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МАЗМҰНЫ

ДИАГНОСТИКА ЖӘНЕ ЕМДЕУ

ХИРУРГИЯ

СОДЕРЖАНИЕ

ДИАГНОСТИКА И ЛЕЧЕНИЕ

ХИРУРГИЯ

CONTENTS

DIAGNOSTICS AND THREATMENT

SURGERY

МАЗМҰНЫ

ОРТАЛЫҚ ТЫНЫСЫ

ХИРУРГТЫ ЕСКЕ АЛУ

СОДЕРЖАНИЕ

СОБЫТИЯ ЦЕНТРА

ПАМЯТИ ХИРУРГА

CONTENTS

EVENTS OF THE CENTER

IN MEMORY OF THE SURGEON

RETROSPECTIVE ANALYSIS OF PATIENT REFERRALS FOR COMPUTED TOMOGRAPHY

МРНТИ 76.13.33

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Abstract

To conduct a retrospective analysis of patient referrals for computed tomography to identify the main problems, both in writing the direction itself and in its validity. ***Materials and methods:*** *The patient referrals for computed tomography (CT) were analyzed at the Radiology Department of the National Scientific Center named after AN Syzganov - outpatients for 3 months.* ***Results and discussions:*** *it has been established that, in the main, clinicians, when issuing a referral for a study, ignore such item as a diagnosis, or replace it with the word – examination. There is also the groundlessness and incorrectness of the referrals for the studies, considering their variability and insufficient awareness of doctors both in the indications and the need for a particular study.* ***Conclusion:*** *Clinicians are not sufficiently aware of the correctness of referrals for computed tomography and, as a result, write out incorrect referrals.*

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Keywords
indications for computed tomography, referrals for computed tomography

Пациенттерге компьютерлік томографиядан өтуге жолдама берудің ретроспективтік талдауы

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Аңдатпа

Зерттеу мақсаты: Компьютерлік томографияға жолдама жазып берудің, аталмыш жолдама беру негізділігінің ретроспективтік талдауын жүргізу. ***Материалдары және әдістері:*** *А.Н.Сызғанов атындағы ҰҒХО» АҚ-тың сәуле арқылы диагностикалау бөліміне компьютерлік томографиядан өтуге амбулаторлық аурулардың 3 айындағы жолдамаларына талдау жасалды.* ***Нәтижелері мен талқылаулар:*** *клиницист-мамандар зерттеу үшін пациенттерге КТ-ға жолдама беру кезінде «диагнозына» қатысты тармақты елемейтіндігі немесе аталмыш сөзді «тексеру» деп ауыстырып жазатындығы анықталды. Сонымен қатар, жолдама берудің вариабельділігін есепке алуымен зерттеуге жолдама беруінің негізсіздігі және сыпайсыздығы, сондай-ақ дәрігерлердің ауру көрсеткіштерінде және де сондай да зерттелуінде хабардар болуының жеткіліксіздігі орын алған.* ***Қорытынды:*** *клиницист-дәрігерлер пациенттерге компьютерлік томографиядан өту үшін тағайындамалардың дұрыстығы жайлы біліктілігі жеткіліксіз, соның салдарынан орынсыз КТ-ға жолдамалар берілуде.*

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Түйін сөздер
компьютерлік томографиядан өтуге көрсеткіштері, компьютерлік томографияға жолдама беру.

Ретроспективный анализ направлений пациентов на компьютерную томографию

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Аннотация

Цель исследования: *Провести ретроспективный анализ направлений на компьютерную томографию для выявления основных проблем, как в написании самого направления так и в его обоснованности.* ***Материалы и методы:*** *Были проанализированы направления на компьютерную томографию в отдел лучевой диагностики НЦХ им.А.Н.Сызганова - амбулаторных пациентов за 3 месяца.* ***Результаты и обсуждения:*** *установлено, что в основном клиницисты при выдаче направления на исследование, игнорируют такой пункт как диагноз, либо заменяют его словом – обследование. Также имеет место необоснованность и некорректность направлений на исследования, с учетом их вариабельности, и недостаточная осведомленность врачей как в показаниях так и в необходимости того или иного исследования.* ***Заключение:*** *Врачи клиницисты недостаточно осведомлены о правильности назначений компьютерной томографии и как следствие выписывают некорректные направления*

ОБ АВТОРАХ
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Ключевые слова
показания к компьютерной томографии, направление на компьютерную томография

Introduction

According to the State Program Development of the Republic of Kazakhstan's healthcare system "Densaulyk" for 2016-2019, task number 2 of which is: Improving the prevention and management of diseases, and the achievement of this task will be measured by such indicators as: Early detection of malignant tumors (stage 1-2). This detectability is impossible without such diagnostic procedures as computed tomography, a referral for which is prescribed by a clinician. [1]

It is known that radiology is one of the most rapidly developing areas of medical imaging, and in the conditions of rapid high-tech growth, it is very difficult for a clinician to find a place in a large number of studies, indications and features of their conduct. In this connection, the clinician writes out the wrong referrals for such studies as computed tomography, not realizing all the possibilities of this study, the difficulties in conducting it, the patient's radiation load, etc. [3, 6]

The relevance is due to the high need for computed tomography of all organs and systems, according to international protocols for the diagnosis and treatment of various diseases. In this connection, the groundlessness and incorrectness of referrals to computed tomography and, as a consequence, the creation of conflict situations between a physician, a patient and a radiologist. [4]

Based on this, the purpose of this study was to analyze the referrals for computed tomography to assess the correctness of the spelling of these referrals, the validity and correctness of the research assignments.

Material and methods

The study material served referrals to CT scan of outpatients for 3 months. 220 referrals were analyzed, of which 86 were referrals for August 2018, 104 referrals for September 2018. and 130 referrals for October 2018. The data are presented in table №1.

Results and discussion

As presented in the table, 26.8% of the directions were identified - without diagnosis; 5.9% - incorrectly purpose of the study; 3.2% were referrals with a diagnosis - a examination and 1.4% were unreasonable purpose of the study. According to the Instruction "on streamlining X-ray studies and reducing radiation exposure to patients and staff" of the Order of the Ministry of Health of the Republic of Kazakhstan No. 381 of October 12, 1994 "On Further Improvement of the Radiation Diagnostics Service", point No. 2: indications, order of appointment and X-ray studies, paragraph 2: in the direction of an x-ray examination, the doctor is obliged to substantiate the indications for it and indicate the specific purpose of the study (preliminary diagnosis), without replacing it with vague wording such as "examination". Otherwise, the referral should be regarded by the radiologist as unreasonable; conduct research under this direction is prohibited. [2, 5]

Due to the conditions of the «sientific center of surgury» CT scan is not carried out without a referral, according to the order of the Ministry of Health of the Republic of Kazakhstan No. 381, patients with such referrals were forced to return to their attending physician to clarify indications for computer tomography or call up with them, which certainly caused aggression and discontent of the patient thereby causing mistrust and doubts in the competence of the clinician. Taking into account the specifics of the work of the "NSCS named after AN Syzganov" and its republican significance, patients are sent for research from various regions of the Republic of Kazakhstan (RK), that is, they are visiting people. Frequently, patients do not have telephone numbers of their doctors, and therefore the radiologist is had to request extracts and other documentation in order to clarify the evidence and determine the type of study, taking the time required for the description, for collecting anamnesis, etc. This applies not only to patients without a diagnosis or diagnosis - examination, the same sequence of actions was in patients with incorrect or unreasonable purpose of the study. For example, in a cancer patient (adenocarcinoma of the sigmoid colon), after surgical treatment and a course of chemotherapy, CT scan of the abdominal and pelvis is indicated. This referral is incorrect, as this study is conducted with the aim of eliminating continued growth and metastasis, which is impossible to estimate without contrast

Month		Diagnosis-examination		Without diagnosis		Incorrectly purpose of the study		Unreasonable purpose of the study	
august	86	1	1,2%	23	26,7%	2	2,3%	-	0%
september	104	4	3,8%	11	10,6%	3	2,9%	1	0,9%
october	130	2	1,5%	25	19,2%	8	6,2%	2	1,5%
total	220	7	3,2%	59	26,8%	13	5,9%	3	1,4%

enhancement and makes this study useless. The same applies to unreasonable appointments: for example, a patient with a diagnosis of chronic pancreatitis, CT scan of the abdominal is not necessary. Trying to convey this information to the patient, radiologist is confronted with the patient's misunderstanding and distrust, because a study with a contrast agent is expensive and the patient doesn't expect such costs when going to study. The same thing happens when the patient refuses to study, due to the lack of evidence. What also causes a lot of conflict situations as between the radiologist and the patient, between the patient and the doctor who appointed these studies, and finally between doctors. Thus, first of all, reducing the authority of the clinician to the patient.

The following directions for tomography are also noted:

- MRI of the lungs
- CT scan of the liver without the introduction of CA with a diagnosis of hemangioma
- CT scan of the lungs with a diagnosis of pulmonary embolism
- CT scan of the abdominal without the introduction of CA with a preliminary diagnosis - tumor of the pancreatic head

All of the above suggests that clinicians are not aware of: the correctness of completing a referral for computed tomography; poorly oriented in the indications for the conduct of this study, the radiation load received by the patient and, as a consequence, in the capabilities of this method.

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FEATURES OF THE CARDIOVASCULAR SYSTEM OF A WOMAN DURING HORMONAL ADJUSTMENT

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Abstract

In connection with the increase in the life expectancy of women, the issue of improving the quality of life of a woman becomes urgent.One of the most frequent pathologies leading to disability and high mortality of women is cardiovascular disease. Globally, mortality from cardiovascular diseases among older women continues to rise compared with men, but this issue has not been given due attention so far. In recent years, interest in the problem of gender differences in risk factors for CVD has attracted the attention of the medical community. The particular course of cardiovascular diseases in women and the effects of steroid sex hormones on cardiovascular system allowed us to determine the protective effect of estrogen on the cardiovascular system. The success of solving this problem depends largely from continuity in the joint work of gynecologists and cardiologists.

Keywords

cardiovascular diseases, physiological hypogonadism, surgical hypogonadism, estrogen

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Аңдатпа

Әйелдердің өмірсүру ұзақтығының өсуіне байланысты әйелдің өмір сапасын жақсарту өзекті мәселелердің алдыңғы қатарында.Әйелдер арасында мүгедектікке және өлімге әкелетін жиі кездесетін патологиялардың бірі жүрек-қан тамырлары аурулары болып табылады. Еуропа елдерінде ересек әйелдердің арасында жүрек-қан тамырлары ауруларынан болатын өлім-жітім ерлермен салыстырғанда артуда, бірақ бұл мәселеге бүгінгі күнге дейін назар аударылмаған.

Соңғы жылдары жүрек-қан тамырлары ауруларының қауіп факторларындағы гендерлік айырмашылықтары медицина қоғамдастығынан өзіне көп назар аудартуда. Әйелдердегі жүрек-қантамыр ауруларының ерекше ағымы және стероидті жыныс гормондардың жүрек-қан тамырлары ауруларына әсерін кешенді зерттеу эстрогендердің жүрек –қантамыр жүйесіне протективті әсерін анықтауға мүмкіндік берді. Оның шешімінің табысы негізінен гинекологтар мен кардиологтардың бірлескен жұмысындағы сабақтастыққа байланысты.

Түйін сөздер

жүрек-қантамыр аурулары, физиологиялық гипогонадизм, хирургиялық гипогонадизм, эстроген.

Особенности сердечно-сосудистой системы женщины в период гормональной перестройки

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Аннотация

В связи с увеличением продолжительности жизни женщин актуальным становится вопрос улучшения качества жизни женщины. Одной из наиболее частых патологий приводящих к инвалидизации и высокой смертности женщин является сердечно-сосудистые заболевания (ССЗ). Во всем мире смертность от сердечно-сосудистых заболеваний среди женщин старшего возраста продолжает повышаться по сравнению с мужчинами, однако этому вопросу до настоящего времени не уделяется должного внимания. В последние годы интерес к проблеме гендерных различий в факторах риска ССЗ привлекает внимание медицинской общественности.Особое течение сердечно-сосудистых заболеваний у женщин и влияния стероидных половых гормонов на на сердечно-сосудистую систему (ССС) позволило определить протективное влияние эстрогенов на сердечно-сосудистую систему.Успех решения данной проблемы во многом зависит от преемственности в совместной работе гинекологов и кардиологов.

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Ключевые слова

сердечно-сосудистые заболевания, физиологический гипогонадизм,хирургический гипогонадизм, эстроген

Since the beginning of the XX century, there is a tendency to increase the life expectancy of the population, which has a huge impact on the structure of society. According to the Organization for Economic Co-operation and Development (OECD) average life expectancy in the world for 2016 was 80.6 years, this figure reaches 78.3 years for males and 83.6 years for females.

According to the Ministry of Healthcare of the Republic of Kazakhstan for 2016 average life expectancy was 72 years, 67.5 years for males and 76.5 years for females.

Cardiovascular disease (CVD) is not accidentally called the “epidemic of the XXI century.” Despite improvements in the quality of diagnosis and treatment of CVD are still the leading cause of death worldwide, more than 17.5 million people die per year from CVDs according to World Health Organization (WHO).

The most common cause of death for Americans were the CVD, from CVD on average die 168.5 people per 100 thousand people.

According to WHO, due to diseases of the circulatory system the mortality rate in the RK is almost twice as high as in the European countries. Over the past ten years, the incidence rate of CVD in Kazakhstan has increased 1.7 times. There is also evidence of a fourfold increase in hospitalization due to chronic heart failure (CHF) compared to a period of 20 years ago.

According to the UN 52 million women will be aged 55 years and elder in 2020, and in 2050, women aged 60 years and elder get closer to 1 billion. Due to the increase in life expectancy, a third of the life of a woman spends in menopause. At the beginning of the XXI century, every second woman of the world will be over 45 years old, therefore improving the quality of life expectancy of women of pre-and postmenopausal age have health and socio-economic value [1.3].

In recent years, interest in the problem of gender differences in CVD risk factors has attracted the attention of the medical community. It is known that women of reproductive age are 4-6 times lower than the incidence of CHD and 2 times lower risk of myocardial infarction (MI) in CHD, compared with men of the same age. [4].

CHD is the cause of death for women in 23% of cases, MI -18% and other CVD-in 15% of observations, while in men these rates are 21%, 11% and 11% respectively [1]. Women have the worst prognosis for CVD compared to men. One in four postmenopausal women dies from CHD, compared to one in thirty who die of breast cancer. Within a year after confirmed AMI, 25% of men and 38% of women die. Among women who underwent MI, due to heart failure 46% are disabled, developing within six years after suffering MI [6].

The peak of CVD in women is 65-75 years old [2]. To understand the development of pathological changes in the cardiovascular system (CVS), it is necessary to take into account that women have smaller chambers of the heart, myocardial thickness, size of coronary arteries, smaller diameter

of the aorta, smaller length of the vascular bed in comparison with men. At rest, the heart rate (heart rate) in one minute in women is 3-5 beats longer, the recovery time of the sinus node function is shorter, the corrected QT interval is longer and women are therefore more sensitive to tachycardia caused by some drugs [7].

Clinical manifestations of coronary heart disease in women are linked to the fact that estrogen deficiency status contribute to the development of dysfunction of small vessels and microvascular ischemia [9,30,31]. It was found that "cardiac syndrome X" (CSX) in women is manifested by typical chest pain, positive stress tests, angiographic normal EPI cardiac coronary arteries and the lack of clinical or angiographic evidence of coronary artery spasm. The frequency of this pathology in the period of pre and post menopause is 80-90% of all cases of CSX. This condition often occurs against the background of systemic endothelial dysfunction, which is typical for women in the period of menopause and is eliminated by the introduction of exogenous estrogens [9,30,31]. Data from a meta-analysis of 25,000 patients showed that among patients with proven stable angina pectoris, atypical pain syndrome was significantly more common in women than in men [23]. The prevalence of atypical pain syndrome in women is associated with a higher incidence of vasospastic component and microvascular ischemia [23,17]. Features of the clinical course of coronary heart disease in women are that very often there are difficulties in the interpretation of pain. In women, more often than in men, the pain is atypical, observed not only in the chest, but can be in the neck, arm, shoulder, abdomen; occur at rest or during sleep. In addition, symptoms such as nausea, shortness of breath, and epigastric discomfort predominate in women [23,17]. The type of pain syndrome also allows assessing the prognosis of the disease in female patients. Most studies have shown that the likelihood of serious coronary events is much higher in patients with typical pain syndrome. According to the J.M. Zamanet al. (2008), a typical pain syndrome in women with chronic CHD was associated with a high risk of coronary death or the development of acute coronary syndrome. At the same time, no such connection was found in the male population. In the study by K.A. Milneret al. (2008) there is also a high probability of development of a serious coronary event in patients with typical CHD pain syndrome [23]. Moreover, a long-lasting typical pain syndrome, even in intact coronary arteries, is a high-risk marker [24]. In his article, Bugiardini (2010) summarized these data as follows: "nonspecific chest pain syndrome and normal coronary angiography data are not synonymous with good prognosis in women." An interesting fact is that, according to Richards H. M., et al. (2002) even when women had complaints typical of stable angina pectoris, they were still less likely than men to be referred for coronary angiography.

Diagnosis of coronary heart disease in women also presents certain difficulties. Even with a typical pain syndrome (angina), a significant part of them with angiography find unchanged (or with hemodynamically insignificant lesions) coronary arteries(VA). According to the authors, in women more often (in 65% of cases) MI occurs without Q wave and slightly higher ejection fraction (EF) in the first 10 days of the disease [2,7]. When analyzing the depth of myocardial damage in women, it was found that small-focal MI was observed in 65%, large - focal – in 21% and transmural-in 14% of patients. A higher percentage of small-focal myocardial damage is probably due to two reasons: first, the peculiarities of coronary circulation in women (in particular, a significant "depletion" of oxygen in the subendocardial myocardium) and, secondly, a more frequent lesion of small branches of the coronary arteries. Unstable angina pectoris and AMI without ST – segment elevation are more common in women, while acute coronary syndrome (ACS) in the form of AMI with ST-segment elevation is more common in men [2]. Perhaps this is due to the peculiarities of coronary arteries [17].

An important feature of the course of coronary artery disease in women is a more frequent lesion of small, rather than main coronary arteries. Coronary angiography very often reveals intact coronary arteries even in the presence of typical angina pains and reduction of regional blood flow in the myocardium [7]. Angiographic studies have shown that the left coronary artery (LCA) and its anterior interventricular branch in women have a smaller diameter regardless of body size. The collateral network is also less developed, and the diameter of the vessels is smaller. When carrying out coronary ventriculography (CVG) in women, one or two vessels are more often diagnosed, whereas in men, the lesion of the trunk of the LCA or three CA is more often observed [17].

When performing tests with dosed physical activity (DPA) performed on a Bicycle Ergometer or treadmill, their specificity, according to Stangl M., Witzel M., Baumann P., et al. (2008), in women was lower and ranged from 33 to 73%, compared to 74-89% in men. The frequency of false-positive results varied from 25% in typical angina to 50% in atypical pain syndrome [17].

Myocardial ischemia is often painless in the form of the diagnosed with Holter ECG monitoring (HM ECG). In General, the sensitivity of HM ECG is

44-81%, and specificity – 61-85%. Daily ECG monitoring is less informative than samples with DPA. This method is of particular value for the detection of vasospastic angina, and can also be used as a screening in patients with risk factors (RF) and a family history of cardiovascular diseases.

Moreover, menopause itself can be considered as a risk factor for the development of cardiovascular diseases, which causes a number of changes in the woman's body, including abdominal obesity, the emergence of insulin resistance, increased sympathoadrenal tone, hypertension, dyslipidemia, Pro-inflammatory and Pro-atherogenic effects, endothelial dysfunction through the direct influence of estrogen deficiency on the cardiovascular system.

Experimentally (Nofer JR 2012, Wang et al. 2013, Knowlton AA et al. 2014) established the presence of estrogen receptors (ER) on endothelial, smooth muscle cells of the heart and blood vessels, cardiac fibroblasts, and macrophages (MP), monocytes, mast and dendritic cells, components of the renin-angiotensin-aldosterone system (RAAS). The biological effect of estrogen is realized by two main mechanisms: genomic and non-genomic effects through estrogen receptors (ER) -α and-β.

Genomic (slow) effects lead to long-term effects, reducing the response to vessel damage and preventing the development of atherosclerosis. Estrogens, interacting with intracellular ER-α and ER-β, regulating the expression of certain gene complexes, stimulate the synthesis of protein molecules that inhibit the processes of cellular free radical peroxidation. This blocking of tissue oxidative stress protects against endothelial damage. It is proved that ER vessels can be transcriptionally activated without connection with estrogen, and by direct phosphorylation of the receptor by various kinases (ligand-independent activation of the receptor).The non-genomic (fast) effect of estrogens is manifested by dilation of vessels by increasing the synthesis of nitric oxide (NO). In caveola membranes of endothelial cells to estrogen receptors in the process of using proteinkinase phosphorylation cascades activate endothelial NO-synthase [7,8]. Endothelium is the most vulnerable in the CS for various pathogenic effects, being on the border between circulating blood and tissues. One of the main mechanisms of the influence of estrogen on the cardiovascular system and, in particular, on the endothelial cells is the regulation of the synthesis of nitric oxide (NO), which is a potent endogenous vasodilator, causes relaxation of smooth muscles of blood vessels, has anti-inflammatory effect on the endothelium through the inhibition of leukocyte attraction and formation of reactive oxygen species,increases neovascularization through the increase of migration to the ischemic tissue and proliferation of differentiated endothelial cells of blood vessels [9].

According to Grodstein et al. (2007) estrogens have a direct vasodilative effect on arterial vessels, including coronary arteries. The mechanisms of estrogen vasodilatation action differ depending on their dosage: when using high doses through smooth muscle cells of vessels, direct action is detected, and at low doses, vasodilatation is mediated primarily due to changes in the activity of endothelial factors – increase in the formation of nitric oxide, prostacycline, decrease in the synthesis of endothelin-1 and thromboxane B-2 [16].

Estrogens can reduce the level of active vasoconstrictor peptide endothelin-1 and the number of receptors to it, which affects vascular tone [10]. In recent years, data on the positive effect of estrogen on the components of the vascular wall on such characteristics of vascular tone as compliance have been accumulated – index, quantitatively expressing extensibility, which is mainly used by foreign authors) and resistance: inhibition of the processes of vascular wall fibrosis by reducing the synthesis of collagen and elastin in smooth muscle cells, reducing migration and proliferation of smooth muscle cells, inhibition of endothelial cell apoptosis [16]. Estrogens have an anti-apoptotic effect on various cell types, including endotheliocytes by reducing the release of cytochrome C from mitochondria, thus acting through a receptor-independent pathway, it also inhibits the expression of the Fas ligand, affecting the receptor-mediated pathway [12,13].

Examined the effects of estrogen on the cells-precursors of endothelial cells. It was experimentally established that women with high estrogen levels in the blood have a greater number of circulating endothelial progenitor cells [14]. Estrogens have antiarrhythmic and cardioprotective effects, this is due to the non-genomic mechanisms that block the channels of CA L-type exerting a negative inotropic effect [18].

