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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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COMPARATIVE ASSESSMENT OF SURGICAL TREATMENT OF COMPLICATIONS OF ULCERATIVE COLITIS IN CHILDREN

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Abstract.

Ulcerative colitis is an inflammatory disease of the colon, characterized by a chronic relapsing course, affecting only the colon with hemorrhagic-purulent inflammation of the mucous and submucosal layer of the intestinal wall, as well as the frequent development of local and systemic complications. The incidence of ulcerative colitis is increasing every year.

Objective: Improving the results of surgical treatment of ulcerative colitis in children through the use of laparoscopic and video-assisted technologies in clinical practice.

Materials and methods: The work carried out the analysis of the case histories of 75 (boys - 34, girls - 41) children with ulcerative colitis who were treated in surgical departments of Baku and Moscow - over a 12-year period - from 2010 to 2022. This study was a retrospective cohort analysis with prospective database completion. The main clinical group (Group 1) of the study included 53 children with ulcerative colitis (UC), who underwent surgical treatment for abdominal complications using minimally invasive laparoscopic techniques developed in the clinic. There were 25 boys (47.2%), girls – 28 (52.8%). The age of the children ranged from 4 to 17 years. It is characteristic that the main group of patients with UC consisted of adolescent children. Comparative Group 2 in our study included 22 children with UC (9 boys (40.9%), girls 13 (59.1%), in whom surgical treatment of complications was carried out using previously generally accepted "open" surgical techniques - classical emergency and planned operations - colectomy and proctocolectomy - using wide laparotomy approaches.

Result: The technique of laparoscopic total proctocolectomy with direct ileoanal anastomosis, developed and adopted in our clinic, is an effective method of treatment for this serious disease, not inferior to "open" operations in any aspect of versatility, convenience, radicality, etc.

Conclusions: Laparoscopic operations can be performed and indicated in almost all clinical situations in children with complicated inflammatory bowel diseases, for emergency indications and routinely, as well as during radical surgical treatment for ulcerative colitis. Endosurgical ostomy operations, total proctocolectomy, ileal retraction with the formation of ileoanal anastomosis are an effective and safe method of treatment in these complex groups of patients.

Key words. Ulcerative colitis, laparoscopy, ileoanal anastomosis, protective stoma.

Introduction.

Ulcerative colitis is an inflammatory disease of the large intestine characterized by chronic recurrent course, affecting only the large intestine with hemorrhagic-purulent inflammation of the mucous and submucous layers of the intestinal wall, as well as frequent development of local and systemic complications. In UC, only the large intestine is affected (except for retrograde ileitis), with the rectum involved in the process. In all cases, the rectum is affected. In some cases, other parts of the large intestine or the entire large intestine become inflamed. In most cases, diffuse inflammation occurs only in the mucous membrane (except for fulminant colitis). Despite the expansion of therapeutic options, 10-20% of patients still require proctocolectomy due to medication resistance [1,2]. UC is characterized by high mortality and frequent occurrence of malignant tumors. Acute severe ulcerative colitis represents a characteristic exacerbation of UC, characterized by systemic inflammation and bloody diarrhea occurring at least once during the disease course in 25% of patients. Each episode carries the risk of complications, the need for colectomy, and death [3,4]. The choice of surgical treatment for UC patients is determined by the duration of the history, the severity of the disease course, the degree and localization of intestinal lesions, extraintestinal manifestations, intestinal complications, and the effectiveness of previous therapy [5]. In ulcerative colitis, the laparoscopic method takes more time than open proctocolectomy. During this time, although intraoperative complications are the same, intestinal peristalsis is restored faster [6]. Although the widespread use of minimally invasive surgery in the treatment of ulcerative colitis is established, data on its use in urgent situations are limited. The scope of minimally invasive surgery in emergency surgical operations is increasing, and this method is considered safer [7]. There is no need to perform lower rectal resection during emergency colectomy for UC, as operative intervention in these patients in critical condition complicates the operation and prolongs its duration. Linear stapler is recommended for rectal resection. This helps to shorten the duration of the operation and reduce the risk of suture dehiscence [8]. Considering the good cosmetic result, early recovery, and short hospital stay after surgery, laparoscopic access is recommended as a minimally invasive intervention in the surgical treatment of children with UC. Increased working time is a matter of experience and technique [9].

