

## THE RUSSIAN ASSOCIATION OF COLOPROCTOLOGY CLINICAL GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF HEMORRHOIDS

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## IMMUNE PHENOTYPING OF FREE TUMOUR CELLS FOR EARLY DIAGNOSIS OF PERITONEAL CARCINOMATOSIS IN COLORECTAL CANCER

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AIM: to test a method of free intraperitoneal colorectal cancer (CRC) cells isolation for the immunophenotyping and evaluation of mitomycin C hyperthermic intraabdominal chemotherapy (HICT)

PATIENTS AND METHODS: twenty-seven patients with CRC were included in the study. Peritoneal lavage prior and after HICT was performed for 10 of them. We defibrinated lavage fluid and stained concentrated tumour cells with monoclonal antibodies CD133 Vio Bright – FITC, CD24 PE, CD26 ECD, CD184 PC5 and CD44 PC7. FACS analysis was done after staining.

RESULTS: patients with colon cancers had the increased expression of CD133 ( $p < 0.001$ ) and CD184 ( $p < 0.05$ ). Mesenteric lymph nodes involvement was followed by an increase of CD26 expression ( $p < 0.05$ ) in CD133+ cancer cells. The ratio of CD44/CD26 expression was increased in patients with peritoneal carcinomatosis ( $p < 0.05$ ). HICT lowers CD24 expression on CD133+ cancer stem cells.

CONCLUSION: the method proposed for free peritoneal CRC cells identification and phenotyping can be used in clinical practice, particularly for evaluating the HICT efficacy. Suppressive effect of HICT on cancer stem cells is detected.

**[Key words: peritoneal carcinomatosis, cancer stem cells, intraperitoneal chemotherapy, fibrin, trypsin]**

## CLASSIFICATION OF HEMORROIDAL DISEASE, CRITERIA OF OBJECTIVITY

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AIM: to assess objective criteria for the prolapsed of internal hemorrhoids piles and to define the degree of external hemorrhoids enlargement in comparison with the Goligher classification.

PATIENTS AND METHODS: the clinical and anatomical status of patients with various forms of hemorrhoids was evaluated within the multicenter observation program «REVISION». The study is based on the analysis of clinical and instrumental examination of 1020 patients with stages I-IV of hemorrhoids aged  $44.1 \pm 12.7$  (18-81) years. The study included 506 (49.6%) females. RESULTS: the data obtained show an irregular increase of internal and external piles, which can be expressed in digital form. In patients with stage I-II, the presence of external piles was detected in 64.7% and 55.7% and in stage III-IV was revealed in 77.7% and 93.5%. Compliance with Goligher classification and the degree of piles enlargement in patients with stages I and II was noted in 225 (84.6%) and 236 (72.2%) cases ( $p < 0.001$ ). In patients with stages III and IV this compliance was detected only in 211 (66.1%) and 58 (53.7%) cases ( $p < 0.001$ ). CONCLUSION: the study showed that the Goligher classification is an inadequate tool for assessing the surgical status of hemorrhoids and evaluating surgical outcomes. The degree of prolapse can be classified according to the size of the internal hemorrhoid piles relative to the sector of the circumference of the anal canal and to the displacement of the pile in relationship with the "dentate line". The size of the external hemorrhoid piles is determined similarly in accordance with the perianal region.

**[Keywords: hemorrhoids, classification, treatment]**

## LAPAROSCOPIC LIVER RESECTION IN SURGERY FOR COLORECTAL CANCER METASTASES

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BACKGROUND: nowadays laparoscopic liver resection (LapLR) in contrast to traditional open approach is more preferable because of reduction of intraoperative blood loss and postop morbidity, decrease of postop hospital

stay. Unfortunately, the place of LapLR in surgery for colorectal liver metastases is still controversial because of small number of comparative studies.

**PATIENTS AND METHODS:** between November 2017 and December 2018 fifty two patients with resectable colorectal liver metastases were included in our pilot study – 35 in the prospective group for laparoscopic liver resection and 17 patients in retrospective group of open-approach liver resections (selected group of historical control) (OLR).

**RESULTS:** one patient was excluded from LapLR group because of absence of intraoperative evidence for metastatic disease (in spite of preop MRI). Two patients had lap-to-open conversion (in one case because of technical difficulties due to the location of the permanent ileostomy in the right mesogastric region; in the other case due to intraoperative bleeding). These patients were included into open group. Atypical liver resections were the most often procedures in both groups – 79% (23/32) and 76% (13/19),  $p=0.3$  (LapLR and OLR, respectively). Duration of the procedure was shorter in the OLR group:  $218\pm 71$  min vs.  $237\pm 101$  min in LapLR,  $p=0.6$ . The median for blood loss in LapLR was 100 ml (quartile 100; 200) vs. 320 ml (quartile 200; 600) in OLR,  $p=0.0001$ . The rate of R0 resections was comparable in both groups ( $p=1.0$ ). The patients of OLR group more often had  $>1$  complication (16 vs. 13,  $p=0.01$ ) and had higher frequency of bile fistulas, abscesses in the liver resection area and clostridial colitis. Postoperative hospital stay was shorter in the LapLR group:  $11\pm 3$  vs.  $14\pm 5$  days,  $p=0.008$ .

**CONCLUSION:** laparoscopic liver resections for metastases of colorectal cancer were associated with less intraoperative blood loss, morbidity, and shorter postoperative hospital stay, with comparable rate of R0 resections.

**[Keywords: colorectal cancer metastases, liver metastases, laparoscopic liver resections, open liver resections, comparative study]**

#### **ALGORITHM OF SURGICAL CARE IN PATIENTS WITH COMPLICATED COLORECTAL CANCER**

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AIM: to standardize surgical care for the malignant colonic obstruction.

**PATIENTS AND METHODS:** the retrospective cohort study included 797 patients with complicated colorectal cancer. Malignant colonic obstruction was diagnosed in 572 patients: 247 of them were treated in 2011-2013 (I group); 325 – in 2014-2017 (II). Urgent bowel resection was performed more often in I group (one-stage treatment), fecal diversion or stent- in II (two-stage treatment). Seventy-seven patients with tumor bleeding were included as well: 62 of them were treated conservatively or underwent endoscopic coagulation or arterial embolization (III group); 15 patients – underwent urgent bowel resection (IV). All of 148 patients with bowel perforation were underwent urgent surgery: resection was performed in 115 patients (V), suturing the perforation site – in 15 (VI), extraperitoneal drainage of the abscess – in 18 (VII). Elective bowel resection was performed in 241 patients (186 – from I-II group, 40 – from III, 15 – from VI-VII) after 0.1-6 months. The comparative analysis of the early and late results of one- and two-stage treatment was carried out with assessment of the 3-year cumulative survival.

**RESULTS:** postoperative mortality was significantly lower in elective resection groups compared with urgent resection groups: 3.6% vs 29.2% (II vs I); 5.0% vs 20.0% (III vs IV); 0.0% vs 35.7% (VI-VII vs V). The survival rate was higher in elective resection groups than in urgent ones: 0.809 vs 0.680 (II vs I), 0.888 vs 0.3571 (III vs IV), 0.8615 vs 0.4257 (VI-VII vs V).

