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BEYOND IMAGINATION: INTEGRATED IMAGING APPROACH TO PELVIC FLOOR DISORDERS

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Pelvic floor disorders (PFD) represents a significant social and economic problem involving about 25% of women older than 60 years with a 13% lifetime risk of undergoing surgery for PFD. Optimal management is impossible without comprehensive assessment of pelvic floor and multimodal approach. A combination of ultrasonic methods has several advantages (low cost, wide accessibility and availability, office procedure performed by clinicians, intraoperative technique, relatively time consuming, good compliance) and should be performed as first-line assessment in PFD.

[Keywords: Pelvic floor disorders, pelvic organs prolapse, obstructed defecation, pelvic floor ultrasound]

LAPAROSCOPIC, OPEN AND TRANSANAL MESORECTAL EXCISION IN RECTAL CANCER SURGERY

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INTRODUCTION: there are no studies comparing laparoscopic, open, and transanal mesorectal excision for rectal cancer. AIM: to compare quality of total mesorectal excision (TME) according to the P. Quirke protocol, to assess circular resection margins (CRM), to assess distal resection margins (DRM) and perioperative morbidity.
PATIENTS AND METHODS: prospective study was performed to compare the effectiveness of different methods of TME.
RESULTS: eighty-eight patients were included in the study, 29 – in the laparoscopic (LA TME) group, 29 – in the open TME group, 30 – in the transanal (TA TME) group. The groups were comparable in clinical, demographic and tumor parameters. There was no significant difference between LA TME, open TME and TA TME in quality of mesorectal excision (p=0.67). There was also no significant difference in rates of positive CRM and positive DRM (p=0.38). No significant difference was obtained between intraoperative and postoperative complications rates (p=0.38; p=0.45).
CONCLUSION: all three methods of TME showed the same results for quality, circular and distal resection margins and perioperative morbidity.

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

ENDOSCOPIC DIAGNOSIS OF DYSPLASIA IN PATIENTS WITH LONGSTANDING ULCERATIVE COLITIS

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AIM: to evaluate high-definition colonoscopy (HD-WLE) using chromoendoscopy for dysplasia in the longstanding ulcerative colitis (UC).
PATIENTS AND METHODS: a cohort prospective study included 140 patients (aged 29-79 years old) with a long course of UC (6-44 years) in time of endoscopic remission with good quality of bowel cleansing. A white-light endoscopy was performed using high-definition colonoscopies (HD-WLE). Chromoendoscopy (0.4% solution of indigo carmine), targeted biopsy, and histological analysis were performed.
RESULTS: HD-WLE revealed 34 lesions with endoscopic signs of dysplasia in 27 (19.3%) patients: in 20 patients – 1 (74.1%) lesion, in 7 patients – 2 (25.9%). In 22 patients (64.7%) lesions were more than 1 cm. Chromoendoscopy confirmed the signs of dysplasia in 100.0% of cases (88.2% – low grade dysplasia). Histologically, low-grade dysplasia was detected in 58.8% of cases, undetected dysplasia – in 20.6%, sporadic adenomas – in 20.6%. The effectiveness of endoscopic diagnosis for detecting dysplasia was 74%. A comparative analysis of the endoscopic signs of dysplasia and sporadic adenomas showed the absence of significant differences.
CONCLUSION: the additional chromoendoscopy during HD-WLE colonoscopy with targeted biopsy does not lead to increase of colorectal epithelial dysplasia detection in UC. The experience of endoscopist should be considered when making decision which type of endoscopy for dysplasia detection in UC is needed.

[Keywords: ulcerative colitis, colonoscopy, dysplasia, chromoendoscopy]

RISK FACTORS FOR THE DEVELOPMENT OF COMPLICATIONS OF ILEAL POUCH IN PATIENTS WITH ULCERATIVE COLITIS

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AIM: to reveal risk factors of complications after ileal pouch-anal anastomosis (IPAA) in ulcerative colitis (UC).
PATIENTS AND METHODS: from September 2011 by July 2018, 144 patients, who underwent IPAA surgery for UC were included in the study. Univariate and multivariate analyses were performed to reveal the risk factors for complication of IPAA, such as pouchitis, cuffitis, pouch fistulas, anastomotic stricture, pouch leakage, bleeding from IPAA, incontinence and small bowel obstruction (SBO).
RESULTS: multivariate regression analysis showed that left-sided UC (OR=12,5, 95% CI 1,7-92, p=0,01), patient's age ≤33 years (OR=5,7, 95% CI 1,54-21,3, p=0,009) and hormone-free period before the IPAA ≤10 months (OR=6,86, 95% CI 1,49-31,56, p=0,01) were associated with cuffitis. The fibrotic changes/wound infection in the anal canal (OR=5,02, 95% CI 1,02-24,69, p=0,04) and albumin 5,6 months was associated with SBO (OR=2,82, 95% CI 1,01-8,31, p=0,0495). Steroid therapy at the time of IPAA surgery was associated with pouch leakage (OR=15,62, 95% CI 2,09- 116,64, p=0,007). Hand-sewn IPAA (OR=42,54, 95% CI 3,51-516,43, p=0,003) were associated with incontinence. Ulcerative defects in the distal part of the rectum according to transrectal ultrasound were associated with anastomotic stricture (OR=10,46, 95% CI 1,52-71,75, p=0,017). There were no statistically significant risk factors for pouchitis and IPAA bleeding.
CONCLUSION: determination of the risk factors for complications of IPAA is a crucial clinical issue for patients with UC. We identified several factors associated with increased risk of complications after pouch formation. Nevertheless, it seems promising to continue the study in order to create the mathematical model that predicts the development of a specific pouch-related complication and determines a group of patients with UC in whom the formation of IPAA is not recommended due to high risk of complications and impaired quality of life.
[Keywords: ulcerative colitis; ileal pouch; complications; risk factors]

IMPLEMENTATION OF FAST-TRACK PROGRAM FOR STOMA REVERSAL PROCEDURES

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AIM: evaluation of the effectiveness of the enhanced recovery protocol for stoma reversal procedures.
PATIENTS AND METHODS: a single-center retrospective analysis of stoma reversal surgery in 130 ostomy patients in 2012-18 was performed. From 2012 to 2015, 56 (43.1%) patients were treated before the implementation of the Enhanced Recovery After Surgery (ERAS) protocol in clinical practice, 74(56.9%) patients were treated in accordance with the principles of fast-track.
RESULTS: the introduction into clinical practice of the ERAS protocol reduced postoperative complications from 8.5% to 5.4% (p=0.002) and the hospital stay from 16,3±9,4 to 11,4±4,2 days (p=0.003).
CONCLUSION: the fast-track strategy is an effective way to improve the results of stoma reversal procedures.
[Keywords: ERAS, fast-track, advantage, recovery]

ENDOSCOPIC PIECEMEAL RESECTION OF LARGE BENIGN COLORECTAL NEOPLASIA: RESULTS OF A RUSSIAN MULTICENTER STUDY

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AIM: to assess the safety of endoscopic piecemeal mucosal resection (EPMR) of large epithelial colorectal lesions and to identify risk factors for tumor recurrence.
PATIENTS AND METHODS: results of EPMR were evaluated in retrospective study, which was carried out in five regional endoscopic centers. The criterion for inclusion in the study was benign colorectal lesion of 20 mm and larger.
RESULTS: we found that complications of EPMR occurred in 13% of cases. In 9.2% it was intraoperative bleeding, which was stopped endoscopically. Postoperative bleeding was detected in 1.2% of patients, perforation – in 2.4%. Tumor recurrence developed in 12%. We have revealed a direct correlation between tumor recurrence

and intraoperative bleeding (p=0.013) and a size of lesion >4 cm (p=0.012); the inverse correlation between the tumor recurrence and the fullness of the lifting during the removal (p=0.008) and the male gender of the patient (p=0.043).
CONCLUSION: significant risk factors of tumor recurrence after endoscopic piecemeal resection of large benign colorectal neoplasia were identified before the procedure (gender and tumor size) and intraoperatively (completeness of lifting and the intraoperative bleeding).
[Keywords: Endoscopic piecemeal mucosal resection; colonoscopy; colon tumors]