Objective: To improve the results of surgical treatment of ulcerative colitis in children through the use of laparoscopic and video-assisted technologies in clinical practice.

Materials and Methods.

The main clinical group (Group 1) of the study included 53 children with ulcerative colitis (UC) who underwent surgical treatment for abdominal complications using developed minimally invasive laparoscopic techniques. There were 25 boys (47.2%) and 28 girls (52.8%) in the group. The age of the children ranged from 4 to 17 years. It is noteworthy that adolescents comprised the main group among patients with UC.

All children underwent comprehensive examination in the hospital at the stage of detection and confirmation of UC, as well as during the differential diagnosis between Crohn's disease

and UC. The complex examination and treatment of children with UC involve multidisciplinary approach with the mandatory participation of many specialists - gastroenterologist, surgeon, endoscopist, morphologist, nutritionist, if necessary - other related specialists.

Standard general clinical, biochemical, and other analyses, assessment and correction of the patients' nutritional status, calprotectin testing, Clostridium difficile toxin testing, if detected - preoperative decolonization, inflammatory response marker testing, comprehensive ultrasound examinations of the abdominal organs, pelvis, retroperitoneal space, etc., including for foci of inflammation and assessment of the degree of inflammation in the intestinal wall and abdominal cavity, comprehensive endoscopic examinations - ileocolonoscopy, esophagogastroduodenoscopy with mandatory repeated multiple biopsies and subsequent morphological examinations, contrast X-ray studies of the GI tract at all levels were performed. As a result of the preoperative examinations conducted, the diagnosis of UC was confirmed in patients, and complications of the disease course were identified, and indications for surgical operations on the abdominal organs were formulated.

Clinical examination methods.

Clinical examination of patients was carried out according to the classical scheme.

Complaints - the nature of existing complaints has been assessed:

- abdominal pain, nausea, vomiting, foaming,
- pain, discomfort in the anus and perineum,
- changes in the frequency and nature of stool, the presence of a pathological mixture in the stool (mucus, blood, etc.),
- violation of the act of defecation (bloody diarrhea),
- the presence of symptoms of intestinal obstruction and signs of intoxication,
- delay in physical and sexual development,
- the presence of other complaints not related to the intestines at first glance - damage to the skin, joints, loss of vision, etc.

Complaint: In ulcerative colitis, the main symptoms are divided into two parts. Intestinal and extraintestinal symptoms. For UC, in contrast to CD, abdominal pain is less and moderate (spastic) in nature, often appears before the act of defecation. During proctitis and proctosigmoiditis, there is no diarrhea, there may be false calls, often accompanied by constipation and normal stool secretion. This sign was found in 11 (14.7%) of the patients included in the examination. One of the main symptoms is the presence of bloody diarrhea, especially at night, which was noted in 52 (69.3%) of the included patients. Rectal bleeding was noted in 62 (82.7%) of these patients during the initial examination in cases of acute onset of the disease. The main complaints of UC patients are not only related to intestinal pains. One of the leading complaints is the appearance of various symptoms in the skin, mucous membrane, eyes, joints, and other organs, which are considered to be signs to pay attention to in order to make a diagnosis.