Estrogens increase HDL by 20-30%. This effect is mediated by increasing the production of apolipoprotein AI and reducing its clearance rate [11]. The contents of HDL is directly proportional to the estrogen level and inversely proportional to the content of progesterone [7].

Estrogens reduce HDL-C levels by 10-20% by enhancing receptor elimination of HDL by liver cells [11].

In Europe and Russia, the most common scale of risk assessment SCORE (SystematicCoronaryRiskEvaluation), and the U.S. – Fremingham risk scale (FraminghamRiskScore). It is shown that when using the Fremingham scale, taking into ac-

count age, hypertension, Smoking, diabetes and hyperlipidemia, the majority of middle-aged people are classified as patients with low or moderate risk, and > 3/4 women under 80 years have a 10-year Fremingham risk of CVD < 10%, which does not accurately reflect the situation [9]. Therefore, experts are increasingly stating the need for cardiological studies with a wider inclusion of women, and that it is necessary to take into account the specific risk factors for women in the prognosis of CVD in women.The Reynolds risk assessment algorithm (ReynoldsRiskScore) was developed specifically for the assessment of cardiovascular risk in women in the United States.The main difference between this scale and the fremingham scale Is the inclusion of family history data on CVD and levels of highly sensitive C-reactive protein, as well as accounting for the level of glycated hemoglobin in patients with diabetes mellitus. When using this scale in a study of Women sHealthStudy 15% of women with moderate risk were reclassified in patients with a high risk [31,32].

The list of traditional risk factors in men and women is the same, but some of them are Smoking, type 2 diabetes and hypertension, women are more important than men [5]. An interesting fact is that Smoking more than 5 cigarettes a day helps to reduce the level of estrogen and in this way launches another, specific for women, risk factor – hypoestrogenemia. According to Nurse'shealthstudy, when Smoking up to 14 cigarettes a day, the relative risk of coronary heart disease is 2.1, and when Smoking up to 25 cigarettes – increases to 6. It should be noted that menopause is not the only risk factor for coronary heart disease, specific for women. These factors include preeclampsia, diabetes in pregnant women, polycystic ovary syndrome, androgen levels after menopause.

Without a doubt, surgical and early menopause of other Genesis are important, modifiable risk factors. Now the role of such factors as metabolic disorders in pregnancy and childbirth, late pregnancy is considered. Of particular importance in women is the level of C-reactive protein (CRP) and the early appearance of cardiovascular disease in the family (for women – before 65 years). At the moment, risk assessment systems specific to women are proposed. Most famous among them are the system Reynold (ReynoldsRiskScore) and is specific to women scale obtained from the analysis of survey data WHI (WomenHealthInitiative) [23].

The identification and control of risk factors (FR) is essential as a preventive measure to reduce the level of CVD in both women and men. Due to the fact that the prevalence of RF remains quite high in the population, this is the basis for the widespread introduction of measures for their primary and secondary prevention.

Unmodified RF include: sex, age (older than 45 years in men and older than 55 years in women), burdened hereditary history (early onset of coronary artery disease in close relatives: myocardial infarction or sudden death in men < 55 years, in women < 65 years).

The main modified RF include: dyslipidemia, hypertension, Smoking, impaired glucose tolerance or type 2 diabetes,abdominal obesity, low physical activity.

It is advisable to consider in more detail the most significant CVD risk factors. According to who, three RF plays a significant role in the development of premature mortality from CVD: the first most important RF -arterial hypertension (AH) in menopause is one of the most important but modifiable risk factors (RF) for CVD [25]. According to the data of the S. Wassertheil-Smoller et al., the prevalence of hypertension in postmenopausal women is about 40%, while in women aged 65 years and older its frequency is 3 times higher compared to women 45-54 years. With the exception of the influence of other risk factors (age, violation of fat and carbohydrate metabolism, overweight), the onset of menopause increases the risk of hypertension by almost 2 times. Before menopause, hypertension occurs much less frequently in the female population than in men, which is to some extent explained by the multidirectional effects of testosterone and estrogen on the cardiovascular system [1].

Hypertensive syndrome is observed in 15-30% of pregnant women, which not only causes serious complications during pregnancy and childbirth, but also has an adverse effect on the long-term prognosis in the mother. The development of preeclampsia during pregnancy is a specific risk factor for CVD in women [7].

Deficiency of sex hormones disrupts the function of the vascular endothelium and the balance between different vasoactive substances, the functioning of smooth muscle cells of blood vessels, leading to an increase in peripheral vascular resistance and, as a consequence, the level of blood pressure (BP).The presence of arterial hypertension in a woman at the time of menopause significantly increases the likelihood of developing diastolic dysfunction of the left ventricle. Left ventricular diastolic dysfunction occurs in half of patients with early menopause and in 3/4 patients with late menopause [26].

For hypertension in premenopause characterized by: activation of the sympathoadrenal system, hyperkinetic state of blood circulation, clinical manifestations of autonomic dystonia, the prevalence of

increased systolic blood pressure with a moderate increase in diastolic blood pressure. For hypertension in pre - and postmenopausal characterized by universal mechanisms: the gradual development of menopausal metabolic syndrome, delay in the body of sodium chloride and water.Postmenopausal hypertension is characterized by gradual progressive activation of the components of the renin-angiotensin-aldosterone system, transformation of the type of blood circulation into hypokinetic, increase in total peripheral resistance, a significant increase in systolic and diastolic blood pressure, and in older age groups – isolated systolic hypertension.

Complications of hypertension occupy the first place in the structure of mortality in the female population. In women older than 45 years, more often than in men, hypertension is detected with a predominance of isolated increase in systolic blood PRESSURE. Another equally important factor is dyslipidemia, a recognized risk factor for CVD in both women and men. It is known that hyperinsulinemia during menopause affects the activity of lipoprotein lipase, and in the case of RI, the level of non-esterified fatty acids increases, which contributes to enhanced Tg synthesis and a decrease in HDL levels. These and other changes in the spectrum of lipoproteins are well known in perimenopausal women: along with hypertriglyceridemia, there was an increase in total cholesterol, HDL and lipoprotein-(a) subfraction (LP(a)), a decrease in HDL, especially in the 2nd subfraction.

In addition, estrogen-deficient "unoccupied" estradiol estrogen receptors located in the endothelium promote the introduction of HDL into the vascular wall [27]. At the same time, low levels of HDL and hypertriglyceridemia are more significant risk factors for CVD, in particular CHD, for postmenopausal women than for men [26]. Jensen J. et al. specify that the levels of total cholesterol, low-density lipoproteins most significantly increased after 6 months after the termination of menstruation, the level of high-density lipoproteins decreases for 2 years before menopause. However, elevated levels of cholesterol and HDL are important risk factors for heart disease in men but not in women, while low HDL levels and high levels of TG, Smoking and hypercholesterolemia are considered to be more important risk factors in women [9].

The third RF is Smoking.The prevalence of tobacco Smoking among modern women is high, while there is an Association of Smoking with an earlier onset of menopause and a decrease in the density of estrogen receptors on the cells of some tissues. The frequency of tides among smokers is directly correlated with the number of cigarettes smoked. It is known that Smoking contributes to the development of endothelial dysfunction, various hemorheological disorders and dyslipidemia, increases the production of free radicals [26]. It is proved that Smoking contributes to the development of oxidative oxidative stress, which is manifested by the activation of lipid peroxidation processes with an increase in the content of oxidized HDL in the blood, a decrease in the enzyme paraoxonase that protects lipoproteins from oxidative modification. Due to structural damage of endothelium by toxins and free radicals of tobacco smoke, endothelium-dependent vasodilation of peripheral and coronary arteries is disturbed.A study conducted among young women (16-44 years), showed that Smoking 3 to 6 cigarettes a day the risk of death from THEM they doubled. For women and men Smoking 20 cigarettes a day, the risk of CONTRACTING it increased by 6 and 3 times, respectively, compared to non-smokers [22].

Along with dyslipidemia, another risk factor-increased body weight and obesity-is of great importance.The tendency of women after menopause to increase the proportion of adipose tissue in the body-a known fact. Abdominal obesity is a recognized independent risk factor for CVD because it is associated with insulin resistance and is closely related to accelerated atherogenesis [26]. The framingham study found a twofold increase in the risk of coronary heart disease in obese women, compared with women without it. The study "Nurseshealth-Study" showed an increase in the risk of coronary heart disease in 2-3 times in women with obesity, compared with those with normal body weight. This risk persists even when other risk factors are controlled [28].Weight gain is observed in 75-80% of women with the beginning of perimenopause, especially expressed in postmenopause. According to Shestakova (2001), in women aged 52.6ұ5.3 years, the increase in body weight is 5-24kg (9.7ұ4.2 kg) compared with reproductive age. According to data from M. J. Toth et al.(2000) the character of fat deposition in menopause does not depend on the age and degree of obesity, but depends only on the cessation of ovarian function: already in early postmenopause,the volume of fat in the hips is 36% more, and the volume of intraabdominal fat is increased by 49% compared to women, whose ovarian function is preserved. Obesity in menopause is accompanied by a decrease in weight that does not contain fat,including muscle tissue. Studies using dual-energy x-ray absorptiometry revealed a progressive decrease in the "low-fat" mass in the body and limbs [27]. Women with abdominal obesity (andromahi) significantly more often suffer myocardial infarction, strokes and die suddenly than women with obesity of the female type (gynecomasty) or

with normal body weight. The appearance of the first clinical signs of CHD in andromorphic women is noted at a young age [28]. Euroaspire demonstrated that visceral obesity (waist circumference over 80 cm in women and 94 cm in men) is more common among women (70%) than among men (46%) suffering from coronary heart disease [19].

One of the most significant RF is diabetes mellitus (DM) and glucose metabolism disorders. Menopause is accompanied by a violation of glucose tolerance: every year after the termination of ovarian function, this probability increases by 6%.

Fremingham study showed that the risk of coronary heart disease in men with diabetes is 2.4 times higher than in men without diabetes, while in women with diabetes this risk is 5.4 times higher than in women without diabetes. In the study "NursheshealthStudy" it was shown that in women with diabetes the overall risk of cardiovascular mortality is 6.3 times higher than in women without diabetes [28]. Elevated fasting plasma glucose levels, impaired glucose tolerance, and type 2 diabetes are common risk factors for CVD in postmenopausal women [26]. Hyperactivity of the sympathetic nervous system observed in menopause causes stimulation of gluconeogenesis, glycogenolysis in the liver, reduces glucose uptake by skeletal muscles, which leads to the development of hyperglycemia and hyperinsulinemia. Hyperinsulinemia leads to the development of insulin resistance, which in combination with hyperglycemia also contributes to the development of endothelial dysfunction. Hyperglycemia, in turn, contributes to the accumulation of end products of glycosylation of proteins in the subendothelial space and activation of free radical processes with an increase in the production of superoxide anions. The end products of glycosylation are atherogenic factors due to their ability to increase endothelial permeability and stimulate smooth muscle cell proliferation [10]. Against the background of diabetes in women, the risk of atherosclerosis increases by 3-4 times, and in men by 2 times. A major European epidemiological study, DECODE, assessed the causes of cardiovascular mortality in women and men with normal blood pressure and hypertension, and in the presence or absence of diabetes. It was demonstrated that the risk of mortality in women was 2 times higher than in men with the combination of hypertension and diabetes mellitus [7].

Pregnancy-a state of physiological insulin resistance, so in itself is a significant risk factor for carbohydrate metabolism. Gestational diabetes mellitus (GDM) is a risk factor for obesity, type 2 diabetes and CVD in mother and offspring in the future. The frequency of gestational diabetes in the General population of different countries varies from 1% to 20%, averaging 7%. These variations are due to differences in the methods of its diagnosis and are directly related to the prevalence of type 2 diabetes in certain ethnic groups. According to the literature, in 20-50% of women who have had GDM, it occurs during subsequent pregnancy, and in 25-75% - 16-20 years after birth develops manifest diabetes [29].

Due to the increase in the life expectancy of women, the increase in the retirement age, as well as the fact that this is the age of realized women who have reached professional heights, are more often in leadership positions and engaged in mental activities, the issue of improving the quality of life of women, as a third of her life falls on postmenopause. One of the most frequent pathologies leading to disability and high mortality of women is CVD. Despite advances in the diagnosis, prevention and treatment of CVD, disability and mortality remain high and tend to increase, particularly among women. In recent years, interest in gender differences in CVD risk factors has attracted the attention of the medical community. The study of risk factors for CVD in women showed the most important role in the development of cardiovascular disease plays a decrease in ovarian function. A comprehensive study of the effect of steroid sex hormones on CS allowed to determine the protective effect of estrogen on it. Analysis of available literature on gender cardiology has shown the need for further study of this problem. The success of its solution largely depends on the consistency in the joint work of gynecologists and cardiologists.

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DIAGNOSTIC ISSUES, DETERMINATION OF INDICATIONS TO THE OPERATION AND RESULTS OF INDIRECT REVASCULARIZATION IN PATIENTS WITH DISTAL LESION OF ARTERIES AND CRITICAL LIMB ISCHEMIA

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Abstract

Aims: *to conduct a complex diagnosis; to clarify the indications for methods of indirect revascularization; to study the surgical treatment results of patients with distal lesions of the arteries and CLI.* ***Objects and methods of study:*** *174 patients aged from 23 to 78 years with non-reconstructive occlusions of the distal arteries and CLI were selected for the study; LSE was performed to stimulate regional hemodynamics for the first group (47 patients); ROT of the tibia and femur was performed for the second group (43 patients); LSE + ROT were performed for the third group (48 patients); The control group consisted of 36 patients with similar pathology who had conventional conservative therapy.* ***Clinical and paraclinical*** *[s.a. skin thermometry; determination of skin saturation with oxygen; Doppler ultrasonography and angioscanning with determination of ABPI; regional systolic blood pressure (RSP); rheovasography with rheographic systolic index definition] studies and MSCT angiography were performed in order to determine the diagnosis of CLI, specify indications for a particular technique of indirect revsacularization, and evaluate the results of treatment.* ***Research results:*** *Research results were rated on the Rutherford R.B scale. The methods of indirect revascularization allowed us to stick to small amputations and, in the majority of patients, to maintain the support functions of the limb and improve the quality of life. At the same time, the best results were obtained with the combined operations of LSE and ROT. It is necessary to clearly define the indications for a particular technique in order to avoid discrediting the methods of indirect revascularization, as an alternative to amputations in case of distal artery occlusion. Correct assessment of the clinical status, regional hemodynamic parameters and MSCT-angiographic semiotics in determining indications for surgery reduces the unsatisfactory results.*

Keywords
obliterating arterial diseases, critical ischemia of the lower limbs, indirect methods of revascularization

Аяқтың критикалық ишемиясына шалдыққан науқастардың артерияларын анықтау, ота жасауға көрсеткіштері, және тікелей емес реваскуляризациялау нәтижелері

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Аңдатпа

Мақсаты: *Аяқтың критикалық ишемиясына шалдыққан аурулардың артерияларын хирургиялық емдеу нәтижелерін зерделеу және тікелей емес реваскуляризациялау әдістеріне көрсеткіштерін кешенді диагностикалау, анықтау.* ***Материал және зерттеу әдістері.*** *Аяқтың критикалық ишемиясына шалдыққан аурулардың дистальды артерияларының реконструкциялауға келмейтін окклюзиясымен 23 жастан 78 жасқа дейінгі жас мөлшеріндегі ауруларға қатысты зерттеулер жүргізілді. Регионарлық гемодинамикасын стимуляциялау үшін 47 ауруында (бірінші топ) ПСЭ жасалды, 43 ауруында (екінші топ) – үлкен жіліншік пен ортан жілік сүйектерінде РОТ жасалған, 48 ауруында (үшінші топ) – ПСЭ + РОТ жасалған. Бақылау тобында ұқсас сырқаттарына шалдыққан 36 ауру үшін жалпы қабылданған консервативті ем жасалған. Аяқтың критикалық ишемиясына шалдыққан аурулардың диагнозын анықтау, тікелей емес реваскуляризациялаудың қандай да болса әдістерінің көрсеткіштерін анықтау және емдеу нәтижелерін бағалау үшін клиникалық пен параклиникалық (тері термометриясы, оттегімен терінің сатурациясын анықтау, ангиосканерлеуі және жатқан, тұрған түрінде ЛПИ, РСД анықтау, ГРСД, реографиялық индексі-РИ реовазографиялауымен], зерттеулер мен МСКТ –ангиография сияқты аталмыш әдістері жүргізілген.* ***Нәтижелер:*** *зерттеу нәтижелері Rutherford R.B. et.al. бағанасы бойынша бағаланған. Тікелей емес реваскуляризациялау әдістері шағын ампутациялармен шектелуге мүмкіндік берді және де көптеген ауруларда аяқтарының тірек функцияларын сақтап қалуға және де өмір сүруін жақсартуға мүмкіндік берді. Сонымен, ең жақсы нәтижелер ПСЭ мен РОТ оталарын аралас жасау кезінде алынған. Артериялардың дисталды окклюзиясы кезінде ампутацияға балама ретінде тікелей емес реваскуляризациялау тәсілдерін дискретитациялауды болдырмау үшін сол немесе өзге әдістің көрсеткіштерін нақты анықтау қажет. Ота жасауға көрсеткіштерін анықтау кезінде регионарлық гемодинамика және МСКТ-ангиографиялық семиотикасының клиникалық статусын, көрсеткіштерін дұрыс бағалау қанағаттанарлықсыз нәтижелерді азайтуға мүмкіндік береді.*

Түйін сөздер
артериялардың бітегіш (облитерациялайтын) аурулар, аяқтың сыни ишемиясы, тікелей емес реваскуляризациялау әдістері

Вопросы диагностики, определения показаний к операции и результаты непрямой реваскуляризации у больных дистальным поражением артерий с критической ишемией нижних конечностей

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Аннотация

Цель: *проведение комплексной диагностики,уточнение показаний к методам непрямой реваскуляризации и изучение результатов хирургического лечения у больных дистальным поражением артерий с КИНК.* ***Материал и методы исследования.*** *Исследования проводились у 174 больных в возрасте от 23 до 78 лет нереконструктабельными окклюзиями дистальных артерий с КИНК. Для стимуляции регионарной гемодинамики у 47 больных (первая группа) проводилась ПСЭ, у 43 больных(вторая группа) - РОТ большеберцовой и бедренной кости, у 48 больных(третая группа) – ПСЭ + РОТ. Контрольную группу составили 36 больных с аналогичной патологией, у которых проводилась общепринятая консерватиная терапия. Для установления диагноза КИНК , определения показания к той или иной методике непрямой ревсакуляризации и оценки результатов лечения проводились клинические и параклинические [кожная термометрия, определение сатурации кожи кислородом ультразвуковая допплерография с ангиосканированием и определением ЛПИ, РСД лежа и стоя, ГРСД, реовазография с определением реографического индекса-РИ] исследования и МСКТ – ангиография.* ***Результаты:*** *результаты исследования оценивались по шкале Rutherford R.B. et.al. Методы непрямой реваскуляризации позволили ограничиться малыми ампутациями и у большинства больных сохранить опорные функции конечности и улучшить качество жизни. При этом, наилучшие результаты получены при сочетанном проведении операций ПСЭ и РОТ. Для исключения дискредитации способов непрямой реваскуляризации, как альтернатива к ампутациям при дистальной окклюзии артерий необходимо четко определить показания к той или иной методике. Правильная оценка клинического статуса, показателей регионарной гемодинамики и МСКТ-ангиографической семиотики при определении показаний к операции позволяет уменьшить неудовлетворительные результаты.*

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Ключевые слова
облитерирующие заболевания артерий,критическая ишемия нижних конечностей, непрямые методы реваскуляризации

Actuality

Chronic obliterative arterial diseases of the lower limbs are and still remain an actual problem of modern angiology and vascular surgery. From 3 to 7.5% of the population in Russia is affected by this pathology. (4.8,) Within 5 years after the onset of the first signs of the disease, critical limb ischemia (CLI) develops in 5% of patients (7). CLI is a severe pathology and is characterized by a high level of disability and mortality (15). According to L.A. Bokeria et al. (2) CLI develops in 30-40% of patients with chronic obliterative arterial diseases of the lower limbs. The frequency of CLI, according to TASK II, is 500-1000 cases per 1 million of population per year (13). Only in 50% of patients with KIHC, it is possible to perform revascularization operations, 25% of patients undergo primary amputation of the hip and tibia, and the remaining patients undergo conservative treatment (13). However, the existing methods of conservative therapy are ineffective, since during the first 6 months, 60% of patients undergo a high-level lower-limb amputation (5.9). In 25% of cases, a primary amputation of the lower limb is performed for the patients with CLI without preliminary revascularization (1.13). It was recorded that 20-25% of patients with CLI who undergo hip and tibia amputation die during the first year, and about 70% of patients die within 5 years (11,12).

The methods of conservative and surgical treatment of CLI are improving every year because of the advances in medical science and technology. According to the national guidelines for the management of patients with lower limb artery diseases (6), performing direct revascularization is the best treatment for CLI. Among direct revascularizing surgical interventions, there are open (autologous and synthetic shunting, endarterectomy); endovascular (balloon angioplasty, stenting, atherectomy, the use of lasers and cutting balloons, high-temperature angioplasty, fibrinolysis, thrombectomy); hybrid (endovascular + open) operations. Nevertheless, the problem of limb preservation and the choice of tactics for treating patients with CLI is still considered as unsolved. The most difficult group consists of patients with atherosclerotic lesions of the popliteal-tibial segment and the lack of adequate outflow pathways. These circumstances preclude the implementation of direct revascularization.

The circumstances that were mentioned above, as well as the presence of severe concomitant pathologies, high surgical anesthetic risk are indications for performing indirect revascularization in CLI. Indirect methods of indirect revascularization include lumbar sympathectomy, arterialization of the venous bed, greater omentun autotransplantation, microvascular autotransplantation of a skin-muscular flap, a compacttomy by means of the Ilizarov technique, resection of the posterior tibial veins with arterio-venous anastomosis ligation, revascularizing osteotrepanation. In clinical practice,

lumbar sympathectomy and revascularizing osteotrepanation alone and in combination are most often used for the development of collateral circulation and stopping CLI (3,10).

Nowadays, there are no uniquely accepted criteria for diagnostic methods in order to choose one or another method of revascularization, to assess the effectiveness of stopping the CLI. Clinical and instrumental diagnostic methods have drawbacks, since the results of some researchers often disagree with the data of studies of other authors (3.11).

Thus, patients with CLI require a detailed study of macrohemodynamics and microcirculation of the affected limb. Considering the lack of effect after performing indirect revascularization in a certain percentage of patients with CLI, it is necessary to optimize diagnostic methods and clarify the indications for performing one or another method of indirect revascularization in persons with distal lesions of the peripheral vascular bed without adequate outflow paths.

Aims

to conduct a complex diagnosis; to clarify the indications for methods of indirect revascularization; to study the surgical treatment results of patients with distal lesions of the arteries and CLI.