THE TREATMENT OF CHRONIC ANAL FISSURES WITH FISSURE EXCISION AND BOTULINUM TOXIN TYPE A INJECTION (ISRCTN97413456)

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AIM: to assess the efficacy of botulinum toxin type A for chronic anal fissure.
PATIENTS AND METHODS: the study included 80 patients randomized by random number generation in 2 groups. Forty patients underwent fissure excision in combination with injections of botulinum toxin type A into the internal sphincter (main group) and 40 – in combination with pneumatic balloon dilatation of the anal sphincter (control group).
RESULTS: there were no statistically significant differences in the intensity of postoperative pain after defecation and during the day between the groups, p=0.45 and p=0.39, respectively. The groups were comparable in the complications such as perianal skin hematomas (p=0.84), external hemorrhoid thrombosis (p=0.1), urinary retention (p=0.46), long-term non-healing wounds (p=0.76). Transitory weakening of the anal sphincter was significantly more often in the control group. On day 30, the transitory anal incontinence in the main group was detected in 6 (21%), in the control group – in 18 (75%) patients, p=0.0002. On day 60, the weakness of the anal sphincter remained in the main group in 3 (10.7%), in the control group – in 10 (41%) patients, p=0.02.
CONCLUSION: botulinum toxin type A and pneumatic balloon dilatation have equal effectiveness in the treatment of chronic anal fissure. The use of botulinum toxin type A can reduce the incidence of transitory weakening of the anal sphincter function in patients with chronic anal fissure.
[Keywords: anal fissure, spasm of the internal sphincter, botulinum toxin type A, incobotulinum toxin A, pneumatic balloon dilatation]

HIGH-RESOLUTION ANOSCOPY IN THE EVALUATION OF THE EFFECTIVENESS OF CONSERVATIVE TREATMENT FOR CHRONIC HEMORRHOIDS

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AIM: to assess the effectiveness of micronized purified flavonoid fraction (MPFF) in conservative treatment for chronic hemorrhoids according to high-resolution anoscopy (HRA).
PATIENTS AND METHODS: the study included 192 patients with chronic hemorrhoids, stage III. The general recommendation for all patients was dietary fibers for soft stools. The main group included 96 patients treated with MPFF for 2 months, 96 controls used dietary fibers only. The treatment effectiveness was evaluated due to high-resolution anoscopy data and clinical manifestation of the disease. The calculation of the drug intake compliance was carried out as well.
RESULTS: patients of the main group showed significant clinical improvement after treatment in prolapse correction (66% vs 27%; p=0.001), in pain intensity decrease (5 times vs 1.5 times; p=0.03), in bleeding incidence (4 times vs 1.5 times; p=0.001). HRA showed significant reduction of inflammation (from type 2 to type 1) in main group in 50% and 20% in controls (p=0.02). Compliance with the MPFF in main group 1 was 74%, the total compliance of dietary fiber intake in both groups was 66.3%.
CONCLUSIONS: combination of MPFF with dietary fiber intake significantly reduces clinical manifestations of chronic hemorrhoids stage III and HRA shows significant reduction of inflammation in hemorrhoid piles in these cases.

[Keywords: high-resolution anoscopy; chronic hemorrhoids; conservative treatment; inflammatory changes; detralex]

DIAGNOSTIC DIFFICULTIES IN MutYH-ASSOCIATED POLYPOSIS (case report)

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MutYH-associated polyposis (MAP) is hereditary syndrome with autosomal recessive inheritance, caused by biallelic mutation in MutYH gene and characterized by presence of multiple (20 and more) polyps in the bowel and increased life-time risk of colorectal cancer. At the same time finding 2 heterozygous mutations in MutYH gene (by Sanger method) doesn`t mean the diagnosis of MAP because of need to confirm their biallelic location. This case-report demonstrates difficulties in diagnostic of MAP caused by inability to investigate parent DNA samples and our options for solution of this problem.

[Keywords: MutYH-associated polyposis, colorectal cancer, biallelic mutations]

MRI DEFECOGRAPHY IN PELVIC FLOOR DESCENT SYNDROME (review)

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Pelvic floor descent syndrome (PFDS) affects multiparous and postmenopausal women. According to epidemiological studies in postmenopausal women, more than 50% suffer from severe symptoms of PFDS, which significantly reduce the quality of life. The high prevalence of pelvic floor pathology increases the need for multimodal diagnosis and treatment. The pelvic floor is a unique anatomical and functional structure and malfunction of this system may lead to many different static and functional disorders. There are a lot of methods of medical imaging modalities for PFDS (X-ray defecography, perineal ultrasound, MR defecography). MRI defecography allows to visualize in detail all three parts of the pelvis, including soft tissues and supporting structures; to evaluate structural and functional pelvic abnormalities in a single study. The range of normal mobility of the pelvic floor and pelvic organs on MRI defecography is still required.

[Keywords: MRI, magnetic resonance tomography, pelvic prolapse, perineal descent, rectocele, rectal intussusception, enterocele, obstructive defection syndrome]

ISAEV V.R. (80 year)

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CLINICAL RECOMMENDATIONS CROHN'S DISEASE. CLINICAL RECOMMENDATIONS (PRELIMINARY VERSION)

Ivashkin V.T., Shelygin Yu.A., Abdulganieva D.I., Abdulkhakov R.A., Alekseeva O.P., Alekseenko S.A., Achkasov S.I., Bagnenko S.F., Bakulin I.G., Baranovsky A.Yu., Barysheva O.Yu., Belousova E.A., Bolikhov K.V., Valuiskikh E.Yu., Vardanyan A.V., Veselov A.V., Veselov V.V., Golovenko O.V., Gubonina I.V., Zhigalova T.N., Karpukhin O.Yu., Kashnikov V.N., Kizova E.A., Knyazev O.V., Kostenko N.V., Kulovskaya D.P., Kulyapin A.V., Lakhin A.V., Makarchuk P.A., Moskalev A.I., Nanaeva B.A., Nizov A.A., Nikitina N.V., Nikolaeva N.N., Nikulina I.V., Odintsova A.H., Osipenko M.F., Pavlenko V.V., Parfenov A.I., Poluektova E.A., Rumyantsev V., Svetlov I. O., Sitkin S. I., Tarasova L. V., Tkachev, A. V., Uspenskaya, Y. B., Frolov S. A., Khlynov O. V., Dashkova E. Yu., Shapina M. V., Shifrin O. S., Shkurko T. V., Shchukina O. B.