When collecting life and disease anamnesis, in addition to general information, special attention was paid to heredity, the course of pregnancy and childbirth in the mother, the course of the neonatal period, the growth and development characteristics of the child in later life, and at the same time, special attention was paid to chronic diseases that require observation or treatment. During the visit to the hospital, the duration of the disease, the dynamics of the development of clinical manifestations - pain syndrome, the presence and nature of vomiting, the characteristics of feces, the presence or absence of fever, infectious, allergic history, etc. attention has been paid. The time of appearance of the first pathological symptoms, which may be related to the onset of the disease, manifested itself in different periods depending on the severity of the disease. Regarding the presence or absence of other complications in patients, cases of damage to the skin, mucous membrane, joints, eyes, and liver were recorded according to the nature of KX. 37 (49.3%) of the included patients had external intestinal injuries in children during UC. During this disease, signs of damage may appear in all organs. However, damage to joints, liver, skin, and mucous membrane was mainly noted. Extraintestinal lesions usually correlate with disease activity and are more likely in severe colitis. [10]. Intestinal complications of UC include intestinal bleeding, toxic dilatation, colon perforation, and colorectal cancer. Cancer patients (11 people in total) were excluded from the study. All patients who came to the clinic with complications underwent surgery. The anamnestic data are reflected in the table below (Table 1).

It should be emphasized that organs and systems not directly related to the intestines - skin and subcutaneous tissues, visible mucous membranes, joints and periarticular tissues - need a comprehensive and complete clinical examination of the patient by determining all existing pathological manifestations. Because similar "extra-intestinal" manifestations encourage correct diagnosis in complex clinical cases, especially in children with manifestations of inflammatory bowel diseases, etc. As can be seen from the table, such cases were found in most patients (37).

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Results of laboratory tests in children with UC.

Because UC is a severe inflammatory process of the intestine, many changes occur in the organism of patients. To determine the extent of these changes, all included patients underwent general clinical analyses. Examinations were conducted on all children involved in the study (n=75). Of these, 53 (66.7%) underwent laparoscopic surgery and 22 underwent open surgery. General and biochemical analyses of blood are included here. A group of 30 healthy children was taken to compare blood changes. Those children have testicular hydrops, cryptorchidism, varicocele, etc. such pathologies have been identified. The result of laboratory analyses of patients are given in a generalized way. When analysing the results of the laboratory examination, we have compared the main diagnostic parameters that undergo sharp changes.

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As can be seen from the table, the condition of all the admitted patients was assessed as severe and moderate. A sharp decrease in hemoglobin was noted in all patients. It is worth noting that leukocytes, which are the main indicators of the inflammatory process, are high. In patients, the main symptom of nutritional disorder is a decrease in albumin, and in some patients, this figure has decreased to 19-24 g/l. In these patients, a special program was drawn up and the general condition was stabilized first, and then a surgical operation was performed. One of the specific markers of UC, Cl. difficile infection. Cl. difficile in all 75 patients involved in the examination infection was checked. In 24 (32%) of these patients, the causative agents of the infection were found. In all cases Cl. difficile infection was treated (this infection was treated with Vancomycin) and re-examination was performed.

Checking the amount of fecal colprotectin in children was carried out in all cases. The 2018 international consensus on UC in children focuses more on faecal calprotectin than previous documents. If the level of calprotectin in feces (fecal calprotectin) increases more than 5 times (212 mg/g or higher, depending on age), the child should be sent to the gastroenterology department for in-depth examination [11].

Ultrasound examinations (USM) for the diagnosis of abdominal pathologies have become the "gold standard" method of choice in modern times, undoubtedly because they are highly informative. Therefore, all the children who entered were transferred from USM. Transabdominal ultrasound examination of the small intestine and large intestine was performed to detect changes in the small intestine, and transrectal ultrasound examination of the rectum was performed to evaluate the activity of the process and to detect or exclude pararectal abscesses. Changes in the internal organs during the examinations, the condition of the intestines, its diameter, the presence of a bulky derivative in the abdominal cavity, the amount of fluid, etc. evaluated. USM was performed in dynamics to all patients. Pararectal abscesses were found in 14 (18.7%) patients.

Endoscopic examination. Endoscopy is the main irreplaceable method in the diagnosis of pathological conditions in the intestines. So, the degree, volume, etc. of the changes in the intestines during these examinations. you can get detailed information about it. The biopsy material taken is considered an indispensable diagnostic tool for verifying the diagnosis. Esophagogastroduodenoscopy and, in severe cases (in the absence of stricture), rectosigmoidoscopy examinations were performed in accordance with the instructions of the patients involved in the examination. Esophagogastroduodenoscopy was performed in all included patients (75 people). Rectosigmoidoscopy was performed in 29 (38.7%) patients.