**CONCLUSION:** multi-stage approach for complicated colorectal cancer is more effective than one-stage.

**[Key words: malignant colonic obstruction; hemorrhagic colorectal cancer; colorectal cancer perforation]**

#### **IMPACT OF ORAL ANTIBIOTIC PROPHYLAXIS ON SURGICAL SITE INFECTION AFTER RECTAL SURGERY: RANDOMIZED CONTROLLED TRIAL**

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AIM: to evaluate the efficacy of preoperative oral antibiotics in reduction of surgical site infection (SSI) in rectal surgery.

**METHODS:** patients undergoing rectal resection were assigned randomly to 2 groups: control (standard preoperative care and intravenous injection of 3d generation cephalosporin) and oral antibiotics group (the

above was complemented by three-knit oral metronidazole 500 mg and erythromycin 500 mg after beginning of mechanical bowel cleansing at 5.00, 8.00 and 10.00 p.m.). The primary endpoint was the overall rate of SSI.

RESULTS: between November 2017 and October 2018, 104 patients (48 in the oral antibiotics group and 56 in control group) were enrolled for this study. The incidence of SSIs was 19.6% (11/56) in control group and 4.1% (2/48) in the oral antibiotics group ( $p=0.01$ ). Both groups had no statistically significant differences in intensity of SSIs and rate of anastomotic leakage. CONCLUSION: preoperative oral antibiotic significantly reduced the risk of SSIs following rectal surgery. The study needs to be continued for evaluation of preoperative oral antibiotics impact to intensity of SSIs and rate of anastomotic leakage.

**[Keywords: colorectal surgery, rectal cancer, oral antibiotic prophylaxis, surgical site infection, anastomotic leakage, metronidazole, erythromycin]**

## RESULTS OF URGENT RESECTIONS FOR COMPLICATED COLORECTAL CANCER IN OLDER PATIENTS

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AIM: to assess the effect of age comorbidity on the early and late results of urgent surgery in patients with complicated colorectal cancer.

PATIENTS AND METHODS: the study included 1098 patients, which underwent urgent surgery in Smolensk hospitals in 2001-2013 for complicated colorectal cancer. They were divided into 2 groups depending on age: the first group – aged  $\geq 70$  years.

RESULTS: the average age in the first group was 58.2 (18-70) years and 75.8 (70-93) years in the second group. Complications IIIb-V by Clavien-Dindo scale were significantly higher in the 2nd group ( $p < 0.0001$ ). R0 resections were performed in 86.6% in first group and 79.4% – in second one ( $p < 0.0001$ ). The 5-year overall survival was significantly better for the first group (34.5% vs 15.2%,  $p = 0.00001$ ). Disease-free survival had no difference between groups 1 and 2 in specialized hospitals (31.8% vs 29.1%,  $p=0.07$ ).

CONCLUSION: R0 resections in specialized hospitals for older patients with complicated colorectal cancer provide better survival.

**[Keywords: complicated colorectal cancer, elderly, comorbidity, post-operative complications, five-year overall and cancer-specific survival]**

## QUALITY LIFE OF PATIENTS OPERATED FOR ULCERATIVE COLITIS (review)

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The review presents data from various Western and Russian papers, which assess QoL of patients with ulcerative colitis, who underwent a proctocolectomy with a terminal ileostomy or with ileal pouch. Both procedures have advantages and disadvantages. The QoL assessment was performed using different validated and not validated scales. Study results show that QoL of patients with ileal pouch and end ileostomy are relatively similar. Improvement of QoL after surgery mostly depends of disease elimination by proctocolectomy but by the restoration of anal defecation. However, meta-analysis is complicated due to the inability to comply with methodological requirements and use of different QoL scales. There is a need to continue research in this field.

**[Keywords: ulcerative colitis, QoL, ileostomy, ileal pouch, questionnaire]**

## POUCHITIS AFTER ILEAL POUCH-ANAL ANASTOMOSIS FOR ULCERATIVE COLITIS (review)

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Pouchitis is a most frequent complication in patients with ileal pouch, it occurs at least 50% of them once in a lifetime. However, pouchitis can be treated fast and effectively. Twenty per cent of patients with chronic pouchitis have unfavourable prognosis because of antibiotic resistance and antibiotic dependence. It is hard to choose an effective treatment in this group of patients, which should include induction and maintenance therapy. Ineffective conservative treatment indicates a necessity of detection of secondary causes of pouchitis. Currently, there is not enough experience and less understanding of the causes of pouchitis to decrease its incidence. Further studies are needed.

**[Keywords: ulcerative colitis, ileal pouch, pouchitis, treatment]**

## **COLD LOOP POLYPECTOMY OF FLAT COLON POLYPS (review)**

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Hot polypectomy is a standard technique for removal of colon polyps. However, this technique is associated with a risk of complications: bleeding, perforation and postcoagulation syndrome. Therefore, it could be interesting to pay attention to using "cold" polypectomy for which means removal without electrothermal lesion. This technique deserves more attention due to simple use, less complications and good results for polyps 1 cm. Further studies are needed for evidence-based conclusions.

**[Keywords: colonic polyps, colonoscopy, cold and hot snare polypectomy]**

## **CYTOMEGALOVIRUS INFECTION IN INFLAMMATORY BOWEL DISEASES (REVIEW)**

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Cytomegalovirus infection (CMVI) with clinical manifestations is a valuable problem in patients with immunosuppression, particularly in patients with inflammatory bowel disease (IBD) treated with steroids and other immunosuppressive drugs. Clinical activity of cytomegalovirus-associated IBD, natural history and stage of IBD, steroids use and anti TNF- $\alpha$ -agents were identified as risk factors. CMVI diagnostics should clarify not only the presence of CMV but its etiological role in clinical features of the disease. The most significant are the virologic and serological methods. All patients with steroid resistance, loss of effect and severe IBD should undergo CMVI screening. It is likely that joining CMVI to IBD is one of the main causes of resistance to steroids, immunosuppressive and biological treatment. requires further studies.

**[Keywords: cytomegalovirus infection, inflammatory bowel disease, CMV, IBD, ulcerative colitis, Crohn's disease]**

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## **SYSTEMATIC REVIEW AND META-ANALYSIS OF TRANSANAL ENDOSCOPIC MICROSURGERY VERSUS ENDOSCOPIC SUBMUCOSAL DISSECTION FOR RECTAL ADENOMAS AND EARLY RECTAL CANCER**

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AIM: transanal endomicrosurgery (TEM) is the standard for organ-preserving treatment of patients with large adenomas and early rectal cancer. The advantage of TEM in comparison with other transanal methods of treatment of rectal tumors is the low frequency of R1 resections and fragmentation, which procudes a low level of local recurrences. Endoscopic submucosal dissection (ESD) is a new technology for superficial rectum tumors. This systematic review and meta-analysis compared safety and efficacy of ESD vs TEM for large adenoma and early colorectal cancer.

PATIENTS AND METHODS: a literature search and meta-analysis of the data was carried out in accordance with the English-language Medline database without restrictions on the publication date (end December 18, 2018) according to keywords: «endoscopic submucosal dissection», «esd», «endoscopic dissection», «tem», «tamis», «transanal endoscopic microsurgery», «transanal resection», «teo», «transanal endoscopic microsurgical excision». The systematic review includes all papers on the comparison of TEM and ESD for large adenomas and early rectal cancer. Statistical data processing was performed using Review Manager 5.3.

