower intensity of pain syndrome - 1.6 ± 0.3 on VAS scale in Control with 6.0 ± 0.2 points; shorter hospitalization - 10.1 ± 2.2 days in Control with 17.4 ± 3.1 days, and more effective postoperative rehabilitation of patients. These factors significantly improve the quality of life after surgery and contribute to lower financial costs to achieve successful treatment outcomes.

KEYWORDS: anal canal, rectum, extrasphincteric fistulas, treatment.

INTRODUCTION

Today, if we talk not about a single universal method, but about the development of a certain direction, approach to the treatment of rectal fistula, there are significant positive changes. Thus, since the end of the last century, against the background of the development of medical technology began to appear and actively develop methods of treatment of rectal fistula, in which the sphincter apparatus is not directly affected [2, 5, 8, 11, 14].

For a number of years, the effectiveness of surgical treatment of patients with rectal fistulae has been evaluated, and during this period the techniques have already become established in the arsenal of surgeons. For example, several meta-analyses have been published characterizing the effectiveness of LIFT (Ligation of Intersphincteric Fistula Tract). Meta-analysis data show the average healing rate of rectal fistula to be between 70 and 71% (40 and 95%). An evaluation of the literature data on video-assisted fistula treatment has also shown encouraging results, with fistula healing in 40 to 95% of cases [1, 4, 7, 10, 13, 16]. These data indicate that the efficacy of these techniques is approaching the effectiveness of traditional radical interventions and the need for a study comparing the results of traditional interventions and well-proven sphincter-sparing surgeries [3, 6, 9, 12, 15, 17].

Another, especially highlighted and still unsolved surgical problem is the treatment of complex variants of rectal fistula in the presence of a marked scarring process in the wall of the

rectum and anal canal with scarring changes in the area of the internal fistula, the presence of infiltrates and infiltrates in the pararectal tissue. Often the above changes are observed in recurrent fistulas, after one or more previous surgeries with compromised state of the locking apparatus of the rectum [13, 15, 19, 21]. One of the options for interventions in the presence of such fistulas is the technique of transferring / relocating a complex fistulous passage into the intersphincteric space, which was proposed by a number of authors in the early 20th century. The technique allows for maximum preservation of the sphincter apparatus structures, i.e. it can be classified as a sphincter-sparing intervention and is aimed at patients who find it difficult to perform other sparing treatment options [14, 16, 18]. In fact, this type of intervention can be used in patients who, under normal circumstances, would most likely be treated with a ligature method [2, 19, 22]. A comparative study evaluating the efficacy of this approach, examining functional outcomes after its use, and comparing these findings with those of the traditional ligature method in this patient population is required to determine the advantages and disadvantages of this approach.

Purpose of the study is to improve the results of treatment of rectal fistula patients by improving the technical aspects of fistula excision

MATERIALS AND METHODS

The study is based on the data of examination and treatment of patients with rectal fistula operated in the proctology department of the multidisciplinary clinic of Samarkand State Medical University in the period from 2018 to 2023. 134 cases were selected for the prospective dynamic active study. Among them were patients with transsphincteric and extrasphincteric rectal fistulas. All patients were operated on routinely and, depending on the chosen treatment tactics, were divided into two groups. The first group, the Control group, included 56 (41.0%) patients who underwent fistula excision using traditional methods. The second group, the main group, included 78 (59.0%) patients in whom fistula dissection was performed using modified instruments.

In the multidisciplinary clinic of the Samarkand State Medical University, when performing excision of rectal fistulas until 2020, we used exclusively traditional methods, after which there were well-known disadvantages - insufficiency and stricture of the anal sphincter, recurrence of rectal fistula, etc. These circumstances prompted us to search for more gentle, less traumatic and at the same time radical methods of surgery.

As a result, since 2021, the choice of surgical treatment for rectal fistulas has been differentiated taking into account the individual peculiarities for each patient (Fig. 1). When choosing the method of surgical treatment we were guided by the results of preoperative diagnostics. MRI was combined with ultrasound and fistulography data. We took into account the gender of the patients, as well as the location and degree of complexity of the fistulous passage.