Table 1. *Basic anamnestic data during UC.*

	3-6 years n=3	**7-10 years n=11**	**11-17 years n=61**	**Total n=75**
The operation was done	3 (4%)	11 (14,7%)	61 (81,3 %)	75 (100%)
Diarrhea	1 (1,33%)	13 (17,33%)	38 (50,6%)	52 (69,3%)
Playful	2 (2,7%)	4 (5,3%)	8 (10.7%)	14 (18,7%)
Liver	1 (1,33%)	3 (4%)	7 (9,3%)	11 (14,7%)
Eye	1 (1,33%)	2 (2.7%)	4 (5.3%)	7 (9,3%)
Skin and mucous membrane damage	0	2 (2,7%)	3 (4%)	5 (6,7%)
Rectal bleeding	1 (1.33%)	3 (4%)	6 (8%)	10 (13,3%)
Delay in physical development	0	4 (5,3%)	17 (22.7%)	21 (28%)
Retardation of sexual development	0	3 (4%)	21 (28%)	31 (41.3%)

Table 2. *The results of the laboratory examination.*

Indicators	**Patients**	**Comparison group**	**p-value**
Hemoglobin, g/l	83±4,8	127.1±3.1	p<0,001
Leukocyte	15,7±4.7	6.48+0.71	p<0,001
ESR, mm/h	42±6,1	5.9+0.88	p<0,001
SRP, mg/l	46,3±5,6	3,5±1.5	p<0,001
Albumin, g/l	20,9±5,2	52.1+0.5	p<0,001

X-ray examinations are of special importance in the diagnosis of complications of UC. Thus, an X-ray examination is performed to determine the toxic dilatation and perforation of the intestine. Radiological examinations help to measure the diameter of the transverse colon. If the diameter is more than 56 mm (more than 40 mm in children under 10 years old), it is already considered as toxic dilatation. 23 (30,7%) of the patients admitted to the clinic were diagnosed with toxic dilatation and perforation and underwent emergency surgery (Figure 1).

Figure 1. *Excessive distension of the intestines is noted as R-ji.*

The picture shows the expansion of the colon. The degree of dilation radiologically corresponds to the degree of toxic dilatation.

In the main group with UC (53 children), the following procedures were performed: Emergency laparoscopic operations - in 17 children, laparoscopic subtotal colectomy with rectal transection at the level of the transitional fold of the peritoneum and formation of a terminal ileostomy was performed (Figure 2).

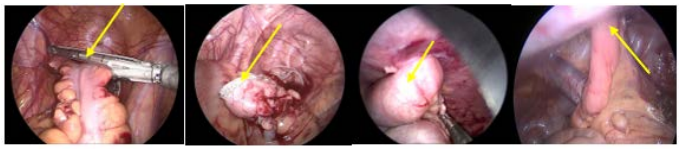

Figure 2. *Rectal transection using a linear stapling device, rectum transected at the level of the transitional fold, laparoscopic control of the correct position of the intestine when forming an ileostomy. Layer-by-layer fixation of the small intestine to the anterior abdominal wall.*

Planned laparoscopic surgeries were performed on 36 children:

- Single-stage treatment - 5 children underwent laparoscopic total proctocolectomy (Figure 3) with ileoanal anastomosis (without protective stoma), a rare procedure in children with UC (Figure 4).