[Keywords: Crohn's disease, inflammatory bowel disease, conservative treatment, surgical treatment, immunosuppressants, corticosteroids, biological therapy, anti-relapse therapy]

COMPARISON OF TUNNEL AND CLASSICAL METHODS OF ENDOSCOPIC SUBMUCOSAL DISSECTION IN EPITHELIAL COLON TUMORS (systematic review and meta-analysis)

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BACKGROUND: endoscopic submucosal dissection (ESD) is a modern effective method for patients with benign epithelial tumors and early colorectal cancer. The use of such a technique for ESD as a submucosal tunnel ('pocket') – creation under a tumor creates conditions for improving the surgical specimen quality and reducing fragmentation rate. Aim: to study the effectiveness and safety of the tunnel method of ESD (TESD) in comparison with classical ESD (CESD) in colorectal adenomas and early colorectal cancer.
MATERIALS AND METHODS: literature search and meta-analysis were performed in accordance with the PRISMA recommendations using the PUBMED search system in the Medline electronic database without limiting publication dates in the English language literature. The systematic review included all the studies on comparison of the tunnel and classical ESD methods.
RESULTS: the analysis included 4 studies (1,422 patients, 458 in the TESD group and 961 in the CESD group). The groups were comparable in the number of adenomas (OR=1.25; 95% CI=0.87-1.79; p=0.22), adenocarcinomas (OR=0.96; 95% CI=0.49-1.87; p=0.90), in the size of neoplasms (95% CI=-6.26-1.22; p=0.19), and in the presence of submucosal fibrosis (p=0.69). There were no significant differences in intraoperative bleeding rate (OR=1.24; 95% CI=0.53-2.88; p=0.61); however, perforations occurred more often when using CESD (OR= 0.35; 95% CI=0.15-0.83; p=0.02). The CESD took significantly longer time than the TESD (OR=-19.1; 95% CI=33.89-4.45; p=0.01). The frequency of en bloc resections (OR=16.06; 95% CI=4.95-52.11; p< 0.0001) and R0-resections (OR=3.28; 95% CI=1.30-8.32; p=0.01) were significantly higher in the TESD.
CONCLUSION: the tunnel method of endoscopic submucosal dissection is an effective and safe alternative to the classical method. However, there is currently a lack of data for the choice of submucosal dissection method for large colorectal adenomas and early colorectal cancer, which requires further comparative studies.
[Keywords: endoscopic submucosal dissection; pocket method; tunnel method]

DISCUSSION ASPECTS OF TREATMENT FOR DIVERTICULAR DISEASE COMPLICATED WITH FIRST EPISODE OF ACUTE DIVERTICULITIS

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Department of Surgical Diseases № 1, Azerbaijan Medical University, Baku, Azerbaijan AIM: evaluating the effectiveness of conservative treatment for diverticular disease complicated with first episode of acute diverticulitis.
PATIENTS AND METHODS: we investigated the results of the conservative treatment of 68 patients with diverticular disease complicated with first episode of acute diverticulitis. The ages of patients range from 32 to 78. The diagnosis was made based on clinical examination, laboratory tests (markers of inflammation – CRP, faecal calprotectin) and imaging studies (irrigoscopy, colonoscopy, USG, CT, laparoscopy). In 19 of 68 patients (28%) affected segment of the colon was descending colon, in 49 (72%) patients sigmoid colon was effected.
RESULTS: all 68 patients received conservative treatment (spasmolytics, antibiotics, probiotics, anti-inflammatory, antibacterial drugs, and diet). Rifaximin was used as antibiotic (daily dose 600-1200 mg). Treatment course lasted for 7 days. We used probiotic (Enterol) to normalize colonic microflora (1 capsule 2 times a day), treatment course lasted for 7-10 days. Long-term outcome of treatment and quality of life of 54 (79,4%) patients were evaluated 2-5 years after a first episode of uncomplicated acute diverculitis. 12 (22,2%) patients underwent medical examinations, in 54 (79,4%) patients we used a questionnaire for assessment. Two scales of MOS 36-Item Short Form Health Survey (MOS SF-36) were evaluated: physical functioning and mental health. Analysis the results of the treatment showed that recurrent episodes of acute diverticulitis did not occur. The analyse of the survey results showed that the mean score of the patients were close to the results of healthy population.
CONCLUSION: pathogenetically based multicomponent conservative treatment in the first episode of acute diverticulitis can make a regression and normalize laboratory values. The study showed that no reccurence was reported and the quality of life of the patients was similar to healthy ones after conservative treatment. It confirmes that the conservative treatment is an alternative treatment method for a first episode of uncompliated acute diverticulitis.
[Keywords: diverticular disease of colon, first episode, non-complicated acute diverticulitis, conservative treatment, quality of life]

TRANSANAL TOTAL MESORECTAL EXCISION LEARNING CURVE

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AIM: to evaluate transanal total mesorectal excision (TA TME) learning curve.

PATIENTS AND METHODS: sixty-five patients with mid- and low cT2-T4aN0-2bM0-1 rectal cancer were included. RESULTS: mean total operating time was 272.4±50.8 (190-400) minutes and after 17th case it has decreased. Mean operating time of transanal phase was 84.9±43.2 (40-200) minutes and after 20th case it has also decreased. The rate of intraoperative complications was 8 (12.3%), postoperative morbidity – 25 (38.4%) cases. These indicators have decreased after 18th and 20th cases respectively. Conversion rate was 2 (3.0%) cases and have decreased after 6th case. Grade 1 specimens were revealed in 9 (13.8%) cases and have decreased after 16th case.
CONCLUSION: TA TME learning curve in high-volume colorectal unit is 16-20 cases.
[Keywords: rectal cancer, learning curve, total mesorectal excision, transanal total mesorectal excision, TA TME]

PRIMARY EXPERIENCE OF NATURAL ORIFICE SPECIMEN EXTRACTION SURGERY (NOSES) FOR RECTAL CANCER

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AIM: to demonstrate the first results of natural orifice specimen extraction surgery (NOSES) for rectal cancer.
PATIENTS AND METHODS: in the period from June 2019 to October 2019 five NOSES for rectal cancer were performed in the hospital. The following factors were evaluated: age, gender, BMI, ASA, operation time, intraoperative blood loss, intraoperative and postoperative complications, duration of postoperative rehabilitation, need for narcotic analgesics.
RESULTS: mean age of patients was 61.2 years. Mean BMI was 25.9 kg/m2 . Mean ASA score was 2. Mean operative time was 225 minutes. Mean intraoperative blood loss was 45 ml. One intraoperative complication occurred – defect of anastomosis in the point of crossing of 3 stapler sutures. One postoperative complication occurred – postoperative ileus. Narcotic analgesics were not used. Mean duration of postoperative stay was 9,8 days. The primary results demonstrate feasibility of NOSES for rectal cancer with adequate qualification of colorectal surgeon.
CONCLUSION: NOSES is a promising technique for rectal cancer surgery. However, the further experience and randomized trials are required.
[Keywords: rectal cancer, natural orifice specimen extraction surgery]

MULTISTAGE MINIMALLY INVASIVE TREATMENT FOR PERIANAL ABSCESS

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AIM: to improve the results of treatment for perianal abscess using ultrasound navigation, seton drainage of the internal fistula and subsequent minimally invasive treatment of fistula.
PATIENTS AND METHODS: seventy-two patients with perianal abscess were included in cohort retrospective study. At the first stage the abscess opening and seton under ultrasound navigation with contrast was performed. On the second stage the FiLaC procedure was performed.
RESULTS: follow-up was 8-14 weeks, 29 (53.7%) patients had subcutaneous or submucosal seton displacement, while 8 (11.1%) produced complete healing. Twenty-one (29.2%) patients required fistulectomy. In 25 (46.3%) patients, intra- and transsphincteric fistulas were detected in 18 (33.3%) and 7 (12.9%) cases, respectively. All these patients underwent laser coagulation of the fistula. After a single laser coagulation, fistula healing within 4 weeks was found in 19 (76.0%) patients. Six (24.0%) patients underwent second laser coagulation of the fistula, while healing was observed in 2 (8.0%) patients. Four (16.0%) patients after second coagulation produced recurrence and have underwent surgery (LIFT procedure or advancement flap).
CONCLUSION: perianal abscess opening with seton provides recovery in 14.8% and produces «ideal» fistula for laser ablation in 46.2% within 10-14 weeks after. Multistage minimally multistage approach provides healing and not affects anal continence in 84.0%.
[Keywords: acute paraproctitis, draining ligature, FiLaC]

