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Ways to Improve the Results of Treatment of Acute and Chronic Paraproctitis

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ABSTRACT

Our study aimed to optimise the treatment of acute paraproctitis and rectal fistulas by conducting a multivariate study of the results of paraproctitis treatment. Fistulotomy and ligature treatment of fistulas have been shown to have a low rate of recurrence but are associated with a high risk of faecal retention disorders. The method of plastic surgery of the internal opening of the fistula with a relocated flap has a high rate of recurrence and the development of faecal incontinence in the postoperative period and cannot be considered a safe alternative to traditional methods. The ratio of the incidence of acute paraproctitis and rectal fistulas is 5:1, regardless of the type of primary intervention, which does not support the desire for primary radicalism in the surgical treatment of acute paraproctitis. Ligation of the fistula in the inner sphincter layer may be proposed as the surgery of choice for the treatment of complex types of rectal fistulas.

Keywords: *acute paraproctitis, chronic paraproctitis, complicated paraproctitis*

INTRODUCTION

The incidence of acute and chronic paraproctitis exceeds 20 cases per 100 thousand population per year, and in most cases, patients of working age are affected [1-3].

The methods of treatment proposed so far have several drawbacks, the most important of which are the risk of relapse and the likelihood of injury to the retention structures of the anorectum with the subsequent development of faecal incontinence [2-4].

Despite the increasingly active development of organ-preserving techniques, there is still no analytical comparison of the results and the emergence of clear indications about the limits of the capabilities of each of the methods [3-5].

There is also no evidential understanding of the role of primary excision of the fistula performed during the autopsy of acute paraproctitis. The inclusion of this element in the standard treatment regimen for acute para-

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proctitis has been and is supported by several authors [4-6].

To date, there are more and more studies, including those with a high level of evidence (randomised multicenter trials), the results of which indicate a high probability of spontaneous healing without primary fistulotomy, an increased risk of faecal incontinence when using methods involving anal sphincter fibre crossing.

Thus, despite the existence of significant experience in the treatment of acute and chronic paraproctitis, this experience is subject to analysis by methods of evidence-based medicine.

In this regard, we have set ourselves the goal of optimising the treatment tactics for acute paraproctitis and rectal fistulas by conducting meta-analytical, epidemiological, observational studies of the results of paraproctitis treatment and creating an algorithm for the treatment of paraproctitis.

MATERIAL AND METHODS

The present study is divided into three components: a meta-analysis of literature data, a cohort study of patients treated for acute paraproctitis and rectal fistulas in the regional multidisciplinary clinical Surkhandarya region, and an observational study of patients operated on for rectal fistulas by ligation of the fistulous tract in the inner sphincter layer.

A meta-analysis of literature data made it possible to compare the results of treatment of rectal fistulas with the most common methods.

The study included works that meet the following requirements: publication not earlier than 2000 inclusive; availability of information on the results of fistulotomy, plastic surgery with a relocated flap, ligature method, method of collagen obturation of the fistula, ligation of the fistulous tract in the inner sphincter layer; the presence in the article of accurate information about the number of patients included in the study, the rate of recurrence of fistula and faecal incontinence after surgery.

The exclusion criteria were the specific nature of the fistulas, the use of non-standard techniques, and significant modifications of classical methods of treatment.

The literature data were searched in the databases of scientific electronic libraries eLibrary.ra and Pubmed. Statistical calculations were carried out using RStudio Desktop software 0.98.945, language version R - 3.1.0, and data preparation for calculations was carried out using the LibreOffice software package version 4.2.6.3.

The calculation criteria for the analysis were the incidence of recurrence and faecal incontinence in the postoperative period. To assess the heterogeneity of the obtained samples, confidence intervals according to Agresti-Cole (y = 0.95) were calculated. The absence of overlapping confidence intervals in the proportion of cases of the development of accounting features in the study with the study with the study group was regarded as a statistical outlier. Such studies were excluded from further study. As a result, the study included 35 original works, including 14,44 patients. Pooled data on various treatments for rectal fistulas.

The first stage of this part of the study was to determine the incidence of paraproctitis in the city of Termez, for which data were obtained on the number of patients operated on for paraproctitis and rectal fistulas in hospitals providing emergency and planned coloproctological care. The second stage was a detailed analysis of the treatment outcomes of patients with acute and chronic paraproctitis. A total of 2,213 patients were included in the study, including 1,847 operated on for acute paraproctitis and 366 for rectal fistulas. The group included 475 patients treated for acute paraproctitis and 69 patients treated for rectal fistulas.