Figure 3. *Complete mobilization of the rectum into the pelvis, ligation, and transection of the colon for ease of further manipulation, and mobilization of the terminal portion of the ileum with formation of the vascular pedicle.*

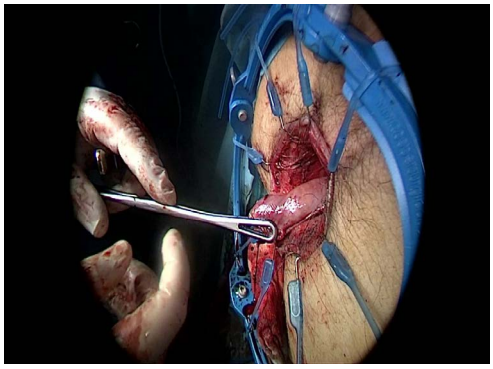

Figure 4. *Formation of direct ileoanal anastomosis.*

- Two-stage treatment - 31 children:
- Stage 1 - laparoscopic total proctocolectomy with formation of ileoanal anastomosis with protective ileostomy.
- Stage 2 - closure of ileostomy. • Comparative Group 2 in our study included 22 children with UC (boys - 9 (40.9%), girls - 13 (59.1%)), who underwent surgical treatment for complications using previously accepted "open" surgical techniques - classic emergency and elective operations - colectomy and proctocolectomy - using wide laparotomy incisions. In Group 2 children with UC (22 children), the following procedures were performed: • Emergency operations - in 6 children, subtotal colectomy with formation of terminal ileostomy was performed. • Planned laparoscopic surgeries were performed on 16 children:
- Two-stage treatment - 9 children:
- Stage 1 - total proctocolectomy with formation of ileoanal anastomosis with protective ileostomy.
- Stage 2 - closure of ileostomy.
- Three-stage treatment (7 children):
- Stage 1 - subtotal colectomy, formation of terminal ileostomy.
- Stage 2 - proctectomy, formation of ileoanal anastomosis, ileostomy.
- Stage 3 - closure of ileostomy.

When statistically analysing research results when processing quantitative indicators, the W (Wilcoxon-Mann-Whitney) test was used. When analysing qualitative indicators, the method used was Pearson's X2 test (chi-square) (when $n^3 5$) and Fisher's exact test (when $n<5$). Statistical studies were carried out using MS EXCEL and S-PLUS programs.

Discussion.

When statistically analysing the research results, the following intraoperative and postoperative indicators were analyzed to assess the effectiveness of treatment in the main and comparative groups of patients:

Duration of surgery, volume of intraoperative blood loss, frequency and severity of intraoperative complications, necessity and frequency of conversion (for laparoscopic surgeries), necessity and duration of stay in the intensive care unit (ICU), time to normalize body temperature, necessity and duration of analgesic use (narcotic, non-narcotic, etc.), necessity and duration of medication bowel stimulation, as well as time to restore intestinal peristalsis, activation time of the patient, duration of postoperative stay of the patient in the

Table 3. *Comparison of intraoperative parameters in patients in the main Group 1 and comparative Group 2 of children with UC.*

Analyzed Parameters	**Main Group 1 (n=53)**	**Comparative Group 2 (n=22)**	**p-value**
Duration of surgery (min.)	136,5±3,7 (85-174)	124,9±8,4 (65-190)	p<0,001
Intraoperative blood loss (ml)	78,3±0,8 (70-90)	194,1±5,4 (160-229)	p<0,001
Duration of stay in the intensive care unit (days)	3,17±0,16 (2-5)	5,4±0,20 (4-7)	p<0,001
Time to normalize body temperature (days)	3,87±0,11 (3-5)	5,6±0,11 (5-6)	p<0,005
Duration of analgesic use (days)	4,5±0,15 (3-6)	6,9±0,22 (5-8)	p<0,001
Duration of medication bowel stimulation (days)	3,11±0,10 (2-4)	5,4±0,25 (3-7)	p<0,001
Time to initiate enteral feeding after surgery (hours)	16,77±0,44 (12-24)	33,0±1,13 (24-44)	p<0,001
Time to first passage of stool (days)	1,9±0,12 (1-3)	2,77±0,16 (2-4)	p<0,001
Duration of postoperative hospital stay (days)	9,21±0,26 (6-12)	17,2±0,38 (14-19)	p<0,001

Table 4. *Comparison of early postoperative complications in patients with UC - groups 1 and 2.*