LASER ABLATION FOR PILONIDAL DISEASE

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AIM: to evaluate short-term results of pilonidal disease treatment using different methods: the excision of pilonidal sinus and fistula with open wound healing, the primary closure of the wound and the laser ablation (2017-2019).
PATIENTS AND METHODS: ninety patients with pilonidal disease without abscess were included in the comparative non-randomized study. The control group included 30 patients with excision and open wound healing. The first main group included 30 patients with the excision of pilonidal sinus and fistula with primary wound closure. The second main group included 30 patients with laser ablation of pilonidal sinus and fistula The evaluation criteria included gender, age, BMI, number of previous procedures, operative time, hospital stay, postoperative pain intensity (VAS), cosmetic result (VAS), complication rate and recurrence rate.
RESULTS: all three groups were homogeneous in gender, age, BMI. The control group showed no complications ($p< 0.0001$) and no recurrence ($p< 0.0001$) rate but had more intensive pain (mean 5.9 points; $p< 0.0001$) and worse cosmetic result (mean 4.4 points; $p< 0.0001$). The group with primary wound closure (1st main group) had the highest complication rate (23.4%; $p=0.004$) and recurrence rate (16.7%; $p=0.02$). The group with laser ablation had significantly shorter hospital stay (1.1 days; $p< 0.0001$), good cosmetic result (mean 8.9 points; $p< 0.0001$) and less postoperative pain (1.4 points; $p< 0.0001$) with low recurrence rate (3.3%; $p=0.32$).
CONCLUSION: the laser ablation of pilonidal sinus and fistula provides less postoperative pain intensity and low recurrence rate, better cosmetic result and short hospital stay. It can be used for outpatient treatment.
[Keywords: pilonidal sinus disease, pilonidal cyst, laser obliteration, laser surgery]

RESULTS OF TREATMENT OF HEMORRHOIDS BY SUBMUCOSAL W-LASER DESTRUCTION OF HEMORRHOIDAL PILES

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AIM: to evaluate the results of submucosal laser destruction of hemorrhoids using a W-laser.
PATIENTS AND METHODS: one-hundred twenty-four patients with chronic hemorrhoids underwent submucosal W-laser destruction of hemorrhoidal piles in September 2017 – January 2019.
RESULTS: the time of the procedure was 18-22 minutes. The hospital stay was 7-10 hours. The maximal edema of the pararectal area appeared by the 3rd days and was resolved on 13-14 days. The size of the edema depended on the volume of anesthetic. Maximal pain was observed on days 1 and 3 after surgery. The period for taking analgesics was not more than 7 days. No prolapse of hemorrhoidal piles was detected in all patients after 4 weeks postoperatively. No rectal bleeding was detected in 97.3%. The excellent result of treatment was found in 70.2%, good – in 22.6%, bad – in 7.2%.
CONCLUSION: submucosal W-laser destruction of hemorrhoidal piles showed a less pain intensity after surgery and a decrease in the complication rate, fast recovery and better quality of life.
[Keywords: hemorrhoids, laser hemorrhoidectomy, submucosal laser hemorrhoidectomy, endovenous laser ablation, minimally invasive hemorrhoidectomy, minimally invasive surgical procedures]

BOTULINUM TOXIN TYPE A AND LATERAL SUBCUTANEOUS SPHINCTEROTOMY FOR CHRONIC ANAL FISSURE WITH THE SPHINCTER SPASM. WHAT TO CHOOSE? (systematic literature review and meta-analysis)

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INTRODUCTION: for the treatment of chronic anal fissure, various surgical techniques are used, the main difference between which is the method of eliminating the anal sphincter spasm. One of the most serious postoperative complications is the development of anal incontinence. To date there are a number of methods for drug-induced relaxation of the internal sphincter, which can significantly reduce the risk of developing anal incontinence after surgery. AIM: to evaluate the safety and effectiveness of botulinum toxin type A (BTA) and lateral subcutaneous sphincterotomy (LSS) in the treatment of chronic anal fissure with sphincter spasm.
METHODS: a systematic review and meta-analysis of 7 selected randomized clinical trials comparing the results of treatment of chronic anal fissure using BTA and LSS was performed. The results of treatment of 489 patients were analyzed with an assessment of the following indicators: the incidence of epithelization of fissures, postoperative complications, development of anal incontinence and the disease recurrence.
RESULTS: In the BTA group, the incidence of fissure epithelization is 0.88 times lower than in the LSS group (OR=0.12; CI=0.06;0.22; $p< 0.00001$). There were no statistical differences in the rate of postoperative complications in both groups (OR=1.07; CI=0.50;2.30; $p=0.85$). The risk of developing postoperative anal incontinence is 0.86 times lower in the BTA group than in the LSS group (OR=0.14; CI=0.03;0.64; $p=0.01$). The

risk of relapse after lateral subcutaneous sphincterotomy is 6.06 times lower than when using botulinum toxin type A (OR=6.06; CI=3.52;10.42; p< 0.00001).
CONCLUSION The use of botulinum toxin type A in the treatment of chronic anal fissure reduces the risk of developing postoperative anal incontinence, but this method is significantly inferior to lateral subcutaneous sphincterotomy in terms of the rate of chronic anal fissure epithelization.
[Keywords: chronic anal fissure, lateral subcutaneous sphincterotomy, botulinum toxin type A, LIS, botox]

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CLINICAL GUIDELINES. ANAL FISTULA

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CYTOMEGALOVIRUS INFECTION IN PATIENTS WITH MODERATE AND SEVERE ULCERATIVE COLITIS

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AIM: to determine the incidence of accompanying cytomegalovirus infection (CMVI) in patients with moderate and severe ulcerative colitis, and also to determine the value of diagnosis and treatment of this infection in that category of patients.
PATIENTS AND METHODS: the study included 67 patients with severe or moderate ulcerative colitis. The colonoscopy with biopsy with definition of cytomegalovirus DNA by polymerase chain reaction (PCR) was done in all the patients. The patients without virus (CMV negative group) received therapy according to the current clinical recommendations. The patients with virus (CMV positive group) had antiviral therapy by ganciclovir in addition to the standard therapy. The viral load in colonic biopsy of those patients was evaluated before the treatment and on the 19-21st therapy days. In case of patient state deterioration and inability to continue the conservative treatment, colectomy was done. The success of therapy in both groups was assessed by the colectomy rate during hospitalization.
RESULTS: the incidence of severe and moderate ulcerative colitis combination with cytomegalovirus infection was 43.2%. The previous treatment did not influence on the probability of virus detection. Acute attacks of ulcerative colitis were found significantly more often in the CMV-positive group than in the CMV-negative group (20% vs 2.6%, respectively) (p=0.02). The efficacy of the antiviral therapy was 69%. All the patients who responded to the antiviral therapy did not undergo surgery. Failure of the antiviral therapy in the patients with associated cytomegalovirus infection significantly increased the colectomy rate (0 – in the patients who responded to the antiviral therapy vs. 22.2% of those who did not respond).
CONCLUSION: the study showed 43% of cases moderate and ulcerative colitis goes with CMVI persistence. CMVI is the resistance factor for conservative treatment. The specific antiviral therapy in addition to the conservative treatment for this category of patients ameliorates the treatment results and prognosis.
[Keywords: cytomegalovirus infection, CMVI, inflammatory bowel disease, IBD, ulcerative colitis, UC]