Surgical treatment of acute paraproctitis in all cases consisted of opening and draining the focus of purulent infection, in some cases supplemented by fistulotomy.

In our work, we used the following methodology. The patient's position on the operating table is lithotomy. After staining the fistulous tract with a vital dye, a probe was inserted into the lumen of the fistula along its entire length. A semilunar incision up to 1.5 cm long was made in the area of the inner sphincter sulcus. At the same time, the fistulous tract was isolated for 1-1.5 cm, the probe was removed, and the fistulous tract ligated twice and crossed between ligatures. It should be noted that the exposure of the fistulous tract in the area of the internal opening was as sparing as possible to prevent the opening of the lumen of the fistula. After crossing the fistulous tract, the wound was washed and sutured tightly. The wound canal drained for up to 3-4 days; then, in most cases, the wound closed on its own.

We operated on 26 patients (17 men and nine women). The median age is 50 years. The observed group included only patients with complex and high fistulas, so there were 16 transsphincter fistulas and ten extrasphincter fistulas.

RESULTS

The data obtained as a result of the meta-analytical study were compared in pairs using the Pearson test and the Holm correction. Thus, the data obtained can be interpreted as follows: classical methods of treating rectal fistulas do not have statistical-

ly significant differences either in the frequency of recurrence or in the incidence of faecal incontinence in the postoperative period.

The use of collagen obturators, providing zero risk of faecal incontinence, is statistically significantly inferior to all other methods in terms of the frequency of recurrence. Ligation of the fistulous tract in the intersphincter layer does not have statistically significant differences in the rate of recurrence with plastic surgery with a relocated flap, significantly differs in the frequency of recurrence with fistulotomy and the use of collagen obturators while providing a minimal risk of faecal incontinence.

Having received data on the number of cases of acute and chronic paraproctitis, we noted that the ratio of the number of patients with acute and chronic paraproctitis is a fairly stable parameter. To test the hypothesis that there are no statistically significant differences between annual indicators, a comparison was performed using the Pearson test. Thus, no statistically significant differences between the annual indicators were obtained, the differences are due to the variation of a random variable.

To analyse the frequency of paraproctitis recurrence, the distribution of patients by age decades was performed. For follow-up studies, groups of patients up to 20 years of age and 20-29 years of age were combined due to similar relapse rates. In the same way, combined groups from 30 to 59 and over 60 were obtained.

The data were compared using the Pearson test with the Yeats correction for continuity. As a result, it was obtained that there are statistically significant differences between the group of patients under 29 years of age and the group of patients from 30 to 59 years of age ($p<0.05$). For the differences between the group up to 29 and the group over 60, the p-value exceeds the critical 0.05 and is 0.2, which can be considered as a trend. There were no statistically significant differences between the groups of 30-59 years and those over 60 years old ($p>0.8$).

In the group of patients operated on for acute paraproctitis, out of 475 patients, 41 patients required repeated surgical treatment for a recurrence of paraproctitis. Of these, 16 were after primary fistulotomy and 25 after intervention without primary fistulotomy. To assess the statistical significance of the difference in data, a comparison was made using the Pearson test with a Yeats continuity correction. There were no statistically significant differences between the recurrence rates for the two types of interventions ($p>0.4$).

In the group of patients who underwent surgical treatment for rectal fistulas, 34 patients had previously been operated on for acute paraproctitis, in 29 cases, there was spontaneous opening of acute paraproctitis or cases of primary chronic paraproctitis when the patient could not reliably indicate the presence of an episode of acute suppuration.

Of the 69 patients with rectal fistulas, 34 had a history of autopsy of acute paraproctitis, and in 11 cases, autopsy and drainage with primary fistulotomy were performed, without primary fistulectomy, in 12 cases, the type of intervention was not established.

For a detailed analysis, patients observed from acute paraproctitis to surgical treatment of rectal fistula were selected, a total of 9 such patients. In 5 cases, the formation of a fistula was preceded by the opening of acute paraproctitis with primary fistulotomy, and in 4 cases - without primary fistulotomy. The data were compared using the exact Fisher test. As a result, it was obtained that no statistically significant differences between the groups were obtained ($p>0.6$).