RESULTS: four retrospective comparative studies were included in the analysis (215 patients). Groups were homogenous in the number of tumors (Odds ratio [OR]=1,19; 95% confidence interval [CI] 0.23-6.16) and size (p=0.55). The intraoperative morbidity included bleeding (p=0.54) and rectal perforation (p=0.32) was homogenous as well. The operation time in the ESD group was significantly longer by 32 minutes than TEM

(OR=32.5;95% CI 17,7-47.4; p<0.0001). Postoperative stay was higher than in 1.6 times after TEM (OR=16.1; 95% CI 1.5-30.1; p=0.03). The antibiotics use after surgery was not significantly different in both groups (p=0.33). The en-bloc resections (p=0.66) and the rate of R1 resections (p=0.74) were not significantly different in both groups. The local recurrence rate was homogenous (p=0.95). CONCLUSIONS: the ESD and TEM procedures are safe and effective techniques for local excision of adenomas and early colorectal cancer, but a randomized study is needed to prove the results.

**[Keywords: Rectal adenoma, Early rectal cancer, Transanal endoscopic microsurgery, Endoscopic submucosal dissection, Systematic review, Meta-analysis]**

#### **LASER SUBMUCOSAL DESTRUCTION OF CHRONIC HEMORRHOIDS STAGE II-III**

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AIM: to evaluate the efficacy of laser submucosal destruction using a radial light guide in patients with chronic hemorrhoids (stages II and III).

PATIENTS AND METHODS: the study included 65 patients with chronic hemorrhoids, 20% had stage II and 80% – stage III by Goligher classification. Laser submucosal destruction of hemorrhoidal piles has been performed in all patients. The following criteria of assessment were used: pain intensity by visual analogue pain (VAS) scale, the morbidity rate and the time complete wounds healing. Criteria for late results assessment was the severity of the main symptoms of hemorrhoidal disease like piles prolapse, bleeding, thrombosis and anal itching.

RESULTS: in 54 (83.1%) patients the postoperative period was uneventful. Postoperative pain syndrome was 3±2 points on VAS scale. Minor postoperative complications were detected in 11 (16.9%) patients. No recurrent hemorrhoids occurred in follow-up.

CONCLUSION: laser submucosal destruction is a good alternative for HAL-RAR and STARR procedure for hemorrhoidal disease, when the rubber band ligation and sclerotherapy were ineffective but the time for classical hemorrhoidectomy has not yet come.

**[Keywords: hemorrhoids, laser vaporization, laser destruction]**

#### **A NEW AGENT BOWEL CLEANSING BEFORE ENDOSCOPY «COLOKIT»**

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AIM: to evaluate the efficacy, safety and drug tolerance of «Colokit» for bowel cleansing before colonoscopy.

PATIENTS AND METHODS: an open prospective non-randomised study of the quality of bowel cleansing was carried out in 30 patients (17 females, aged 26-72 years), who underwent diagnostic colonoscopy after using «Colokit» (Mayoly Spindler, France) using two different regimes (recommended and alternative).

RESULTS: the quality of the bowel cleansing was significantly better in patients after «Colokit» use in recommended regime vs alternative regime. No difference in subjective assessment of patients' comfort during bowel preparation was found in both regimes.

CONCLUSION: the «Colokit» agent provides good preparation and patients' comfort and can be recommended for the bowel cleansing before colonoscopy.

**[Keywords: colonoscopy, preparation, «Colokit»]**

#### **DOES LESION SITE AFFECTS OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLON NEOPLASIA?**

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State Scientific Centre of coloproctology, Moscow, Russia AIM: to assess results of endoscopic submucosal dissection (ESD) for colon neoplasms due to lesion site.

PATIENTS AND METHODS: One-hundred thirteen patients (66 females, aged 65,7±11,0 years) with colon neoplasms which underwent ESD for one year (January 2017 – January 2018) were included in the study. All patients were divided in two groups depending on lesion site. The first group included patients with lesions in caecum, ascending colon and proximal third of transverse colon, the second group – other colon parts and intraperitoneal part of the rectum. All patients underwent preoperative tests including colonoscopy, gastroscopy and transabdominal ultrasound. ESD included lesion marking, injection, circular incision and dissection. The results obtained were analyzed statistically using Graph Pad 7 for Mac.

RESULTS: the 1st group included 61 (54.0%) patients and the 2nd – 52 (46.0%). Laterally spreading tumors (LST) were detected more often in the 1st group (56 patients of the 1st group vs 38 – in the 2nd,  $p=0.03$ ). The lesion size in the 1st group was  $31\pm 13$  (7-80) mm and  $29\pm 11$  (8-76) in the 2nd one ( $p=0.3$ ). Conversion from ESD to resection occurred in 9 (8.0%) patients, in 5 patients of the 1st group and in 4 – the 2nd one ( $p=1.0$ ). The only reason for conversion was unfavorable lesion lifting ( $\leq 2$  mm). Most of the lesions were removed en bloc, specimen fragmentation after ESD occurred in 10 (9.6%) patients: in 5 (9.0%) in the 1st group and in 5 (10.4%) in the 2nd ( $p=1.0$ ). Intraoperative complications during ESD in the 1st group occurred in 2 (3.5%) cases and in 2 (4.1%) – in the 2nd ( $p=1.0$ ). Postoperative complications were detected in 2 (1.9%) patients. Histopathology showed adenocarcinoma in 9 (8.0%) patients. Two (1.7%) patients produced local recurrence.

CONCLUSION: ESD is a safe method removal of colon adenomas. The intra- and postoperative complications rate is 3.5% and 1.9% for the 1st and the 2nd group. Local recurrences occurred in 2,04%. Unfavorable lesion lifting ( $\leq 2$  mm) in right colon is a risk factor for specimen fragmentation or conversion.

**[Key words: endoscopy, endoscopic submucosal dissection, colon, neoplasms, adenocarcinoma, lesion, piecemeal resection, local recurrence, right part of the colon]**

## **MULTIMODAL DIAGNOSTICS AND SURGICAL TREATMENT OF ABNORMALITIES OF COLON DEVELOPMENT AND FIXATION IN ADULTS**

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AIM: to improve treatment results of adults with colon malformations and fixation abnormalities.

PATIENTS AND METHODS: retrospective observational study included 157 adults with colon malformations and fixation abnormalities. RESULT: bioelectric excitability in colon malformations and fixation anomalies is typical due to stage of the disease and localization. It was found that disease progress is followed by the inhibition of bio-potentials and intestinal wall atrophy and atony. Sixty-nine (43.9%) patients had the compensated constipation. In 88 (56.1%) patients with sub- and decompensation have met indications for surgery. Seventy-two (45.9%) of them underwent surgery by open and laparoscopic approach. The type of the procedure depended on the type of abnormality. Postoperative complications occurred in 5 (6.9%) patients with mortality rate 1.4%. Better quality of life was detected in operated patients than of those, who refused surgery.