PREDICTORS OF COLECTOMY IN PATIENTS WITH EXTREMELY SEVERE ULCERATIVE COLITIS

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AIM: to identify predictors of colectomy in patients with extremely severe ulcerative colitis.
PATIENTS AND METHODS: seventy-four patients with severe ulcerative colitis in 2017 were included in the study. The patients were divided into the groups of colectomy (54 pts) and conservative treatment (20 pts). The predictors such as serum albumin, C-reactive protein, hemoglobin, endoscopic picture, and clinical data were analyzed.
RESULTS: the groups were homogeneous by gender, age and duration of the disease. Mean albumin and hemoglobin levels were significantly lower (28 g/l and 96 g/l) in the colectomy group. The endoscopic picture of extensive ulcer defects merging among themselves was significantly more common in the operated patients – 78%, compared with 5% in the conservative treatment group (p<0.0001). The risk of colectomy in the presence of an endoscopic picture was 85%, and when combined with an albumin level of less than 31 g/l and hemoglobin of less than 107 g/l, the risk increased to 100%.

CONCLUSION: the endoscopic picture of extensive, merging ulcerative defects in combination with an albumin level of less than 31 g/l and hemoglobin less than 107 g/l are predictors of colectomy with high predictive value.
[Keywords: ulcerative colitis, colectomy, predictors of colectomy]

COMPARATIVE EVALUATION OF MULTIPARAMETRIC ENDORECTAL ULTRASOUND AND ENHANCED IMAGING COLONOSCOPY IN THE DIAGNOSIS OF EARLY COLORECTAL CANCER

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AIM: to compare multiparametric endorectal ultrasound (ERUS) and enhanced imaging colonoscopy in the diagnosis of early colorectal cancer.
PATIENTS AND METHODS: the study included 78 patients with epithelial rectal tumor. All the patients underwent multiparametric ERUS andcolonoscopy with examination by narrow beam imaging (NBI) at optical magnification. All the patients were operated.
RESULTS: a morphological examination removed specimens revealed adenomas in 48 cases, in 19 specimens – adenocarcinomas in situ and T1, and in 11 specimens – adenocarcinomas with invasion of the muscle layer or deeper. When calculating the accuracy indicators of diagnostic methods for groups of patients with adenoma, Tis-T1 adenocarcinoma, and T2-T3 adenocarcinoma, the difference in the sensitivity and specificity of the methods in none of the presented groups did not reach the level of statistical significance ($p>0.05$). ROC analysis showed that ultrasound has a prognostic value comparable to colonoscopy. The area difference was 0.013 ($p=0.85$).
CONCLUSION: endoscopy and ultrasound have similar value in the diagnosis of malignant transformation of rectal adenomas.
[Keywords: early rectal cancer, multiparametric endorectal ultrasound, strain elastography, colonoscopy, pit-pattern, capillary pattern]

EFFECTIVE BOWEL CLEANSING FOR SCREENING COLONOSCOPY

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AIM: to assess the effectiveness and safety of sodium picosulfate for screening colonoscopy.
PATIENTS AND METHODS: the retrospective study included 299 patients at mean age of 54±14 years who had screening colonoscopy. All patients received sodium pikosulfate for bowel cleansing. The quality of bowel cleansing was evaluated by the Boston international scale. Organoleptic and subjective sensations were also evaluated.
RESULTS: the quality of bowel cleansing was 8.5±1.0 point by Boston scale. As a result of screening colonoscopy in 96 (32.1%) patients, polyps of the rectum, sigmoid, colon and ileum were detected in 11%, 8%, 11% and 2% of cases respectively. Pathology showed that 78 (26%) patients had adenomatous polyps, 13(4%) – adenocarcinoma. All patients reported comfortable use of the agent.
CONCLUSION: sodium picosulfate fully meets the requirements for the drug used for bowel cleansing for colonoscopy.
[Keywords: colorectal cancer, screening colonoscopy, early cancer detection, bowel cleansing]

OPTIMAL DIAGNOSTIC ALGORITHM FOR COLORECTAL CANCER COMPLICATED BY ACUTE BOWEL OBSTRUCTION

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AIM: to work out a diagnostic program that allows to individualize approach in preoperative care and surgery for patients with colorectal cancer complicated by acute obstruction.
PATIENTS AND METHODS: the study included 442 patients with colorectal cancer complicated by acute obstruction, at whom were used special diagnostic methods for the purpose of precise diagnosis.
RESULTS: the most informative and safe methods for the diagnosis of tumor obstruction were abdominal X-ray, CT scan, colonoscopy (CS), barium enema (BE) and abdominal ultrasound. These methods allow to prove bowel obstruction and its stage, to detect the tumor site, depth of invasion, distant metastases, to control the efficacy of decompression and to make prognosis of the outcome in 87.2-96.4% patients.

CONCLUSION: the information obtained allows to plan individually the use of conservative, endoscopic and surgical methods of treatment for patients with colorectal cancer complicated by acute bowel obstruction.
[Keywords: bowel obstruction, colorectal cancer, diagnostics]

SURGICAL MODALITIES FOR SIGMOID COLON CANCER COMPLICATED BY DECOMPENSATED OBSTRUCTION

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AIM: to evaluate the early and long-term results of emergency two-stage surgical procedures in patients with sigmoid colon cancer complicated by decompensated bowel obstruction.
PATIENTS AND METHODS: the cohort study included 112 patients with sigmoid colon cancer complicated by bowel obstruction that underwent emergency two-stage surgical procedures in general surgical and coloproctological units in 2011-2017. The group 1 (n=60) included patients who, at the first stage, underwent Hartmann's procedure, at the second stage – stoma reversal. The group 2 (n=52) included patients with a loop colostomy at the first stage and radical elective surgery as a second stage. The comparative analysis between the groups was carried out according to the following criteria: the type of surgery, the type of intestinal stoma, the rate and type of postoperative complications, postoperative mortality, resection status (R0/R1), the number of removed lymph nodes, the rate of adjuvant polychemotherapy (PChT).
RESULTS: postoperative mortality in the group 1 was 3.33% (n=2) and occurred after the first main stage (Hartmann's procedure), there were no deaths in group 2 (p=0.28). The procedures in group 2 fully met the criteria of oncological radicalism based on the number of lymph nodes examined and resection status (p<0.0001 and p<0.0001, respectively). Three-year overall survival at stage IIB in group 1 was 44.4% vs 75.2% in group 2 (p<0.0001); with IIIB in the 1st group – 60.3% vs 68.2% in group 2 (p=0.034); at IIIC in the 1st group – 35.7% vs 60.7% in the 2nd group (p=0.009). The 3-year disease – free survival at stage IIB in the 1st group was 41.7% vs 68.8% in the 2nd group (p<0.0001); with IIIB in the 1st group – 53.6% vs 64.5% in group 2 (p=0.036); at IIIC in the 1st group – 33.2% vs 60.8% in the 2nd group (p=0.023).
CONCLUSION: for sigmoid colon cancer complicated by decompensated obstruction, in general hospitals the stage treatment with the colostomy at the first stage is preferable.
[Keywords: sigmoid colon cancer, decompensated obstruction, multistage surgery]