Patient Groups with UC	**Group 1 n=53**	**Group 2 n=22**	**p**
Total Early Postoperative Complications	11 (20,8%)	8 (36,4%)	p>0,05
Grade 1 (resolved surgical site infection)	2 (3,8%)	1 (4,5%)	P_{EFM}>0,05
Grade 2 (additional medication and other therapy)	3 (5,7%)	2 (9,1%)	P_{EFM}>0,05
Grade 3a - interventions without general anesthesia	2 (3,8%)	2 (9,1%)	P_{EFM}>0,05
Grade 3b - interventions under general anesthesia	2 (3,8%)	2 (9,1%)	P_{EFM}>0,05
Grade 4 - additional treatment of complications in the intensive care unit	2 (3,8%)	1 (4,5%)	P_{EFM}>0,05
Grade 5 - patient death	0	0	-

Comparison of early postoperative complications of surgeries for ulcerative colitis did not reveal significant differences between patients in this group (p>0.05).

Table 5. *Types of late postoperative complications requiring repeat surgical interventions.*

Groups of patients with UC	**Group 1 (laparoscopic) n=53**	**Group 2 ("open") n=22**
Type of complications		
Late adhesive intestinal obstruction	0	1
Uncontrolled perianal dermatitis requiring temporary ileostomy	1	1
Total late postoperative complications requiring repeat operations	1 (1.9%)	2 (9.1%)

hospital, frequency and severity of early and late postoperative complications, frequency of repeat surgical operations related to complications. The table presents intraoperative indicators characterizing the laparoscopic and "open" surgeries performed on our patients (Table 3).

The analysis of the results indicates that the laparoscopic method outperforms the open method. Examination of the compared indicators shows that blood loss, duration of surgery, length of stay in the intensive care unit ($p < 0.001$), and other indicators significantly differ ($p < 0.001$, $p < 0.005$). In all cases, the procedure was completed without conversion. Patients in this group required the same amount of blood transfusions (PEFM=0.13). The analysis of the results of surgical treatment of children was conducted both in the early period (within 30 days after the intervention) and in the long-term postoperative period (from 1 to 12 years). To assess the severity of early postoperative complications, we used the above classification (based on the widely known Clavien-Dindo scale) (Table 4).

The table shows late postoperative complications requiring repeated surgical interventions (Table 5).

Radical surgical treatment of UC should ultimately involve the most complete removal of the colon, including the anal mucosa. This is due to the prevention of relapse of the disease in the remaining areas of the mucosa and the possible complications associated with this, primarily malignancy (an increased incidence of malignancy in UC has been proven, especially with an early onset of the disease - as is always the case in children). The method of total laparoscopic proctocolectomy developed and used in our clinic meets all these requirements.

Results.

Analysing our experience in treating 75 children with UC using laparoscopic techniques (in 53 patients) and “open” methods (in 22 children), we can draw the following conclusions:

- The technique of laparoscopic total proctocolectomy with formation of direct ileoanal anastomosis, developed and adopted in our clinic, is an effective method of treatment for this severe condition, not inferior to "open" surgeries in terms of universality, convenience, radicality, and other aspects.
- Such surgeries can and should be performed in clinics with sufficient experience in performing laparoscopic surgeries on the colon, all necessary equipment, instruments, devices, and consumables, as well as specialists from related specialties who usually participate in the observation and treatment of such patients.
- In a comparative analysis of the use of laparoscopic and "open" techniques for performing proctocolectomy in UC patients, it can be concluded that endoscopic interventions:
- are less traumatic, accompanied by less blood loss ($p<0.001$).
- significantly reduce the duration of intensive care unit stay, the duration and severity of postoperative pain relief ($p<0.001$).

- ensure earlier initiation of enteral feeding, faster restoration of bowel peristalsis and passage ($p<0.001$).
- shorten the length of hospital stay, as well as the duration of early and subsequent postoperative rehabilitation of patients ($p<0.001$).
- are associated with some reduction in the number of early and late postoperative complications.

Conclusion.