Material and methods

Studies were conducted in 174 patients aged from 23 to 78 years with non-reconstructive occlusions of the distal arteries with CLI, who were hospitalized at the department of vascular surgery in 2003-2013. All patients were diagnosed with III-IY degree of chronic ischemia according to the Fonteine-Pokrovsky classification. Until 2010, the diagnosis of KIHK and the determination of indications for one or another method of indirect revsacularization were carried out mainly on the basis of complaints, anamnesis, clinical examination and paraclinical [s.a. skin thermometry, determination of oxygen saturation of the skin ("Bionet Model: BM5"), Doppler ultrasonography with angiography and determination of ankle-brachial index (ABI), regional systolic pressure (RSP), in the position of lying and standing, gradient regional systolic pressure (GRSP) ("Sonoace Pico "), rheovasography with rheographic systolic index definition] studies. However, because of the lack of logistical support, angiography was performed only in some patients. Since 2010, MSCT angiography is performed at clinic on the tomograph "Somatom Definition AS 64" manufactured by Simens in order to establish the diagnosis and study the state of regional macrohemodynamics and collateral circulation, as well as Minimax-Doppler-K apparatusis used to study the foot micromax circulation.

For the surgical treatment of patients with distal lesions of the arteries and CLI were performed the lumbar sympathectomy (LSE) under the endotracheal anesthesia in the first group (47 patients), the revascularizing osteotrepanation (ROT) of the tibia and femur under the epidural anesthesia in the second group (43 patients), LSE + ROT under the endotracheal and epidural anesthesia in the third group (48 patients). Conventional conservative therapy that had been adopted in the department of vascular surgery was performed in the control group which consisted of 36 patients with similar pathology.

Results and discussion

Complex preoperative preparation was carried out for 3-5 days before the operation, including drug therapy, long-term epidural blockade (LEB) and intravascular laser therapy (HH). LEB and IVLT were continued for 4-5 days in the postoperative period. LEB was performed by catheterization of the epidural space between L3-L4 or L4-L5 with the injection of 2% - 6 ml of lidocaine every 6 hours. IVLT was carried out with the "Mustang2000 +" device (the length of the wave was 0.63 em, the radiation power at the end of the quartz fiber was 5 mW, the exposure time was 30 min).

Complex preoperative preparation led to a decrease in the intensity of pain, static limb edema, normalization of the patient's sleep, subsidence of the inflammatory reaction, warming of the skin (according to thermometry), and restriction of the necrotic process on the legs and foot. These data testify to the mobilization of collateral blood flow and microcirculation in the ischemic limb even before the operation of indirect revascularization, which creates favorable conditions for carrying out LSE, revascularizing osteotrepanation on the tibia. Positive dynamics in terms of ABI, an increase in RSI, skin saturation with oxygen during the preoperative preparation period and an increase in these indicators after operations of indirect revascularization also objectively indicated mobilization of collateral blood flow and microcirculation in the affected limb. The increase in microcirculation is also registered by the study of microcirculation on the dorsum of the foot with the ultrasonic medical diagnostic device "Minimax-Doppler-K".

In the control group, the regression of clinical symptoms was very slow, only thing that was detected is the tendency to improve regional blood flow and microcirculation at the level of the leg and foot.

Mark	Effectiveness	Control group (n= 36)	First group (n = 47)	Second group (n = 43)	Third group (n = 48)
+3	Significant improvement	-	-	-	-
+2	Moderate improvement	8(22,2%)	30(63.8%)	26(60,5%)	34(70,8%)
+1	Minimal improvement	12(33,3%)	11(23.4%)	9(20,9%)	9(18,8%)
0	Without changes	4(11,1%)	-	-	-
-1	Minimal deterioration	-	-	-	-
-2	Moderate deterioration	7(19,4%)	6(12,8%)	6(13,9%)	5(10,4%)
-3	Significant deterioration	5(13,9%)	-	2(4,7%)	-

Table 1.
Evaluation of the results of indirect revascularization in the studied groups with CLI

In the first and third groups, the necrotic wounds on the fingers and foot healed, in some cases a small amputation was performed - amputation or exarticulation of the fingers, transmetatarsal amputation of the foot, respectively, in 6 (12.8%) and 5 (10.4%) patients. In the second group, 2 (4.75%) patients underwent a large amputation at the level of the shin, 6 (13.9%) had a small amputation, and in the remaining patients, the necrotic wound healed. In the control group, 5 (13.9%) patients underwent a large amputation at the level of the hip and shin, and 7 (19.4%) underwent a small amputation.

The results of the effectiveness of treatment in the studied groups of patients were evaluated according to the R.B. Rutherford et al. (14) and shown in the table.

In retrospect, we analyzed the dependence of the results of indirect revascularization techniques on clinical status, indicators of instrumental methods of research and MSCT angiography. At the same time, it was clinically revealed that the continuation of swelling and ischemic pain, the absence of regression of the inflammatory and the necrotic process, warming of the skin in the distal part of the affected limb, the absence of positive dynamics in the indicators of skin saturation with oxygen during the preoperative preparation, as well as pronounced changes in soft tissues upon admission of patients to the clinic negatively affect the results of surgical treatment. With baseline values of ABI below 0.32-0.30 units, RSBP lying below 50-40 mm Hg, RSBP standing below 110-90 mm Hg, HRSBP above 2.0-2.5 units, RI below 0.18 -0.20 units we observed a moderate or significant deterioration in the results on the Rutherford RB scale et al., after operations of indirect revascularization.

The insertion of MSCT angiography into clinical practice has improved the diagnosis of obliterating arterial diseases, including in the stage of critical ischemia. A complete picture of the main and collateral circulation of blood, the state of small arteries in the distal part of the limb, made it possible to clearly define the indications for a particular method of indirect revascularization. Comparing clinical and angiographic data with the results of operations of indirect revascularization, we came to the conclusion that with occlusion of the femoral-poplite-hip region of the arterial segment, with occlusion of all three arteries of the shin on the full length, with profound changes in the soft tissues of the limb (especially in patients with sugar diabetes) indirect revascularization has proven to be ineffective. In varying degrees, improvement after indirect revascularization was observed: with occlusion of the superficial femoral artery with contrasting popliteal artery through the branches of the deep external pudendal artery of the thigh and with steno-occlusion of the tibial arteries; with occlusion of the femoral-popliteal segment with the presence of collateral blood flow in the arteries of the shin; when blood flow is saved in at least one of the arteries of the shin; with multi-stage occlusion of the arteries of the shin with contrasting of individual segments on the middle, lower third of the shin and foot.

Conclusions

1. When determining indications for indirect revascularization operations, it is necessary to take into account the changes in the soft tissues of the distal part of the limb, the degree of impairment of regional hemodynamic parameters (ABI, RSP lying, RSP standing, RSPG) and angiographic semiotics according to MSCT – angiography.
2. Unreasonable indications for one or another method of indirect revascularization lead to discredit and rejection of these operations, although LSE, ROT and LSE + ROT are alternatives to amputation of the limb with non-reconstructive distal artery disease.
3. Indirect revascularization operations that were performed according to clear indications help to preserve the support function of the limb and improve the quality of life in patients with distal steno-occlusion of arteries with CLI.

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COMPLEX TREATMENT OF ACUTE CHOLECYSTITIS USING LASER TECHNOLOGY IN ELDERLY PATIENTS

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Abstract

Purpose of work. *To evaluate the effectiveness of using different variants of low-energy laser therapy in the complex treatment of complicated acute cholecystitis in elderly and senile patients. The work is based on the data of examination and treatment of 43 patients with complicated acute calculous cholecystitis hospitalized for treatment in the clinical base of the Institute of Surgery. Academician M. Topchibasheva and FSBI (SRC Laser medicine.O. K. Skobelkin)* ***Material and methods.*** *All patients with the confirmation of acute destructive calculous cholecystitis and the impossibility of performing cholecystectomy due to the severity of the General condition and the presence of concomitant diseases were performed under the control of ultrasound through the skin transhepatic drainage of the biliary tract. Patients depending on the method of postoperative treatment were divided into 2 groups - main (20 people) and control (23 patients).* ***Results.*** *In the main group of patients after the use of intra-irradiation of bile and ILIB shifts were more significant-the level of SM in the blood decreases by 30.2%, LII-by 34.6%, and the level of MA and CE decreased by 32% and 21.4%, respectively. Catalase activity increased by 60.2% and peroxidase - by 30%.* ***Conclusion.*** *These studies have shown that the addition of postoperative complex drug therapy with sessions of intraflow laser irradiation of bile through drainage and intravenous laser irradiation of blood after PPP drainage of the bile ducts in elderly patients with acute complicated calculous cholecystitis is an effective method to stop the inflammatory phenomena in the gallbladder and ducts.*

Keywords
cholecystitis, laser

Егде жастағы науқастарды лазерлі технологияны қолдану арқылы жедел холециститті кешенді емдеу

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Аңдатпа

Жұмыстың мақсаты. *Қарт және егде жасындағы пациенттерддің асқынған жедел холециститті кешенді емдеуде төмен энергетикалық лазер терапиясының түрлі нұсқаларының қолдануының тиімділігін бағалау. Академик М.Топчибашев атындағы және ФМАБ («Лазер медицинасы» ҚҰО, О. К. Скобелкин) Хирургия институтының клиникалық базасына ауруханаға жатқызылған асқынған жедел калкулезді холециститке шалдыққан 43 аурудың денсаулықтарын тексеру және емдеу деректеріне осы жұмыс негізделген.* ***Материал мен әдістер.*** *Расталған жедел деструктивтік калкулезді холециститке шалдыққан және холецистэктомияны орындауға болмайтын барлық пациенттерге жалпы жағдайының ауырлығына және ілеспе ауруларының болуына байланысты, өтшығу жолдарының ультрадыбыс арқылы зерттеуі жүргізілген. Пациенттер отадан кейінгі емдеуден кейінгі әдістеріне қарай, 2 топқа бөлінген – негізгі (20 адам) және бақылау (23 пациент).* ***Нәтижелер.*** *Өттің интра-сәулендіруді және ИЛИБ-ті қолданғаннан кейін негізгі топта жылжулары айтарлықтай болды - қандағы SM деңгейі 30,2%-ға, LII - 34,6%-ға төмендеген, ал МА және СЕ 32 % және 21,4%-ға төмендейді. Каталаздың белсенділігі 60,2%-ға, ал пероксидаздар - 30%-ға ұлғайған.* ***Қорытынды.*** *Жедел асқынған холециститке шалдыққан қарт пациенттердің өтшығу жолдарын РРР-кәріздеуден кейін қанды тамыр ішінде лазер арқы сәулелендіру және дренаж арқылы ішкі ағым лазер арқылы сәулендіру сеанстарымен отадан кейінгі кешенді дәрі-дәрмек арқылы емдеуден кейін толықтыруы өтшығу жолдары және түтікте қабыну құблыстарын тоқтатудың тиімді әдісі болып табылғандығын зерттеу көрсеткен.*

Түйін сөздер
холецистит, лазер

Комплексное лечение острого холецистита с использованием лазерных технологий больных пожилого возраста

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Аннотация

Цель работы. *Оценить эффективность использования различных вариантов низкоэнергетической лазерной терапии в комплексном лечении осложненного острого холецистита у пациентов пожилого и старческого возраста. Работа основана на данных обследования и лечения 43 больных с осложненным острым калькулезным холециститом, госпитализированных для лечения в клиническую базу Института хирургии имени академика М. Топчибашева и ФГБУ (ГНЦ Лазерная медицина, О. К. Скобелкин).* ***Материал и методы.*** *Всем пациентам с подтвержденным острым деструктивным калькулезным холециститом и невозможностью выполнения холецистэктомии в связи с тяжестью общего состояния и наличием сопутствующих заболеваний проводили ультразвуковое исследование желчевыводящих путей. Пациенты в зависимости от метода послеоперационного лечения были разделены на 2 группы - основную (20 человек) и контрольную (23 пациента).* ***Результаты.*** *В основной группе пациентов после применения интра-облучения желчи и ИЛИБ сдвиги были более значительными - уровень SM в крови снижается на 30,2%, LII - на 34,6%, а уровень MA и CE снижается на 32 % и 21,4% соответственно. Активность каталазы увеличилась на 60,2%, а пероксидазы - на 30%.* ***Выводы.*** *Исследования показали, что дополнение послеоперационной комплексной медикаментозной терапии с сеансами внутрипотокового лазерного облучения через дренаж и внутривенное лазерное облучение крови после РРР-дренирования желчных протоков у пожилых пациентов с острым осложненным калькулезным холециститом является эффективным методом остановить воспалительные явления в желчном пузыре и протоках.*

Ключевые слова
холецистит, лазер

Introduction.

The incidence of acute cholecystitis (AH) is increasing, especially among elderly and senile patients, whose share in the structure of this pathology reaches 65% (1,5,12), which determines the significance of the problem. In recent years, close attention of surgeons is focused on the issue of improving the results of treatment of elderly patients with the most common pathology - acute cholecystitis (6,7). New prospects for radical surgical treatment of patients with cholecystitis appeared due to the introduction of low-traumatic operations into clinical practice: laparoscopic cholecystectomy and cholecystectomy from mini-access (1,7,11,17). A feature of the manifestations of acute cholecystitis in the elderly and senile age is the rapid formation of destructive forms with the development of homeostasis disorders and multiple organ dysfunction, up to irreversible organ failure (7, 14). Therefore, intensive complex medical therapy in this category of patients after performing various options of surgical treatment is extremely important for recovery.

Contraindications to cholecystectomy AH in patients of elderly and senile age against the backdrop of severe intercurrent diseases often surgeons are forced to use respectacle percutaneous gall bladder drainage (4,6,15). Minimally invasive interventions with radiation navigation in AH can be a method of choice in geriatric and problem groups of patients because they have undoubted advantages over laparoscopic cholecystostomy (2,10). Methods of complex minimally invasive treatment of complicated acute calculous cholecystitis (1,3,11) require further development, as many issues of tactics and methods of treatment remain unresolved, and the results are not quite satisfactory. To date, there are unresolved issues of choosing the timing of various methods of operation, methods of minimally invasive surgery using laser technology, depending on the clinical form and nature of complications of acute cholecystitis.

One of the common complications of acute calculous cholecystitis is cholangitis, which is always accompanied by endotoxicosis of varying degrees. Taking into account the antibacterial effect of laser radiation, as well as the potentiation of the antibacterial action of antibiotics and a positive effect on the rheological properties of bile, it is advisable to Supplement the basic complex therapy of acute cholecystitis with low-energy laser radiation, in particular simultaneously conduct ILIB (Intravenous laser irradiation of blood) and intravesical exposure of bile (IEB) through the drainage.

Purpose of work

To evaluate the effectiveness of using different variants of low-energy laser therapy in the complex treatment of complicated acute cholecystitis in elderly and senile patients.

Materials and methods

The work is based on the data of examination and treatment of 43 patients with complicated acute calculous cholecystitis hospitalized for treatment in the clinical base of the Institute of Surgery. Academician M. Topchibasheva and FSBI (SRC Laser medicine.O. K. Skobelkin)

All patients with the confirmation of acute destructive calculous cholecystitis and the impossibility of performing cholecystectomy due to the severity of the General condition and the presence of concomitant diseases were performed under the control of ultrasound through the skin transhepatic drainage of the biliary tract. Patients depending on the method of postoperative treatment were divided into 2 groups - main (20 people) and control (23 patients). In the control group, patients after biliary drainage PPP underwent complex drug therapy. In the main group of patients from the first day after PPP biliary drainage was supplemented with sessions of low-energy laser irradiation of bile through drainage and intravenous laser therapy (ILIB).

Patients with acute complicated calculous cholecystitis were aged from 65 to 88 years, on average 76.8±3.4 years (table 1).

All patients suffered from severe concomitant pathologies, which were a contraindication for radical surgical treatment (table 2).

The most typical concomitant diseases of patients who applied to the clinic were: diabetes mellitus and obesity (17 – main group, 19 - control group), General atherosclerosis with signs of coronary artery disease postinfarction cardiosclerosis (15 - main and 18 – control groups), ADCC (acute disorders of cerebral circulation) (16 and 15) and a significant number of patients suffered from cardiopulmonary and renal failure.

According to the severity of the main and concomitant diseases, age, sex, the examined patients of both groups with complicated acute calculous cholecystitis were comparable.

Through the bladder through the liver (TBTL) drainage was performed after consultation of all necessary specialists, examination by anesthesiologist and appropriate preparation of the patient for the intervention.

Intraductal irradiation of bile was begun through a drain in the first days after crescono - coresidence biliary drainage. For laser irradiation the laser device "Mustang-2000" with laser nozzles "KI ILIB – 405" and disposable quartz monofilament sterile light guides with side holes were used. ILIB began in the first days after percutaneously - through the hepatic biliary drainage. The course of bile irradiation consisted of 3-5 sessions. For carrying out ILIB used laser device "matrix-ILIB" with laser nozzles " KL-ILIB-405 "(firm matrix, g. Moscow) and disposable quartz monofilament sterile fibers with a needle KIVL-01. The following parameters were used in ILIB: radiation wavelength 405 nm, radiation power at the end of the light guide – 1.0 mW, exposure – 10 minutes, the course was carried out 5 – 7 sessions depending on the severity of the condition. All patients tolerated laser treatment well, there were no complications during low-energy laser therapy.

Results

Analysis of the data on the study of shifts in the blood formula, LII(Leukocyte Index Of Intoxication), the main biochemical parameters in the examined groups testified to the advantages of supplementing complex drug therapy with sessions of intra-

Age	Sex.		In total. Amount (%)
	Woman Amount (%)	Man Amount (%)	
65-70 years.	4 (9,3%)	3 (7%)	7 (16,3%)
70-75 years.	9 (20,9%)	4 (9,5%)	13 (30.4%)
75-80 years.	10 (23,2%)	5 (11,5%)	15 (34,7%)
80-90 years.	5 (11.6%)	3 (7%)	8 (18.6%)
In total.	28 (65%)	15 (35%)	43 (100%)

Table 1.
Distribution of patients by sex and age.

Accompanying pathology	Total patients	
	Control group	Major group
Acute disorders of cerebral circulation	16 (69,6%)	15 (75%)
Diabetes, obesity	19 (82,6%)	17 (85%)
Coronary artery disease Myocardial infarction	18 (78,3%)	15 (75%)
Cardiopulmonary failure	12 (52,2%)	13 (65%)
Renal-hepatic insufficiency	10 (43,5%)	10 (50%)
Chronic nonspecific lung diseases	11 (47,8%)	9 (45%)

Table 2.
The distribution of patients according to comorbidities

flow irradiation of bile through drainage and ILIB , although depending on the clinical form of acute cholecystitis and the degree of endogenous intoxication, the results differed.

Endogenous intoxication syndrome is accompanied by activation of Lipid peroxidation (LP), inhibition of the antioxidant defense system, with the accumulation of highly toxic intermediate and final products of lipoperoxidation circulating in the blood of patients.

In the control group of patients, where patients underwent TBTL biliary drainage and basic drug therapy, we noted a decrease in Malonic dialdehyd (MA) by 11.4%, Clem's engine (CE) - by 5.3%, LII and SM - by 18.4% and 23.2%, respectively. Increased catalase activity was 24%, peroxidase -16.4%.

In the main group of patients after the use of intra-irradiation of bile and ILIB shifts were more significant-the level of SM in the blood decreases by 30.2%, LII-by 34.6%, and the level of MA and CE decreased by 32% and 21.4%, respectively. Catalase activity increased by 60.2% and peroxidase - by 30%.

After 5 sessions the analyzed parameters were normalized, while in the control group the analyzed parameters improved, but did not reach the norm. In the control group, normalization of the studied parameters of LP and antioxidant protection was noted only for 8-10 days.

The studies have shown that the potentiation of complex drug therapy with low-energy laser therapy in elderly patients with complicated acute calculous cholecystitis has reduced the duration of inpatient treatment for 3-5 days.

Conclusion

These studies have shown that the addition of postoperative complex drug therapy with sessions of intra-flow laser irradiation of bile through drainage and intravenous laser irradiation of blood after PPP drainage of the bile ducts in elderly patients with acute complicated calculous cholecystitis is an effective method to stop the inflammatory phenomena in the gallbladder and ducts, as well as endogenous intoxication syndrome and thereby reduce the mortality and length of stay of patients in hospital. Our results indicate the effectiveness and feasibility of low-energy laser therapy in complicated acute calculous cholecystitis in elderly and senile patients.

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THE EFFICIENCY OF THE DIAGNOSTIC ALGORITHM IN IDENTIFYING THE NATURE OF NODULATION IN THE THYROID GLAND

МРНТИ 76.29.37

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Abstract

We recruited 100 patients with a diagnosis of thyroid diseases (TD) 72(72%) of them were women, 28(28%) – men. Clinical-laboratory investigations have been performed according to the generally accepted methods. All of patients underwent USI. During fine needle aspiration biopsy (FNAB) of thyroid tumors ultrasonic direction (location, position) may play an important role for the control of the material obtained. The most characteristic ultrasound signs of focal changes in the thyroid gland, indicating the possibility of their malignant nature, are: irregular knot shape (75%); uneven borders (81%); fuzzy outlines (72%); gipoehogenicity (83%); (87,0), the presence of hyperechoic inclusions (25%), microcalcinates in 17% of cases. The sensitivity of ultrasound in the diagnosis of thyroid nodules is 91%, the specificity is 76% and the diagrotic accuracy reaches 88%. With metastases in the regional lymph nodes of the neck, sensitivity of ultrasound is 82%, specificity is 85% and diagnostic accuracy is 79%. Conducting a fine needle aspiration biopsy under the control of ultrasound in 93% allows us to obtain informative material for cytological research. The histological accuracy of the TIAB is 85%. The conducted study in patients with nodal formation of the thyroid gland in the preoperative period in 15% of cases is not able to accurately determine the nature of the pathological process.

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Keywords
nodular formation of the thyroid gland, efficiency of examination methods

Қалқанша безінің түйінді түзілісінің сипатын анықтауда диагностикалық алгоритмнің тиімділігі

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Аңдатпа

Зерттеулер қалқаншабез (ҚБ) ауруларымен түйін пайда болған 100 ауруға қатысты жүргізілген. 72(72%) әйел, – 28(28%) ерлер аталмыш зерттеуге қатысты. ҚБ жаңа өсінділері 604 ауруда анықталған (аденома - 177, кисталар мен киста тәрізді түйіндер - 281, обыр дерті - 146). Клиникалық-зертханалық зерттеулер жалпы қабылданған әдістерімен жүргізілген. Барлық ауруларға ультрадыбыс арқылы зерттеулер жасалған. УД ҚБ өсінділерін жіңішке ине арқылы биопсия жасаған кезінде – инені бағыттап енгізу иненің қалай қадалғанын бақылап тұруға болады және де алынатын материалдың ақпараттылығын арттыруға болады. Аурулардың ошақты өзгерістерінің қатерлі түріне нағыз тән екендігін көрсететін ультрадыбыстық белгілері түйіннің бұрыс пішіні (75%); шектері тегіс емес (81%); контурлары анық емес (72%); гипоэхогендігі (83%); құрылымының бірыңғай еместігі (87,0); гиперэхогенді қосылуларының болуы (25%), микрокальцинаттары 17% жағдайында. Қалқанбездің түйінді өсінділерін диагностикалау кезінде УДЗ сезгіштігі 91% жетеді, ерекшелігі -76% және диагростикалық нақтылығы 88% жетті. Метастазалар кезінде мойынның регионарлық лимфотүйінділері УДЗ сезгіштігі 82%, ерекшелігі - 85% және диагностикалық нақтылығы - 79% құрайды. УДЗ бақылауында жұқа инемен аспирациялық биопсияны жасау кезінде 93% жетіп, цитологиялық зерттеу үшін информативті материалды алуға мүмкіндік береді. ТИАБ-тың гистологиялық нақтылығы 85% құрайды. Отаға дейінгі мерзімде қалқанбездің түйінді өсінділерімен зерттеуден өткен 15% оқиғасында патологиялық процессінің сипатын нақты анықтай алмайды.