The postoperative period did not have significant features, the pain syndrome was mild, which is due to the absence of damage to the anoderm. In three patients, suppuration of the wound in the inner sphincter sulcus was noted, which required revision. Wound healing occurred within the usual timeframe, in some cases, it lasted up to 6 weeks, which is associated with the long-term biodegradation of ligatures in the wound.

The median follow-up period was 35 months. Recurrence of the fistula was noted in five cases (19%): in one woman and four men. At the same time, in four cases of recurrence, an inner sphincter fistula developed, for which repeated surgical treatment was carried out in the amount of fistulotomy.

One patient refrained from repeat surgery.

DISCUSSION

Despite the extensive experience in the treatment of paraproctitis accumulated by medical science to date, surgical tactics for paraproctitis remain a controversial issue. The proposed methods of treatment are described in detail, but there are very few studies that make an integral comparison of the functional results of different types of treatment. At the same time, the stereotypes and ideas existing in classical clinical guidelines are largely subject to revision in light of the emergence and development of organ-preserving interventions [7].

This article attempts to perform an objective analysis of the literature data, including elements of a meta-analysis of the united groups. This made it possible to compare the main treatments for such critical parameters

as the rate of recurrence and the development of faecal incontinence.

Using epidemiological methods, the incidence of paraproctitis was considered in the example of our clinic in the main hospitals providing care to patients with acute paraproctitis and rectal fistulas. The data obtained at this stage of the study allowed us to doubt the correctness of the postulates about the almost inevitable formation of rectal fistulas after surgical treatment of acute paraproctitis.

At the clinical stage of the study, we analysed our own experience in the treatment of rectal fistulas by ligation in the intersphincter layer. As a result, we obtained results that confirm the reproducibility and simplicity of the method.

Algorithm for surgical treatment of paraproctitis. After summarising the literature data, the results of the meta-analysis, and the epidemiological and observational parts of our study, we developed an algorithm for the surgical treatment of paraproctitis.

The only method of treatment for acute paraproctitis is surgery, the main stage of which is the opening and drainage of the focus of suppuration.

A primary fistulotomy is possible if the following conditions are met: accurate pre- or intraoperative diagnosis of the fistulous tract; simple type of fistula (linear direction of the fistula tract, absence of additional passages and cavities); normal level of premorbid contention; the availability of appropriate qualifications and experience of the surgeon performing the intervention. Any doubt about the accuracy of visualisation of the fistulous tract should be interpreted as a reason for refusing primary radical intervention.

In patients with a premorbid decrease in the level of faecal retention, performing a fistulotomy during the primary intervention is contraindicated due to the high degree of probability of deterioration of faecal contention.

If a high location of the fistula is detected, the opening of the abscess should be supplemented with drainage ligature. This technique will prevent early closure of the wound, with the subsequent formation of a complex fistula, and will help to form a linear fistula tract, which will give the prerequisites for success in further treatment. In all other cases, opening and drainage of the pararectal abscess cavity is indicated without any attempts to perform primary radical treatment.

Patients who have undergone intervention for acute paraproctitis are subject to observation. If a recurrence of suppuration is detected, drainage surgery is indicated. Performing a second autopsy in combination with a fistulectomy is inappropriate and carries, in many respects, great risks of damage to the sphincter apparatus and the formation of a false fistulous tract.

The probability of forming a rectal fistula after opening paraproctitis is relatively small and is about 20%; the recommended follow-up period starts from 6 months.

The tactics of surgical treatment of patients with formed rectal fistulas depend on the type of fistulous tract. If an intrasphincter fistula is detected in the patient, a fistulotomy is indicated. In such cases, the intervention has no technical difficulties, does not involve a high risk of damage to the rectal retention apparatus and gives a low recurrence rate.

In cases of complex, nonlinear configuration of the fistula tract, an attempt to perform radical surgery with total excision of the fistula has the risk of remaining incomplete and is associated with a high level of postoperative faecal incontinence, which does not make this type of intervention the "operation of choice" for patients with newly diagnosed high and/or complex fistulas. We consider the occlusion of the fistulous tract to be the "first line" method for such cases. The method is characterised by no risk of damage to the sphincter fibres, ease of performance, not requiring anaesthesia, and, in most cases, can be performed on an outpatient basis.

However, its significant disadvantages are a rather high level of fistula recurrence and the possibility of developing suppurative complications [8, 9].

Ligation of a fistula in the intersphincter layer is a method of surgical treatment of rectal fistulas, which is also not associated with the risk of developing postoperative faecal incontinence and gives acceptable results in terms of recurrence. This method is recommended as the method of choice for complex fistulas, both as initial treatment and in cases of recurrent fistulas.

