

## ПУТИ УЛУЧШЕНИЯ РЕЗУЛЬТАТОВ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ ИШИОРЕКТАЛЬНЫХ И РЕТРОРЕКТАЛЬНЫХ ФОРМ ОСТРОГО ПАРАПРОКТИТА

Шербек У.А., Рустамов И.М.

Самаркандский государственный медицинский университет

<https://doi.org/10.5281/zenodo.8278856>

**Аннотация:** В основу настоящего исследования положен опыт комплексной диагностики и хирургического лечения 119 больных со сложными формами острого парапроктита – ишиоректальными и ретро ректальными локализациями. Оптимизация тактико-технических аспектов хирургического лечения больных со сложными формами парапроктита, предусматривающей проведение операций в 2 этапа при высокой (глубокой) локализации абсцесса (22,3% больных) и выполнения первично-радикальных вмешательств при низкой локализации гнойника позволило снизить осложнения в ближайшем послеоперационном периоде с 38,4% до 11,9%, а также формирования параректальных свищей с 11,5% до 4,6% и рецидива заболевания с 9,6% до 2,9% в отдаленном периоде.

**Ключевые слова:** Ишиоректальный парапроктит, ретро ректальный парапроктит, сложные формы, хирургическое лечение.

## WAYS TO IMPROVE THE RESULTS OF SURGICAL TREATMENT OF ISCHIORECTAL AND RETRORECTAL FORMS OF ACUTE PARAPROCTITIS

**Abstract:** The present study is based on the experience of complex diagnostics and surgical treatment of 119 patients with complex forms of acute paraproctitis - ischiorectal and retrorectal localizations. Optimization of the tactical and technical aspects of surgical treatment of patients with complex forms of paraproctitis, involving operations in 2 stages with high (deep) localization of the abscess (22.3% of patients) and performing primary radical interventions with low localization of the abscess, made it possible to reduce complications in the immediate postoperative period from 38.4% to 11.9%, as well as the formation of pararectal fistulas from 11.5% to 4.6% and recurrence of the disease from 9.6% to 2.9% in the long term.

**Keywords:** Ischiorectal paraproctitis, retrorectal paraproctitis, complex forms, surgical treatment.

## INTRODUCTION

Paraproctitis is one of the most common proctological diseases, in the structure of which it gives way only to hemorrhoids, anal fissures and colitis in the structure of which, and in the general structure of urgent proctological diseases, paraproctitis occupies a leading position. The incidence of paraproctitis is about 0.5% of the total population, among all patients with general surgical diseases - 4-5%, and among patients with diseases of the rectum - 20-40%.

The most difficult to diagnose, and dangerous in terms of their complications and outcomes, are complex forms of purulent paraproctitis, which include: ischiorectal, pelviorectal, retrorectal paraproctitis, the frequency of which, according to A.M. Madaminova (2020) is 12.3-19.5%. Complex forms of acute paraproctitis have their own characteristics of clinical manifestation, diagnosis and treatment tactics. According to Bisset C.N. (2017), Jamshidi R. (2018), patients turn to the later stages of the disease or are hospitalized in surgical hospitals with different diagnoses due to the difficulty and complexity of diagnosing the disease, as a result of which anaerobic infection often accompanies and septic complications develop, the frequency of

which is up to 22% of fatal cases. For the diagnosis of complex forms of paraproctitis, ultrasound, CT and various laboratory research methods have been introduced and used. However, due to the topographic and anatomical features of the ischioanal and rectal space and the possibility of anaerobic infections, the search for ways of early diagnosis of the disease is of particular importance.

The main modern concepts of the principles and trends in the surgical treatment of complex forms of acute paraproctitis do not change - the preservation of the muscle structures of the anal sphincter and the reduction of the recurrence of the disease, only the approaches change. In 13–20% of the operated patient's complications of a purulent-inflammatory nature occur, in 4–10% of patients there is a relapse or the transition of the disease to a chronic form of the course, in 17–36% of patients there are symptoms of discomfort in the anus, in 6–8% of patient's insufficiency develops. anal sphincter (E.E. Bolkvadze (2017).