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Эффективность диагностического алгоритма в выявлении характера узлообразования в щитовидной железе

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Аннотация

Исследования проводились над 100 больных с узлообразованиями заболеваниями щитовидной железы(ЩЖ). Женщин было 72 (72%), мужчин – 28 (28%).Новообразования ЩЖ установлены у 604 больных (аденома- 177, кисты и кистозные узлы-281, рак-146). Клинико-лабораторные исследовании проведены по общепринятым методам. У всех больных выполнен ультразвуковое исследование. При тонкоигольной биопсии образований ЩЖ УЗ - наведение позволяет контролировать положение иглы и повысить информативность получаемого материала. Наиболее характерными ультразвуковыми признаками очаговых изменений ЩЖ, указывающих на возможность их злокачественного характера, являются: неправильная форма узла(75%); неровные границы(81%); нечеткие контуры(72%); гипоэхогенность(83%); неоднородность структуры(87,0);наличие гиперэхогенных включений(25%), микрокальцинаты в 17% случаях. Чувствительность УЗИ при диагностики узловых образованиях щитовидной железы достигает 91%, специфичность-76% и диагростическая точность достигает 88%. При метастазах в регионарные лимфоузлы шеи чувствительность УЗИ составляет 82%, специфичность-85% и диагностическая точность- 79%. Проведение тонкоигольной аспирационной биопсии под контролем УЗИ в 93% позволяет получить информативный материал для цитологического исследования. Гистологическая точность ТИАБ составляет 85%. Проводимые исследование у пациентов с узлообразованием щитовидной железы в дооперационном периоде в 15% случаях не способны точно определить характера патологического процесса.

Ключевые слова

узлообразования щитовидной железы, эффективность методов обследования

Introduction

Among the pathologies of the thyroid gland(thyroid) nodular (multi-nodular) nontoxic goiter is the most common disease [1]. Nodal goiter-a collective clinical concept that combines all palpable education in the thyroid gland, having different morphological characteristics. (2). It is known that at single nodes (especially cold) there is a high incidence of cancer in them - up to 16.1% [3]. Thyroid cancer among the key forms of endemic goiter is found in 27% of cases, (4) Difficulties in recognizing early forms of thyroid cancer in conditions endemic goiter / / thyroid Cancer (prevention and treatment (.5.) Percent advanced cases of thyroid cancer remains large, which is associated with difficulties in diagnosing it in the early stages (6). Opinions on the frequency among the nodes that have a complex structure, extremely controversial, and according to different authors vary from 1 -5% to 39% (7) by one of the most relevant issues of clinical endocrinology is the timely diagnosis of cancer thyroid (thyroid). Despite the fact that malignant tumors of the thyroid gland make up the overall structure of cancer incidence of only 1 -3%, prevalence of thyroid cancer, according to autopsy material, including latent t cancer is significantly higher, and reaches 20%. (8) difficulties of differential diagnostics lead to tactical errors, causing the worst prognosis, and inadequate and unjustified surgery - the recurrence of the disease and multiple repeat surgical procedures increase percentage of complications (9). Considering that the diagnosis of malignant tumor thyroid gland is difficult and in the initial stages of the disease diagnosis error is 50-100 % (10). Ultrasonic research method is one of the leading methods of diagnosis of thyroid disease. For the time being echosemiotics studied the various signs of thyroid disease! However, many researchers believe that using only ultrasound the method is not possible to establish the morphological nature nodules [11,12,13].

In this regard, to increase the diagnostic significance of ultrasound, it is customary to combine with the morphological method of diagnosis, which can serve fine needle puncture aspiration biopsy(FNPA) of thyroid gland (14). Due to this early differential diagnosis of thyroid nodules cancer is of particular relevance. Actively continue to be discussed possibilities of ultrasound and fine-needle aspiration biopsy (FNAB) in verification morphological nature of nodular thyroid diseases (15). Into the present time none of the existing methods of diagnosis does not allow reliable differentiate the nature of the pathological process in the thyroid gland.

Objective

To determine the effectiveness of conventional diagnostic algorithm in comparison with the results of postoperative morphological study of thyroid nodules.

Material and methods

Among 100 patients with female thyroid nodulation there were 72, male patients-28 patients (F:M = 2,6:1). The age of patients ranged from 10 to 75 years (in average 42.7±13.9 years, median 43.9 years). All patients on admission to the clinic was conducted by physical examination with palpation of

thyroid gland and areas of regional outflow's. Specialized examination, in addition to General clinical analyses (blood, urine, ECG, etc.), included the following methods of radiation and non-radiodiagnostics: ultrasound of the neck; FNAB primary tumor of the thyroid gland, and enlarged and/or suspicious for metastases to the regional lymph nodes; flushing from the puncture needle of the lymph node to determination (by radio immunological analysis) of the level of content the tumor-specific tumor marker (thyroglobulin - when DTC, calcitonin - when MTC); the blood analysis on the level of TSH, СвТ4, TG, Tctg, CT (suspicious at MTC); if medically required: scintigraphy, computed tomography of the lungs. Puncture to obtain the material for cytological studies (CS) were performed by fine-needle method aspiration biopsy (FNAB) under ultrasound control. Laboratories and of neck lymph nodes was produced needles 20 - 22 G. Determination of the content of thyroglobulin and calcitonin was performed with the use of radioimmunological sets CIS bioInternational (France). Researches were carried out in duplicates. The limit of detection of kits for determining TG was 0.5 өg / l. for a positive result, the content of TG in the flush of the puncture needle from the lymph node is more than 30 өg / l. The limit detection sets for the determination of TG was 0.5 PG / l. the level of CT in the washout from the puncture needle was regarded as a positive result at -88-the concentration of CT more than 12 IG/L. Cytological conclusions classified as a negative (the elements of the lymph node without signs of tumor), uninformative (peripheral blood) and positive (thyroid cells, suspected of metastasation - punctate cystic cavity thyroid cells thyroid).

Determination of the content of TSH, fractions of thyroid hormones, cancer-embryonic antigen, as well as antithyroid antibodies (antibodies to thyroglobulin and antibodies to thyroperoxidase) were carried out by quantitative radioimmunological analysis using sets CIS bioInternational (France), AmershamInternational (UK) and Immunotech (Czech Republic). Histological examination was performed according to the standard technique on paraffin sections stained with hematoxilin and eosin. Final the diagnosis was made on the basis of histological data conclusions. Histological conclusions were formulated in accordance with who histological classification(2004 revision) [DeLellis R.A.,Lloyd R.V., Heitz P.U. EngC. WHOclassificationoftumors: pathologyandgenetics: tumorsofendocirneorgans. Lyon (France): IARCPress, 2004.-320c]. Statistical processing of the data was performed on personal computer with the help of a software package for statistical data processing STATISTICA forWindows 7.0. Use methods parametric and non-parametric statistics. Critical level the reliability of the null statistical hypothesis was taken to be equal to 0.05.

Results and discussion

An objective examination in 7(7%) patients revealed thyroid increase in the 2nd degree, 63(63%) patients - 3rd degree, 18(18%)-4th degree and 12(12%) 5th degree. All patients underwent ultrasound. Of the examined 100 patients with thyroid nodules sonographically in 85% of cases revealed hypoechogenicity of nodes, in 73% the contours are uneven, in 25% of malformations there were calcinates; heterogeneity of the node was visualized in 25% of cases; in 19% of the nodes the capsule was damaged and cystic changes of nodes were in 6% of cases. Around the node in 7% of cases the rim("halo") was removed. Ultrasound in thyroid size more than 1 cm nodes identified in 82% of subjects up to 1 cm size nodes identified in 18% of patients. The most characteristic ultrasound signs of focal changes in the thyroid indicating the impossibility of their malignant nature, was the irregular shape of the site (75%); irregular border (81%); indistinct boundaries (72%); hypoechoic (83%); heterogeneity of structure (87,0); hyperechoic inclusions (25%), micro calcifications in 17% of cases.

Thus, the use of radiation imaging techniques allowed to diagnose malignant thyroid lesions with sensitivity up to 94.6 %, specificity up to 77.7%, diagnostic accuracy up to 92.71%.

An increase in regional lymph nodes was found in 36.0% of patients. The most common ultrasonic metastatic lesions of the lymph nodes of the neck: an increase in size (more than E1 0 mm); oval shape (50.0%); smooth boundaries (70,%); signs with clear contours (74%); hypoechogenicity (58%); heterogeneity of the echostructure, the presence of hyperechogenic inclusions and anechogenic component (55%); not found in the normal formation of conglomerates, their mobility during compression by an ultrasonic sensor. Sonographic signs of cysts and cystic formations of the thyroid was as follows: anechogenic (64%) and hyperechogenicity (36%): round or oval(63%); the boundaries of smooth with clear outlines (97%); the presence of the rim(Halo); dorsally the intensity is missing, in 65% of cases is not homogeneous echostructure and in 100% of cases, the integrity of the capsule is preserved. In the diagnosis of thyroid nodules, ultrasound sensitivity was 84%, diagnostic accuracy 79% and specificity 66%.

On the basis of ultrasound in the preoperative period among the examined 100 patients, malignant nodes were established in 41 patients, in 44 patient's benign nodes were established and in 15 patient's sonographic results did not allow to determine the nature of the pathological process of

nodes. On cytological analysis of biopsy specimens obtained FNAB of 100 surveyed in 49(49%) cases cytologically installed papillary cancer thyroid (PTC), 7(7%) cases follicular cancer (FTC), 37(37%) cases, benign adenoma and only 5(5%) cases accurately interpret Cytology failed.

All patients were operated on; between histological findings (postoperative material) and Cytology (on the material of FNAB) studies revealed some differences: in 65 drug identified PTC (Cytology-49), in 5 cases FTC(Cytology-7), adenoma –28 (Cytology-37) cases; histological examination of a 5-preparation set medullary thyroid cancer.

In the preoperative period by ultrasound in 22 patients out of 100 sonographic signs of metastases to the regional lymph nodes were revealed. In a cytological study of them 18 cases revealed atypical cells by histological analysis verifying the final diagnosis, it was found that the studies conducted in the preoperative period in 15% of cases could not accurately determine the nature of the pathological process in the nodules of the thyroid gland.

Conclusions

1. The most characteristic ultrasound signs of focal changes in the thyroid gland, indicating the possibility of their malignant nature, are: irregular shape of the site (75%); irregular border (81%); indistinct boundaries (72%); hypoechoic (83%); heterogeneity of structure (87,0); hyperechoic inclusions (25%), micro calcifications in 17% of cases.
2. The sensitivity of ultrasound in the diagnosis of thyroid nodules reaches 91%, specificity-76% and diagnostic accuracy reaches 88%. In metastases in the regional lymph nodes of the neck ultrasound sensitivity is 82%, specificity-85% and diagnostic accuracy-79%.
3. Conducting fine-needle aspiration biopsy under ultrasound control in 93% allows to obtain informative material for cytological examination. Histological accuracy of FNAB is 85%.
4. Conducted research in patients with thyroid nodulation in the preoperative period in 15% of cases are not able to accurately determine the nature of the pathological process.

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REATMENT OF ECHINOCOCCOSUS OF LUNGS

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Abstract

The results of treatment of 676 patients with lung echinococcosis are presented. The methods of phased and simultaneous bilateral echinococcectomy from the lungs, from the lungs and organs of the abdominal cavity and chemotherapy with Albendazol were used. Methods for reducing traumatic operations are suggested.

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Keywords
Echinococcosus of lung, treatment, echinococcectomy

Өкпе эхинококкозының емі

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Аңдатпа

Бұл бақылауда өкпе эхинококкозымен ауыратын 676 науқас емінің нәтижелері көрсетілген. Кезеңді және бір уақытты екі жақты өкпе эхинококэктомиясы, құрсақ қуысының эхинококэктомиясы және альбендазолмен химиотерапия қолданылды. Ота барысындағы жарақатты төмендету жолдары көрсетілді.

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Түйін сөздер
Өкпе эхинококкозы, ем, эхинококэктомия

Лечение эхинококкоза легких

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Аннотация

В работе представлены результаты лечения 676 пациентов с эхинококкозом легких. Использованы способы поэтапной и одномоментной двусторонней эхинококкэктомии из легких, из легких и органов брюшной полости и химиотерапия Албендозолом. Предложены способы снижения травматичности операций.

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Ключевые слова
Эхинококкоз легких, лечение, эхинококэктомия

Cytomegalovirus is the most common and significant infection in children after liver transplantation with the development of episodes of CMV infection or CMV disease. CMV infection is associated with an increased risk of biliary atresia and graft loss. According to R. Razonable, the incidence of CMV infection in the population is 60 to 100% [1]. The incidence of CMV infection in patients after liver transplantation is in a wide range from 13 to 75%, which is associated with various schemes of prevention of CMV infection, the degree of immunosuppression, various methods of confirming the presence of infection, and various follow-up periods after transplantation [2]. In the Korean J. Kim study, the incidence of active CMVI was 55.7%, CMV disease 5.5%, such data were obtained from an analysis of 618 patients from 1996 to 2009, and the methods of prevention and treatment varied [3]. In the J. Bowman study, rates of detection of active CMV among children after liver transplantation who did not receive preventive antiviral therapy were obtained at 40%, with mortality rates of about 19% [4]. According to the Japanese study of Y. Kawanoa among children after related liver transplantation, the level of CMV infection was 36.3%, 16 of whom had a CMV disease rate of 60.6%.

Material and methods

Since March 2016g. 18 liver transplants from a living related donor in children were performed. The age of the patients ranged from 6 months to 8 years (Table 1). Of these, 15 (83.3%) patients with biliary atresia (Fig. 1). The number of girls is 10 (66.7%) and boys 5 (33.3%). At the time of diagnosis, most of the children registered a formed cirrhosis of the liver.

Results and discussion

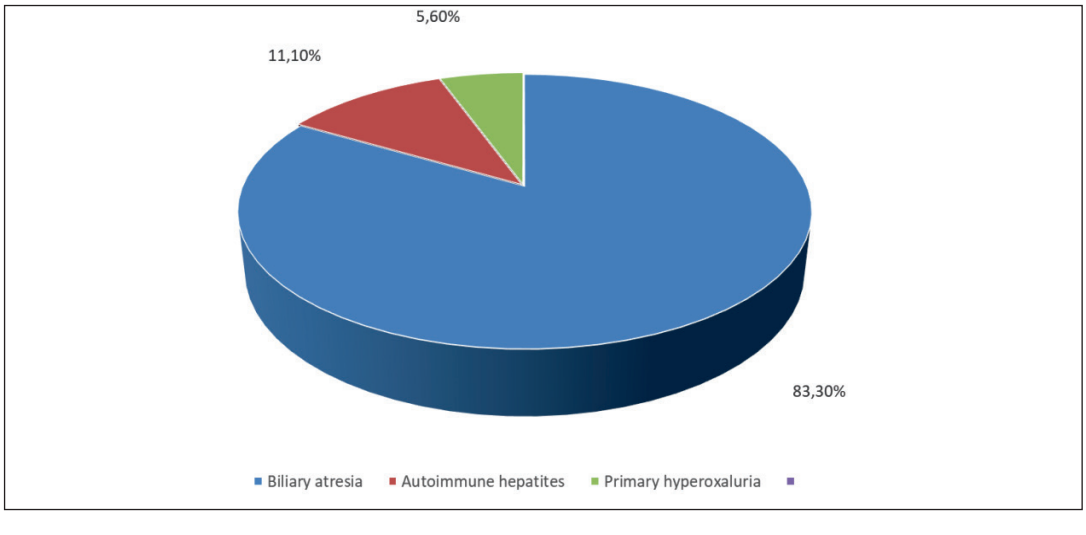
All recipients with positive quantitative parameters of PCR received CMV-specific immunoglobulin 3-5 months before the operation. The left lateral sector was transplanted to 15 patients with biliary atresia from CMV of the seropositive related lifelong donor (D+/R+) 13 donors and from CMV 1 seronegative donor (D-/R +), 1 to the simultaneous transplantation (liver and kidney) 2 patients with cirrhosis of the liver in the outcome of autoimmune hepatitis. In all children, biliary atresia was combined with a cytomegalovirus infection, 7 of them with an active form (Table 2, 3). The observation period is from 14 days after the operation to 2 years.

After the operation, a three-component immunosuppressive therapy was performed (prednisolone, Sellsept, Tacrolimus). Activation was noted in 2 patients with inactive form of CMV. In 2 children, neurologic symptoms developed - 1 with active form of CMV and in 1 child it was associated with a toxic effect of immunosuppressive therapy (tacrolimus), which was managed by conservative methods of treatment. All children with cytomegalovirus infection received antiviral therapy with valganciclovir at a rate of 18 mg/kg for 1 month, against which the virus load in children with an active CMV phase was reduced. Six months after the operation, in all children, the quality of PCR for CMV was negative. At 9

Table 1
Liver transplant characteristics.

Recipient characteristics	Age 0 – 2 y.o	Age 2 – 8 y.o	CMV seropositive (IgG positive)	CMV infection PCR DNA positive
Total numbers	15	3	18	7
Biliary atresia	15	0	15	7
Autoimmune hepatitis	0	2	2	0
Primary hyperoxaluria	0	1	1	0

Figure 1
The main contingent of recipients.



Indicators	N	Average	Standard deviation	Median	Interquartile range
Bilirubin	18	288,1	180,7	272,0	184,0
Bilirubin direct	18	219,2	126,1	230,5	140,7
Protein	18	53,7	7,1	53,5	11,6
Albumin total	18	27,9	7,5	26,5	13,1
INR	18	*1,6*	*0,6*	1,5	1,0
Creatinine	18	*44,0*	*89,6*	22,3	19,3
ALT	18	*193,6*	*145,0*	179,5	120,8
AST	18	267,4	180,8	209,0	248,8
PELD	18	20,6	5,1	19,5	6,0
BMI	18	*17,8*	*3,9*	16,5	7,1
Lymphocytes	18	42,0	16,7	43,5	17,0
CMV titer	7	698,0	129,6	740,0	206,0

Table 2
Laboratory indicators, PELD, BMI, CMV titer.

Indicators, n=17	Abs.	%
Ascite		
Yes	17	94,4
No	1	5,6
Encephalopathy		
1	6	33,3
Min	12	66,7
CMV		
Negative	11	61,1
Positive	7	38,9

Table 3
The frequency of encephalopathy, ascites and active CMV.

months after liver transplantation, 1 patient with an inactive form of CMV had an increase in viral load.

It should be noted local, extraordinary defeat of individual organs in the liver recipient.

Patient K., 7 years old. Diagnosis “Condition after orthotopic transplantation of the left lateral liver sector from a living related donor from 23.05.2016 in connection with cirrhosis of the autoimmune etiology. Long-term drug-induced immunosuppression”. On May 2016, an operation was performed to implant the left lateral liver sector from a living related donor - from the father.

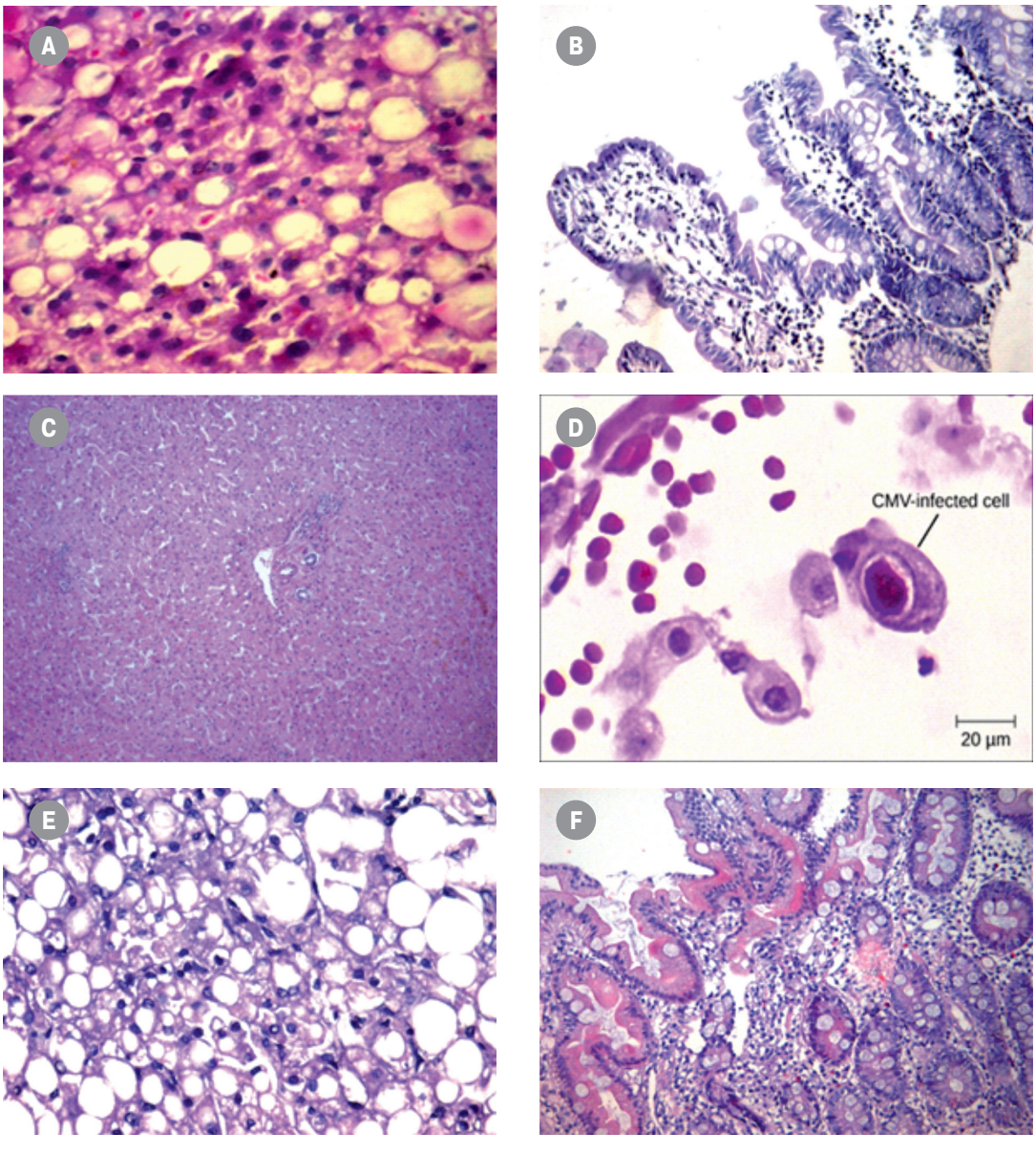
Immunosuppressive therapy is three-component, against which the child has diarrhea. Received vancomycin and metronidazole for the sanation of Clostridium difficile. 12 months after the operation, a biopsy from a liver transplant and duodenum was taken, where nonalcoholic fatty liver transplant dystrophy, stage of fibrosis II and enterit (Fig. 2 – a, b). It was not found when examining a potential donor for fatty dystrophy (Fig. 2 – c). Dietotherapy, ursodeoxycholic acid was used at the rate of 15mg/kg and essential phospholipids, against which there was a decrease in hepatic samples. In the analyzes: ALT-91U/l, AST-63U/L, total bilirubin - 4.7 mg/dL, GGTP – 19U/L, alkaline phosphatase – 378U/ L, tacrolimus concentration - 4.4ng/ml. CMV seropositive (IgG), PCR on CMV was negative (blood, saliva, feces, biopsy).