Laparoscopic surgeries can be performed and are indicated in virtually all clinical situations in children with complicated inflammatory bowel disease, for emergency and elective indications, as well as for radical surgical treatment of UC. Endoscopic stoma-forming surgeries, total proctocolectomy, lowering of the ileum with formation of ileoanal anastomosis, are effective and safe methods of treatment in these complex patient groups.

Conflict of interest statement.

The authors declare no conflict of interest.

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Лапароскопическое лечение осложнений язвенного колита у детей

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Язвенный колит - воспалительное заболевание толстой кишки, характеризующееся хроническим рецидивирующим течением, поражением только толстой кишки с геморрагически-гнойным воспалением слизистой и подслизистого слоя кишечной стенки, а также нередким развитием местных и системных осложнений. Заболеваемость язвенным колитом увеличивается с каждым годом.

Цель: Улучшение результатов хирургического лечения язвенного колита у детей за счет применения в клинической практике лапароскопических и видеоассистированных технологий.

Материалы и методы. В работе проводился результаты анализов историй болезни 75 (мальчиков – 34, девочек – 41) детей с язвенным колитам, находившихся на лечении в хирургических отделениях г. Баку и г. Москвы –за 12-летний период - с 2010 по 2022 гг. Данное исследование представляло собой когортный ретроспективный анализ с проспективным заполнением базы данных. В основную клиническую группу (Группа 1) исследования было включено 53 детей с язвенным колитам (ЯК), которым хирургическое лечение по поводу абдоминальных осложнений проводилось с применением разработанных в клинике миниинвазивных лапароскопических методик. Мальчиков было 25 (47,2%), девочек – 28 (52,8%). Возраст детей колебался от 4 до 17 лет. Характерно, что основную группу среди больных с ЯК составили дети подросткового возраста. В сравнительную Группу 2 в нашем исследовании было включено 22 ребенка с ЯК (мальчиков – 9 (40,9%), девочек – 13 (59,1%), которым хирургическое лечение осложнений проводилась по общепринятым ранее «открытым» хирургическим методикам - выполнялась классические экстренные и плановыне операции – колектомия и проктоколектомия - с применением широких лапаротомных доступов.

Результат: Методика лапароскопической тотальной проктоколэктомии с наложением прямого илеоанального анастомоза, разработанная и принятая в нашей клинике, является эффективным способом лечения при этом тяжелом заболевании, не уступающим «открытым» операциям ни по каким аспектам универсальности, удобства, радикальности и др.

Выводы: Лапароскопические операции могут выполняться и показаны практически при всех клинических ситуациях у детей с осложненным течением воспалительных

заболеваний кишечника, по экстренным показаниям и в плановом порядке, а также при проведении радикального хирургического лечения по поводу язвенного колита. Эндохирургическое проведение стомирующих операций, тотальной проктоколэктомии, низведения подвздошной кишки с формированием илеоанального анастомоза, является эффективным и безопасным способом лечения в этих сложных группах пациентов.

Ключевые слова: язвенный колит, лапароскопия, илеоанальный анастомоз, защитная стома.

ბავშვებში წყლულოვანი კოლიტის გართულებების ლაპაროსკოპიული მკურნალობა

ისმაილოვი მ.უ[1], პოლუხოვი რ.შ[1], პოდუბნი ი.ვ[2], მაგამედოვი ვ.ა[1].

[1]პედიატრიული ქირურგიის დეპარტამენტი, აზერბაიჯანის სამედიცინო უნივერსიტეტი, ბაქო, აზერბაიჯანი.

[2]ევდოკიმოვის სახელობის მოსკოვის სამედიცინო და სტომატოლოგიური უნივერსიტეტი, ბაქო, აზერბაიჯანი.