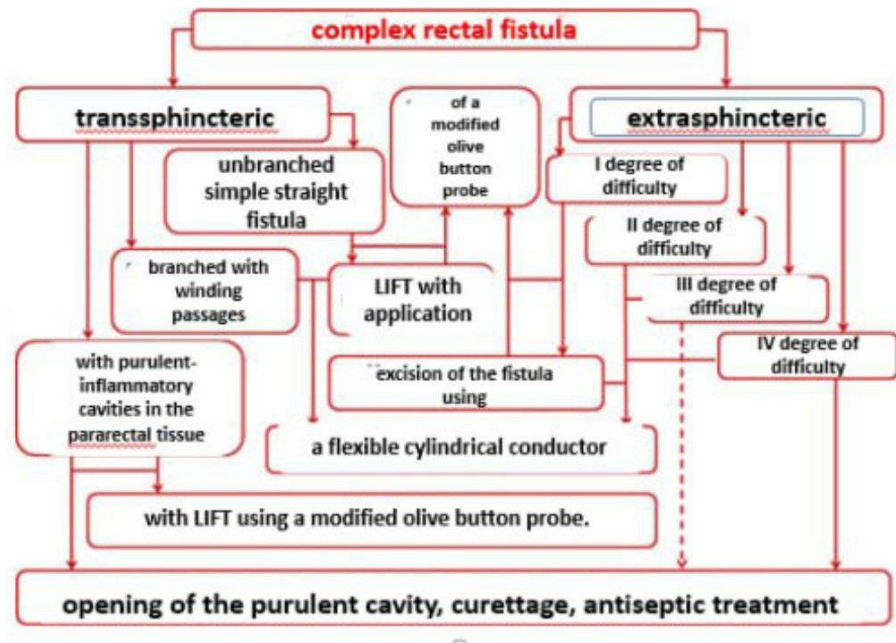


Figure. 1. Algorithm of surgical tactics in complex rectal fistulas

When performing LIFT (Ligation of Intersphincteric Fistula Tract) surgery, i.e. ligation of the fistulous passage in the intersphincteric space and removal of the proximal part of the fistula from the rectum, in addition to the standard set of surgical instruments, we additionally used a dissector and a modified button probe with an olive, which we developed. The dissector was necessary to isolate the part of the fistulous passage located in the intersphincteric space, especially the “posterior” part, which is the most proximal to the fistula surface and is not visualized from the wound side. The end of the dissector was inserted behind the fistulous canal and bypassed and reintroduced into the wound. Subsequently, the instrument was needed to grasp the ends of threads, which were brought under the highlighted segment of the fistula and used to ligate the passage along its length. A modified button-shaped probe with an olive was necessary to introduce the probe into the lumen of the fistulous passage from the side of the internal opening and the fistulous passage was tied with ligature at the level of the rod notch. When pulling the probe backward, the olive fixes the fistula mucosa and pulls it into the lumen of the rectum, i.e. the proximal part of the fistulous passage swells into the lumen of the rectum on the inside, the fistula is cut off at the very base after stitching and ligation.

As we all know, in tortuous fistulous tracts, conventional grooved or button-shaped probes do not pass through the fistulous tract to the internal opening of the fistula, therefore, in addition to the standard set of instruments, we used a flexible cylindrical conductor developed by us, which easily penetrated through complex tortuous, branched fistulous tracts when inserted through the external or internal opening.

In the main group (OG) patients one of the variants of interventions aimed at maximum sphincter preservation (sphincter-preserving operations) was used. Depending on the location of the fistulous passage relative to the muscle fibers of the anal sac, the following types of surgeries were performed.

Patients in the main group with transsphincteric fistulae underwent LIFT (Ligation of Intersphincteric Fistula Tract, i.e., ligation of the fistula tract in the intersphincteric space) with the elimination of the internal opening of the fistula at its base after turning it inside out into the

rectal lumen. For this purpose, a modified button probe with an olive or a flexible cylindrical guide with an olive was used in case of a tortuous fistulous passage. In the presence of purulent accumulations in the pararectal tissue, in addition to excision of the fistula, we performed dissection, scraping of the walls of the purulent cavity, washing with antiseptics and drainage of the residual cavity.

This subgroup included 49 patients. The average age of patients in this group was 45.3 ± 7.1 years.

Depending on the degree of complexity of the fistulous passage, the following operations were performed in the main group of patients with extrasphincteric fistulas: excision of extrasphincteric fistula of the I-II degree of complexity without damage to the muscle fibers of the anal ileum using a modified guide, and excision of extrasphincteric fistula of the III-IV degree of complexity with opening of the purulent cavity. This subgroup included 29 patients. The mean age of the patients in this subgroup was 52.1 ± 9.7 years.

RESULTS

In order to examine the immediate results, pain intensity was assessed using a linear visual analog scale (VAS) (Figure 2).

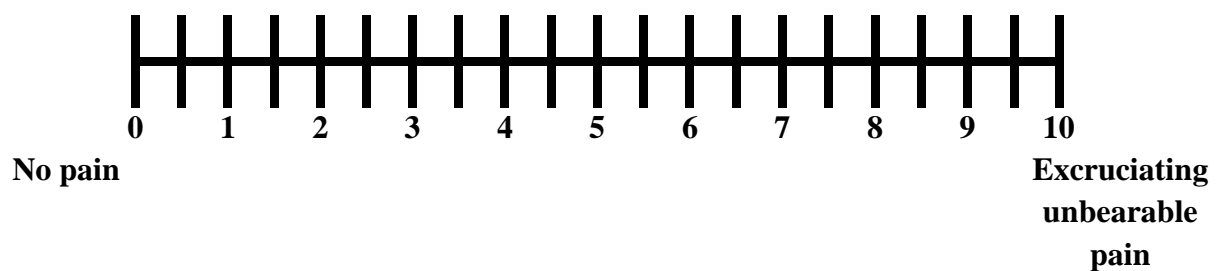


Figure 2. Visual analog pain scale (VAS)

Pain intensity was assessed at rest on days 1, 3, and 5 and after 1, 2, and 3 acts of defecation.