Also, due to the peculiarities of access and surgical intervention, in the form of restrictions for revision and manipulation, there are often difficulties in processing the internal hole during radical operations. In addition, existing surgical interventions using wide incisions provide sufficient freedom of manipulation, but are extremely traumatic for the patient. According to the literature, the dissection of the anal sphincter fibers, the frequency of vascular damage, dissection of the anococcygeal ligament and resection of the coccyx in complicated forms of acute paraproctitis do not satisfy practical surgeons.

In this regard, the choice of surgical access, depending on the topographic and anatomical features of the location of the purulent focus in the pararectal space and the possibilities of diagnostic technologies, is a promising direction in the treatment of acute paraproctitis.

**Purpose of the study:** improving the results of surgical treatment of patients with complex forms of acute paraproctitis.

#### **MATERIALS AND METHODS**

The present study is based on the experience of complex diagnostics and surgical treatment of 119 patients with complex forms of acute paraproctitis - ischioanal and retrorectal localizations, operated in the department of coloproctology of the clinic of Samarkand State Medical University for the period 2017-2022, which accounted for 32.3% of the total number operated patients with acute paraproctitis. The study did not include 2 patients with pelviorectal paraproctitis due to the small number of observations.

Patients were divided into two groups depending on the period and volume of treatment and diagnostic care. The comparison group (retrospective analysis) included 52 patients who underwent surgical treatment, which consisted in opening the pararectal abscess in the traditional way. The main group consisted of 67 patients, for the diagnosis and surgical treatment of which modern methods of instrumental research were used (endorectal sonography, MRI), as well as improved surgical methods of treatment, providing for delayed liquidation of the internal opening of the pararectal abscess in a 2-stage and hydropressive ozone therapy in the treatment of pararectal wounds.

The age of the patients ranged from 18 to 83 years. There were 104 men (87.3%), women 15 (12.7%), which corresponds to a ratio of 7:1. The disease more often occurred in people of the most able-bodied age from 18 to 59 years, which accounted for 87.4% of cases. Patients in the elderly and advanced age accounted for 12.6%.

Among the studied patients, in 88 (74%) cases, a primary complex form of acute paraproctitis was noted, in 31 (26%) - a recurrence of a complex form of acute paraproctitis.

In 60.4% of cases in patients with complex forms of acute paraproctitis, concomitant diseases of the anal canal were identified, the most common chronic hemorrhoids - 25.1% and acute hemorrhoids - 13.4%. Anal fissure was revealed in 14.3% of patients. Proctitis and hypertrophy of anal papillae were diagnosed less frequently - 7.6%.

With complex forms of acute paraproctitis, 41.3% of patients were admitted to the hospital up to 3 days from the onset of the disease, 26.9% - from 3 to 6 days, 23.7% - from 7 to 9 days and 7.9% over 10 days.

It should be noted that in patients with retrorectal and ischiorectal forms of acute paraproctitis, there was a significant increase in endotoxemia, indicating the progression of the disease.

Indicators of endotoxemia in patients with complex forms of acute paraproctitis are significantly increased. Thus, the indicators of LII in the ischiorectal form reached up to  $9.1 \pm 0.8$ , and in the retrorectal form up to  $10.4 \pm 2.4$ . GPI in ischiorectal form was up to  $12.9 \pm 2.3$ , and in retrorectal form up to  $16.9 \pm 1.7$ . This was due to the prescription of the disease, due to the late treatment of patients to a specialist.

Of 119 patients with complex forms of acute paraproctitis, 83 (69.7%) patients underwent sigmoidoscopy (RRS), 36 (30.3%) patients did not undergo RRS due to the presence of pain syndrome. Sigmoidoscopy was performed using an apparatus with a fiber optic system, which made it possible to determine the presence or absence of an infiltrate bulging into the intestinal lumen (Fig. 1.1). During the examination, it was revealed that the mucous membrane in the area of infiltration is hyperemic, the vascular pattern is enhanced, mesh. In some cases, it was possible to establish the localization of the internal opening in the region of anal crypts.