CONCLUSION: multimodal diagnostics with precise evaluation of the motor-evacuation function of the colon in patients with colon malformations and fixation abnormalities, assessment of conservative treatment, the determination of the type of surgery allows to improve functional results and quality of life.

**[Keywords: colon anomalies, dolichocolon, dolichosigma, transversoptosis, Payr's syndrome, surgical treatment]**

## **SHORT-TERM OUTCOMES OF LAPAROSCOPIC ELECTIVE COLONIC RESECTIONS FOR DIVERTICULAR DISEASE**

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AIM: to assess the feasibility and safety of laparoscopic elective colon resections for diverticular disease.

PATIENTS AND METHODS: a retrospective non-randomized study included 38 patients with elective colon resection for diverticular disease. Twenty-six underwent laparoscopic resections (main group), 12 – open resections (controls). The indications for surgery were: chronic diverticulitis, pericolic abdominal mass, external and internal colon fistulas and stricture of the colon.

RESULTS: operation time was the same in the control group ( $167.1\pm 73.3$  vs  $129.9\pm 43.7$  min,  $p=0.06$ ). Thirty-three (86.8%) resections were performed with a colorectal anastomosis and 5 (13.2%) obstructive resections of the sigmoid colon. In the main group, the inferior mesenteric artery (IMA) was divided at the origin in 4 (15.4%) cases, in the control group – in 6 (50%) ( $p=0.045$ ). The anastomotic leakage in the main group was in 3 (11.5%) patients, in the control group – in 1 (8.3%) ( $p=1.0$ ). The postoperative period was significantly shorter in the main group compared with the controls ( $9.3\pm 2.8$  vs  $13.4\pm 5.1$  days,  $p=0.003$ ). After laparoscopic procedures, narcotic analgesics were used in 3 (11.5%) cases, after conventional – in 8 (66.7%) ( $p=0.001$ ).

CONCLUSION: laparoscopic approach is comparable to the conventional one in operative time and postoperative morbidity. Laparoscopic approach is associated with a significantly less postoperative pain syndrome and a shorter postoperative period, more often allows to preserve the IMA as well.

**[Keywords: diverticular disease of colon, elective resections, laparoscopic resections]**

## CONSERVATIVE TREATMENT FOR CHRONIC HEMORRHOIDS. RESULTS OF SURVEY OF RUSSIAN SURGEONS

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AIM: to clarify surgeon's preferences for the conservative treatment of chronic hemorrhoids.

MATERIALS AND METHODS: an anonymous survey included 102 surgeons with an experience in chronic hemorrhoids treatment.

RESULTS: an analysis of survey revealed surgeon's preferences for local and systemic drugs for the treatment of chronic hemorrhoids. The surgeons reported more than 30 different drugs for the local treatment of hemorrhoids. Most specialists consider it necessary to prescribe systemic phlebotonics. The drug «Detralex» was most often used.

CONCLUSION: a majority of surgeons use effective drugs for the treatment of chronic hemorrhoids. In any cases relative shortage of knowledge about discussed problem was revealed.

**[Keywords: chronic hemorrhoids, local treatment, systemic treatment, survey]**

## FILAC TECHNOLOGY FOR EXTRASPHINCTERIC FISTULAS

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AIM: to assess efficacy of FiLaC technology for extrasphincteric fistulas.

PATIENTS AND METHODS: the retrospective cohort study included 56 patients with extrasphincteric fistulas of Grade III and IV. All patients underwent a modified FiLaC procedure, which consisted of excision of the fistula tract, preservation of the fistula tract inside anal canal with its laser exposure by water-absorbing Biolitec laser power of 13W and energy density of 100 J/cm. Internal fistula opening was closed with a Z-shaped absorbable suture.

RESULTS: after fistula tract excision up to the anal canal we failed to insert laser probe to the internal fistulous opening in 6 (10.7%) patients due to scars. Thirty-nine (78.0%) 50 patients, who underwent FiLaC procedure were under observation with median follow-up of 27 months. Twenty (51.3%) patients had fistulas of Grade III with the recurrence occurred in 7 (35.0%) patients. Among 19 (48.7%) patients with fistulas Grade IV the recurrence was detected in all cases.

CONCLUSION: FiLaC procedure is effective only for extrasphincteric fistulas Grade III.

**[Keywords: FiLaC, extrasphincteric fistulas, laser technology]**

## ISCHEMIC COLITIS IN AN ADULT PATIENT WITH ATYPICAL HEMOLYTIC UREMIC SYNDROME (case report)

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Atypical hemolytic uremic syndrome (aHUS) is a rare life-threatening condition caused by uncontrolled complement activation due to mutations in the alternative pathway of complement components. aHUS is characterized by microangiopathic hemolytic anemia, thrombocytopenia, acute renal failure and affecting multiple organ systems. Extra-renal manifestations of aHUS take place in 20% of patients including involvement of the central nervous system, cardiovascular system, lungs, skin and gastrointestinal tract. This case report describes a severe course of atypical hemolytic uremic syndrome in a 21-year-old female, developed ischemic colitis.

**[Keywords: atypical hemolytic uremic syndrome, thrombotic microangiopathy, ischemic colitis, extrarenal manifestations, case report]**

## FIRST EXPERIENCE OF STRICTUROPLASTY IN A TEENAGER WITH COMPLICATED CROHN'S DISEASE (case report)

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A rare clinical observation of spontaneous intestinal perforation into the free abdominal cavity in teenager with complicated Crohn's disease during steroids therapy is presented. The experience of exclusive enteral nutrition and the results of the first stricturoplasty in children are demonstrated.

**[Keywords: Pediatric Crohn's disease; Free intestinal perforation, Exclusive Enteral Nutrition, Surgery; Stricturoplasty]**

### **FISTULA LASER ABLATION FOR ANAL FISTULAS (systematic review)**

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AIM: to reveal fistula healing incidence after application of FiLaC™ technique and factors that can affect it.

MATERIALS AND METHODS: when searching electronic medical databases for publications that evaluated the results of the FiLaC™ technique in the treatment of anal fistula, 6 studies were selected, corresponding to the search queries. The search was carried out taking into account the principles of systematic literature reviews and meta-analyses (PRISMA). The time interval for searching publications was between 2011 and October 2018. In the publications included in the analysis, the following parameters were evaluated: general characteristics of the study groups, technical aspects of the FiLaC™ technique, the site of the fistula in relation to the anal sphincter, the option of closing the internal fistula, the incidence of healing and recurrence of fistula, the duration of the follow-up period after surgery, re-operated cases of fistula recurrences.

RESULTS: taking into account the data obtained in the analysis of the selected studies, the mean incidence of fistula healing was 64.5% (40.0-88.2)%. It was found that the only factors that can be used to assess their impact on the incidence of fistula healing were: the gender and the variant of the fistula site in relationship to the anal sphincter (transsphincteric/extrasphincteric). Statistical analysis and evaluation of the odds ratio revealed no effect on the treatment result of the above parameters.

CONCLUSION: the analysis of the data showed that FiLaC™ is mainly indicated for the treatment of patients with extrasphincter and transsphincteric anal fistulas. The method can be recommended as a sphincter-sparing treatment in patients with initially weakened anal sphincter function and, consequently, with a high risk of anal sphincter insufficiency in the application of traditional techniques. Further evaluation of the treatment results in the treated period and their comparison with the results after other variants of coagulation of the fistula walls is required to obtain a clearer understanding of the effectiveness of the FiLaC™ technique.