SURGICAL TREATMENT FOR A PATIENT WITH TWO RECTOVAGINAL FISTULAS (case report)

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The article describes clinical case of a patient with two rectovaginal fistulas of high and low level. The first stage included diverting loop sigmostomia and latex seton for low fistula. Three months later, on the second stage, fistulectomy with invagination of the fistula to rectal lumen with compression of invaginated part by titanium nickelide clamp was done. The fistulectomy with sphincteroplasty was done for the lower fistula. No postoperative complications developed; the complete recovery was detected. Seven months later, on the third stage, the stoma closure was done. No complications and fistula recurrence were obtained in 2 months of follow-up.
[Keywords: rectovaginal fistula, titanium nickelide, compression clamp, invagination method]

MESENCHYMAL TUMORS OF THE COLON AND RECTUM: DIAGNOSIS, TREATMENT, PROGNOSIS (case report and review)

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Mesenchymal tumors of the colon and rectum are extremely rare and do not have specific clinical manifestations, their diagnosis and staging cause certain difficulties. Different types of mesenchymal tumors differ in prognosis and choice of the treatment. It explains the importance of differential diagnosis of these neoplasms among themselves and tumors-derivatives of other embryonic structures. The article describes the clinical case of a rare mesenchymal tumor and management of the patient.
[Keywords: mesenchymal tumor, gastrointestinal stromal tumor (GIST), leiomyoma, leiomyosarcoma]

ENDOSCOPIC PROCEDURES FOR COLORECTAL ANASTOMOSES STRICTURES (review)

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In the review data concerning modern methods of endoscopic treatment of colonic strictures are presented. Relevance of this problem, reasons for the development, clinical picture and methods of endoscopic procedures for strictures are presented in detail. The analysis of Russian and foreign literature with an assessment of the effectiveness and feasibility of various methods of treatment of strictures has been done. Despite the variety of ways of existing methods of stricture's treatment, there are still no evidence-based data on the efficiency and safety of various endoscopic approaches. Thus, there are a number of unresolved topical issues that require further research.
[Keywords: colonic strictures, colorectal strictures, endoscopic bougienage, balloon dilation, endoscopic electric incision, endoscopic colonic stenting]

MEDICAL CARE FOR HEMORRHOIDS IN THE FEDERAL SUBJECTS OF RUSSIA IN 2018

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AIM: to analyze basic medical care characteristics for hemorrhoidal disease (HD) in federal subjects of Russia in 2018.
MATERIALS AND METHODS: the study is based on the summary data of the annual statistical observation form Report of the chief coloproctologist of the subject of the Russian Federation for 2018, which includes the level of outpatient treatment for HD per 100,000 of the population, the number of outpatient coloproctologists, the number of hospitalized patients for HD, the rate of patients hospitalized for emergency indications and number of coloproctological beds.
RESULTS: in 2018 in Russia there were 304.9 outpatient visits per 100,000 thousand of the population for HD (Me=304.9; Q1=236.1; Q3=401.2). Number of coloproctologists was 0.23 per 100,000 (Me=0.23; Q1=0.13; Q3=0.32), and no correlation between these indicators was found (r=0.18; p=0.09). The hospitalization rate for HD was 36.8 (Me=36.8; Q1=30.5; Q3=44.7). There were 2.68 coloproctological beds per 100,000 (Me=2.68; Q1=1.95; Q3=3.35), and the percentage of patients with HD hospitalized in an emergency hospital was 34.0% (Me=34.0; Q1=24.0; Q3=45.0). There was no correlation between the number of patients treated in a hospital and the proportion of emergency hospitalizations in patients with hemorrhoids (r=0.1; p=0.38).
CONCLUSION: in 2018, at least half a million patients with HD have got an outpatient consultation of coloproctologist. A significant staff shortage in specialists remains, and unresolved organizational problems require further studies.
[Keywords: hemorrhoids, organization of medical care, outpatient treatment, inpatient treatment]

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PERIANAL INFECTIOUS COMPLICATIONS IN PATIENTS WITH GRANULOCYTOPENIA AND HAEMATOLOGICAL MALIGNANCIES

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AIM: to study the perianal infection (PI) in patients with granulocytopaenia (GCP) and hematological malignancies (HM).
PATIENTS AND METHODS: the prospective study (2016-1018) includes 95 episodes of PI in 76 patients with HM (male/female 35/44; mean age of 35 (17-69)). 43(54.4%) of the patients were detected to develop acute leukemia (AML – 34 (43%); ALL – 9(11.4%); NHL – 17(21.5%). The comparison of PI episodes within the GCP period (number of granulocytes less than 0.5x109/l) and without it was done.
RESULTS: PI episodes within the period of GCP were significantly much more often than those without GCP (77.9% vs 22.1%, relative risk 3.5 (95% CI: 2.4-5.2). The biggest number of PI episodes in the setting of GCP was registered within the period of chemotherapy (ChT): in the phase of consolidation (28.4%) and induction (13.3%) of acute leukemia ChT and lymphomas' ChT (20.3%). Anal fissures were the most frequent source of PI within GCP period (66.2% vs 19.1% without GCP, p<0.001). Inflammatory changes in perianal tissues were clinical features of PI in the setting of GCP in 89.2% of the cases: inflammatory mass in 71.6% (vs 23.8% without GCP,

p<0.001), abscess in 8.1% (vs 66.7% without GCP, p<0.001). In 10.8% of the cases of PI with GCP only perianal pain and fever were registered. No tissues change was detected with the lowest WBC count (Me 0.2 (0.1-0.5) x109/l). Bloodstream infections were detected in 15 (20.3%) episodes within the period of GCP only, of them in 6 (8.1%) cases the species matching of microorganisms in blood and in rectum was noticed. Within the period of GCP antibacterial therapy was carried out in 98.6% of the cases: antibacterial therapy alone was applied in 87.8% of the episodes (vs 7.2% without GCP, p<0.001); both antibacterial therapy and surgical treatment were carried out in 10.8% (vs 61.9% without GCP, p<0.001) of the cases. Mean duration of antibiotic treatment of patients with GCP was drastically longer in the group of postoperative patients in comparison with the group of those who had conservative treatment (25.5 vs 15.1 days, p=0.05). Antimicrobial therapy within GCP period resulted into inflammation regress in 83.1% of the cases; abscess or fistula formation, hence surgical treatment in 13.8% of the cases; progression of infection in 3.1% of the cases. Increase of GCP duration up to 30 and more days is connected with bacteremia rate increase (12.5% vs 28%, p<0.05); combinations of PI with other infections (25% vs 52%, p<0.05); requirement of antimicrobial therapy modification (16.7% vs 40%, p<0.05).
CONCLUSION: GCP significantly raises risk of PI. PI that develops in the setting of GCP, is characterized by abnormal, often low clinical manifestations and high risk of sepsis. Invasion of microorganisms through affected tissue seals is the basic mechanism of perianal infection within the period of GCP. Antibacterial therapy is the prior method of PI treatment in the settings of GCP; antibacterial therapy efficiency is 83.1%. Need for surgery in the period of GCP is associated with the infectious episode and antibacterial therapy duration increase. Lengthening of GCP is a negative predictor in PI treatment.
[Keywords: perinatal infection, abscess, leukemia, agranulocytosis, granulocytopaenia, neutropenia, hemoblastosis]

