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LAPAROSCOPY AS A DYNAMICALLY DEVELOPING DIRECTION FOR THE TREATMENT OF PERITONITIS

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One of the causes of high mortality (17-65%) in widespread peritonitis is untimely treatment of the patient, late diagnosis and factors that affect the progression of the inflammatory process in the peritoneal cavity.

The difficulty of diagnosis is complicated by both objective reasons: the use of analgesic and antibacterial drugs, multi-purpose therapy, and subjective: the presence of negativity in the patient's attitude to surgery. Surgical intervention in peritonitis is aimed at solving at least four tasks: elimination of the cause of peritonitis; effective sanitation of the peritoneal cavity; creation of conditions for control over the course of the inflammatory process; evacuation of exudate.

With the development of modern surgery, there is a need to identify the highest priority method of treatment of various forms of acute peritonitis. The most promising area in the diagnosis and treatment of peritonitis is the introduction of laparoscopic technologies.

Analyzing the research of various surgical schools, we found that with common forms of peritonitis to conduct a one-time rehabilitation to obtain abacteriology, it is almost impossible. Therefore, there is a need for repeated operations to ensure active rehabilitation and drainage of the peritoneal cavity. For this purpose, programmed laparoperpsy does not lose relevance, but there are already many developed laparoscopic techniques to avoid the use of laparotomy approaches.

One of such methods is the use of special devices that allow inserting laparoscopic instruments into the peritoneal cavity through the abandoned ports, which for the period between remediation, served as places of drainage. This allowed for remediation without the risk of damage to structures when starting tools.

Thus, laparoscopic technologies under certain conditions allow to reliably eliminating the cause of peritonitis, to effectively rehabilitate the peritoneal cavity and its drainage, but when in doubt about their adequacy, it is necessary to use laparotomy techniques, including programmed laparoperation.

The use of programmed laparoscopy in the treatment of peritonitis reduces the patient's hospital stay and bed-days, avoids a large number of postoperative complications and improves the quality of life of patients.

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PATHOPHYSIOLOGICAL MECHANISMS OF DIABETIC RETINOPATHY

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The evaluation of pathophysiological mechanisms in diabetic retinopathy found that early stages are characterized by histopathological changes which include loss of pericytes, basement membrane thickening, haemodynamic alterations leading to reduced vascular integrity. The later stages of diabetic retinopathy are characterized by complications, which include visual impairment, primarily due to macular edema and proliferative diabetic retinopathy. Also the severity of retinopathy was associated with poorer metabolic control, demonstrated by elevated HbA1c. Diabetic complications accompany the accumulation of advanced glycation end products in diabetic tissues. Increased accumulation of these products has been reported in epiretinal membranes by the use of immunohistochemical technique. Binding of advanced glycation end products to high-affinity receptor in pericytes exerts selective toxicity resulting in their death. Vascular endothelial growth factor exert important role of intraocular neovascularization due to ischemic retinopathy.

So, as conclusion, we can suggest that early stages of diabetic retinopathy are characterized by histopathological changes which include loss of pericytes, basement membrane thickening, haemodynamic alterations leading to reduced vascular integrity. The later stages of diabetic retinopathy are characterized by complications, which include visual impairment, primarily due to

macular edema and proliferative diabetic retinopathy. Binding of advanced glycation end products to high-affinity receptor in pericytes exerts selective toxicity resulting in their death.

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ROLE OF PROTEOLYTIC AND FIBRINOLYTIC ACTIVITIES OF INTESTINAL WALL TISSUES IN SUTURED AREA HEALING UNDER THE CONDITIONS OF ANASTOMOTIC LEAKAGE DEVELOPMENT

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Anastomotic leakage (AL) continues to be quite serious complications after operations on the hollow digestive organs. The frequency of the onset of AL is variable with range 3,8 – 8,1% (B.R.Phillips, 2016). The mortality rate after formation of colorectal anastomosis is up to 22% (F.Daams et al., 2013). Current investigations pay a great attention to study and modification of the risk factors of anastomotic leakage, such as nutrition disturbances, smoking, steroids and chemotherapy, duration of surgical treatment, volume of infusion and blood transfusion etc. Tissue ischemia, the kind of suture material and technical approach are proved to have a significant impact on the intestinal anastomosis healing. Local changes of some biochemical processes in the intestinal tissues directly into the sutured area, their influence on regeneration and leakage occurrence are insufficiently studied.

Purpose of the research: to study influence of specific changes of proteolytic and fibrinolytic activities of intestinal tissues directly into the region of sutures on regenerative properties of anastomosis under experimental conditions of their leakage development. The investigation has been performed on 72 albino nonlinear rats undergoing AL model. In 12, 24, 48, 72 hours and 5 days following surgery euthanasia of the animals was performed under anesthesia and the samples of the intestinal tissue in the region of sutures were taken for specific tests. The levels of proteolytic activity by the lysis of: azoalbumin (AA), azocollagen (ACg), azocasein (ACs) and the indices of fibrinolitic activity: total (TFA), nonenzymatic (NFA), enzymatic (EFA) have been investigated. Evaluation of reparative processes in the intestinal wall was performed during microscopy of the histological sections of the sutured zone. According to the obtained data a reliable steady activation of tissues proteolysis have been found in the animals of the experimental group in comparison with the control one. So, in 12-24h. following the operation a reliably higher activity of lysis of AA, ACs and ACg was detected in the animals of the experimental group ($p<0,001$). It‘s indicative of increase of proteolytic modification of the low- and high-molecular proteins. At this period of observation in the animals with AL there occurs a proved rise of TFA into serous layer of intestinal wall, both at the expense of NFA and EFA ($p<0,001$). Analysis of the histological sections of the anastomotic area of the experimental group of animals determined more intense neutrophilic infiltration in the submucosal layer of the intestinal wall extending to muscle and serous membranes, as well as expressed venous plethora and hemorrhages into serous membrane. On contrary, in the animals of control group the fibrinous mesh into channel of the thread and between the serous membranes was not observed. During a later period (48-72 h.) we observed a tendency to rise of the indices of tissue proteolysis in the submucosal layer of intestinal wall, especially indices of ACg lysis, which were one and a half time higher than data of the control group. Elevation of the tissue fibrinolytic activity was detected in the animals with AL, largely at the expense of EFA which exceeded the control data twice as much. The histological signs of regeneration disturbances in this period of observation were significant diastasis between the serous membranes of intestine touching only in the area of the connected edges of the mucous membrane, also the diffuse inflammatory reaction with expressed neutrophilic and plazmocytic infiltration, edema, plethora and hemorrhages which spread to all layers of the intestinal wall. The constant signs of tissue necrosis with the advantage of disintegrated neutrophilic granulocytes and lymphoid cells over macrophages and single active fibroblasts were found around canal of the thread. Thus, prolonged intense degradation of collagen molecules in the submucosal layer of intestinal wall, which provides the basic strength of anastomoses, may be one of the mechanisms of disturbances of regeneration of