**[Keywords: fistula-in-ano, minimally invasive techniques, laser ablation]**

### **THE RESULTS OF 600 TRANSANAL ENDOSCOPIC SURGERIES OF RECTAL ADENOMAS AND ADENOCARCINOMAS**

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AIM: transanal endomicrosurgery (TEM) is the method of choice for local excision of rectal cancer. The presented series of patients is collected prospectively and is the largest of the published in the Russian medical periodicals.

PATIENTS AND METHODS: six-hundred patients [average age  $\pm$  59.8 $\pm$ 9 (31-90) years old; 375/600 (62.5%) – women] with rectal adenomas and adenocarcinomas, who underwent TEM in 2011-2019.

RESULTS: the mean size of the removed tumors was 3.4 $\pm$ 1.5 cm (0.5-10.0). R0 resection was performed in 571/600 (95.2%) of the cases. The complication rate was 3.6% (22/600). Pathomorphological study of the removed specimens revealed adenoma in 450/600 (75.0%) patients, adenocarcinoma in 150/600 (25.0%) cases. The mean time of observation of patients with adenomas was 38.4 $\pm$ 25.1 months, with adenocarcinomas – 33.4 $\pm$ 23.8 months. The rate of local recurrence in adenomas was 4.5%. Loco-regional recurrence of adenocarcinoma pT1 after TEM was revealed in 6.8% of patients and 30% of pT2 patients without adjuvant treatment.

CONCLUSION: TEM is an effective and safe method of treatment of rectal adenomas. With rectal cancer, a thorough selection of patients is required.

**[Keywords: transanal endomicrosurgery, adenoma, adenocarcinoma, rectum]**



## LATE RESULTS OF TOTAL MESORECTUMECTOMY IN RECTAL CANCER AFTER OPEN AND LAPAROSCOPIC PROCEDURES

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AIM: to evaluate late results for patients that had open and laparoscopic total mesorectumectomy (TME) surgery for rectal cancer.

PATIENTS AND METHODS: prospective cohort study included 103 patients aged from 20 to 70 years with rectal cancer. Patients were divided into 2 groups: the 1st group included 47 patients after laparoscopic TME (LTME) and the 2nd group included 56 patients after open one (OTME). All tumors were adenocarcinomas. Late results were assessed by actual and disease-free 3- and 5-year survival in 97 (94.2%) patients.

RESULTS: local recurrence rate after OTME and LTME was 11,5% (6 patients) and 11,1% (5 patients) ( $p>0.05$ ). Distant metastases occurred in 4 (7,7%) and 3 (6,7%) cases, respectively ( $p>0.05$ ). The actual survival after LTME was 80.0% (81.8% after OTME,  $p>0.05$ ), the disease-free 3-year survival rate was 56,7% (60.6% after OTME,  $p>0.05$ ), 5-year survival was 31.6% (31.8% after OTME,  $p>0.05$ ).

CONCLUSION: no significant differences were found between laparoscopic and open approach for rectal cancer in local recurrence rate and survival.

**[Keywords: rectal cancer, total mesorectumectomy, laparoscopic low anterior resection, open low anterior resection, survival]**

## SYSTEMS APPROACH FOR ANTIBIOTICS IN COLORECTAL SURGERY IN GROWING ANTIMICROBIAL RESISTANCE BACKGROUND

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Pirogov National Medical and Surgical Center, Ministry of Health of Russia, Moscow, Russia AIM: to reduce antibiotic resistance of infectious agents in colorectal surgery using optimal antibiotic therapy.

PATIENTS AND METHODS: single-center interventional study with retrospective control has been done. Start point of intervention was January 2017, when it was provided direct administrative control of perioperative antibiotic prophylaxis protocols and empirical antibiotic therapy. The study included 200 patients after colorectal surgery in 2016-2017. Patients divided in two groups: in 2016 y – control (A), in 2017 – interventional one (B).

RESULTS: significant decrease was detected in total antibiotic use from 16.1 to 12.2 defined daily dose (DDD) and in duration of antibiotic prophylaxis from 5.5 to 1.9 days ( $p<0.001$ ). Incidence of infection caused by multi-resistant strains reduced from 84.3% to 50% ( $p<0.001$ ). Analysis of etiology septic complications in colorectal patients showed a decrease in the number of Enterobacteriales, producing extended-spectrum beta-lactamases (ESBL) from 33.3% to 11.8% ( $p<0.01$ ). The incidence of carbapenem-resistant *Klostridium pneumoniae* reduced from 7.8% до 0%,  $p=0.031$ . ESKAPE group pathogens decreased from 24 (47.1%) to 12 (17.7%),  $p<0.001$ . No difference in postoperative infectious morbidity between groups was detected (32.9% vs 31.0%,  $p=0.88$ ). Incidence of antibiotic-associated diarrhea decreased from 5% to 0% ( $p=0.03$ ).

CONCLUSION: direct control of antibiotic prophylaxis protocols and empirical antibiotic therapy allowed to decrease the rate of antibiotic use and to decrease rate of infection complications caused by antibiotic resistance strains.

**[Keywords: colorectal surgery, septic complications, perioperative antibiotic prophylaxis, antimicrobial therapy, antimicrobial resistance, protocol]**

## THE INHIBITORY AND DESTRUCTIVE ACTION OF THE SILVER NANOPARTICLE PREPARATION ON BIOFILMS FORMED BY CLINICALLY RELEVANT MICROORGANISMS

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AIM: to obtain and investigate the activity of silver nanoparticles stabilized with arabinogalactan in relation to clinically relevant strains of filmforming microorganisms.

**MATERIALS AND METHODS:** silver nanoparticles were obtained by reduction from silver nitrate in the presence of arabinogalactan with additional stabilization with dioctyl sodium sulfosuccinate. The shape and size of the nanoparticles were determined by the method of transmission electron microscopy, the zeta potential by the method of electrophoretic light scattering. The study of the effect of the nanoparticles on biofilm formation was carried out on 17 clinically relevant strains of bacteria isolated from blood culture and the clinical biomaterial of postoperative patients.

**RESULTS:** the silver nanoparticles with an average diameter of 11.4 nm and a zeta potential of –24 mV were obtained. The minimum inhibitory concentration of the nanoparticles in relation to planktonic form of bacteria was 120 µg/ml; the use of the drug at a concentration of 100 µg/ml reduced the amount of CFU by 7 orders of magnitude compared with the initial culture. The study of the effect of silver nanoparticles on the formation of biofilms showed that, in the presence of the drug, the growth of biofilms was significantly reduced; at a drug concentration of 150 µg/ml, the growth of bacterial films was completely suppressed. Incubation of the formed daily biofilms with the silver nanoparticles in the concentration range from 150 to 120 µg/ml for 48 h resulted in the partial or complete destruction of the biopolymer matrix.

**CONCLUSION:** the studied preparation of silver nanoparticles has a great potential for use in the treatment of infectious diseases caused by biofilm forming microorganisms.