**Figure 1.1. Patient P., 47 years old. RRS revealed infiltrative edema on the posterior wall of the rectum in retrorectal acute paraproctitis.**



**Figure 1.2. Patient K., 52 years old. Endorectal sonography: there is a fluid mass in the ischiorectal region.**



**Figure 1.3. - MRI patient A. born in 1979 MRI: axial section, flow in the right ischiorectal space. hyperintense signal from the purulent cavity**

For the purpose of topical diagnosis of pararectal abscess in patients with complex forms of acute paraproctitis and to assess the exact localization, size, depth of the purulent cavity from the skin, the degree of involvement of the pathological process in the walls of the rectum and external sphincter, the presence of an additional passage and purulent leakage in all 119 subjects perineal and transabdominal ultrasound were performed.

In the main group of patients, in order to clarify the location of the purulent cavity, 55 (82.0%) patients underwent endorectal sonography (Fig. 1.2). The informativeness of endorectal sonography in identifying purulent cavities and streaks in pararectal tissue in complex forms of acute paraproctitis was 97.1%, in determining the location of the alleged crypt - 60.3%.

In 16 (23.2%) patients in complex clinical cases in the main group, according to indications, MRI of the pelvic organs was additionally performed (Fig. 1.3). Using this research method, reliable information (93.7%) was obtained on the location and nature of purulent contents, recurrent and residual forms of the disease.

All 119 patients with complex forms of acute paraproctitis underwent surgical interventions.

All patients of the comparison group with acute paraproctitis underwent surgical interventions with the expansion of indications for the use of primary radical operations, involving the simultaneous opening of the abscess, the elimination of the purulent tract and its internal opening. At the same time, in ischiorectal lesions, an abscess was opened with excision of the affected crypt. In case of retrorectal localization, an abscess was opened and drained with a ligature. When the abscess was located in the posterior-rectal space, the coccygeal-anal ligament was additionally dissected.

Patients in the comparison group underwent an opening of paraproctitis into the lumen of the rectum with the elimination of the internal opening - 59.6%. Opening of paraproctitis with draining ligature and drainage of the purulent cavity - 13.4%. 17.3% of patients underwent opening of paraproctitis with drainage of the purulent cavity. Opening of paraproctitis with dissection of the anal-coccygeal ligament and drainage of the purulent cavity - 5.7%, opening of paraproctitis with resection of the coccygeal bone and drainage of the purulent cavity - 3.8%.

However, during primary radical operations, it was not always possible to clearly localize the purulent course, which is associated with a pronounced inflammatory edema of the soft tissues and a high localization of the abscess. Also, excessive radicalism led to the destruction of the muscle structures of the sphincter and the pelvic floor with the worst results in the rehabilitation of patients (Fig. 2.1, 2.2, 2.3).



**Figure 2.1. - Patient D., 33 years old. Condition after opening paraproctitis with dissection of the anal sphincter in ischiorectal paraproctitis**



**Figure 2.2. Patient A. 47 years old. Condition after opening paraproctitis with dissection of the anal-coccygeal ligament with retrorectal paraproctitis**



**Figure 2.3. Patient S., 41 years old. Types of wound after opening retrorectal paraproctitis with resection of the coccygeal bone**

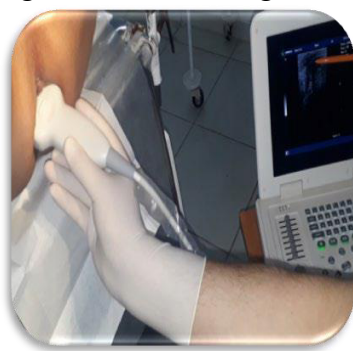
In the main group, the choice of the volume of surgical intervention depended on the following factors: the location and volume of the purulent cavity, depending on the location in complex forms of acute paraproctitis, the degree of obesity, the shape of the coccygeal bone. Also, for the purpose of intraoperative prevention of damage to the neurovascular bundle, anal sphincter muscles, anal coccygeal ligament and damage to the coccygeal bone, a differentiated approach to the choice of access and incision was used to open complex forms of acute paraproctitis under the

control of perineal or endorectal ultrasound.