წყლულოვანი კოლიტი არის მსხვილი ნაწლავის ანთებითი დაავადება, რომელსაც ახასიათებს ქრონიკული მორეციდივე მიმდინარეობა, რომელიც გავლენას ახდენს მხოლოდ მსხვილ ნაწლავზე ნაწლავის კედლის ლორწოვანი და ლორწოვანი გარსის ჰემორაგიულ-ჩირქოვანი ანთებით, აგრეთვე ლოკალური და სისტემური გართულებების ხშირი განვითარებით. წყლულოვანი კოლიტის შემთხვევები ყოველწლიურად იზრდება.

მიზანი: ბავშვებში წყლულოვანი კოლიტის ქირურგიული მკურნალობის შედეგების გაუმჯობესება კლინიკურ პრაქტიკაში ლაპაროსკოპიული და ვიდეო-დახმარებითი ტექნოლოგიების გამოყენებით.

მასალა და მეთოდები. სამუშაომ ჩაატარა წყლულოვანი კოლიტით დაავადებული 75 (ბიჭი - 34, გოგო - 41) ბავშვის შემთხვევების ისტორიის ანალიზი, რომლებიც მკურნალობდნენ ბაქოსა და მოსკოვის ქირურგიულ განყოფილებებში - 12 წლის განმავლობაში - 2010 წლიდან 2022 წლამდე. ეს კვლევა იყო რეტროსპექტული კოჰორტის ანალიზი მონაცემთა ბაზის პერსპექტიული შევსებით. კვლევის ძირითად კლინიკურ ჯგუფში (ჯგუფი 1) შედიოდა წყლულოვანი კოლიტის (UC) მქონე 53 ბავშვი, რომლებსაც ჩაუტარდათ ქირურგიული მკურნალობა მუცლის ღრუს გართულებებზე კლინიკაში შემუშავებული მინიმალური ინვაზიური ლაპაროსკოპიული ტექნიკის გამოყენებით. იყო 25 ბიჭი (47.2%), გოგონები – 28 (52.8%) ბავშვების ასაკი 4-დან 17 წლამდე მერყეობდა. დამახასიათებელია, რომ UC-ით დაავადებულთა ძირითად ჯგუფს მოზარდი ბავშვები შეადგენდნენ. ჩვენს კვლევაში 2 შედარებითი ჯგუფი მოიცავდა 22 ბავშვს UC-ით (9 ბიჭი (40.9%), გოგონა 13 (59.1%), რომლებშიც გართულებების ქირურგიული მკურნალობა ჩატარდა ადრე ზოგადად მიღებული „ღია“ ქირურგიული ტექნიკის გამოყენებით - კლასიკური გადაუდებელი და დაგეგმილი ოპერაციები. - კოლექტომია და პროქტოკოლექტომია - ფართო ლაპაროტომიის მიდგომების გამოყენებით.

შედეგი: ჩვენს კლინიკაში შემუშავებული და მიღებული ლაპაროსკოპიული ტოტალური პროქტოკოლექტომიის ტექნიკა პირდაპირი ილეოანალური ანასტომოზით არის ამ სერიოზული დაავადების მკურნალობის ეფექტური მეთოდი, რომელიც არ ჩამოუვარდება „ღია“ ოპერაციებს მრავალმხრივობის, მოხერხებულობის, რადიკალობის და ა.შ.

დასკვნები: ლაპაროსკოპიული ოპერაციები შეიძლება ჩატარდეს და ნაჩვენები იყოს თითქმის ყველა კლინიკურ სიტუაციაში ბავშვებში ნაწლავის გართულებული ანთებითი დაავადებების დროს, გადაუდებელი ჩვენებით და რუტინულად, ასევე წყლულოვანი კოლიტის რადიკალური ქირურგიული მკურნალობის დროს. ენდოქირურგიული ოსტომის ოპერაციები, ტოტალური პროქტოკოლექტომია, ნაწლავის რეტრაქცია ილეოანალური ანასტომოზის წარმოქმნით არის მკურნალობის ეფექტური და უსაფრთხო მეთოდი პაციენტების ამ კომპლექსურ ჯგუფებში.

საკვანძო სიტყვები: წყლულოვანი კოლიტი, ლაპაროსკოპია, ილეოანალური ანასტომოზი, დამცავი სტომა.