

## ON-DEMAND RELAPAROTOMY AND PROGRAMMED SANITIZATION IN THE TREATMENT OF WIDESPREAD PERITONITIS

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**Abstract:** The choice of tactics for repeat surgical interventions for disseminated peritonitis remains a subject of debate. The aim of this study was to compare the effectiveness of on-demand relaparotomy and programmed debridement relaparotomies in patients with disseminated peritonitis. Clinical treatment outcomes, complication rates, and mortality were analyzed. It was found that an individualized approach using on-demand relaparotomy with dynamic clinical and laboratory monitoring reduces surgical trauma and the incidence of postoperative complications without increasing mortality.

**Keywords:** widespread peritonitis, relaparotomy, programmed sanitation, abdominal sepsis, surgical tactics.

## TARQALGAN PERITONITNI DAVOLASHDA «TALAB BO‘YICHA» RELAPAROTOMIYA VA DASTURLASHTIRILGAN SANATSIYALAR

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**Annotatsiya:** Tarqalgan peritonitda qayta jarrohlik amaliyotlari taktikasini tanlash munozarali masala bo‘lib qolmoqda. Tadqiqotning maqsadi tarqalgan peritonit bilan og‘rigan bemorlarda «talabga ko‘ra» relaparotomiya va dasturlashtirilgan sanatsion relaparotomiyalar samaradorligini qiyosiy baholashdan iborat edi. Davolashning klinik natijalari, asoratlar chastotasi va o‘lim ko‘rsatkichlari tahlil qilindi. Dinamik klinik-laborator monitoring ostida «talabga ko‘ra» relaparotomiyani qo‘llash orqali individuallashtirilgan yondashuv operatsion jarohatni (travmani) va operatsiyadan keyingi asoratlar sonini o‘lim ko‘rsatkichini oshirmasdan kamaytirishga imkon berishi aniqlandi.

**Kalit so‘zlar:** tarqalgan peritonit, relaparotomiya, dasturlashtirilgan sanatsiyalar, abdominal sepsis, jarrohlik taktikasi.

## РЕЛАПАРОТОМИЯ «ПО ТРЕБОВАНИЮ» И ПРОГРАММИРОВАННЫЕ САНАЦИИ В ЛЕЧЕНИИ РАСПРОСТРАНЁННОГО ПЕРИТОНИТА

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**Аннотация:** Выбор тактики повторных хирургических вмешательств при распространённом перитоните остаётся предметом дискуссий. Целью исследования явилось сравнение эффективности релапаротомии «по требованию» и программированных санационных релапаротомий у больных с распространённым перитонитом. Проанализированы клинические результаты лечения, частота осложнений и летальность.

Установлено, что индивидуализированный подход с применением релапаротомии «по требованию» при динамическом клинико-лабораторном мониторинге позволяет снизить операционную травму и частоту послеоперационных осложнений без увеличения летальности.

**Ключевые слова:** распространённый перитонит, релапаротомия, программированные санации, абдоминальный сепсис, хирургическая тактика.

## INTRODUCTION

Disseminated peritonitis is one of the leading causes of high mortality in emergency abdominal surgery. Even with prompt elimination of the primary source of infection, a significant proportion of patients remain at risk of progression of the inflammatory process in the abdominal cavity, requiring repeat surgeries.

In modern surgery, two main tactics for reoperation for peritonitis are used: programmed sanitative relaparotomies and "on-demand" relaparotomies. The former involves performing repeat interventions at predetermined times, regardless of clinical progression, while "on-demand" relaparotomies are performed in the presence of signs of ongoing or recurrent infection.

The lack of uniform criteria for selecting reoperation strategies often leads to an excessive number of surgeries, increased surgical trauma, and complication rates. Therefore, a comparative analysis of these approaches in terms of clinical efficacy and safety is essential.

To evaluate the clinical effectiveness of on-demand relaparotomy and programmed sanitary relaparotomies in patients with disseminated peritonitis.

## MATERIALS AND METHODS

The study included patients with widespread peritonitis who were treated at clinics of the Surkhandarya branch of the Research Center for Emergency Medical Care. All patients were admitted on an emergency basis and required urgent surgical intervention.

The criteria for inclusion in the study were the presence of widespread peritonitis, confirmed intraoperatively, and the need for repeated surgical interventions in the postoperative period. Patients with localized forms of peritonitis, terminal stages of cancer, and severe concomitant pathology in the stage of decompensation were not included in the study.

All patients underwent a comprehensive clinical and laboratory examination, including assessment of hemodynamic parameters, acid-base status, blood biochemical parameters, and vital organ function. Diagnosis and dynamic monitoring were performed using ultrasound examination of the abdominal organs and, if necessary, computed tomography.

Depending on the chosen tactics for repeat interventions, patients were divided into two groups. The first group underwent programmed sanitary relaparotomies, which involved repeat operations 48–72 hours after the initial intervention, regardless of clinical dynamics. The second group underwent relaparotomy “on demand,” the indications for which were determined based on clinical, laboratory, and instrumental signs of ongoing or recurrent peritonitis.