In 47 (70.1%) cases, in patients of the main group, an internal opening of the primary purulent tract was detected in relation to the external anal sphincter, in 20 (29.8%) patients we were unable to find an internal opening due to severe soft tissue edema against the background of a purulent inflammatory process. In patients with ischiorectal form of acute paraproctitis, in 26.6% of cases, the nature of the primary purulent course in relation to the external anal sphincter was intrasphincteric. In 20.0% of cases, patients had a transsphincteric type and in 28.9% - an extrasphincteric type of primary purulent course. Also, in patients with the retrorectal form of acute paraproctitis, 27.3% of patients had an intrasphincteric, 13.6% transsphincteric, and 18.2% extrasphincteric location of the purulent passage.

In 38.8% of cases, paraproctitis was opened into the lumen of the rectum with the elimination of the internal opening, 31.3% - opening of paraproctitis with draining ligature and drainage of the purulent cavity, 7.4% - opening of paraproctitis with drainage of the purulent cavity.

In 15 (22.4%) cases, the purulent cavity was punctured primarily under ultrasound control and active drainage was established (Fig. 3.1, 3.2, 3.3). These patients after the normalization of laboratory and instrumental studies, 3-5 days after the removal of the inflammatory process around the anal canal and the area of the purulent cavity, the 2nd stage of the operation was performed. Under spinal anesthesia, from 5 to 10 ml of a solution of brilliant green and a solution of hydrogen peroxide 3% in a ratio of 2:1 were injected into the tube located in the purulent cavity. After that, a revision of the anal canal was made in order to identify the primary purulent passage in the affected crypt with the presence of a dye coming from it. The study revealed a purulent course of the primary fistula in 15 cases. Further, after processing the internal hole, the mucous membrane was brought down according to the Jad Roble method.



**Figure 3.1. Determination of the localization of the purulent cavity under ultrasound control**



**Rice. 3.2. Ultrasound-guided active drainage technique**



**Rice. 3.3. Hydropressive washing of the purulent cavity with an ozonized solution**

Of the 67 patients of the main group, 56 (81.2%) patients underwent a bacteriological study after puncture of purulent contents during surgery in order to determine the microbial landscape, depending on the clinical forms of complex forms of acute paraproctitis and sensitivity to antibiotics.

The results of the study of bacterial cultures of patients with complex forms of acute paraproctitis showed that in most cases there is not a monoculture, but a mixed microbial flora. In all forms of complex forms of acute paraproctitis, aerobic infection was more common, mainly E.

Coli (71.4%), and St. Aureus (69.6%). Anaerobic non-clostridial infection was detected in 19.6% of patients, anaerobic clostridial infection - in 3.6%. After receiving the results of the bacteriogram from the purulent cavity, the sensitivity of microorganisms to antibiotics was determined.

In complex forms of acute paraproctitis, aerobic and anaerobic infections were identified. St. was the most sensitive. Aureus to cefazolin, ciprofloxacin and gentamicin. E. coli is more susceptible to kanamycin, ceftriaxone, and ciprofloxacin. In the anaerobic non-clostridial form of acute paraproctitis, sensitivity to cefazolin, ciprofloxacin, gentamicin, doxycycline, kanamycin and metronidazole is more pronounced.

## RESULTS AND DISCUSSION

In operated patients for ischiorectal and retrorectal acute paraproctitis, the main cause of postoperative complications in the comparison group was damage to the musculoskeletal apparatus of the pelvic organs and muscle structures of the sphincter during primary-radical methods of operations in the acute phase of the disease, without intraoperative localization of the pararectal abscess according to ultrasound data.

Traumatic access with damage to the neurovascular bundle was accompanied by severe pain. In patients in the control group on the 1st day after surgery, unbearable pain was noted in 20.8%, while in the main group - 7.2%. On the 3rd day in the control group, 41.7% had severe pain, in the main group - 21.7%. In the control group, pain was noted on the 6th day of the postoperative period up to 18.4%, in the main group this amount reached only 6.2%. The intensity of pain was associated with dissection of the muscles of the anal sphincter, anal-coccygeal ligament with a deep semi-oval incision with the intersection of the pudendal nerve. In the main group, the lower intensity of pain is associated with an adequately selected access according to ultrasound navigation data.