The patient was asked to indicate on the line the level of pain he/she felt at the moment. The distance from the left border of the line (point “no pain”) to the point marked by the patient was then measured in centimeters, rounding the value obtained. Each centimeter corresponds to one point of pain intensity.

In the main group of patients who underwent LIFT surgery without anal sphincter disruption using a modified button probe or a flexible cylindrical conductor with olive, the average intensity of pain sensations at rest on the first day after surgery was 6.0 ± 0.2 points. By the 5th day after surgery the pain intensity decreased 3.8 times, reaching the level of 1.6 ± 0.3 points (“very mild pain”).

In the Control group of patients who used the ligature method, there were severe pain sensations at rest on the first day after surgery, reaching the level of 7.8 ± 0.4 points. However, by the 5th day after surgery, the intensity of pain decreased to 4.3 ± 0.2 points (“medium pain”) ($p < 0.05$) (Fig. 3).

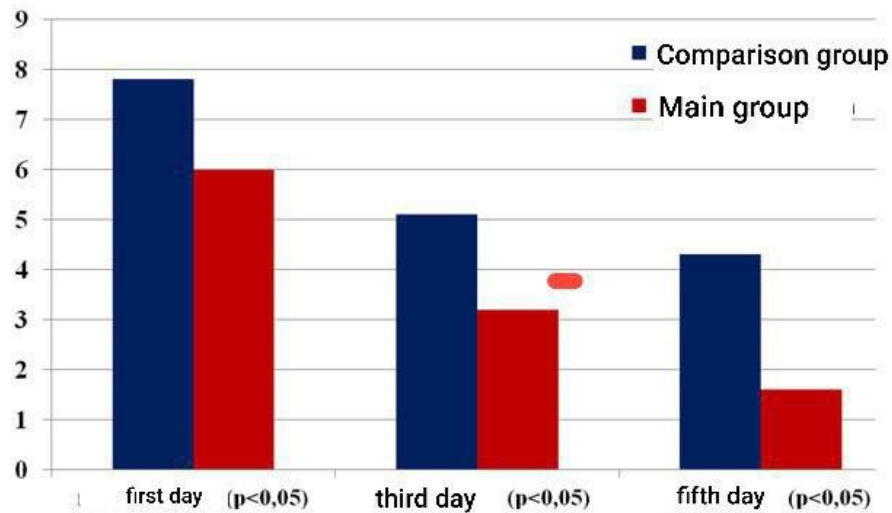


Figure 3. Dynamics of pain syndrome intensity in the early postoperative period

The majority of patients in the studied groups (64.2%) experienced the first act of defecation 3 days after surgery. In the main group after the first act of defecation, the average intensity of pain sensations was 3.6 ± 0.2 points, which is described as “weak pain” sensations. In the Control group after the first act of defecation, the intensity of pain sensations after the first act of defecation was 5.5 ± 0.4 points, which corresponds to the level of “medium pain” ($p < 0.05$).

In the main group after the third act of defecation the intensity of pain sensations sharply decreased to 1.1 ± 0.3 points, which is characterized as “very weak pain”, and in half of the cases there was a complete absence of pain sensations. In the Control group, after the third act of defecation, pain sensations of “medium degree” were noted, assessed as 3.8 ± 0.2 points ($p < 0.05$) (Fig. 4).