The Mannheim Peritonitis Index (MPI), APACHE II, and SOFA integral scales were used for an objective assessment of the severity of the condition and the prognosis of the disease. The scores were determined in the preoperative period and in the postoperative period. Particular attention was paid to changes in the SOFA scale as a marker of organ dysfunction progression.

The criteria for performing relaparotomy “on demand” were deterioration of the patient's clinical condition, increasing intoxication, persistent or worsening pain syndrome, negative

dynamics of laboratory indicators, as well as data from instrumental examination methods indicating the presence of a continuing intra-abdominal infectious process.

The effectiveness of the tactics used was assessed by analyzing the frequency of repeat surgeries, postoperative complications, mortality, and length of hospitalization. Statistical data processing was performed using standard methods of variational statistics with an assessment of the significance of differences between groups.

### RESULTS

An analysis of clinical data showed that the need for repeat surgeries was determined by the severity of the inflammatory process and the degree of organ dysfunction. Moreover, the rate of repeat surgeries was higher in the programmed debridement group compared to the on-demand relaparotomy group.

**Table 1. Patient characteristics and severity of condition**

Indicator	Programmed rehabilitations	Relaparotomy "on demand"
Average age, years	56.4 ± 3.2	54.9 ± 2.8
MPI, points	26.8 ± 2.1	27.1 ± 2.3
APACHE II, points	18.9 ± 1.7	19.2 ± 1.9
SOFA, points	8.1 ± 1.2	8.3 ± 1.1

Differences in the initial severity of the condition between the groups were not statistically significant, which ensured comparability of the results.

In the programmed sanitation group, the number of repeated interventions per patient was higher, which was accompanied by an increase in surgical trauma and the incidence of local complications.

**Table 2. Treatment results depending on tactics**

Indicator	Programmed rehabilitations	Relaparotomy "on demand"
Average number of reoperations	2.6 ± 0.4	1.4 ± 0.3
Postoperative complications, %	48.7	33.2
Surgical site infections, %	29.4	17.8
Mortality rate, %	34.1	30.6
Duration of hospitalization, bed days	24.8 ± 3.1	20.3 ± 2.7

The obtained data indicate that the use of on-demand relaparotomy was accompanied by a decrease in the incidence of postoperative complications and a reduction in the duration of inpatient treatment with comparable mortality rates.

### DISCUSSION

The problem of choosing tactics for repeated surgical interventions in cases of widespread peritonitis remains one of the most controversial in emergency abdominal surgery. On the one

hand, programmed sanitary relaparotomies allow for regular monitoring of the condition of the abdominal cavity and timely elimination of foci of ongoing inflammation. On the other hand, multiple interventions increase surgical trauma, contribute to the progression of the inflammatory response, and increase the risk of infectious complications.

The data obtained during the study indicate that the use of programmed sanitation is accompanied by a higher number of repeat operations and a higher frequency of postoperative complications. Repeated laparotomies create conditions for the formation of tertiary peritonitis, the development of infections in the area of surgical intervention, and disturbances in the reparative processes of the anterior abdominal wall.

The “on demand” relaparotomy tactic in the presented study demonstrated comparable mortality rates with fewer repeat interventions and a lower frequency of complications. This confirms the advisability of an individualized approach to repeat operations based on an objective assessment of the patient's clinical condition.

A key element in the successful implementation of the “on demand” relaparotomy tactic is dynamic clinical and laboratory monitoring. The use of the MPI, APACHE II, and SOFA integrated prognostic scales allows for the timely detection of signs of progression of the inflammatory process and organ dysfunction. The SOFA scale plays a special role in this regard, as its dynamics reflect the degree of the body's systemic response and the risk of developing multiple organ failure.

It should be noted that abandoning scheduled sanitation does not mean reducing attention to the patient. On the contrary, the tactic of relaparotomy “on demand” requires more careful observation and a clear definition of the indications for reintervention. Delayed relaparotomy in the progression of peritonitis can lead to a worsening prognosis and increased mortality.

The results obtained are consistent with current trends in the surgery of widespread peritonitis, aimed at reducing surgical trauma and minimizing unnecessary interventions. At the same time, programmed sanitary relaparotomies remain important in patients with extremely severe disease, the impossibility of simultaneous sanitation, and pronounced intra-abdominal hypertension.

Thus, the choice of tactics for repeated surgical interventions in widespread peritonitis should be strictly individualized and based on objective criteria of the severity of the patient's condition. A rational combination of clinical assessment and prognostic scales can increase the effectiveness of treatment and reduce the frequency of adverse outcomes.

### **CONCLUSION**

On-demand relaparotomy is a valid and clinically effective treatment strategy for patients with disseminated peritonitis. Compared to programmed sanitary relaparotomies, this approach reduces the incidence of postoperative complications and shortens hospital stays without increasing mortality. A differentiated approach to repeat interventions should be based on an objective assessment of the patient's condition and dynamic monitoring of clinical parameters.

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