Subsequent biopsy from the liver 24 months after the operation due to the increase in transaminases to 250U/l, the appearance of a stool to 5-6-7 times a day, uncontrolled with symptomatic treatment. Clostridium difficile - negative, PCR of CMV blood, saliva negative, intestinal biopsy from three loci and feces on PCR was positive. Results of liver biopsy - steatohepatitis. On a biopsy specimen from the intestine of morphological data, no specific enteritis was found for CMV «owl’s eye». (Fig. 2 – d, e, f). Treatment - valcyte and immunoglobulin against CMV, after which there was a positive dynamics.

Conclusions

1. The combination of antiviral prophylaxis and preventive therapy is no less effective than prolonged antiviral therapy.
2. Valganciclovir is as effective as ganciclovir for the treatment of CMV disease in liver transplant recipients.
3. Our experience confirms the role of cytomegalovirus infection in the development of biliary atresia with the formation of liver cirrhosis and requires adequate follow-up after liver transplantation.

Figure 2
a – liver transplant
b - colon
c – donor's liver
d – «owl's eye»
e – liver transplant
f - colon



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CAUSES OF CORONARY ARTERY STENT THROMBOSIS IN PATIENTS PRESENTING ACUTE CORONARY SYNDROME

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Abstract

The article describes the influence of various factors and their combination contributing to the development of thrombosis of coronary artery stents. The reasons for the development of stent thrombosis are known and described, but there are some issues that require deeper coverage. This article will provide some data on this aspect.

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Keywords
percutaneous coronary intervention, acute coronary syndrome, stent thrombosis, antiplatelet drugs

Жедел коронарлық синдром кезінде тәж артериясындағы стент тромбозының себептері

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Аңдатпа

Мақалада тәж артериясындағы стент тромбозының дамуына алып келуші әр-түрлі факторлар және олардың қосарланған әсері жайлы баяндалған. Стент тромбозының даму себептері айқын және осыған дейін жазылып өткен, бірақ кейбір сауалдарға жауап табу үшін тереңірек зерттеуді талап етуде. Бұл мақала осы мәселе жөнінде біршама мәлімет береді.

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Причины тромбоза стента коронарных артерий у пациентов с острым коронарным синдромом

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Аннотация

В статье описано влияние различных факторов и их сочетание, способствующих развитию тромбоза стентов коронарных артерий. Причины развития тромбоза стентов известны и описаны, но имеются некоторые вопросы, требующие более глубокого освещения. Эта статья представит некоторые данные по этому аспекту.

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Ключевые слова
чрескожное коронарное вмешательство, острый коронарный синдром, тромбоз стента, антиагреганты

Introduction

Stent thrombosis is a rare, but a threatening complication characterized by its own consequences that can clinically be manifested as a myocardial infarction, unstable angina or sudden coronary death [11]. Improvement of the technique of stent implantation and introduction of a regimen of the dual antiplatelet therapy (DAPT) have significantly decreased the rate of this complication from 16% 0,4% till 2,8% 1,2% in 1992-2002 [12].

In PLATO studies the rate of death from all causes: myocardial infarction (MI) and stroke during the first year among patients presenting with acute coronary syndrome (ACS) receiving DAPT were 5,9%, 6,9% and 1,3%, respectively [3, 17]. But among patients undergone a percutaneous coronary interventions (PCI), the rate of stent thrombosis can be 1-5% [3, 7].

Factors associated with patients' condition include: diabetes mellitus, acute coronary syndrome, senile age, low ejection fraction, serious cardiac complications during the first 30 days after procedure, heart attack, genetic resistance to clopidogrel, hypersensitivity reaction [3, 8, 9, 16]. Factors associated with lesion of coronary arteries include lesion of the type «C» according to ACC/AHA classification, in-stent restenosis, calcinosis, total occlusion, bifurctional or multivascular lesion, stenosis of a venous graft, a big extent of the stented segment [8, 9, 16]. An active smoking is also important factor of the stent thrombosis [5].

It is necessary to use more widely TIMI, GRACE, GRACE-2, EuroSCORE, EuroSCORE-2, CADILLAC scales in clinical practice for assessment of the stent thrombosis risk that allow to estimate the probability of the development of MI or sudden coronary death in patients presenting with acute coronary syndrome and determine more aggressive method of treatment in this group of patients [5].

The most significant factors increasing the risk of stent thrombosis are as follows: the presence of acute coronary syndrome in a patient, multivascular lesion, decreased ejection fraction, initial occlusion of coronary arteries, long (more than 25 mm) stented segment of a coronary artery, and a discontinuation of the dual antiplatelet therapy after endovascular procedure. Combination of the male and the age elder than 60, and occlusion of coronary arteries in presence of multivascular lesion of coronary arteries are additional predictors of stent thrombosis [18].

DAPT (clopidogrel in combination with acetylsalicylic acid (ASA) has become the basis of the strategy of stent thrombosis prevention after PCI [13]. Prescription of clopidogrel (Plavix) in a dosage of 300-600 mg [1, 10, 14, 20] or ticagrelor (Brilinta) in a dosage of 180 mg has been proved to have an efficacy in acute conditions in prehospital stage and before PCI procedure.

Appearance of the next generation of blockers of P2Y12-receptors – prasugrel and ticagrelor (Brilinta) [3, 7, 19] has become a new milestone in the development of antiplatelet therapy that allowed to overcome partly such deficiencies of clopidogrel. By the time the pharmacological response to clopidogrel is differed by significant variability [15], and up to 30% of patients can be resistant to clopidogrel (have a high residual reactivity of platelets) [6].

In PLATO studies 18624 patients with moderate and high risk of an ACS without ST-segment elevation (who were going to be treated conservatively or with invasive way) or ST-segment elevation MI were randomized for intake of clopidogrel 75 mg/day in a loading dose 300-600 mg or ticagrelor (Brilinta) in a loading dose 180 mg followed by 90 mg per day [4].

The optimal duration of DAPT is 12 months regardless of a type of stent (Drug-eluting stent (DES) or Bare-metal stent (BMS) updated recommendations on myocardial revascularization of the European Society of Cardiology, 2017, Barcelona). Exact duration of a treatment has to be determined individually, taking into account concomitant risks – stent thrombosis and bleeding.

Premature discontinuation of DAPT noticeably increases the risk of stent thrombosis – catastrophic event that often leads to MI and/or death. After PCI procedure before discharge of patients from hospital it is necessary to warn them about risk of premature discontinuation of an intake of ASA and clopidogrel or ticagrelor (Brilinta). All big clinical researches were carried out using an original clopidogrel (Plavix) [2].

Aim of study

To analyze the stent thrombosis (ST) in patients presenting with acute coronary syndrome treated in City Clinical Hospital (CCH) №7 in Almaty. To determine the influence of the combination of diverse factors responsible for development of stent thrombosis of coronary arteries.

Material and methods

According to the classification of Academic Research Consortium proposed in 2006 on stent thrombosis, we have carried out a retrospective analysis: 404 (55,6%) patients undergone a stenting in City Clinical Hospital №7, Almaty from 15th of September, 2016 till 2017 (during 16 months).

There has been analyzed the influence of some factors on development of the stent thrombosis, for what the following variables were included into the prognostic model of proportional risks such as sex,

age, arterial hypertension, diabetes mellitus, smoking, the level of lipid spectrum, presence of ACS with ST-segment elevation and without it, repeated MI, systolic dysfunction of the left ventricle (LV) (EF of the LV <50%), vascular diameter, extent of the target stenosis, type of a stent, fullness of the revascularization.

In addition to the timing of stent thrombosis, we estimated the clinical condition of patients, emergency of a procedure, the character of a lesion, initial percentage of stenosis, the regimen of antiplatelet therapy, the presence of antiproliferative cover of a stent.

Results

Retrospective analysis included 726 patients who underwent a coronaroangiography. There were predominantly patients with diagnosis «Acute coronary syndrome» (ACS) and chronic course of ischemic heart disease (IHD). Procedures were performed in 2016-2017 in multiprofile hospital – City Clinical Hospital №7 that serves the western part of Almaty city – the population of the Nauryzbay and the part of Alatau and Auezov districts. Of them 466 (64,3%) males and 259 (35,7%) females. The age of patients varied in the range from 35 till 91 years, an average age was 64,3±12,3 years.

675 (93%) patients with ACS (of them 440 (65,2%) males and 235 (34,8%) females) were urgently admitted to the hospital, 51 (7%) patients with exertional angina (of them 26 males (51%) and 25 females (49%) were admitted on the planned basis. ACS with ST-segment elevation was detected in 176 (24,2%) cases (of them 134 males (76,1%), 33 females (23,9%).

Stent thrombosis was detected in 8 (1,9%) patients with ST-segment elevation MI and without it according to angiographic data who underwent a stenting, males - 7 (87,5%), females - 1 (12,5%). Stent thrombosis has appeared in 7 (87,5%) patients with ACS with ST-segment elevation and in 1 (12,5%) patient with ACS without ST-segment elevation in 12th days after stent implantation.

Stent thrombosis in acute period (0 - 24 hours) was found in 1 (12,5%) patient, in subacute period (24 hours - 30 days) – in 6 (75%) patients, there were no patients in late period (from 30 days till 12 months) and in very late period (after 12 months) – only 1 (12,5%) patient. The patient with stent thrombosis in very late period had a coronary artery stented more than 1 year ago in another hospital.

Stent thrombosis in all patients was diagnosed clinically in the form of ACS with ST-segment elevation and without it. Stent thrombosis was confirmed by angiographic data.

In 4 (50%) cases stent thrombosis was located in anterior descending artery, in 2 (25%) cases – in diagonal artery, in 2 (25%) cases – in right coronary artery.

Discussion

In all cases 1 stent was implanted and a satisfactory result was achieved. We have not noticed an influence of factors associated with technique of a procedure on development of stent thrombosis.

The age of patients varied from 45 till 84, of them 3 patients (37,5%) were till 60, 5 patients (62,5%) – elder than 60.

All patients with suspicion onto stent thrombosis underwent a PCI after which the blood flow was restored. Whereas in 4 cases (50%) restenting was performed, in 3 cases (37,5%) – balloon angioplasty, in 1 case (12,5%) a patient was directed to coronary artery bypass grafting.

In this monitoring the presence of ACS has become one of the most important predictors of stent thrombosis among factors associated with a patient.

Multivascular lesion was found in 3 (37,5%) cases. MI was found in 8 patients (100%). Further, after liquidation of stent thrombosis, 1 (12,5%) patient developed an acute cardio-vascular insufficiency that led to cardiac death. On autopsy stent thrombosis has not been found.

Decreased ejection fraction of the left ventricle (less than 50%) was an additional separate factor increasing the risk of stent thrombosis. Decreased ejection fraction in our study (EF<50%) was found in 5 (62,5%) patients.

While at the same time, there were found combined factors (multivascular lesion with occlusion of a coronary artery, the age of patients elder than 60 years and male) that in case of mutual combination increase the probability of stent thrombosis.

The presence of the type II diabetes mellitus at the stage of decompensation has become an additional separate factor of the development of stent thrombosis that was found in 3 (37,5%) patients.

At the moment of admission into the hospital all patients had the normal level of lipid spectrum.

Type/Time of thrombosis development		Number of patients, abs., %
Early	Acute (0-24 hours)	1 (12,5%)
	Subacute (24 hours -30 days)	6 (75%)
Late (30-365 days)		-
Very late (>365 days)		1 (12,5%)
Total number of thrombosis		8 (1,9%)

Table 1.
Analysis of stent thrombosis according to criteria of Academic Research Consortium

All patients underwent a stenting using drug-eluting stents with diameter from 2,25 till 3 mm and length from 15 till 33 mm. Thus, in our case, there was no significant dependence of the development of stent thrombosis on the length and diameter of a stent.

In 7 (87,5%) cases there was an irregular regimen of DAPT, up to refusal in 4 (50%) cases. In 1 case (12,5%) there was a combination of the decreased ejection fraction (EF=21%) and disorder of the DAPT.

The given analysis has shown extremely great importance of the DAPT after PCI.

The most significant factors increasing the risk of stent thrombosis are as follows: the presence of acute coronary syndrome in a patient, multivascular lesion, decreased ejection fraction, an initial occlusion of coronary arteries (87,5%), and the most important one is a discontinuation of the DAPT after endovascular intervention.

The combination of the male and the age elder than 60 years, and the occlusion of coronary arteries in the presence of decreased ejection fraction are the additional predictors of stent thrombosis.

Conclusion

Thus, we can draw the following conclusions:

In our analysis the general rate of stent thrombosis was 1,9%.

In PCI for stent thrombosis the second stent is implanted only in case of severe residual dissection. If unstable plaque is the cause of thrombosis contributing the protrusion of a tissue and its coming out of stent cells into vascular lumen, the repeated stent in stent implantation can be required. However, in such cases the balloon angioplasty (postdilatation) is often performed, as stent in stent implantation runs the risk of the thrombosis in the given segment of a coronary artery because of stent malposition (the presence of a lumen between vascular wall and at least 1 cell of a stent, in which there is a blood flow between a cell of stent and vascular wall).

If there is a suspicion on a genetic resistance and (or) there has been detected a reaction of hypersensitivity to clopidogrel, then it is recommended to appoint the following generation of inhibitors of P2Y12-receptors - ticagrelor (Brilinta) and prasugrela. If a patient did not receive inhibitors of P2Y12-receptors before and during PCI and there is no any possibility to intake such medicines per os, then one should prescribe inhibitors of P2Y12-receptors intravenously – cangrelor. It is necessary to have an impedance aggregometry to urgent detection of a genetic resistance to ASA and clopidogrel.

Besides, if there appear thrombotic complications during the procedure that are confirmed by angiographic data, it is recommended to use inhibitors of the glycoprotein receptors IIb/IIIa of platelets in the absence of contraindications. Unfortunately, nowadays the inhibitors of the glycoprotein receptors IIb/IIIa of platelets (this group includes such medicines as abciximab (ReoPro), tirofiban (Aggrastat), eptifibatide (Integrilin)) are not registered in the Republic of Kazakhstan.

The basic measures of a prophylaxis of stent thrombosis is a selection of patients for PCI (patients with well-known low ejection fraction less than 30%, high level of cardiac markers are in need of medicamentous therapy), providing the complete stent opening, early use of antiaggregants in patients with acute coronary syndrome before PCI, adequate anticoagulant therapy during procedure and after procedure, keeping the terms of intake of DAPT (supporting dosage of ASA 75-100 mg/day, clopidogrel (Plavix) 75 mg/day or ticagrelor (Brilinta) 90 mg twice a day) during 12 months at least.

The exact duration of the treatment has to be defined on the individual basis for each patient, taking into account concomitant risks like stent thrombosis and bleeding. Local GP and cardiologists are responsible for premature discontinuation of DAPT in patients who underwent a stenting.

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THE SURGERYOF BRACHIOCEPHALIC ARTERIES IN PATIENTS WITH MULTIFOCAL ATHEROSCLEROSIS

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Keywords

multifocal atherosclerosis, brachiocephalic artery, surgical treatment

Abstract

Aim: *to evaluate the results of surgical treatment of combined lesions of brachiocephalic arteries in atherosclerosis.* ***Materials and methods:*** *surgical treatment of 198 patients with concomitant lesions of branches of the aortic arch and other arterial basins were examined. 188 patients were operated. The total amount of operation was 335; 294 of them were stepped surgery and 41 were single-staged operation.* ***Results:*** *There was 1 fatal outcome from ischemic stroke after a stepped operation and 2 after one-stage bilateral carotid endarterectomy. Myocardial infarction was the cause of death in 3 patients after the stepped operations and 1 patient after single-staged operation. Cardiac complications not resulting in death were observed in 5 patients after the 1st stage of stepped operationы, in 16 patients after the 2nd stage, in 5 patients after single-staged operations. Bleeding occurred in 2 patients after the 1st stage, in 5 patients after the 2nd stage, in 5 patients after one-stage operations. Conclusion: For successful treatment of patients with multifocal atherosclerosis the program of examination and treatment should be systematized. In combined lesions of brachiocephalic arteries stepped surgery is more advisable.*

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мультифокалды атеросклероз, брахиоцефалды артериялар, хирургиялық емдеу

Аңдатпа

Зерттеудің мақсаты: *Брахиоцефалды артерияларының қосарласқан атеросклерозбен зақымданған науқастарды хирургиялық емдеудің нәтижелерін анықтау.* ***Мәліметтер мен әдістер:*** *қолқа, оның бұтақтарының және басқа артериалды бассейндердің қосарласқан зақымдануындағы 198 науқастың хирургиялық емдеудің нәтижелері зерттелді. қолқаның доғасының бұтақтардың зақымдануы 198 науқастың (100%) ішінде 188-іне операция жасалды. Барлығы 335 операция жасалынды, оның ішінде 294 көп сатылы түрде, ал 41-і бір сатылы түрде жасалынды.* ***Тұжырым:*** *Мультифокалды атеросклерозы бар науқастарды жақсы емдеу үшін тексеру және емдеуді жүйелеу керек. Брахиоцефалды артерияларының қосарласқан атеросклерозбен зақымданған науқастарға көп сатылы түрде хирургиялық тактиканы қолданған жөн.*

Хирургическое лечение поражений брахиоцефальных артерий при мультифокальном атеросклерозе

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Аннотация

Цель исследования: *оценить результаты хирургического лечения сочетанных поражений брахиоцефальных артерий при атеросклерозе.* ***Материал и методы:*** *изучены результаты хирургического лечения 198 больных с сочетанным поражением ветвей дуги аорты и других артериальных бассейнов. Из 198 больных 188 больных были оперированы. Всего выполнено 335 операции, из них 294 поэтапно, а 41 операция выполнена одномоментно.* ***Результаты:*** *Летальных исходов от ишемического инсульта после этапных операци было 1, после одномоментной двусторонней эндартерэктомии – 2. Инфаркт миокарда явился причиной смерти у 3 больных после этапных операций, и у 1 больного после одномоментной. Кардиальные осложнения, не приведшие к летальному исходу, наблюдались у 5 пациентов после 1-го этапа, у 16 пациентов после 2-го этапа, у 5 пациентов после одномоментных операций. Кровотечения возникли у 2 пациентов после 1-го этапа, у 5 пациентов после 2-го этапа, у 5 пациентов после одномоментных операций.* ***Заключение:*** *Для успешного лечения больных с мультифокальным атеросклерозом необходимо систематизировать программу обследования и лечения больных. При сочетанном поражении брахиоцефальных артерий целесообразно проводить поэтапную тактику лечения.*

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Ключевые слова
мультифокальный атеросклероз, брахиоцефальные артерии, хирургическое лечение

Bydefinition, WHO (2012), cerebral stroke is an extremely important medical problem. In the mortality of the circulatory system as a whole, the proportion of cerebrovascular diseases is 36.6%. According to the Russian register of strokes, the annual number of strokes in the country is up to 450 thousand (Gusev EI, 2003). Of these, up to 60% remain disabled. In stroke patients, repeated strokes occur within three years. In the structure of the etiology of cerebrovascular diseases, atherosclerosis takes the leading place (up to 80%). In 80% of cases, the lesions are localized extracranially and only 20% intracranially (Spiridonov A.A., Lavrentyev A.V., Morozov K.M., Pirtskhalaishvili Z.K., 2000, A.V. Pokrovsky et al. 2004).

Surgical treatment of stenotic lesions of the branches of the aortic arch allows to significantly reduce the possibility of stroke, improve the quality of life of a large contingent of patients and occupies a very important place in the system of medical care.

Patients with asymptomatic stenosis of the branches of the aortic arch come to the attention of doctors about damage to other vascular basins: coronary, renal, lower limb arteries, aortic aneurysms. In a number of messages, the frequency of such combinations reaches 50-60%. Currently, in most cases, such patients surgery on the branches of the aortic arch are performed by the first stage before the reconstruction of other major vessels. However, to date, many tactical aspects of this problem remain debatable. Therefore, in recent years, special attention has been paid to the diagnosis and treatment of patients with combined atherosclerotic lesions of the coronary, brachiocephalic arteries and branches of the terminal aorta (Wagner, E. A., 1992; Pokrovsky, A., Zotikov, A. E., 1996; Kazanchyan, P. O., Popov V.A., Alukhanyan O.A., Ambatiello S.G., 2000).

All the above indicates the relevance of the chosen research direction and the need to improve surgical treatment..

Purpose: to evaluate the results of surgical treatment of combined lesions of the brachiocephalic arteries in case of atherosclerosis.

Material and methods

The work is based on the study of the results of the examination and surgical treatment of 198 patients with a combined lesion of the branches of the aortic arch and other arterial pools treated at the NSCS named after A.N. Syzganov from 2007

to 2017. Of these, 174 patients (87%) are male and 24 patients (13%) are female, the age of patients ranged from 41 to 78 years. All patients had a lesion of the aortic arch branches with a clinic of cerebrovascular insufficiency of various degrees. The duration of the clinical manifestations of the disease ranged from 1 year to 29 years. In addition to general clinical research methods, all patients underwent duplex scanning, X-ray contrast angiography, if indicated, computed tomography and / or magnetic resonance imaging of the brain.

Analysis of the results of the examination of patients shows the following frequency of lesions of various arterial pools.

In 198 (100%) patients a lesion of the aortic arch branches was revealed. In assessing the neurological status, we followed the AV classification. Pokrovsky (Figure 1). As can be seen, the majority of patients in the stage of chronic cerebrovascular insufficiency were.

Of the 198 patients, 188 patients were operated. A total of 335 operations were performed, of which 294 were carried out in stages, and 41 operations were performed simultaneously. From 1 to 4 surgeries were performed for each patient. 1.78 operations were performed on one patient. Depending on the number of operations, the patients were distributed as follows: 65 (34.6%) patients underwent a single operation, of which 41 (22%) patients underwent a one-time operation. Two operations were performed in 102 (53%) patients, three operations in 18 (10%) patients, and four operations in 3 (2%) patients.