**[Keywords: biofilms, silver nanoparticles, antimicrobial activity, clinical isolates, catheter-associated infection, postoperative wounds]**

### **STRENGTH PROPERTIES OF BOWEL WALL AND SAFETY OF ENDOSCOPIC STENTING IN PATIENTS WITH COLORECTAL CANCER AND ACUTE OBSTRUCTION**

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**AIM:** to evaluate the strength properties of the colorectal tumors in patients with colorectal cancer with acute bowel obstruction.

**MATERIALS AND METHODS:** twenty-six resected specimens with colorectal cancer complicated by acute bowel obstruction were studied using histological and immunohistochemical methods. Following criteria have been assessed: tumor histological structure and differentiation, invasion depth, bowel wall thickness in central and peripheral tumor parts, ratio of necrosis, proper tumor tissue and preserved muscular and serosal layers.

**RESULTS:** in tumors of 3.9-5.5 cm long no significant differences were detected between volume ratio of the preserved muscle tissue, fibrous tissue and necrotic tissue in central part of tumors compared with peripheral one. In tumor >5.5 cm long the volume ratio of proper tumor and necrotic tissue was significantly higher in tumor central part compared to peripheral one.

**CONCLUSION:** endoscopic stenting in colorectal cancer with acute bowel obstruction is more safety if tumor length ≤5.5 cm. The tumor perforation is highly likely when tumor length >5.5 cm

**[Keywords: colorectal cancer, acute bowel obstruction, endoscopic stenting]**

### **STRICTUREPLASTY AS AN ORGAN-SAVING METHOD IN PATIENTS WITH SMALL BOWEL CROHN'S DISEASE (case report)**

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Crohn's disease (CD) is a complex, chronic recurrent disease with transmural, segmental, granulomatous inflammation in all parts of the gastrointestinal tract with high risk of local and systemic complications. The disease is progressive, despite a wide range of modern conservative and surgical approaches. One of the most common causes of surgery for CD is strictures, which are result of prolonged, non-specific inflammation and later cicatricial changes in the intestinal wall. The occurrence of strictures is a serious clinical problem, due to the lack of effective methods of diagnosis and treatment. In fact, there are two type of surgery – resection of the affected area and organ-saving procedure. At the same time, when performing extensive resections of the small bowel, the patient loses a large area of absorption surface, which often leads to the short bowel syndrome. Recently, the majority of foreign experts prefer organ-saving procedure – strictureplasty. In this paper, we present a case of successful application of this procedure for complicated form of Crohn's disease.

**[Keywords: Crohn's disease, strictureplasty, Heineke-Mikulicz]**

## **CROHN'S DISEASE AND MULTIPLE MYELOMA: A CLINICAL CASE AND LITERATURE REVIEW Taratina O.V.,**

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Crohn's disease and multiple myeloma are pathological entities, the development of which, at least in part, is associated with an immune dysregulation. Crohn's disease is often combined with extra-intestinal manifestations from different organs and systems (joints, skin, eyes, etc.). Hematological extra-intestinal manifestations, such as myelodysplastic syndrome, aplastic autoimmune anemia, autoimmune thrombocytopenia, B12-deficiency anemia are less common. The list of extra-intestinal manifestations of Crohn's disease is constantly expanding, including more and more descriptions of the combination of Crohn's disease with diseases of the blood system. The paper presents a rare clinical case of a combination of Crohn's disease and multiple myeloma. The female patient is 53 years old. In 1993 ulcerative colitis was diagnosed and she received Sulfasalazine 4gr per day. In 2015, with the recurrent attack, the diagnosis was transformed towards Crohn's disease basing on colonoscopy. She received steroid therapy. In 2018 the control examination revealed an increase in the level of total protein to 117gr/l. Patient underwent a sternal biopsy. Multiple myeloma was diagnosed on the basis of a myelogram.

**[Keywords: inflammatory bowel disease, Crohn's disease, multiple myeloma, aplastic anemia, cobalamin deficiency, extraintestinal manifestation]**

## **COLON DUPLICATION (case report)**

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This case report describes a rare condition – colon duplication in patient in adulthood, which underwent surgery for benign abdominal tumor. The diagnosis was established after histological study of the resected specimen.

**[Keywords: colonic duplication, congenital malformation]**

## **EPIDIDYMOORCHITIS AS AN EXTRAINTESTINAL MANIFESTATION OF CROHN'S DISEASE (case report)**

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Extraintestinal manifestations are found at least in a quarter of patients with Crohn's disease. In contrast to eyes lesions, joints and skin, epididymoorchitis caused by Crohn's disease is extremely rare and is described in few papers. However, orchitis and epididymitis are described in another autoimmune disease, ankylosing spondylitis and, although the incidence of asymptomatic orchitis in ankylosing spondylitis is unknown, it is often diagnosed during examinations for male infertility. A clinical case report of a 26-year-old patient suffering from Crohn's disease with extraintestinal manifestations in the form of orchiepididymitis is presented. While receiving treatment in the urological unit, the patient underwent several procedures, including a right-side orchiectomy, but the inflammatory process progressed with the risk of losing the only remaining testicle. Only after ileocecal resection for the penetrating Crohn's disease with ileosigmoid fistula and following biological therapy, it was possible to achieve remission and preserve a single testicle.

**[Keywords: Crohn's disease, extraintestinal manifestations, orchitis, epididymoorchitis]**

## **THE ROLE OF BIOLOGICAL MARKERS IN THE DIAGNOSIS OF POSTOPERATIVE INFECTIONS IN COLORECTAL CANCER SURGERY (review)**

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Infectious complications in colorectal cancer surgery is one of the major problems in postoperative complications structure. The frequency of the latter is 5-22%, and in 5-20% of cases such complications lead to death. It should be noted that the development of postoperative complications leads to a decrease in the quality of life of patients, general and relapse-free survival of patients operated on for colorectal cancer. One of the promising ways to diagnose postoperative infectious complications after surgery is to assess the level of biological markers of plasma inflammation. It can be used to identify patients with a high probability of infection and be an indication for earlier additional methods of diagnosing complications. Currently, biomarkers that are used for early postoperative infection detection include increase in the leukocytes level in peripheral blood, CRP, PCT, CD64 neutrophils and others. Despite the large number of studies, the question of the role of these

biomarkers in postoperative infections diagnosis in the patients who under went colorectal cancer surgery remains unclear.

**[Keywords: colorectal surgery, rectal cancer, colon cancer, inflammatory biomarkers, surgical site infection, CRP, PCT, CD64 neutrophils, HLA-DR monocytes]**

### **EFFICACY AND SAFETY OF USTEKINUMAB FOR CROHN'S DISEASE (review)**

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Crohn's disease (CD) is a chronic autoimmune disease of the gastrointestinal tract, which mainly affects young people of productive age. Until now, patients with this disease cannot be cured with by conservative therapy or surgery. The effectiveness of drugs for CD is limited, and their use is often accompanied by adverse events. All this creates a need for new drugs, fundamentally different in the action, with high efficiency and a good safety profile. The review is dedicated to a new biological agent for the treatment of CD blocking interleukins 12 and 23, which are involved in the pathogenesis of inflammation in inflammatory bowel diseases. This review presents the data of phases 2 and 3 clinical trials of the agent and the data obtained in real clinical practice, allowing to conclude about the efficacy and safety, as well as its place in the treatment algorithm for CD.