COLORECTAL CANCER DIAGNOSTICS VIA DETECTION OF TISSUE-SPECIFIC EXTRACELLULAR NANO-VESICLES

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The development of methods for effective diagnosis and monitoring of colorectal cancer (CRC) treatment is one of the basic scientific problem. The circulating plasma contains extracellular nanovesicles (EVs) secreted mainly by blood and endothelial cells. The minor fraction of plasma EVs is produced by cells of various tissues, including cells of the intestinal epithelium. The biochemical composition of such vesicles should have tissue-specific features. Presented study was aimed to identify surface markers of EVs secreted by intestinal epithelium cells and to assess the possibility of isolating and quantification of such vesicles for the diagnosis of CRC. The cell cultures (HCT-116, HT-29, COLO-320, HuTu-80, SW837), plasma of CRC patients and healthy donors were used in the study. The methods of nanoparticle tracking analysis (NTA), atomic force microscopy (AFM), dot-blotting and flow cytometry were applied for EVs characterization. With the original technology of immunosorption we have demonstrated an increased amount of CLRN3, GAL4 and Meprin A, i.e. positive EVs in plasma of CRC patients comparing to healthy donors. Based on the quantitative analysis of such EVs, new methods of diagnostics and monitoring of CRC therapy can be developed.
[Keywords: colorectal cancer, extracellular nanovesicles, tissue-specific markers, exosomes, diagnostics]

THE FIRST EXPERIENCE OF CONTRAST ENHANCED ULTRASOUND IN EPITHELIAL RECTAL TUMORS

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AIM: to evaluate the diagnostic capabilities of contrast-enhanced ultrasound for the diagnostics of epithelial rectal tumors.
PATIENTS AND METHODS: the study included 15 patients, who underwent endorectal ultrasound and transvaginal contrast enhanced ultrasound. All the patients underwent surgery.
RESULTS: morphology revealed adenomas in 9 cases, and adenocarcinomas with different invasion depth in 6 cases. When analyzing the tumors contrast, significant differences in arrival time of contrasting between

adenomas and adenocarcinomas were obtained (p = 0.041), and the contrast enhancement of adenocarcinomas was faster (p = 0.036). Negative correlations of peak intensity of contrast enhancement of hypoenhanced zones in adenocarcinoma with indices T (rxy =-0.781; p = 0.001) and N (rxy = - 0.519; p = 0.047)and a positive correlation with the tumor differentiation degree (rxy=0.742; p = 0.002) were established. Also, the negative correlation of the arrival time with the index T (rxy=-0.552; p=0.033) was found.
CONCLUSION: contrast-enhanced ultrasound is an imaging technique that allows real-time qualitative and quantitative assessment of tumor tissue perfusion. The method is not standardized, but it can be a useful non-invasive method for assessing the blood supply of rectal tumors at the preoperative stage, and also has the potential to assess risk factors for lymphogenic metastasis.
[Keywords: contrast-enhanced ultrasound, rectal cancer, rectal adenoma]

NEUTROPHIL-TO-LYMPHOCYTE RATIO AS AN INFECTIOUS COMPLICATIONS BIOMARKER IN COLORECTAL SURGERY (own data, systematic review and meta-analysis)

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BACKGROUND: biological markers of inflammation belong to the main tool for predicting the risk of infectious complications at the preclinical stage. One of such biomarkers is the neutrophil-to-lymphocyte ratio (NLR), but an insufficient number of studies does not allow us to estimate its value as a predictor of infectious complications in colorectal surgery.
AIM: to determine the predictive value of NLR as a predictor of infectious complications after colorectal surgery.
PATIENTS AND METHODS: from January 2018 to December 2019 192 patients after colorectal surgery were included in the study. The rate of infectious complications, NLR levels differences in patients with and without infectious complications were determined, the area under the curve (AUC), sensitivity, specificity, negative and positive prognostic value of NLR on the 3rd (POD) and the 6th (POD) postoperative days were assessed. A literature search and meta-analysis of the data in accordance with the preferred reporting items for systematic reviews and meta-analyses checklist (PRISMA) were conducted. The information was taken from the Medline electronic database and the E-library, scientific electronic library, among the English and Russian literature without publication date restrictions by the keywords: “neutrophil/lymphocyteratio”, “neutrophil-to-lymphocyte ratio”, “neutrophil lymphocyte ratio”, “neutrophil ratio”, “lymphocyte ratio”, “colorectal”, “colon”, “rectum”. The systematic review included all the studies related to assessing the prognostic value of NLR as a predictor of infectious complications in colorectal surgery.
RESULTS: infectious complications were detected in 29 (15.1%) of 192 patients. On the 3rd and the 6th POD, the patients with infectious complications had higher median NLR values than the patients without complications (p=0.0017 for the 3rd POD; p=0.018 for the 6th POD). On the 3rd POD, the area under the curve at the NLR cut-off point 5.13 was 0.644, sensitivity – 69.7%, specificity – 60.7% (p=0.019). On the 6th POD, similar indicators at an NLR cut-off point of 3.94 were 0.75, 75.9% and 70.6%, respectively (p<0,001). Four studies, which included 1,152 observations, were added in the meta-analysis. On the 3th POD, the summarized AUC was 0.671, sensitivity – 86.3%, specificity – 60.3% (p=0.014). The risk of infection with a biomarker above the threshold increased by more than 10 times (OR=10.2; 95% CI: 1.4-72). On the 4th POD, the above indicators were 0.711, 75.4%, 87.5%, respectively (p=0.002). Odds ratio was 51 (95% CI: 20-128).
CONCLUSION: the neutrophil-to-lymphocyte ratio is a reliable indicator for predicting the risk of developing infectious complications in colorectal surgery. In addition, the low values of this biomarker are an important criterion for the safe discharge of patients from hospital. The prevalence and availability of this test makes it easily feasible in clinical practice.
[Keywords: colorectal surgery, postoperative infectious complications, surgical site infection, inflammation biomarker, neutrophil-to-lymphocyte ratio]

CURRENT PRACTICE OF TRISULFATE APPLYING FOR BOWEL CLEANSING IN ACCORDING TO CLINICAL SAFETY POSITIONS

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High-quality bowel cleansing is the basis for effective colon examination. Inadequate preparation of the colon can be the reason for nondetection of colorectal polyps during the examination and reach 12%. The objective of this publication is to present current literature data based on the principles of evidence-based medicine that address the safety of using trisulfate in preparation for colonoscopy. It was found that the drug for intestinal

cleansing, which is a low-volume one-liter hyperosmotic based on a combination of sodium, potassium and magnesium sulfate salts, has a high efficiency of preparing the intestine for colonoscopy. The percentage of patients with successful bowel preparation using trisulfate is 97%. At the same time, the drug has an acceptable safety profile, including for patients from risk groups. The results of this review indicate that the new low-volume one-liter trisulfate is an effective remedy for providing one of the most important indicators of highquality colonoscopy - bowel cleansing and has a high safety profile.

[Keywords: colonoscopy, bowel cleansing, trisulfate]

INTRAABDOMINAL AND TRANSANAL VACUUM DRAINAGE FOR COLORECTAL ANASTOMOSIS LEAKAGE (case report)

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AIM: to present a clinical case of treatment of colorectal anastomosis leakage complicated by secondary diffuse postoperative peritonitis with preservation of the anastomosis.
PATIENTS AND METHODS: the patient was a 69-year-old male, with a diagnosis of the rectal cancer pT3N0M0, after surgery treatment (laparoscopic TME, ileostomy). The postoperative period was complicated by anastomosis leakage.
RESULTS: we applied the method of surgical treatment, which included stage relaparotomy without resection of anastomosis with installing intraabdominal and pelvic system of negative pressure treatment and transanal endoluminal vacuum drainage at the anastomotic leakage site.
CONCLUSION: the primary use of the method gave us encouraging results, which enables to consider the proposed technical approach as a promising option for treatment of such a complicated group of patients.