In a staged order, 138 reconstructive interventions were performed on the aortic arch basin, of which 108 patients had carotid endarterectomy, 25 had carotid-subclavicular shunting, 2 cases of left brachiocephalic stem formation, 2 patients underwent carotid-spinal anastomosis, and 1 patient underwired subclavicular-bicarotid shunting. It should be noted that in this group, in 12 cases, carotid endarterectomy, as a step-by-step operation, was performed without discharging from the hospital, that is, for one period of hospitalization.

Clinical case. Patient O., 74 years old, was hospitalized with complaints of periodic dizziness, intermittent claudication that occurs when walking at a distance of 20-30 m., numbness, coldness of both feet. From the anamnesis: sick for many years. He underwent 2 surgeries, in 2000 – Aortobifemiral shunting, in 2001 - carotid endarterectomy on the right side. In 1998, a pacemaker was installed. In March 2009, he underwent stroke by ischemic type in the basin of the middle cerebral artery on the right. Suffering from type 2 diabetes since 2008. The patient was examined, the conclusion of ultrasound duplex scanning: “Atherosclerosis. Stenosis of the common, internal, external carotid arteries on the left side. A blood clot in the lumen of the ICA on the right. Condition after aortic-bifemoral shunting, dentures are passable. Reduced blood flow in the left leg. An angiographic study shows that the aorto-femoral bifurcation shunts are completely passable, there is stenosis of the cervical part of the ICA up to 80% on both sides (Figure 1), the left renal artery is up to 60%. Obliterating atherosclerosis of the lower limb arteries.

At the first stage, the patient underwent carotid endarterectomy on the right (Figure 2). The immediate postoperative period was uneventful, no signs of neurological deficit were observed. On the

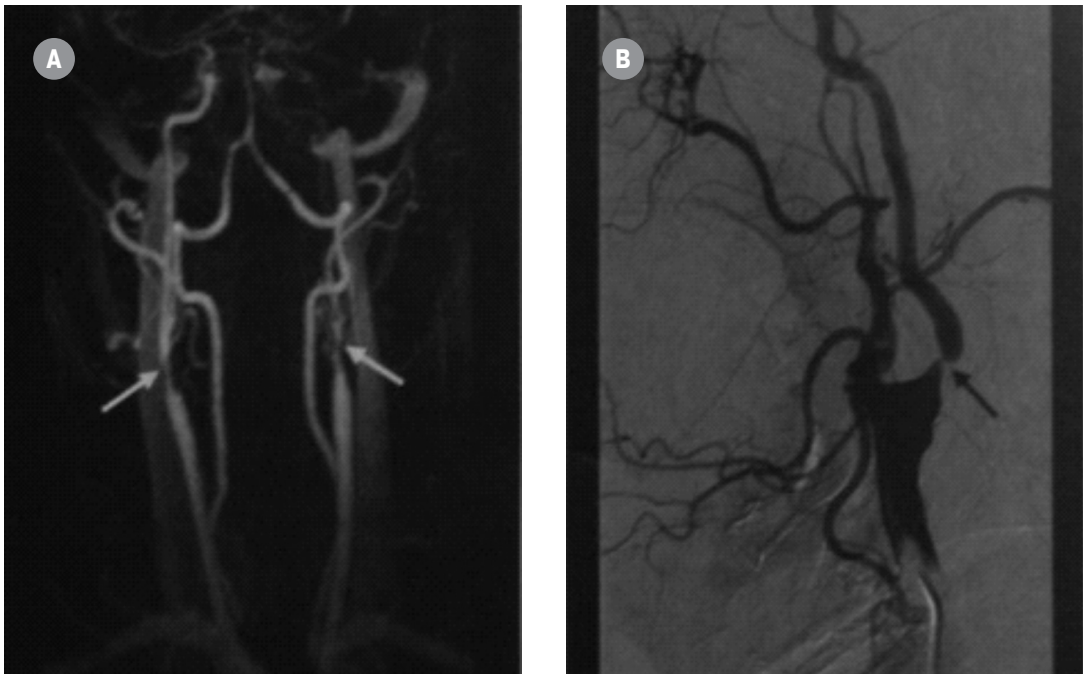

Figure - 1
A) Patient with significant stenosis of internal carotid artery

B) Patient with suboclusion of internal carotid artery

9th day after the operation, the second stage was performed carotid endarterectomy on the left. Intraoperatively, during revision, the internal and external carotid arteries are on the verge of occlusion due to ulcerated atherosclerotic plaque (Figure 3), the latter extending to the ICA above the bifurcation 1.5 cm, additionally highlighted proximal. The postoperative period was uneventful. Headaches, dizziness stopped. In the department, complex therapy was carried out, against the background of which the distance of painless walking increased, the feet became warmer. On day 6, the patient was discharged for further outpatient treatment of a satisfactory condition.

Carotid-subclavial shunting was performed in 25 patients. As a transplant, autovena was used in 8 patients. In all cases, the indication for surgical treatment was the presence of a robbery syndrome with a clinic of vertebrobasilar insufficiency.

Simultaneous surgical interventions in two arterial basins were performed after determining the degree of priority as a compulsory measure in patients with a severe competing lesion. Combinations of operations on the aorto-iliac zone and brachiocephalic arteries prevailed (31 patients out of 41). In one case, aortobicartid shunting was performed to one patient simultaneously with myocardial revascularization. Single-stage combined operations on the branches of the aortic arch were performed in only 32 patients. Carotid endarterectomy in all cases performed in the classic version.

Results and discussion. Immediately after the first stage of surgical treatment on the brachiocephalic arteries, ischemic stroke, leading to death, was observed in one patient. The cause of death was a material embolism from the plaque during endarterectomy. Postoperative cardiac complications, such as myocardial infarction, rhythm disturbances, were observed in 5 patients. Bleeding from the postoperative wound, which required a reoperation in the form of a revision of the wound and removal of the hematoma, was observed in 2 patients, lymphorrhea in 1 patient, trauma of the cranial and phrenic nerves in 4 patients.

After the second stage of surgical treatment, there was no ischemic stroke in the abdominal aorta and arteries of the lower extremities. Secondary operation due to postoperative bleeding was performed in 5 patients. Prosthesis thrombosis was observed in 7 patients. In 2 patients, due to the unsatisfactory condition of the receiving bed, after repeated attempts at thrombectomy, limb amputation was performed. Postoperative cardiac complications were observed in 16 patients. Due to myocardial infarction, 3 patients died.

After simultaneous reconstructions of two arterial basins, no stroke was observed. Stroke occurred in 2 patients after bilateral simultaneous carotid endarterectomy. The cause of stroke in 1 patient was a torsion of the distal segment of the internal carotid artery. In another case, the patient on the 7th day after the operation appeared clinic insolvency sutures. The patient was re-operated; after the operation, an ischemic stroke was observed, leading to death. Postoperative cardiac complications were observed in 5 patients. One patient died of myocardial infarction. Everteration of the intestine after surgery developed in 1 patient, suppuration of the postoperative wound in 2, lymphorrhea from the region of the distal anastomoses was observed in 3 patients.

Conclusion. For successful treatment of patients with multifocal atherosclerosis, it is necessary to systematize the program of examination and treatment of patients. In case of combined lesions of the brachiocephalic arteries, it is advisable to carry out a phased tactics of treatment.

Figure - 2
Intraoperative view of carotid endarterectomy

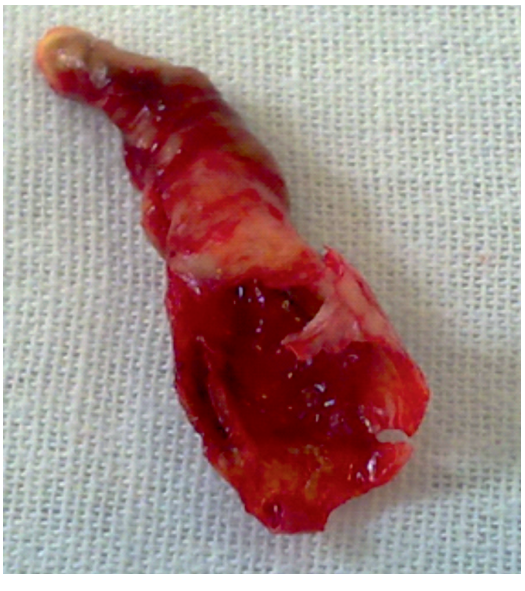

Figure - 3
Atherosclerosis plaque of internal carotid artery

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IS RESECTION OF THE ANTRUM USEFUL IN CASE OF LONGITUDINAL RESECTION OF THE STOMACH?

МРНТИ 76.29.34

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Abstract

Objective: *Comparative analysis of the resection of the antrum with longitudinal gastrectomy in patients with extreme obesity.* ***Material and methods:*** *The work included the results of 118 sleeve gastrektomy operations performed in 2012–2018 in patients with obesity [mean age - 30 years; the average body weight index is 54.2 kg / m^2]. The first group included 61 (51.7%) patients who underwent standard laparoscopic longitudinal gastrectomy (sleeve gastrectomy), and the second group consisted of 57 (48.3%) patients who underwent resection of the antrum at the time of standard longitudinal gastrectomy for the formation of an even smaller size of the stomach. In both groups, from the point of technical modification, after 1, 3, 6 and 12 months postoperative difficulties were comparatively analyzed: BMI, diabetes, hypertension, sleep, apnea syndrome were examined in patients before and after surgery, special methods of examination were carried out, the dynamics of fatty liver disease was traced.* ***Results:*** *In the first 6 months 61 (51.7%) patients who underwent surgery, dropped an average of 39.5 +11.5 kg of body weight, which amounted to 65-50% of excess weight and 28-40% of the total body weight of the patient. In 57 (48.3%) patients who had a smaller stomach after antrumectomy, this difference was 44±13 kg. In group I with the standard laparoscopic longitudinal resection of the stomach (sleeve gastrectomy), in the first 12 months after surgery, weight loss amounted to 62±7.5 kg. In group II whith the sleeve gastrectomy + antrumresection, wight loss amounted to 73 ± 8 kg The results of calculating the percentage of weight loss ratios by the end of 12 months showed the effectiveness of the method and amounted to 43.4%. The results obtained in all these patients are based on observations carried out for 36 months. The dynamics of observation for 12 months showed the disappearance of signs of fatty degeneration in all patients. In 38 of 43 patients suffering from type II diabetes, after one month, the level of glucose in the blood returned to normal amounts without taking antidiabetic drugs, and 5 patients reduced the dose of the drug. In addition to the above, in both groups, patients who underwent a sleeve gastrectomy did not need vitamin-mineral support after the first three months. Considering the results of the conducted research, it can be concluded that with a modified stomach reduction operation (sleeve gastrectomy) in patients with extreme obesity, weight loss and recovery from concomitant diseases, in comparison with the standard group, occurs more efficiently and quickly.*

Keywords
Severe obesity, sleeve gastrectomy, 32 Fr, antrumectomy, pyloric sphincter

Асқазанды бойлық резекциялау отасы кезінде антральды бөлігін резекциялау пайдалы ма?

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Аңдатпа

Мақсаты: *анық көрінетін семіруіге шалдыққан пациенттердің бойлық гастроэктомиясымен асқазанның антральдық бөлігін резекциялауының салыстырма талдауын жүргізу.* ***Материал және әдістер.*** *Бұл жұмысқа семіріп кеткен пациенттерге 2012–2018 жылдарда жасалған 118 гастроэктомия нәтижелері кірген (орта жас мөлшері-30 жас; дене массасының орта есеппен алған индексі 54,2 кг / м^2] құрады. Бірінші топты стандарты лапароскопиялық бойлық гастрэктомия (жеңдік гастрэктомия), отасын жасатқан 61 (51,7%) пациент құрады, ал екінші топты асқазанның*

шағын көлемін қалыптастыру үшін стандартты бойлық гастроэктомия жасау кезінде асқазанның антральды бөлігіне ота жасалған 57 (48,3%) пациентке. Екі топта да, техникалық модификациялау тұрғысынан, 1, 3, 6 және 12 айында отадан кейінгі мерзімге салыстырма талдаужасалған: ИМТ, диабет, артериалдық гипертензия, ұйқы, апноэ синдромы, пациенттердің отаға дейі және отадан кейін зерттелген, тексерудің арнайы әдістері бауырдың майлы ауруларының динамикасын зерделеу мақсатында зеттеулер жүргізіоген. ***Нәтижелер:*** *бірінші 6 айында 61 (51,7%) операция жасатқан пациенттер орта есеппен алғанда дене массасының 39,5 + 11,5 кг құрады, ондай жайт 65-50% құрады, дене массасының артығынан және 28-40% жалпы дене массасынан. Антрумэктомия отасынан кейін асқазаны азайып қалған 57 (48,3%) пациенттердің айырмашылығы 44±13 кг құрады. I-ші топқа асқазанның стандартты лапароскопиялық бойлық резекциялауымен (жеңдік гастрэктомия) жасатқан пациенттер кіреді және бірінші 12 айында отадан кейін салмақ тастаған 62±7,5 кг құрады. II-ші топта жеңжік гастрэктомиясымен + антрумрезекциясымен салмақ тастаған 73 ± 8 кг құрады. 12 айдың соңында салмақ тастаған коэффициентті есепайырысу нәтижелері әдістің тиімділігін көрсетті, ондай көрсеткіш 43,4% құрады. Барлық осы пациенттерден алынған нәтижелер 36 ай ішінде жүргізілген қадағалаула негізделген. 12 айдың ішіндегі қадағалау динамикасы барлық пациенттердің май дегенерациясының белгілері жойылғанын көрсететті. II түріндегі диабетіне шалдыққан 43 пациентінің арасынан 38 пациентінде бір айдан кейін қанындағы глюкоза деңгейі диабетке қарсы препараттарды тұтынбай-ақ қалыпты деңгейіне жетті, ал 5 пациент осы препараттардың мөлшерін төмендетті. Баяндалғанның негізінде жеңдік гастрэктомия жасатқан екі топтағы пациенттерге қосымша ретінде бірнші үш айдан кейін дәрумендi-минералды қолдау ретінде ем жасауды қажет етпеген. Өткізілген зерттеудің нәтижелерін есепке алуымен асқазанды азайту бойынша модификацияланған операция кезінде семіргені анық көрінген пациенттеге ілеспе ауруларынан салмағын тастау және сауығып кету стандарты таппен салыстырғанда, тиімдіреу және жылдам өтуде.*

Түйін сөздер
ауыр түрде семіру, жеңдік гастрэктомия, 32 Fr, антрумэктомия, пилориялық сфинктер.

Полезна ли резекция антрального отдела при операции по поводу продольной резекции желудка?

ОБ АВТОРАХ

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Аннотация

Цель: *провести сравнительный анализ резекции антрального отдела желудка с продольной гастрэктомией у пациентов с выраженным ожирением.* ***Материал и методы.*** *В работу включены результаты 118 гастроэктомии, выполненных в 2012–2018 гг. у пациентов с ожирением [средний возраст - 30 лет; средний индекс массы тела составил 54,2 кг / м^2]. Первую группу составили 61 (51,7%) пациент, перенесший стандартную лапароскопическую продольную гастрэктомию (рукавная гастрэктомия), а вторую группу составили 57 (48,3%) пациентов, которым была сделана резекция антрального отдела желудка во время стандартной продольной гастрэктомии для формирование меньшего размера желудка. В обеих группах с точки зрения технической модификации, через 1, 3, 6 и 12 месяцев были сравнительно проанализирован послеоперационный период: ИМТ, диабет, артериальная гипертензия, сон, синдром апноэ были исследованы у пациентов до и после операции, специальные методы обследования были проведены с целью изучения динамики жировой болезни печени.* ***Результаты:*** *за первые 6 месяцев 61 (51,7%) пациент, перенесший операцию, сбросил в среднем 39,5 + 11,5 кг массы тела, что составило 65-50% от избыточной массы тела и 28-40% от общей массы тела. У 57 (48,3%) пациентов, у которых после антрумэктомии желудок уменьшился, разница составила 44±13 кг. В I группе со стандартной лапароскопической продольной резекцией желудка (рукавная гастрэктомия) в первые 12 месяцев после операции потеря веса составила 62±7,5 кг. Во II группе с рукавной гастрэктомией + антрумрезекцией потеря веса составила 73 ұ 8 кг. Результаты расчета коэффициентов потери веса к концу 12 месяца показали эффективность метода и составили 43,4%. Результаты, полученные у всех этих пациентов, основаны на наблюдениях, проведенных в течение 36 месяцев. Динамика наблюдения в течение 12 месяцев показала исчезновение признаков жировой дегенерации у всех пациентов. У 38 из 43 пациентов, страдающих диабетом II типа, через один месяц уровень глюкозы в крови вернулся к нормальному уровню без приема противодиабетических препаратов, а 5 пациентов снизили дозу этих препарата. В дополнение к вышесказанному, в обеих группах пациентам, перенесшим рукавную гастрэктомию, не требовалась витаминно-минеральная поддержка после первых трех месяцев. Учитывая результаты проведенного исследования, можно сделать вывод, что при модифицированной операции по уменьшению желудка у пациентов с выраженным ожирением потеря веса и выздоровление от сопутствующих заболеваний, по сравнению со стандартной группой, происходит более эффективно и быстро.*

Ключевые слова
тяжелое ожирение, рукавная гастрэктомия, 32 Fr, антрумэктомия, пилорический сфинктер

Introduction

Currently, the number of people with obesity is increasing. Researchers associate it with inactivity, the adoption of high-calorie foods, hormonal changes and other reasons. In recent decades, researchs have shown that the prevalence of obesity in the population has become an epidemy. According to forecasts of the World Health Organization in 2025, 50% of women and 40% of men have the probability of morbid obesity or severe obesity. In the structure of extreme obesity, the main place is occupied by type 2 diabetes, arterial hypertension, and dyslipidemia. Metabolic obesity (MO) and metabolic syndrome (MS), along with a negative ef-

fect on vital quality, is also characterized by high mortality. All of the above prove important medical and social benefits of the problem. Currently, in the treatment of MO and MS, bariatric surgery has acquired priority [1,2]. Obesity, being a chronic, multisystem disease, is the cause of many problems in the human organism. This pathology is one of the progressively growing serious medical problems, especially in developed countries. Type II diabetes, hypertensive disease, impaired venous circulation, hypercoagulapathy, fatty degeneration of non-alcoholic origin, reproductive system defects are the main complications [3.4]. In the initial stage of treatment determines methods of conservative correction. But practice shows that with the development of limiting obesity, the methods of medical correction are not so satisfactory and there is a need for sufficient material consumption and prolonged observation [5]. In this regard, the current focus on bariatric surgery is associated not only with the method of weight loss in extremely obese patients, but is also a treatment of type II diabetes and its associations on the first place. Bariatric surgery is not only a correction of the MO and its associations, it also improves the quality of life and continuance. The treatment of the basic composition of MO and MS with bariatric intervention provides faster social adaptation. Therefore, the widespread "epidemy" on the background of MO makes the question of its correction by new methods more relevant. In this regard, in surgical practice endovideosurgical technologies stubbornly developing and widely implementing. In recent decades, laparoscopic methods have rapidly become established in bariatric surgery, minimally invasive and low-impact interventions have improved the medical and social environment in surgical treatment. Due to this, indications for surgical treatment are expanding. Currently, in order to increase the rationality of treating obesity, various types of bariatric operations are utilized. The relatively recent introduction of surgery in cases of extreme obesity has aroused interest in research of the treatment results in various aspects [6,7,8]. The fundamental concept of the most effective treatment of obesity in bariatric surgery is the reduction of appetite and food digestion by the gastrointestinal system, which achieves by utilizing one or both of the principal pathways: reducing intestinal absorption (malabsorption operations) and reducing the stomach (restrictive operations) or symbiotic operations, including both methods at the same time. In the surgery of obesity the goal is, along with ensuring ideal weight loss, to assist in the treatment of associated diseases [11,12]. In most patients who undergo surgical treatment of obesity, sleeve gastrectomy is preferred among other bariatric methods.

Purpose: Comparative examination of the results of various methods of operations for standard longitudinal gastric resection (sleeve gastrectomy - SG) in patients with extreme obesity.

Material and methods

Research included the results of 118 sleeve gastrectomy operations performed at the Modern Hospital and at the educational and surgical clinic of the Azerbaijan Medical University from 2012 to 2018 in patients with obesity [mean age -30 years; the average body weight index is 54.2 kg / m2]. Surgical indications were established according to the criteria of the IFSO (International Federation for Surgery of the Obesity and Metabolic Disorders) 2006 Bariatric Surgery. Marked body weight before surgery, body mass index (BMI) and associated diseases. Before the operation, all patients underwent gastroscopy to examine the gastrointestinal system and ultrasonography to identify the pathology of the liver and biliary tract. In the preoperative period all patients were consulted by a pulmonologist, a cardiologist, a nutritionist, a psychologist and an endocrinologist; anesthetic risk was also assessed.

Before and after the operation fractional heparin was utilized. Varis stockings and dynamic foot massagers were additionally worn on the patients before operation. Antibiotics of the cephalosporin group were prescribed in single dose before operation and in double dose after. The performed technically modified operations were divided into two groups. Group I included 61 (51.7%) patients who, after standard measures, underwent standard laparoscopic longitudinal gastrectomy (sleeve gastrectomy - SG), were resected with a 36 Fr calibration tube, 4-6 cm more proximal to the pyloric sphincter (this is the initial years of our operations). As a result, a stomach is formed in a volume of 120-140 ml. And group II consisted of 57 (48.3%) patients who underwent standard laparoscopic longitudinal gastrectomy (sleeve gastrectomy - SG) + antrum resection. The resection was performed with a 32 Fr calibration tube, antrum removed 2-3 cm proximal to the pyloric sphincter. As a result, the stomach is formed 80-90 ml. In the postoperative period, the patients stayed for 1-3 days. The technique of operations in both groups was carried out according to international standards, but in group II laparoscopic longitudinal gastrectomy (sleeve gastrectomy - SG) was slightly technically modified. According to the world literature, the use of the calibration tube 32-42 Fr does not affect the loss of body weight during the first 6 months, despite these data, we still recommend using 32 Fr because of the long-term favorable results.

Looking through modern literature it can be noted that resection should be performed at a distance of 4-6 cm from the pyloric sphincter. During our operations with the 32 Fr calibration tube, resection performs at a distance of 2 cm from the pyloric sphincter in the antrum area parallel to the body of the stomach and the lesser curvature to the bottom (fundus). As a result of applying these 2 methods, we form a stomach of a smaller volume, and as a result achieve even more serious and prolonged weight loss. At the next stage, methylene blue introduces into the stomach lumen to control the stapler line. During surgery, to control bleeding and minimize the risk of leakage, the staple line is sutured (sometimes with omentopection). The use of omenopection prevents further torsion of the stomach stump, usually about 1 cm in diameter, and follows the goal of maximum control of the staple line infiltration. For prophylactic control of stapling line infiltration, drainage is placed in all patients. The operation ends with the removal of the resected stomach through a 15 mm trocar. Due the utilization of a modified operative technique, postoperative difficulties were comparatively analyzed; before surgery and 1, 3, 6 and 12 months after surgery, BMI was observed in dynamics, probable hypertension, and special examinations of fatty liver were also taken into account.