As the results showed on the 3rd day after the operation, the level of blood leukocytes decreased relative to the initial values to  $8.4 \pm 0.4 \times 10^9/l$  (in the comparison group to  $9.3 \pm 0.9$ ), and by 5- on the first day of the postoperative period, they were  $4.2 \pm 0.4$  and  $6.1 \pm 0.5 \times 10^9/l$ , respectively. There was also a decrease in ESR, which at the same time remained the highest in the comparison group and amounted to  $21.5 \pm 2.0$  and  $24.3 \pm 4.7$  mm/h on the 3rd day of the postoperative period, respectively, and on the 5th day of the postoperative period, they decreased to  $11.7 \pm 1.7$  and  $15.2 \pm 3.9$  mm/hour, respectively.

In the postoperative period, a statistically significant decrease in endotoxemia was noted by the 5th day of the postoperative period. Thus, the indicators of LII in the main group by this period of time decreased to  $6.1 \pm 0.8$  ( $p < 0.05$ ), and in the comparison group to  $8.3 \pm 0.9$ . In complex forms of acute paraproctitis, the GPI indicators on the 3rd day after the operation decreased relative to the initial values to an average of  $9.8 \pm 1.5$  ( $p < 0.001$ ), and in the comparison group to  $17.3 \pm 3.1$ . On the 5th day after the operation, these indicators decreased to an average of  $7.1 \pm 1.4$  ( $p < 0.001$ ) and  $10.4 \pm 2.6$  ( $p < 0.05$ ), respectively.

In the early postoperative period, under the control of ultrasound, all patients of the main group underwent monitoring of changes in the residual cavity in order to exclude residual and the occurrence of recurrent purulent cavities (Fig. 4.1, 4.2). In 2 cases, on the 3rd and 4th day of the postoperative period, a residual purulent cavity was detected, which, after additional drainage and treatment with an ozonized solution, were cleared of a purulent-necrotic process. In 3 (4.5%) patients, an additional purulent bleed was found in the form of a residual purulent cavity. These patients, also repeatedly, under general anesthesia, underwent additional opening of the purulent cavity.



**Figure 4.1. Patient S., 29 years old. 4 days after the opening of ischiorectal paraproctitis with the elimination of the internal opening. There is a positive trend in the reduction of the purulent cavity**



**Figure 4.2. Patient Zh., 51 years old. 4-day postoperative opening of retrorectal paraproctitis. Residual purulent cavity**

When opening a pararectal abscess in the comparison group, a resection of the coccygeal bone was forced in 3.8%, dissection of the anal-coccygeal ligament in 7.6%. Damage to the anal sphincter was noted in 17.3% in the comparison group and 5.9% in the main group of patients.

On the 3rd-5th day after the operation, 13.4% of patients had symptoms of general intoxication and local spread of the purulent process into the surrounding adrectal tissue. The reasons were associated with undiagnosed intraoperatively purulent cavities and streaks during the first operation and the occurrence of a residual purulent cavity. These patients underwent re-opening of purulent cavities and streaks. In patients of the main group, the amount of residual purulent cavity was 2.9%, in the comparison group - 9.6%. Recurrent purulent cavity in the main group was found in 4.5%, in the control group - 11.5%.

The terms of complete healing of the pararectal wound in the main group was  $26.1 \pm 1.3$  days (in the comparison group  $31.5 \pm 2.2$ ). The terms of treatment in the hospital were reduced to  $5.97 \pm 0.24$  beds/days (in the comparison group  $9.23 \pm 0.74$ )

Tracked long-term results in terms of 1 to 5 years. 5 patients from the comparison group were admitted again with a relapse of the disease, only 2 patients from the main group had a relapse of paraproctitis. Pararectal fistulas formed in 6 (11.5%) patients in the comparison group, in the main group in 3 (4.4%). Partial functional insufficiency of the anal sphincter was detected in 7 (13.5%) patients in the comparison group, in the main group in 3 (4.4%).