Plastic surgery of the internal opening of the fistulous tract with a displaced flap, taking into account the literature data and the results of our observations, cannot be considered an organ-preserving intervention due to the high level of faecal incontinence in the postoperative period, which does not allow recommending this method as a "first-line" method in the treatment of rectal fistulas. The advantage of the algorithm proposed by us is the focus on performing sphincter-sparing interventions at all stages of surgical treatment of paraproctitis.

A wide range of diagnostic and therapeutic methods allows you to plan the treatment of acute paraproctitis, avoiding situations that are potentially dangerous for the rectal retention apparatus. Treatment methods involving

anal sphincter fibre crossings should be performed according to strict indications and by qualified specialists.

CONCLUSION

The lowest recurrence rate is demonstrated by the fistulotomy and ligature method, but these methods are associated with a high risk of faecal incontinence in the postoperative period. Occlusion of the fistula and ligation of the fistulous tract in the inner sphincter layer should be recognised as the safest. The ratio of the incidence of acute paraproctitis and rectal fistulas is 5:1, this indicator is stable and does not depend on the type of interventions performed in the treatment of acute paraproctitis. In the case of ligation of the fistula in the inner sphincter layer, recurrence was noted in 19% of cases, but the development of faecal incontinence in the postoperative period was not noted. The developed algorithm for the treatment of paraproctitis allows for minimising the risks of faecal incontinence in the postoperative period at all stages of surgical care for patients with acute paraproctitis and rectal fistulas.

Conflict of Interest – None

Ethical aspect – the article is reviewed, and the information presented has a cited reference to primary sources.

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O'TKIR VA SURUNKALI PARAPROKTITNI DAVOLASH NATIJALARINI YAXSHILASH USULLARI

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ABSTRAKT

Bizning tadqiqotimizning maqsadi ko'p qirralli o'rganish orqali o'tkir paraproktit va rektal fistulalarni davolashni optimallashtirish edi. Fistulalar fistulotomi va ligature davolash past takrorlanish darajasiga ega ekanligi ko'rsatilgan, ammo najas ushlab turish buzilishlarining yuqori xavfi bilan bog'liq. Fistula ichki o'rinini ko'chirilgan qopqoqli plastik jarrohlik usuli yuqori takrorlanish tezligiga va operatsiyadan keyingi davrda najas ushlab turolmaslik rivojlanishiga olib keladi va an'anaviy usullarga xavfsiz alternativ sifatida qaralmaydi. O'tkir paraproktit va rektum fistulalari bilan kasallanish nisbati boshlang'ich aralashuv turidan qat'i nazar 5:1 tashkil qiladi, bu o'tkir paraproktitni jarrohlik bilan davolashda birlamchi radikalizmga bo'lgan istakni qo'llab-quvvatlamaydi. Sfinkter qavatidagi fistulani ligatsiyalash rektal fistulalarning murakkab turlarini davolash uchun tanlangan jarrohlik amaliyoti sifatida taklif qilinishi mumkin.

Kalit so'zlar: o'tkir paraproktit, surunkali paraproktit, murakkab paraproktit

ПУТИ УЛУЧШЕНИЯ РЕЗУЛЬТАТОВ ЛЕЧЕНИЯ ОСТРЫХ И ХРОНИЧЕСКИХ ПАРАПРОКТИТОВ

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АБСТРАКТ

Целью нашего исследования было оптимизировать тактику лечения острого парапроктита и свищей прямой кишки путем проведения многофакторного исследования результатов лечения парапроктита. Было доказано, что фистулотомия и лигатурный метод лечения свищей обеспечивают низкий уровень развития рецидива, но сопряжены с высоким риском нарушения калового держания. Метод пластики внутреннего отверстия свища перемещенным лоскутом имеет высокий уровень рецидива и развития калового недержания в послеоперационном периоде и не может рассматриваться как безопасная альтернатива традиционным методам. Соотношение частоты развития острого парапроктита и свищей прямой кишки составляет 5:1 , не зависит от типа проведенного первичного вмешательства, что не поддерживает стремление к первичному радикализму при хирургическом лечении острого парапроктита. Лигирование свища в межсфинктерном слое может быть предложено в качестве операции выбора для лечения сложных типов свищей прямой кишки.

Ключевые слова: острый парапроктит, хронический парапроктит, осложненный парапроктит