Results

Of 118 patients with extreme obesity [mean age - 30 years; the average body mass index is 54.2 kg / m2] included in this research: 93 (78.8%) were women, 25 (21.2%) men. Of them: 43 (36.4%) patients had type II diabetes, or prediabetes; hypertension in 33 (27.9%) patients; 19 (16.1%) patients with sleep apnea; 17 (14.4%) women with hormonal disorders associated with polycystic ovarian disease; in 5 (4.2%) men lack of sexual function; in 14 (11.8%) – degenerative osteoarthritis; in 1 (0.8%) patient with chronic obstructive pulmonary disease; 2 (1.7%) patients had a condition after coronary stenting due to ischemic heart disease, and almost all patients (98%) had grade IV obesity. Surgery in 2 (1.7%) patients were laparotomic, in the remaining 116 (98.3%) cases laparoscopic procedures were performed. The average duration of the operation was 2.5 ± 0.5 hours; patients in the clinic had an average of 2.5 ± 0.5 bed-days. Fatal outcome was not observed. One (0.8%) patient underwent a second operation after 4 days due to insufficiency of the anastomosis. In one (0.8%) patient hypotension was noted on the next day after operation, correction was made by infusion and drug therapy. In 1 (0.8%) case 3 days after surgery, and in 1 (0.8%) case a month later, dysphagia appeared, corrected by conservative treatment, no mechanical narrowing was detected with endoscopy. After 3 months without treatment, the patient's condition returned to normal. During 6-month follow-up, positive dynamics was observed in all our patients, and by the end of 12 months, with the exception of 1 patient, normal values were obtained. In 1 (0.8%) patient 5 days after the operation an anastomosis failure in the fundus portion of the stomach was found. The patient was urgently hospitalized, and the subhepatic and left subdiaphragmatic areas were percutaneously drained on the background of appropriate intensive therapy. The next day, a full closed bariatric stand was installed, and after 3 days the patient was sent home under outpatient monitoring. After 5 weeks of dynamic control, the stand was removed, the subsequent period passed without complications.

Two months after surgery, 11 (8.6%) patients had gastroesophageal reflux, and 1 (0.8%) patient had a dumping syndrome. In the postoperative period, in the first 90 days, appropriate treatment was carried out with proton pump blockers, acid neutralizers and diet. In the first 6 months, patients of group I after standard laparoscopic longitudinal gastrectomy (sleeve gastrectomy - SG) lost approximately 39.5 ± 11.5 kg. And in patients of group II with the formation of smaller sizes of the stomach, weight loss averaged 44.5 ± 13kg. However, in patients of group I, after standard laparoscopic longitudinal gastric resection (sleeve gastrectomy - SG) for the next 6 months, compared to the first 6 months, the mass loss index gradually decreased and amounted to 22.5 ± 4.5 kg. And in patients of group II, with the formation of smaller sizes of the stomach and resection of the antrum, this figure, in comparison with the standard group, was 28.5 ± 6.5 kg. After 12 months, in the first group, the weight loss in general was 62 ± 7.5 kg, and in the second group – 73 ± 8 kg. Also, in both groups, patients, who underwent sleeve gastrectomy, did not need vitamin-mineral support after the first 3 months. In the first 3 months blood tests were performed for all patients, and, if necessary, vitamin and mineral treatment was carried out by parenteral route. Given all this, in the second group of patients with the formation of a smaller stomach size, weight loss and regression of concomitant diseases were more effective, compared with group I. By the end of 12 months, the percentage of overweight ratio was 43.4%, which demonstrates the effectiveness of this method.

Conclusions

Considering the results of the conducted research, it can be concluded that with a modified stomach reduction operation (sleeve gastrectomy)

in patients with extreme obesity, weight loss and recovery from concomitant diseases, in comparison with the standard group, occur more effectively and quickly. After a new technical modification of the operation of the sleeve gastrectomy in patients with severe obesity, satisfactory weight loss and positive dynamics of obesity and associated diseases, along with the absence of a negative effect on the vitamin balance and the absence of low absorption syndrome, make this method more reliable.

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RESULTS OF TREATING BOWEL OBSTRUCTION ACCORDING TO MATERIALS OF SURGICAL DEPARTMENT OF RAILROAD CLINICAL HOSPITAL

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Abstract

The article presents materials of retrospective analysis of patients, discharged from railroad hospital during the period 2005 - 2015 with diagnosis of bowel obstruction after operative and conservative treatment of 509 patients. Comparative data on lethality after emergency operation on bowels is presented. The results imply study of acute bowel obstruction and direct examination of patients during their permanent stationary treatment after operation.

Keywords
acute bowel obstruction (ABO) (dynamic, commissural, obturational, strangular), colostomy.

Теміржол клиникалық ауруханасы хирургиялық бөлімінің материалдары бойынша жедел ішек түйнелуін емдеу нәтижелері

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Аңдатпа

Мақалада жедел және консервативті емдеуден кейін «Ішек түйнелуі» диагнозымен 2005 - 2015 жылдарындағы мерзімінде ауруханадан ем алып шыққан 509 пациенттің ретроспективтік талдауының материалдары ұсынылған. Ішек түйнелуінің себебінен шұғыл ота жасағаннан кейін өлім-жітім оқиғаларының салыстырма деректері көрсетілген. Нәтижелері жіті ішек түйнелуін және отадан кейін стационарлық емдеу кезінде пациенттерді тікелей тексеруін зерделуі деп танылады.

Түйін сөздер
жіті ішек түйнелуі, колостома

Результаты лечения острой кишечной непроходимости по материалам хирургического отдел железнодорожной клинической больницы

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Аннотация

В статье представлены материалы ретроспективного анализа 509 пациентов, выписанных из железнодорожной больницы в период 2005 - 2015 гг. с диагнозом: «Кишечная непроходимость» после оперативного и консервативного лечения. Приведены сравнительные данные о летальности после экстренной операции по поводу кишечной непроходимости. Результаты подразумевают изучение острой кишечной непроходимости и непосредственное обследование пациентов во время стационарного лечения после операции.

Ключевые слова
острая кишечная непроходимость, колостома

Introduction

Acute bowel obstruction is an urgent topic in emergency surgery. Among all emergency patients ABO forms 5% of cases, diagnostic and treatment of it implies certain complications. In surgical history Wahl of 1889 two types of ABO are outlined: mechanical and dynamic. According to modern bibliographic data acute bowel obstruction takes place in 1,2-4,2% of cases and in any age. ABO is divided into two types: obstruction of neoplastic and nonneoplastic genesis. Mechanical form of the letter includes commissural bowel obstruction (64-74%). Commissural process and take place in stomach cavity in case of gynaecological pathology, tuberculosis, and inflammatory diseases of bowel. Strangular bowel obstruction happens in 12-20% of commissural obstruction cases, and forms 4-25% of nonneoplastic genesis. The origin of such obstruction lies in blood flow disturbance in bowel wall due to its compression. For neoplastic bowel obstruction lethal rate equals 22-41%, general lethality from ABO: 5-25%. According to materials of our clinic, lethality is much lower and equals 2.5%.

Research objective: Evaluate results of diagnosing and treating ABO and quality of surgical treatment.

Material and methods

Analyzing stationary cards of 509 patients, discharged from surgical department of railroad hospital during the period 2005-2015 after treatment of acute bowel obstruction. Age of patients ranged from 18 to 80 years, men in women in equal numbers, 60% of them endured surgery. 301 operated patients, in other words, 50% were elderly and old people, 6 patients had ABO of neoplastic genesis - 1,2%. According to history of disease in anamnesis: sudden stomach pains without clear localization, delay of stool and gas, sickness and vomiting, especially in case of small intestine obstruction. Early vomiting was not typical for obstructions in large intestine. In cases of strangular bowel obstruction pain attacks were stronger, and they were less expressed in obturational forms. The described symptoms: stomach asymmetry, “sand noise” of Sklyarov, during auscultation - “water drops” of S.I. Spasokukotskiy. Palpation of 30% of patients revealed «defansmuskulus», in others words - positive symptom of Schetkin-Bloomerg that is a sign of peritonitis. The histories contain description of x-ray examination (presence of Kloiber cups) that testifies for neglected cases of ABO. Among 509 of the received patients 50% were earlier operated, therefore, commissural bowel obstruction could not be excluded, and in 12-20% of cases strangulation can happen which is a strict objection against contract Rə- examination with liquid barium, these patients were examined with ultrasound. 242 patients with partial of dynamic bowel obstruction were treated via conservative method and discharged with a positive effect.

Results

During the mentioned period 267 of 509 patients with ABO were operated, among them 235 via laparotomy with cutting of commissures without resection of intestine, 10 - with resection, and the rest - via other methods: 4 - via desinvagination, 9 - method of Gartman, 7 - colostomy, 2 - via placement of «anus praet». 80-yeal-old patient with ABO of nonneoplastic genesis died. He had endured surgery of ABO, and was received with complication: perforation of intestine with fecal peritonitis. 6 patients were operated with diagnosis obturational bowel obstruction of neoplastic genesis, 7 patients died in total, during 10 years average lethality of ABO equaled 2,5%, and it was related to heavy pathology for the elderly and old people.

Conclusion

Regardless of difficulty of differential diagnostic of ABO, the selected tactic of overseeing Rə- graphy in case of commissural bowel obstruction, in other words, not implementing Rə- contrast examination with barium, allowed us to decrease death rate down to 2,5% in comparison to bibliographic data of 5-25%.

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ACCOMPANYING DYSFUNCTION OF THE GASTROINTESTINAL TRACT IN CHILDREN AFTER CARDIOSURGICAL SURGERY

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Abstract

The article presents the clinical and instrumental features of dysfunction of the gastrointestinal tract in patients with congenital heart defects after surgery under artificial blood circulation. It was noted that in 63.3% of cases, children showed signs of dynamic intestinal obstruction; 36.7% of newborns show signs of necrotizing enterocolitis of various degrees. The features of the bacteriological landscape, clinical manifestations and X-ray picture are presented depending on the type of intestinal function disorder. The role of hypoxia, hypoperfusion during the artificial blood circulation, the functioning of the open arterial duct in "blue" patients in the formation of risks of necrotizing enterocolitis is shown.

Keywords
congenital heart defects, children, cardiac surgery, intestinal dysfunction, necrotizing enterocolitis, extracardiac diseases

Кардиохирургиялық отадан кейін балалардағы асқазан-ішек жолдарының қосарласқан бұзылыстары

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Аңдатпа

Мақалада жасанды қан айналымы жағдайында туа біткен жүрек ақауы бар науқастардың отадан кейінгі асқазан-ішек жолы дисфункциясының клиникалық-аспаптық ерекшеліктері ұсынылды. 63,3% жағдайда балаларда ішектің динамикалы тарылуының белгілері, 36,7% нәрестеде некрозды энтероколиттің әртүрлі деңгейдегі белгілері байқалды. Ішек қызметі бұзылысының түрлеріне байланысты бактериологиялық пейзаж, клиникалық біліну және рентгенологиялық көріністің ерекшеліктері ұсынылды. Жасанды қан айналымы кезінде гипоксияның, гипоперфузияның рөлі және некрозды энтероколиттің даму тәуекелдерінің қалыптасуында «көгерген» пациенттердегі ашық артериалдық өзектің жұмыс істеуі көрсетілді.

Түйін сөздер
туа біткен жүрек ақауы, балалар, кардиохирургия, ішек дисфункциясы, өліеттендіруші энтероколит, экстракардиалдық ауру

Сопутствующая дисфункция желудочно-кишечного тракта у детей после кардиохирургических операций

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Аннотация

В статье представлены клинико-инструментальные особенности дисфункции желудочно-кишечного тракта у пациентов с врожденными пороками сердца после операции в условиях искусственного кровообращения. Отмечено, что в 63,3% случаях у детей встречались признаки динамической кишечной непроходимости; у 36,7% новорожденных признаки некротизирующего энтероколита различной степени. Представлены особенности бактериологического пейзажа, клинических проявлений и рентгенологической картины в зависимости от типа нарушения кишечной функции. Показана роль гипоксии, гипоперфузии во время искусственного кровообращения, функционирования открытого артериального протока у «синих» пациентов в формировании рисков развития некротизирующего энтероколита.

Ключевые слова
врожденные пороки сердца, дети, кардиохирургия, кишечная дисфункция, некротизирующий энтероколит, экстракардиальные заболевания

Actuality

Necrotizing enterocolitis (NEC) remains the most difficult and least studied problem in pediatrics [1, 2, 5, 6]. In child's cardiac surgery low perfusion pressure during artificial circulation (AC), small cardiac output in the postoperative period, aggravated by sympathetic vasoconstriction due to a stressful response to the operation, and the introduction of exogenous catecholamines generate reduced perfusion of the internal organs of the abdominal cavity. According to literature data, NEC refers to severe, relatively rare complications, arising after surgical interventions on the heart [3, 4]. NEC, arising in the postoperative period, is often not recognized in a timely manner, the child accordingly does not receive the necessary treatment, which can lead to a fatal outcome.

Material and methods

There were analyzed medical histories of 30 children, hospitalized in the Scientific Center for Pediatrics and Pediatric Surgery with congenital heart diseases (CHD) and vascular malformations for the period 2014-2017.

All children underwent standard research methods: echocardiography, chest X-ray, clinical and laboratory studies, bloodtests on fetal infections, on procalcitonin, immunogram, angiocardiography, CT and MRT on indications, bacteriological examinations of smears and sputum, abdominal radiography in standard positions.

Results and discussion

Among the patients studied, the age structure included 18 infants, children under 6 months old - 10 children, over 1 year – 2 children. All patients underwent interdisciplinary therapy with a neurologist, pulmonologist and neonatal surgeon, specialists in radiation diagnostics, infectious diseases and nephrologists.

Analysis of clinical manifestations in children in the pre-operative and postoperative periods showed that in 19 cases (63.3%) were signs of dynamic intestinal obstruction. This group of children comprised: 7 newborns (36.8%) and 12 post-neonatal patients. All patients were after heart surgery (2 patients after pulmonary artery narrowing and 10 operated under artificial circulation). In this group of patients, clinical symptoms were observed in the first 24 hours after the operation as a moderate uniform bloating, a scant "light" stagnant gastric discharge, and there was heard listless peristalsis of the intestine. There was noted only moderate gas filling of the intestinal loops in these patients on the series of survey radiographic images of the abdominal cavity organs. Conditionally pathogenic microflora is isolated in 36.8% of cases in bacteriological monitoring in this group of patients before the operation and after (smears from the pharynx, blood and bucket sowing).

There were conducted conservative therapy of paretic postoperative intestinal obstruction and intensive therapy of somatic status in this group of patients. The measures were effective, which allowed the symptoms of intestinal pathology to be quenched in patients without complications.

The most complex and severe group of patients after heart and vascular surgery were children with congenital heart diseases (CHD) who developed signs of necrotizing enterocolitis (NEC) - 11 patients (36.6%). 10 children were newborns, 1 patient older than 5 years (after Fontaine's surgery with severe multi-organ failure, who was on dialysis).

The group of patients with "pale" CHD were presented by 1 patient with a critical coarctation of the aorta 3 patients (with an aortic arch interruption, an interventricular septal defect with coarctation of the aorta) and 3 patients with an aortic arch interruption, an interventricular septal defect with coarctation of the aorta. "Blue" CHD were presented by 4 patients (with transposition of trunk - 2, total abnormal drainage - 1, pulmonary artery atreusia – 1). In 2 cases (25%) performed an operation without artificial circulation (with pulmonary artery atresia, superimposition of systemic - pulmonary anastamosis and resection of coarctation of the aorta), and in 75% of cases with prolonged artificial circulation (AC) (more than 60 minutes and hypothermia, in 3 cases with circulatory arrest). This group of patients had more severe postoperative period due to the development of severe postperfusion syndrome, heart failure, multiple organ disorders.

In this group of patients 7 (63.6%) diagnosed "uncomplicated" NEC 1 and 2 stages; in 4 cases (36.3%) - NEC with the development of peritonitis and intestinal perforation. In the most cases, there were children with CHD who underwent an open-heart surgery under artificial circulation and spent more than 7 days on ventilatory ventilation due to heart failure and multiple organ dysfunction, sepsis.

In patients diagnosed with uncomplicated NEC, clinical manifestations were: unevenly increased bloating of abdomen, lax intestinal peristalsis, moderate stagnant duodenal content from the nasogastric tube, lack of stools. In the resulting of X-ray examination non-uniform gas filling of the gastrointestinal tract was noted. In the X-ray contrast study there were manifestations of dynamic intestinal obstruction, the phenomenon of a "static" loop. The uneven, moderately pronounced dilatation of the intestinal loops, sluggish peristalsis or its absence were determined with ultrasound of the abdominal cavity. All patients were regularly examined by a neonatal surgeon. The conservative therapy of NEC was performed by adequate antibiotic therapy (including the sensitivity of the microflora), metronidazole, complete parenteral feeding with decompression of the gastrointestinal tract and low cardiac output, correction of hypoxemia, electro-

lyte balance, microcirculation, immunotherapy. In the result of treating the signs of NEC were gone. In a bacteriological study of sputum, a mixed culture planted in most cases: Strep. spp, Staph. spp, Enterobacter spp. In the hemocultures bloodtests Staph. Intermedius was detected in 2 cases, in the remaining 5 cases the blood culture was clean. In the intensive care unit (ICU) on the ventilator were treated 4 patients with the predominant flora of Staph. spp, mainly coagulase-negative, multi-resistant staphylococci. There were 2 patients with Staph. spp in the ICU. By them followed representatives of the family of Eterobacteriaceae in 2 patients and fungi of the genus Candida spp in 1 case. In a bacteriological study a klebsiella seeding, multidrug-resistant to antibiotics from the enterobacter family was received.

Complications in the form of preperforation and intestinal perforation with peritonitis developed in 4 cases (13.3%) in patients with NEC 3 and 4 stages. According to our analysis, this severe group of patients included patients with "blue" CHD, severe arterial hyperoxemia, which discharged prior to surgery. All of newborns entered in the clinic with very serious condition due to severe hypoxemia, heart failure, without infusion of vasoprostan at the stage of primary health care (PHC). From the anamnesis these patients underwent intrapartum hypoxemia (according to APGAR 3-5-6 points, weighed obstetric anamnesis, intrauterine pneumonia). In the structure of CHD in these children 75% newborns had a simple form of transposition of the main vessels (TMV), 25% newborns had a total anomalous drainage of the pulmonary veins without a defect in the interatrial septum. Considering the ductus-dependent CHD and severe arterial hypoxemia, after preoperative preparation, all the newborns were operated in the conditions of AC (more than 120 minutes) and deep hypothermia. According to the analysis, in the postoperative period a severe postperfusion syndrome was marked in all patients: cardiac weakness, respiratory insufficiency, neurological disorders. All of these patients were on prolonged mechanical ventilation for more than 2 weeks. In the first day of the postoperative period acute renal failure (ARF) was developed in all cases, with further transformation to a septic state. A sepsis proceeded according to the hyperergic type with pronounced leukocytosis, increase of procalcitonin and CRP, intoxication in 3 cases, and in 1 case it proceeded to the hypoergic type with leukopenia, without hyperthermia, and moderate increase of procalcitonin. All children had bloating, sluggish peristalsis, gastro-duodenal copious discharge from the nasogastric tube. Severe swelling of the soft tissues was marked in all patients after surgery on the background of acute renal failure and the syndrome of "capillary leakage", in connection with this, it was impossible to differentiate the swelling of the anterior abdominal wall, characteristic of peritonitis.

All patients were regularly examined by neonatal surgeons. Daily monitoring of radiation was carried out for exclusion of acute surgical pathology from the side of the abdomen. In 1 patient with total abnormal drainage with left ventricular hypoplasia after surgery, the diagnosis of NEC was not exposed, perforation and peritonitis were a clinical finding in a pathomorphological study at autopsy. This patient after a surgery, on a background of left ventricular hypoplasia had a low cardiac output and took high-dose catecholamine therapy. In 3 cases after correction of TMV by surgeons, the risk of NEC emergence was exposed. All children had a series of dynamic panoramic X-rays - there were no data for acute pathology from the abdominal cavity. An uneven increased swelling of the intestinal loops was on the X-rays. There were not datas for the pneumo-peritoneum on the X-rays. Sonography also noted in all cases pronounced hyperpneumotization of the intestine, the presence of ascites between the intestinal loops. It was regarded as manifestations of anasarka in acute renal failure. A picture of limited peritonitis developed in 1 case. The laparocentesis with drainage of the abdominal cavity was performed for this patient in the first stage, however, in dynamics there was the progression of peritonitis, so a laparotomy was performed. The risk of NEC was exposed in 2 cases, during the installation of peritoneal drainage was obtained from the abdominal cavity - a calorie content and doctor diagnosed intestinal perforation. Meanwhile after carrying out of X-Ray of the abdominal cavity in the frontal and lateral positions in these patients, there were no signs of acute surgical pathology, in particular, intestinal perforation. Emergency laparotomy, with resection and removal of the intestinal stoma carried out for all children. Intraoperative with laparotomy, diffuse fecal peritonitis with intestinal perforation was exposed, it was confirmed histologically, bacteriological analyzes were taken. The most common reason of NEC are Kl. pneumonia, E. coli, clostridia, staphylococcus, streptococcus and fungi of the genus Candida according to foreign authors. It is important to note, that the surgeon examined patients in the intensive care unit, where the bacterial colonization of the child's intestines is extremely aggressive, already at the stage of peritonitis or perforation of the intestine, after a catastrophe in the abdominal cavity.

There was 1 case with presence of Klebsiella after bacteriological culture of abdominal contents in our observations. There was a conditional pathogenic flora in 2 cases. There was 1 patient with intrauterine pneumonia, he had already had bacteremia with seeding of staphylococcus. After surgery on the heart in conditions of AC this complicated the course of the postoperative period and development of septic complications, including peritonitis. All of these children received intensive therapy, including broad-spectrum antibiotics, immunomodulators, parenteral feeding,

low cardiac output therapy, prolonged ventilation for more than 3 weeks. Despite the therapy in this group, the patients died. The cause of death was multiple organ failure and septic state. Manifestations of NEC and peritonitis were complications of the septic state.