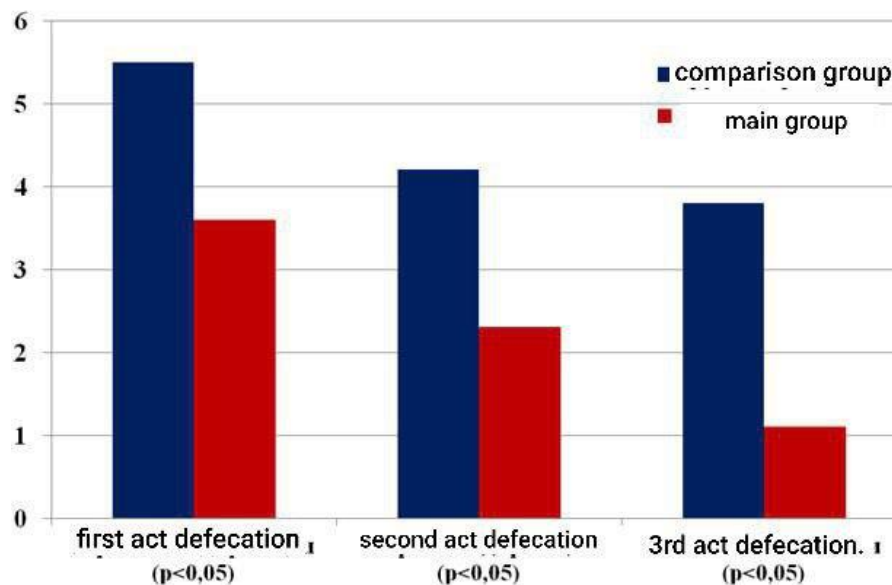


Figure 4. Dynamics of pain syndrome intensity after acts of defecation

Thus, patients who underwent LIFT surgery with the use of modified guides and without disruption of the muscle fibers of the anal groin have a significant reduction in the level of pain

syndrome in the postoperative period and after acts of defecation. This reduction in pain reduces the need for narcotic analgesics and significantly improves the quality of life of patients.

During the first two days after surgery, the patients of the main group were changed daily aseptic dressings in the perianal area, after which daily dressings were no longer required. This reduced the workload of the medical staff and decreased the consumption of dressings. In the Control group, daily dressings were performed with periodic tightening of the ligature every 4-5 days until its removal. Patients of the main group in the postoperative period were given the opportunity to receive anesthesia on demand using the non-narcotic drug “Ketorol”. In most cases (76.9%) this amounted to 2 ml twice a day during the first two days after surgery. In the Control group, patients were prescribed the narcotic drug “Promedol” during the first 24 hours after surgery at 1 ml three times a day.

In 2 patients (2.6%) from the main group, acute urinary retention occurred in the early postoperative period, which required bladder catheterization. We associate this complication with the use of spinal anesthesia during surgery. In the Control group, 4 patients (7.1%) had abscessation of the fistulous passage. We associate this complication with incomplete removal of the distal part of the fistulous passage, which led to the subsequent development of abscess. The patients underwent abscess opening on the 2-3 day after the operation. After that they were discharged from the hospital on the 5th-6th day after abscess opening in satisfactory condition. The low invasiveness of the operation using modified guides without damaging the muscle fibers of the anal sphincter had a significant impact on the duration of hospital stay. On average, the patients of the main group spent 10.1 ± 2.2 days in hospital (preoperative period was 3.2 ± 3.2 days, postoperative - 7 ± 1.9 days). The duration of inpatient treatment was determined by the necessity of complex examination, including fistulography, ultrasound examination of the rectum and pararectal fiber, as well as magnetic resonance imaging. After implementation of the new algorithm of examination and treatment, 15 patients operated on in 2021 managed to reduce the length of hospital stay to 7.9 ± 1.1 bed-days. In the Control group, the average length of hospital stay was 17.4 ± 3.1 days (preoperative period - 5.3 ± 3.1 days, postoperative period - 11.4 ± 2.2 days) ($p < 0.05$) (Table 1).

Table 1. Results of surgical treatment of patients with rectal fistulas in the early postoperative period.

Indicators		Main group (n=78)	Control group (n=56)
Average duration of inpatient treatment		10,1±2,2	17,4±3,1
		$p < 0,05$	
Complications	acute urinary retention	2 (2,6%)	1 (1,8%)
	abscessed fistula	-	4 (7,1%)
Anesthesia	using narcotic drugs	-	+
	using non-narcotic drugs	+	-
	dressing anesthesia	-	+

CONCLUSION

The developed innovations in the technical aspects of surgical treatment of patients with rectal fistulas led to an improvement in the standards of medical care, reducing the incidence of immediate postoperative complications from 8.9% to 2.6%. The use of a modified button probe

and flexible cylindrical conductor with olive in the surgical treatment of complex rectal fistulae not only simplifies the process of technical implementation, but also prevents damage to the muscle fibers of the anal ileum. In addition, this method requires less operative time, 44.2 ± 5.1 minutes compared to 80.5 ± 7.3 minutes. The use of sphincter-saving surgical methods in the main group differs from traditional operations on fistula excision with subsequent suture of the sphincter, causing a shorter period of temporary disability - 18.9 ± 3.6 days compared to 32.7 ± 4.6 days; more favorable postoperative course with lower intensity of pain syndrome - 1.6 ± 0.3 on VAS scale in Control with 6.0 ± 0.2 points; shorter hospitalization - 10.1 ± 2.2 days in Control with 17.4 ± 3.1 days, and more effective postoperative rehabilitation of patients. These factors significantly improve the quality of life after surgery and contribute to lower financial costs to achieve successful treatment outcomes.

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