**[Keywords: Crohn's disease, conservative treatment, ustekinumab, UNITI trial, IMUNITI trial, efficiency, safety]**

### **Sevostianov S.I. OBITUARY**

#### **№4(70)2019 vol. 18**

#### **PROJECT: CLINICAL GUIDELINES FOR THE DIAGNOSTICS AND TREATMENT OF ULCERATIVE COLITIS**

Ivashkin V.T., Shelygin Yu.A., Belousova E.A., Abdulganieva D.I., Alekseeva O.A., Achkasov S.I., Valuiskikh E.Yu., Vardanyan A.V., Veselov A.V., Veselov V.V., Golovenko O.V., Gubonina I.V., Zhigalova T.N., Kashnikov V.N., Knyazev O.V., Makarchuk P.A., Moskaliev A.I., Nanaeva B.A., Nizov A.A., Nikitina N.V., Nikolaeva N.N., Pavlenko V.V., Poluektova E.A., Svetlova I.O., Tarasova L.V., Tkachev A.V., Frolov S.A., Khlynova O.V., Chashkova E.Yu., Shapina M.V., Sheptulin A.A., Shifrin O.S., Shchukina O.B.

### **OPEN, LAPAROSCOPIC AND TRANSANAL TOTAL MESORECTAL EXCISION: A SYSTEMATIC LITERATURE REVIEW AND NETWORK META ANALYSIS**

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AIM: to compare the effectiveness of different methods of total mesorectumectomy (TME).

MATERIALS AND METHODS: the systematic review performed in accordance with PRISMA practice and recommendations.

RESULTS: Forty-one papers were included in the analysis. Fourteen studies were for transanal total mesorectumectomy (TA TME) (n=480) compared with laparoscopic (LA TME), 26 – for LA TME vs open (n=6820), 1 – for open vs TA TME. There was no significant difference between open TME, LA TME and TA TME in grade 3 quality of mesorectumectomy by Quirke. The positive circular resection margin (CRM) is less often in TA TME group, then LA TME (OR=2.58, CI 1.34-4.97, p=0.005). There was significantly lower positive CRM rate in LA TME then open TME (OR=0.73, CI 0.63-0.85, p<0.0001). There were no significant differences in postoperative complications rates between LA TME and TA TME (p=0.72). Network meta-analysis showed less postoperative complications followed LA TME than open TME (OR=0.75, CI 0.65-0.84).

CONCLUSION: TA TME is comparable with laparoscopic and open TME in short term results. Rates of positive CRM, the quality of Grade 1 mesorectal excision, the conversion rate, the postoperative urinary dysfunction, may have better results in TA TME.

**[Keywords: rectal cancer, surgery, mesorectum, total mesorectal excision, TME, laparoscopy, transanal, TATME]**

### **EXPERIENCE OF TOFACITINIB USING IN THERAPY OF ULCERATIVE COLITIS IN REAL CLINICAL PRACTICE**

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AIM: to demonstrate the first Russian experience with the use of tofaciminib (TOFA) for the treatment of moderate and severe UC in real clinical practice.

PATIENTS AND METHODS: eighty-five patients with UC (aged  $41.38 \pm 14.69$  years, average disease duration  $9.55 \pm 5.27$  years, mild UC – 3.5%, moderate UC – 41.2%, severe – 52.9%, acute severe UC – 2.6%), resistant to corticosteroid therapy (36.5%) and biological agents (61.2%), were prescribed with TOFA at an induction dose of 10 mg 2 times a day, followed by a decrease in the dose to a maintenance dose (5 mg 2 times a day). Early clinical response, clinical and endoscopic remission, prevalence and dynamic of extraintestinal manifestations were assessed at 8 and 12 weeks of treatment, as well as safety and tolerability.

RESULTS: Sixty-eight (80.0%) patients completed induction treatment with TOFA for 8 weeks, other patients continue to receive TOFA. A quick response within one week was detected in 41 (50.6%) patients, on average, on the 5th day of therapy. At the end of induction, 52 (76.5%) patients achieved clinical remission, 3 (4.4%) achieved a clinical response, 13 (19.1%) patients showed no positive changes. Of the 53 patients observed over 12 weeks, 41 (77.4%) had clinical remission, 6 (11.3%) had clinical improvement, and 6 (11.3%) patients had no response to the treatment. The changes of extraintestinal manifestations were positive: 55.2% of patients at week 8 and 77.8% of patients at week 12 showed clinical improvement, mainly in relation to the joint syndrome. One episode of herpes zoster infection, one case of anemia, were identified during 12 weeks of follow-up.

CONCLUSION: TOFA in UC is effective in achieving a rapid clinical response, clinical remission and mucosal healing in patients who do not adequately respond to therapy with basic as well as biological drugs. Tofacitinib is an effective and safe therapeutic option for this challenging patient population.

**[Keywords: Ulcerative colitis, Inflammatory bowel disease, Tofacitinib, JAK inhibitors]**

## **THE CHOICE OF TREATMENT IN PATIENTS WITH HEMORRHOIDAL DISEASE (THE RESULTS OF THE OBSERVATIONAL PROGRAM RE-VISION)**

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AIM: analysis of approaches to the treatment of different stages of hemorrhoids to clarify what factors provides the choice of a method of treatment modality.

PATIENTS AND METHODS: the study is based on the analysis of clinical and instrumental examination of 804 patients with stage I-IV hemorrhoids. It included 412 (51.2%) females aged 19-83 ( $44.8 \pm 13.2$ ) years.

RESULTS: micronized purified flavonoid fraction (MPFF) in combination with dietary fiber intake and topical treatment effectively reduces the severity of the main clinical manifestations of hemorrhoids. Due to this, in 200 (24.8%) cases of stage I-IV hemorrhoids, doctors chose conservative treatment in connection with the achieved positive clinical effect. The combination of systemic phlebotropic therapy (MPFF) with minimally invasive and surgery was carried out in 355(44.2%) and 249 (31.0%) cases of stage II-IV hemorrhoids, respectively. Minimally invasive procedures were performed in patients with a minimal changes of external hemorrhoidal piles. In 210 (54.7%) cases, surgery was performed in patients with a significant changes of external hemorrhoidal piles.

CONCLUSION: multimodal treatment of hemorrhoids with the use of MPFF, shows its effectiveness for elimination of the main clinical manifestations of the disease in hemorrhoids stage I-II. Patients with stage III and IV hemorrhoids require the use of a minimally invasive procedures and excisional surgery. The choice of the method is influenced not only by the hemorrhoid stage, but also by the anatomical features. The use of MPFF allows to remove the acute changes and to select an optimal method of minimally invasive or surgical procedure individually.

**[Keywords: Anal pain; Bleeding; Constipation; Hemorrhoidal disease; Micronized purified flavonoid fraction (MPFF), Detralex]**

### **ROLE OF TOPICAL TREATMENT OF PAIN SYNDROME IN PATIENTS AFTER HEMORROIDECTOMY**

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AIM: to estimate efficacy of local use of fluocortolone pivalate combined with lidocaine for postoperative pain after excisional hemorrhoidectomy.