Thus, optimization of the methods of complex treatment of patients with complex forms of acute paraproctitis with intraoperative use of endorectal sonography, differentiated surgical tactics, involving operations in 2 stages with high (deep) localization of the abscess and primary radical interventions with low localization of the abscess, made it possible to reduce the frequency immediate postoperative complications from 38.4% to 11.9%, formation of pararectal fistulas from 11.5% to 4.6% and recurrence of the disease from 9.6% to 2.9%, reduce the healing time of pararectal wounds by 5.4 day and terms of inpatient treatment up to 3.2 days.

## CONCLUSIONS

The main reason for the unsatisfactory results of surgical treatment of patients with complex forms of acute paraproctitis are tactical and technical errors in opening and draining the

pararectal purulent cavity due to pronounced tissue edema and high localization of the process and excessive radicalism in the desire to eliminate the internal opening of the purulent tract with damage to the neuro-vascular bundle, anal coccygeal ligament and anal sphincter muscles.

1. The information content of radiation diagnostic methods - endorectal and perineal ultrasound was 97.1%, MRI - 93.7%, which justifies the need for their use in topical diagnosis of complex forms of paraproctitis and monitoring of purulent cavities of the pararectal region in the postoperative period.

2. Optimization of the tactical and technical aspects of surgical treatment of patients with complex forms of paraproctitis, involving operations in 2 stages with high (deep) localization of the abscess (22.3% of patients) and performing primary radical interventions with low localization of the abscess, made it possible to reduce complications in the near future. In the postoperative period from 38.4% to 11.9%, as well as the formation of pararectal fistulas from 11.5% to 4.6% and recurrence of the disease from 9.6% to 2.9% in the long-term period.

#### Literature.

1. Абдуллаев, М. Ш. Острый парапроктит у больных сахарным диабетом (обзор литературы) / М. Ш. Абдуллаев, А. Б. Мансурова // Колопроктология. – 2012. – № 1 (39). – С. 46–51.
2. Болквадзе, Э. Э. Сложные формы острого парапроктита. Обзор литературы / Э. Э. Болквадзе // Колопроктология. - 2009. 27 (1). С. 38-46.
3. Клинические рекомендации по диагностике и лечению взрослых пациентов с острым парапроктитом / Ю. А. Шельгин [ и др.] // Москва.- 2013. - С. 13.
4. Мадаминов, А. М. Положительные стороны применения гипербарической оксигенации при лечении сахарного диабета и острого парапроктита / А. М. Мадаминов, А. Б. Мансурова // Медицина Кыргызстана. – 2015.–Т. 1, № 1. – С. 18-20.
5. Bisset, C.N. Re: Bacteriological study in perianal abscess is not useful and not cost-effective / C.N. Bisset, L. Dick, Y.R. Chin, L. Summers, A. Renwick // ANZ J Surg. – 2017. – Vol. 87 (5). – P. 420-421. – doi: 10.1111/ans.13878.
6. Bondi J, Avdagic J, Karlhom U, Hallbj  k O, Kalman D,   alty   Benth J, Naimy N,   resland T (2017) Randomized clinical trial comparing collagen plug and advancement flap for trans-sphincteric anal fistula. Br J Surg. 104(9):1160–1166
7. Jamshidi, R. Anorectal Complaints: Hemorrhoids, Fissures, Abscesses, Fistulae / R. Jamshidi // Clin Colon Rectal Surg. – 2018. – Vol. 31 (2). – P. 117-120. – doi: 10.1055/s-0037-1609026.
8. Kanstrup, C. Perianal abscess after anal intercourse should raise suspicion of rectal gonorrhoeae infection / C. Kanstrup, H. Perregaard, C.A. Bertelsen // Ugeskr Laeger. – 2019 Feb 25. – Vol. 181 (9). – pii: V10180736.
9. Loo VG, et al. Association of medical microbiology and infectious disease Canada treatment practice guidelines for Clostridium difficile infection. Official J AssocMed Microbiol Infect Dis Canada. 2018;3(2).