[Keywords: peritonitis, negative pressure therapy, colorectal anastomosis leakage]

HEMICOLECTOMY WITH EXTENDED LYMPH NODE DISSECTION IN PATIENT WITH SITUS VISCERUM INVERSUS

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Colorectal resection for cancer in a patient with partial situs inversus was described for the first time. Hemicolectomy with D3 lymph node dissection for left-sided ascending colon cancer was performed in a 78-year-old woman with abdominal organ transposition and laevocardia. There were no intraoperative complications, but the procedure was technically challengeable due to advanced adhesions in the abdomen after the previous cholecystectomy. The case illustrates following the oncological principles in patients with abnormality. In order to determine proper volume of surgery and to minimize risk of intra-and postoperative complications, application of high-tech diagnostic tools is preferable, including CT reconstruction of vessels and other anatomical structures situated in the surgical site.

[Keywords: hemicolectomy, colon cancer, situs inversus, D3 lymph node dissection, laevocardia]

ANOPLASTY AND LATERAL INTERNAL SPHINCTEROTOMY FOR CHRONIC ANAL FISSURE (systematic review and meta-analysis)

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INTRODUCTION: lateral internal sphincterotomy (LIS) is considered the "gold standard" therapy for chronic anal fissure (CAF). Advantages of LIS over other surgical techniques include higher rate of healing and lower risk of fissure recurrence. However, this procedure is associated with a high risk of anal incontinence (AI) in the postoperative period. Anal advancement flap (AAF) is an alternative surgical procedure for CAF, which requires the use of local flaps. Anal advancement flap is associated with a significantly lower risk of anal incontinence.
AIM: to compare short-term and long-term outcomes of anal advancement flap and lateral internal sphincterotomy in patients with chronic anal fissure.
MATERIALS AND METHODS: a systematic review and meta-analysis of studies comparing outcomes of anal advancement flap and lateral internal sphincterotomy were conducted. The following parameters were evaluated: the rate of epithelialization, the rate of anal incontinence, and the rate of postoperative complications. The statistical analysis was carried out using the Review Manager software 5.3.

RESULTS: the systematic review included four studies that presented the results of 278 patients. Compared with LIS, the odds for healing after AAF were 63% lower (OR=0.37; CI=0.19; 0.74; P<0.005). No significant differences in the rate of postoperative complications (OR=1.43; CI=0.54; 3.78; p=0.47) were found. Compared with AAF, the odds for anal incontinence after LIS were 94% higher (OR=0.06; CI=0.01; 0.37; p=0.002).
CONCLUSION: both lateral internal sphincterotomy and anal advancement flap are effective for CAF. However, considering the ambiguity and poor quality of data from the studies comparing these procedures, a high risk of bias for comparison groups and heterogeneity of the studies, the results should be interpreted with caution. Therefore, the aforementioned limitations dictate the need for further research.
[Kewords: chronic anal fissure, lateral subcutaneous sphincterotomy, anoplasty, V-Y plasty, LIS, AAF]

DIAGNOSTICS, TREATMENT AND PROGNOSIS IN PATIENTS WITH COLORECTAL CANCER AND PERITONEAL CARCINOMATOSIS (review)

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Isolated colorectal peritoneal metastases occur in 1.8% of patients. This type of tumor is characterized by certain phenotypic and molecular genetic characteristics, which determines the choice of specific treatment options. In this literature review, along with a description of the main principles of the pathogenesis of the disease, the sensitivity and specificity of various diagnostic methods for colorectal peritoneal lesions, the choice of systemic therapy, the need for peritonectomyand intraperitoneal hyperthermic chemoperfusionare are considered.
[Keywords: colorectal cancer, peritoneal metastases, peritoneal carcinomatosis, peritonectomy, HIPEC, PIPEC, intraperitoneal chemotherapy]

LAPAROSCOPIC RESECTIONS WITH TRANSANAL SPECIMEN EXTRACTION IN RECTAL CANCER SURGERY (a systematic review and meta-analysis)

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INTRODUCTION: the NOSES technique allows one to remove specimen without incisions on the anterior abdominal wall and is accompanied by fewer complications by reducing the incidence of wound infections. The results of these surgeries on colorectal tumors are presented in a limited number of heterogeneous studies, which necessitates obtaining objective data using meta-analysis.
AIM: to compare the immediate and long-term outcomes of two methods for surgical treatment of colorectal cancer.
MATERIALS AND METHODS: a systematic review was carried out in accordance with PRISMA practice and recommendations.
RESULTS: nine comparative studies were selected for the period from 2014 to 2019. 1,693 patients were included in the meta-analysis: in 765 (45%), the tumor specimen was removed transanally (NOSES group) and in 928 (55%) it was removed via minilaparotomy (LA group). The tumor size in the NOSES group was 0.5 cm smaller (OR=0.5, CI95% 0.2-0.8, p=0.0004) than in the LA group. In regards to the other parameters the groups had no publication bias. The surgery duration when comparing NOSES with LA was comparable (p =0.11). The VAS pain was on average 2 points (OR=1.8, CI95% 1.2-2.4, p<0.00001) more pronounced in the LA group. The postoperative hospital stay was less in the group with transanal specimen removal (OR=0.8, CI95% 0.4-1.3, p=0.0003). The chance of developing postoperative complications in the NOSES group was (OR=0.5, CI95% 0.4-0.8, p=0.0004) with a rate of 62/765 (8%) cases, compared with the control group - 130/931 (14%). The chance of developing wound infection was higher in the LA group (OR=0.2, CI95% 0.1-0.3, p<0.00001). There were no differences in the incidence of anastomotic leakage (p=0.97). There were also no differences in the five-year overall (p=0.74) and cancer-specific survival (p=0.76). CONCLUSION: using NOSES techniques creates better conditions for the patients' recovery due to the low incidence of postoperative complications due to the absence of wound infection and is a safe manipulation. However, the presence of publication biases requires a careful interpretation of the data obtained.
[Keywords: rectal cancer, colorectal surgery, oncology, laparoscopic surgery. metaanalysis]

MOLECULAR-GENETIC FEATURES OF COLORECTAL TUMORS IN PERITONEAL CARCINOMATOSIS AND LIVER METASTASES (review)

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AIM: to analyze the literature on the molecular genetic characteristics in patients with peritoneal carcinomatosis and liver metastases of colorectal cancer.
PATIENTS AND METHODS: RSCI, Google Scoolar, PubMed, Web of Science databases were used for review. Over 200 literature sources on the given subject were analyzed, of which 67 were included in this review.
RESULTS: in the review, the data on molecular genetic changes occurring during peritoneal carcinomatosis and liver metastases in patients with colorectal cancer were presented. The key points for treatment patients with metastatic colorectal cancer were identified.
CONCLUSION: the presented data summarizes molecular genetic studies, which in turn enable clinical oncologists, surgeons and chemotherapists to determine treatment modality.
[Keywords: peritoneal carcinomatosis, liver metastases, implantation metastasis, epithelial-mesenchymal transition, circulating tumor DNA]

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