PATIENTS AND METHODS: two-hundred patients were included in retrospective study. All patients underwent excisional hemorrhoidectomy. Patients were divided in two groups, each group included 100 patients comparable in demographics, hemorrhoids stage. Traditional postoperative systemic pain relief was used in both groups and included NSAIDs and opioid receptor antagonists. The main group included patients with postoperative additional local use of fluocortolone pivalate in combination with lidocaine in operative theatre, every day after during postoperative control examination and after each defecation up to 7 days after surgery. The pain intensity was estimated using visual analog scale (VAS).

RESULTS: on the 1st day after surgery pain was less intensive in the main group (1.57 vs 3.24;  $p < 0,05$ ), as well as on the 3d day (0,91 vs 2.48;  $p < 0,05$ ) and on 7th day (0.63 vs 1.12;  $p < 0,05$ ). CONCLUSION: local use of fluocortolone pivalate combined with lidocaine reduces postoperative pain twice.

**[Keywords: hemorrhoidectomy, post operation pain management, fluocortolone, lidocaine]**

### **PERIANAL INFECTIONS AS FIRST PRESENTATION OF HEMOBLASTOSIS AND APLASTIC ANEMIA**

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AIM: to present clinical variability of perianal infection (PI), developed in the debut of oncohematological disease and to determine the factors that impede PI relief and time of antitumor treatment initiation, as well as the causes of complications during chemotherapy (ChT).

PATIENTS AND METHODS: the analysis included 8 patients with an infectious process in the perianal region developed in the debut of hemoblastosis and aplastic anemia (before ChT).

RESULTS: in 5 of 8 patients there was a long time between start of PI and the start of ChT for hemoblastosis, from 18 to 49 days. The impediment for a favorable time to start ChT were not clarified diagnosis of hemoblastosis (acute myeloid leukemia – 2 cases, multiple myeloma – 1, lymphoma – 1) and the ongoing infectious process in patients with severe granulocytopenia (GCP). Usually undetected hematological malignancies were observed in patients with compensated data of haemogram. Complications during ChT were associated with recurrence of PI in the area of surgery (palliative drainage of anorectal abscess and fistula-in-ano) and of the sepsis with persisted inflammation in the postoperative wound on the background of GCP.

CONCLUSION: PI is one of the infectious complications peculiar for the debut of oncohematological disease. Therefore, a general blood test with leukocyte formula should be performed before surgery in all patients with paraproctitis to exclude hemoblastosis. The unknown diagnosis of hemoblastosis and the ineffectiveness of surgical treatment of paraproctitis in patients with severe GCP were the main reasons for the delay in the beginning of antitumor treatment in this study. Persistent infection (fistula-in-ano) and the persistent inflammation in the wound on the background of the GCP has resulted in the recurrence of PI and sepsis during chemotherapy.

**[Keywords: perianal infection/ abscess, leukemia, hemoblastosis, neutropenia, granulocytopenia]**

### **ACUTE SEVERE ULCERATIVE COLITIS (case report)**

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The case report of the onset of acute severe ulcerative colitis (ASUC) in a young, previously healthy patient. The UC was revealed department of the infectious disease in general hospital, a proper conservative treatment was started but was ineffective. The patient was taken to the colorectal surgery unit of the tertiary referral center. His status was very poor including metabolic changes and dehydration, anemia, thrombocytopenia, systemic inflammatory response syndrome. Despite intensive therapy, the condition impaired and massive intestinal bleeding recurred. Urgent colectomy with end ileostomy was performed. Pathomorphological study verified the diagnosis of ulcerative colitis – highly active inflammation involving the submucosal and muscular

layers of the intestine with multiple crypt abscesses. The patient was discharged 2 days after surgery. Follow-up was 3.5 years, patient in good condition without restrictions.

**[Keywords: ulcerative colitis, super severe course, surgical sepsis, massive bleeding, urgent coloproctology]**

### **GIANT GASTROINTESTINAL STROMAL TUMOR OF THE SIGMOID COLON (case report)**

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The paper presents a clinical case of a rare stromal colon tumor in a patient previously operated for breast cancer. The patient with a rapidly growing abdominal tumor of unknown origin underwent tests in the department of coloproctology. According to ultrasound and CT examination, the lumpy formation with large size and low mobility, compressing the surrounding organs and probably coming from the colon, has been revealed. The removal of the tumor coming from the sigmoid colon with segmental resection anastomosis was performed. The postoperative period was uncomplicated, patient discharged from the clinic 7 days after surgery. Immunohistochemical examination of the tumor showed Gastrointestinal Autonomous Neurogenic Tumor (GANT) – a variant of GIST. Surgery for rare mesenchymal tumors is better in the coloproctological units with sufficient skills of surgeons. The multidisciplinary approach is necessary in such cases.

**[Keywords: gastrointestinal stromal tumor, tumor removal]**

### **CAN FLUORESCENT ANGIOGRAPHY REDUCE THE LEAK RATE OF COLONIC ANASTOMOSES? (a meta-analysis)**

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AIM: to evaluate of efficacy of fluorescence angiography (FA) in reducing the anastomotic leakage (AL) rate after colorectal surgery in meta-analysis.

SEARCH STRATEGY: PubMed were searched up to May 2019 for studies comparing fluorescence imaging with standard approach. The primary outcome measure was colorectal anastomotic leakage (AL) rate. The Newcastle-Ottawa scale was used for quality assessment. A meta-analysis with random-effects model was performed to calculate odds ratios (ORs) from the original data. RESULTS: Two thousand four hundred and sixty-six patients from 7 non-randomized studies and 1 randomized study were included. Fluorescence imaging significantly reduced the AL rate in patients after colorectal surgery (OR 0.58; 95%CI 0.39-0.85; p=0.006) and after rectal cancer surgery (OR 0.28; 95%CI, 0.14-0.55; p=0.0002). A limitation of this meta-analysis is the inclusion of only one randomized study.

CONCLUSION: Fluorescence angiography with indocyanine green is a method of preventing of leakage of colorectal anastomosis. The results of randomized clinical trials are needed to confirm the effectiveness of this technique.

**[Keywords: anastomosis leakage, meta-analysis, colorectal surgery, indocyanine green]**

### **RUBBER BAND LIGATION FOR HEMORRHOIDS (review)**

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Rubber band ligation is one of the most common and effective minimally invasive methods of treatment of chronic hemorrhoids. An analysis of the experience gained in the use of latex ligation makes it possible to evaluate the advantages and disadvantages of this technique and suggest new options for its implementation. One of the main advantages of rubber band ligation is the radicality of the procedure, which provides the closed removal of internal hemorrhoid piles, which makes it possible to standardize the widespread use of this technique in outpatient practice. When performing the procedure, tool kits of various designs are used, methods of one-stage and multi-stage ligation are used, various technical options are available for applying latex ligatures that affect the pathogenetic factors of hemorrhoidal disease. Optimization of options for the use of rubber band ligation allows to expand the range of use of this technique and provides a rational choice of individual approach.

**[Keywords: hemorrhoids, rubber band ligation]**

### **TATIANCHENKO V.K. (70 years)**