There were more than 80% of our patients underwent surgery under conditions of AC according to our data. According to the literature data, the danger of complications' development exists after each heart surgery, in both cases: after surgical interventions in conditions of artificial circulation and under hypothermia. [Meshalkin EN, 1973, 1985]. The highest frequency of complications observed in groups of complex, especially cyanotic or combined CHD. A sepsis, multiple organ dysfunction and cardiac insufficiency, exceeding the time of operation with AC provided the decisive role in the development of complications, toxic and ischemic genesis. Maybe, the provoking factors of complications' development, including from the gastrointestinal tract and ischemia of the intestine are the non-pulsating blood flow during AC, postoperative low cardiac output syndrome, using of direct and indirect anticoagulants. There were patients of the neonatal period, including those with intestinal perforation and peritonitis in 60% of cases with manifestations of NEC and dynamic intestinal obstruction. Specifically, this group is vulnerable, where provoking factors can cause severe complications. Necrotizing enterocolitis of newborns is polyethological disease. The main pathogenetic factors are hypoxia and ischemia in the perinatal period, inadequate nutrition of the newborn and colonization of the intestine by abnormal microorganisms. There were patients with severe manifestations of NEC in our observations, who were admitted to the clinic with a very serious condition, they had intrapartum hypoxemia and intrauterine pneumonia, which aggravated after surgery under conditions of AC and hypothermia. Maybe, the factor of intestinal ischemia in cases of "blue" CHD with the presence of a neonatal arterial duct (NAD) is diastolic steal syndrome of the mesenteric arteries. There are cases of NEC in premature infants with functioning of NAD in the literature, however, we have not found any studies of the influence of NAD in patients with "blue" CHD on blood pressure in the intestinal blood flow, which requires further study. As for the influence of catecholamines on the body, it is known that they cause a spasm of the abdominal cavity vessels. In our cases, all patients received exogenous catecholamines: epinephrine, norepinephrine, dopamine. The cardiotonic support was high doses of catecholamines in the group with low cardiac output.

According to our observations, the typical clinical signs of perforation of the intestine and peritonitis disguise in "blue" patients, in "edematous" patients, who received long-term infusions of muscle relaxants and morphine in the early postoperative period. The clinical picture of acute surgical pathology in the abdominal cavity had its difficultly differentiated features, both clinical and diagnostic, as it was flatten out by the general severe condition of the patient after heart surgery in conditions of AC and the characteristics of the CHD.

Conclusions

Thus, according to our clinical observations, we made the following conclusions:

1. The presence of background pathology, severe anamnesis, intrapartum hypoxia, inadequate intensive therapy at the level of PHC in children, especially with "blue", ductus-dependent CHD, are the risk of complications after surgery in conditions of AC and hypothermia, including NEC.
2. A comprehensive radiological study (including X-ray, ultrasound, computed tomography) should performed in a group of patients at risk of developing NEC and intestinal perforation after heart surgery.
3. The presence of hyperpneumatization and fluid sequestration between the intestinal loops in the sonography of the abdominal cavity can be regarded as a predictor of the development of severe NEC and peritonitis.
4. The interpretation of the radiographic picture and clinic of acute surgical pathology in the abdominal cavity may be difficult in the group of severe patients, who are on prolonged ventilation, receive morphine infusion, muscle relaxants and have the signs of an anasarka.

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THE ABILITIES OF MODERN DIAGNOSTIC METHODS IN BLADDER CANCER STAGE IDENTIFICATION

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Abstract

The present research is devoted to a comparative analysis of the radiological diagnostic methods of bladder cancer. The data of Ultrasonography, Computer Tomography and Magnet Resonance Tomography investigations have been analyzed for disease stage identification, prevalence of process and level of tumor penetration. The research included 76 patients with BC, who were examined and treated at the clinical bases of the Department of Urology of the Azerbaijan Medical University - Republican Clinical Hospital and the Central Hospital of Seafarers from 2009 to 2012. In the course of the examination, ultrasonography, CT, MRI, both individually and in combination, were used to diagnose all patients, which made it possible to carry out a comparative analysis, identify diagnostic abilities and determine the need of applying one or another research method. To all the patients, depending on the location and degree of tumor invasion, were performed the appropriate operations. In all cases, a histopathological analysis of the macropreparation was performed. Postoperative diagnoses matched preoperative in 90–93% of cases. We do not exclude that discrepancies in diagnoses took place not so much because of the imperfection of the method itself, but because of the incorrect interpretation of data by a radiologist. The obtained results allow identify these diagnostic methods efficiency and recommend their more widely utilization in clinical practice as separately as a complex variant for increase of accuracy of diagnostics and quality of treatment.

Keywords
bladder cancer (BC), ultrasonography (US), computer tomography (CT), magnetic resonance imaging (MRI)

Несептік қуық обырының кезеңін анықтауындағы диагностикалаудың заманауи әдістерінің мүмкіндіктері

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Аңдатпа

Осы зерттеу несептік қуық обырын (НҚО) диагностикалауда зерттеудің сәуле арқылы әдістерін қолданудағы салыстырма талдауына арналған. Аурудың кезеңін, ісік процессінің таралуы және инвазивті деңгейін анықтауда УДЗ, КТ және МРТ қолдану деректерінің талдауы жасалған. Аталмыш зерттеуге Республикалық клиникалық ауруханасындағы және Теңізшілердің орталық ауруханасындағы клиникалық базаларында Әзірбайжан медициналық университетінің урология кафедрасында 2009 жылдан бастап 2012 жылға дейінгі мерзімде тексеріліп, ем алып шыққан НҚО 76 ауруы кірген. Диагнозды анықтау үшін барлық ауруларға тексеру процессінде қалай да жеке-жеке, солай да кешенді УДЗ, КТ және МРТ әдістері ұсынылған, ондай жайт олардың салыстырма талдауы жасауға, диагностикалық қабілеттерін анықтауға және зерттеудің сондай немесе өзге де әдістерін қолдануының қажеттілігін нақтылауға мүмкіндік береді. Барлық ауруларға ісік инвазиясының орныққандығына және деңгейіне байланысты тиісті операциялар жасалған. Барлық оқиғаларында макропрепараттың патогистологиялық зерттеуі жүргізілген. Операциядан кейінгі диагноздары 90 – 93% оқиғаларында отаға дейінгі қойылған диагноздарымен сәйкес келді. Диагноздарындағы айырмашылықтар мен сәйкес келмеуі тек әдістің жетілдірілмегендігінен ғана емес, сондай-ақ радиолог-дәрігермен деректерінің дұрыс жасамаған тұжырымдамасынан орын алғандығын жоққа шығармаймыз. Алынған нәтижелер диагностикалаудың сәуле арқылы әдістерінің тиімділігін анықтауға және де диагностикалаудағы нақтылығын арттыру үшін, сонымен емдеу сапасын жақсартудағы түпкілікті қорытындысын арттыру үшін қалай да жеке, сондай-ақ кешенді нұсқасында клиникалық тәжірибеде кеңірек пайдалануға мүмкіндік береді.

Түйін сөздер
(НҚО) несептік қуығының обыры, (УДЗ) ультрадыбыстық зерттеу, (КТ) компьютерлік томография, (МРТ) магниттік-резонанстық томография

Возможности современных методов диагностики в определении стадии рака мочевого пузыря

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Аннотация

Настоящее исследование посвящено сравнительному анализу применения лучевых методов исследований в диагностике рака мочевого пузыря. Проанализированы данные применения УЗИ, КТ и МРТ в определении стадии заболевания, распространенности процесса и степени инвазии опухоли. В исследование вошло 76 больных РМП прошедших обследование и лечение на клинических базах кафедры Урологии Азербайджанского Медицинского Университета – Республиканской Клинической больнице и Центральной больнице моряков в период с 2009 по 2012 годы. В процессе обследования всем больным для установки диагноза применялись УЗИ; КТ; МРТ как по отдельности, так и в комплексе, что позволило провести их сравнительный анализ, выявить диагностические способности и определить необходимость применения того или иного методов исследования. Всем больным в зависимости от расположения и степени инвазии опухоли были проведены соответствующие операции. Во всех случаях было проведено патогистологическое исследование макропрепарата. Послеоперационные диагнозы совпали с дооперационными в 90 – 93% случаях. Не исключаем, что расхождения в диагнозах имели место не столько из-за несовершенства самого метода, сколько из-за неправильной интерпретации данных врачом – радиологом.Полученные результаты позволяют определить эффективность лучевых методов диагностики и рекомендовать более широкое применение в клинической практике как по отдельности, так и в комплексном варианте для повышения точности диагностики и в конечном итоге улучшения качества лечения.

Ключевые слова
Рак мочевого пузыря (РМП), ультразвуковое исследование (УЗИ), компьютерная томография (КТ), магнитно-резонансная томография (МРТ)

Introduction

According to the WHO, BC accounts 3% of all malignant diseases and 30-40% of neoplastic diseases of the organs of the urogenital system. In the structure of cancer incidence in men, it is on the 8th, and in women on the 18th place [1,2]. Every year, more than 100,000 cases of BC are diagnosed in the world, 80% of which are men [3,4]. In 98% of cases, bladder tumors develop from epithelial tissue, 90% of them have transitional cell carcinoma [5,6]. Despite the worldwide tendency to increase in the incidence of BC, early diagnosis of the disease, determination of the stage of tumor invasion are still at an insufficiently high level and improvement of this situation is one of the most pressing problems of modern oncourology [7]. The correct diagnosis based on clinical, laboratory and instrumental methods of research. The long early period of the asymptomatic course, the presence of minimal structural changes in the organs and untimely visit to a doctor only aggravate the situation of patients [8]. In this regard, the timely diagnosis of the disease should be considered not only as a medical, but also as a socio-economic problem [9]. A number of clinical and histological features determines the relevance of the diagnosis of BC. Among them, on the one hand, is the slow development of the disease, on the other, the scarcity and non-specificity of the early clinical symptoms [10]. There are many research methods in the arsenal of the physician for diagnosing the disease. In all cases, it is impossible to use them all on one patient. Some of these methods are invasive and can lead to various complications; others are economically expensive, which limits their use in practice [11]. The rapid development of science and technology made it possible to create diagnostic equipment of a new generation, broaden the horizons of utilization of radiation research methods and improve their quality and safety, which contributed to their more frequent use in practice [12]. Therefore, there is a need and relevance to continue conducting research in this area.

The purpose of the research – to assess the effectiveness of the radiological research methods (ultrasonography, CT, MRI) in the diagnosis of BC.

Material and methods

The research included 76 patients with BC, examined and treated at the clinical bases of the Department of Urology of the Azerbaijan Medical University - Republican Clinical Hospital and the Central Hospital of Seafarers from 2009 to 2012. There were 66 men (86.8%), 10 women (13.2%) among them. The age of patients ranged from 31 to 79 years. The average age is 62.3 years. In the course of the examination, ultrasonography, CT, MRI, both individually and in combination, were used to diagnose all patients, which allowed carrying out a comparative analysis, identifying diagnostic abilities and determining the need to apply one or another research method. The convenience of implementation, the invasiveness of the method and its cost price were also taken into account. At the moment, there are many private clin-

Table 1
Stages of bladder tumors determined by transabdominal ultrasonography

Stage of the process	Quantity of patients	The Accuracy of stepwise determination	
		Correct	Incorrect
T1N0M0	7	5(71,4%)	2(28,6%)
T2N0M0	16	15(93,7%)	1(6,3%)
T2aN0M0	9	8(88,9%)	1(11,1%)
T2bN0M0	7	7(100%)	-
T3N0M0	13	11(84,6%)	2(15,4%)
T3aN0M0	8	7(87,4%)	1(12,5%)
T3bN0M0	6	5(83,3%)	1(26,7%)
T4N0M0	10	10(100%)	-
Total:	**76**		

ics in the Republic, with modern medical diagnostic equipment. Most patients who come to these clinics for diagnosis are exposed to several, sometimes expensive and duplicative, invasive methods of research. However, often these researches are not enough, and in order to clarify the diagnosis and determine the method of treatment additional research is needed. Researches conducted by higher qualified specialists make it possible to more fully utilize the diagnostic capabilities of the equipment, which makes it possible to reduce the amount of examination. Re-examination is not definitely perceived by the patients.

Considering the high diagnostic accuracy of the methods of radiation diagnosis used by us, as well as the invasiveness of the endoscopic methods of examining the bladder, we did not use cystoscopy in the preoperative diagnosis of BC. For the same reason, the preoperative morphological diagnosis of tumors was not performed. Transabdominal ultrasonography was performed as usual with a 3.5 mqHz transducer. Transrectal ultrasonography was performed with 5.9 transducers (7.5 mqHz). We performed a CT scan on a PhilipsBrilliance 64 apparatus. The slice thickness was 1 mm. The examinations were carried out before and after the injection of an intravenous contrast agent (Ultravist 370/100). The entire abdominal cavity from the diaphragm to the exit of the small pelvis was examined. MRI examinations were carried out on the PhilipsAchieva 1.5T device in T1, T2, and diffuse modes, in axial, coronal and sagittal projections. To establish the primary diagnosis and determine the degree of tumor invasion, the most economically profitable and highly informative method of ultrasonography was performed to all the patients entered our research in the first place. To all patients included in our research were performed transabdominal ultrasonography. A tumor of the left posterolateral wall was diagnosed in 21 (27%) patients, in 16 (21.1%) - of the right posterolateral wall of the bladder. In 4 cases, due to the proximity of the tumor to the opening of the right ureter, and in 3 cases to the opening of the left ureter, a hydronephrotic transformation was determined from the corresponding side. In 15 (19.7%) cases, the tumor was located on the back wall and the neck of the bladder; 7 (9.2%) - in the neck; in 12 (15.8%) cases on the anterior wall; 5 (6.6%) patients – had a tumor of a bladder arch. In addition to the localization of the tumor in the bladder, the ultrasonography method was used to determine their amount and size, which played an important role in choosing the upcoming treatment method. A single tumor in the bladder was diagnosed in 41 patients, in 18 patients two tumors, in 10 patients three tumors, in 8 patients multiple. In 21 patients, the tumor size was 2.5-3 cm, in 26 - 3.5-4 cm, in 20 - 4.5-5.0 cm, in 11 - 5.0-6.0 cm.

As follows from the table, the majority of patients had the tumor in the T2-T3 stage. The experience and professional skills of the physician play an important role in the preoperative diagnosis of the bladder cancer stage.

Transrectal ultrasonography has been performed to 12 patients. Before the procedure, the bowels were emptied necessarily. The research was conducted by using special transducers. According to the results of TRUS, in 5 patients the tumor was on the anterior wall, in 4 – in the area of the bladder neck, and in 3 – at the top of the bladder. The research was carried out on a full and emptied bladder, which made it possible to identify a violation of elasticity and deformation of the walls of the bladder in the tumor area. This data, in turn, determined the type of upcoming surgical treatment. In general, despite the high information content of ultrasonography in the primary diagnosis of BC, the degree of tumor invasion, the state of regional lymphatic nodes and the presence or absence of metastases in parenchymal organs, there are cases where US is not such reliable. In the diagnosis of small tumors of 1.0-1.5 cm US cannot be considered completely reliable and in these cases it is more expedient to resort to other methods of radiation diagnosis.

In the course of our research, in case of difficulties in diagnosing and differentiating the stage of

Figure 1.
Patient A.V. 59 years old. Ultrasonogram of a calcified tumor of the right posterolateral wall of the bladder with dimensions of 3.5x3.0 cm (T2N0M0).

the disease, we used CT and MRI. These methods do not require any special preliminary preparation of the patients. In cases of compression of the ureters' openings by the tumor of the bladder, CT was performed with intravenous contrast enhancement to detect functional disorders of the upper urinary tract. CT scan was peformed to 43 (56.6%) patients who entered our research; to 11 (14.5%) - MRI. Twenty-three patients had CT scans with intravenous contrast. This method very accurately determined the local prevalence and stage of the process. The following stages were diagnosed by CT: T1 - in 8 patients, T2 - in 18, T3 - in 12, T4 - in 5. By MRI: T1 - in 2, T2 - in 4, T3 - in 3, T4 - in 2 patients.

In some cases, for the diagnosis of stage T1-T3 bladder tumors, the CT abilities are not enough and such patients are recommended for MRI with a high degree of informativeness. Of all the methods of radiation diagnosis, in terms of their specificity and accuracy in the diagnosis of malignant tumors, the MRI method is considered to be the best. The relatively high cost of the method and the poor technical equipment of some clinics limits its utilization in practice.

The accuracy of preoperative diagnosis of bladder tumors, depending on the method of radiological diagnosis used, is presented in the following table.

The appropriate operations were performed to all patients, depending on the location and degree of tumor invasion. Surgical treatment was carried out under intubation anesthesia, epidural or spinal anesthesia. 16 (21.2%) patients underwent resection of the left posterolateral wall of the bladder with left-sided ureterocystoneostomy; 12 (15.8%) patients - resection of the right posterolateral wall

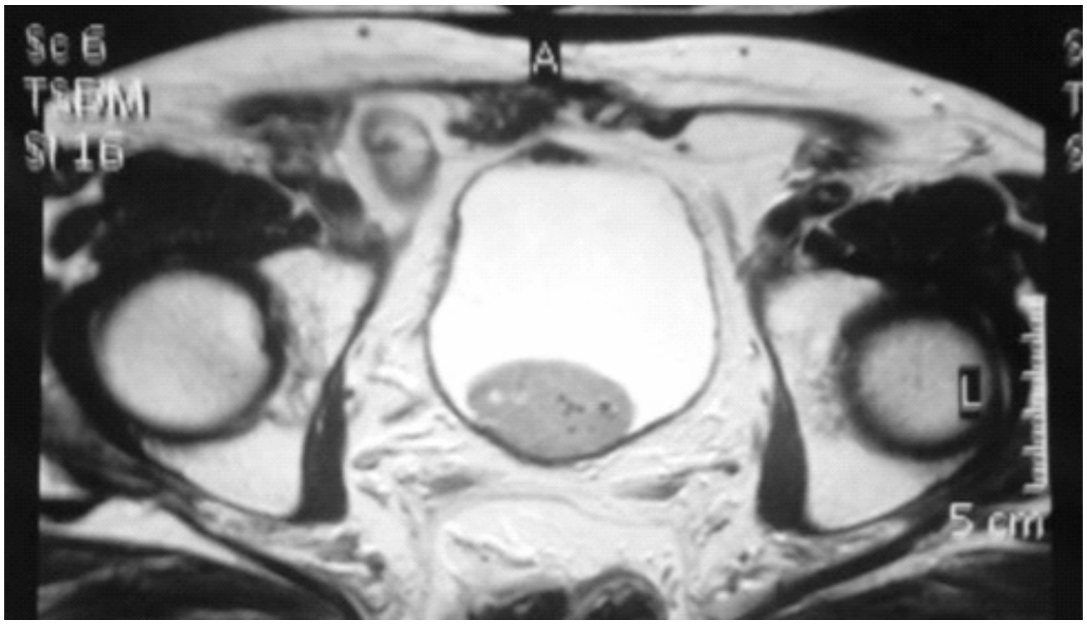

Figure 2.
Patient G.M. 53 years old. Computed tomogram of a tumor infiltrating the right posterolateral wall and bladder neck measuring 4.1x3.2 cm.

Table 2
Determination of the degree of BC invasion by various methods of radiation diagnosis

	Research methods			
	Transabdominal ultrasonography	Transrectal ultrasonography	CT	MRI
Quantity of patients	76	18	43	11
Correct diagnosis	90,8%	94,4%	87,9%	90,9%

with right-sided ureterocystoneostomy; 5 (6.6%) patients - resection of the left posterolateral wall; 6 (7.9%) - right posterolateral wall; 7 (9.2 %) - resection of the anterior wall and the top of the bladder; 6 (7.9%) - transurethral resection; 12 (15.8%) - cystectomy with ligation of the internal iliac arteries, lymphadenectomy, of which 6 patients by ureterocutaneostomy, and in 7 - with the diversion of the ureters to the intestine. 5 (6.6%) patients due to the severity of the condition, according to vital indications, underwent ligation of the internal iliac arteries and lymphadenectomy with ureterocutaneostomy. In all cases a histopathological examination of the macropreparation was performed. Transitional cell carcinoma was diagnosed in 28 (36.8%) patients. Of them: G1-11; G2-6; G3-4; G4 in 4 patients. The squamous cell carcinoma was diagnosed in 19 (24.1%) patients. Of them: G1-8; G2-4; G3-3; G4 in 2 patients. Adenocarcinoma was diagnosed in 13 (17.1%) patients. Of them: G1-1; G2-3; G3-2; G4 in 3 patients. Malignized papilloma was diagnosed in 9 (11.8%) patients. Of them: G1-4; G2-2; G3-2; G4- in 1 patient. Infiltrative cancer was diagnosed in 7 (9.1%) patients. Of them: G1-1; G2-2; G3-2; G4- in 1 patient. According to the degree of invasion: in 7 patients - T1N0M0, in 32 patients - T2N0M0, in 27 patients - T3N0M0, in 10 patients - T4N0M0. Postoperative diagnoses matched with preoperative in 90–93% of cases.

Discussion and results

In the course of our research, for early diagnosis and determination of the degree of invasion of BC, we assigned the greatest importance to the evaluation of data from radiological diagnostic methods. The choice of treatment method and operation (organ-preserving or organ-imposing) was determined on the basis of the interpretation of the data obtained from these research methods. Among all methods of radiation diagnosis, ultrasonography as the most convenient for patients, painless and cost-effective was peformed to all patients during the initial diagnosis. Using various transducers, it was utilized both transabdominally and transrectally. In the course of our research, we concluded that for the diagnosis of tumors localized in the area of the neck and the apex of the bladder, the possibilities of transabdominal ultrasonography are not enough. In these cases, we performed transrectal ultrasonography despite its relative traumatic effect. The high informativeness of the method made it possible to determine the thickness of the wall of the tumor localization, the change of its elasticity and rigidity, and structural changes in the walls of the bladder. The results of histopathological examination of 76 patients spent after surgery in whom a bladder tumor was diagnosed with transabdominal ultrasonography matched with a preoperative diagnosis in 69 (90.8%) and did not matched in 7 (9.2%) patients. By analogy, preoperative diagnosis using TRUS performed in 18 cases matched with the postoperative diagnosis in 17 (94.4%) and did not matched in 1 (5.6%). Preoperative diagnostics performed by 33 patients using CT scan matched with the postoperative one in 29 (87.8%) cases and did not matched in 3 (12.2%) cases. The diagnoses based on MRI in 11 cases was correct in 10 (90.9%) cases and incorrect in 1 (9.1%). In some cases, in the differentiation of stages T2-T3 of the BC, the CT data proved to be inaccurate. These data matched with the postoperative in 87.8% of cases. To date, one of the most informative radiation method for the differential diagnosis of the stages of BC T1-T4 is MRI. According to the results of our research, the reliability of this method was 90.9%. In 9.1% of cases, the histologically established postoperative diagnosis differed from the diagnosis established by MRI. We do not exclude that the discrepancies in the diagnoses took place not so much because of the imperfection of the method itself, but because of the incorrect interpretation of the data by the radiologist.

As a result of our research, we came to the conclusion that the utilization of modern radiological research methods in the early diagnosis of BC, determining its degree of invasion and choosing a radical method of treatment can be considered as the “gold standard” and more widely performed in practice. Despite the high information content of each of the radiation methods of investigation separately, in some diagnostically unclear cases, it is more expedient to utilize them in a complex.

Conflict of interest

There is no conflict of interests under the presented article. We express gratitude to all the employees of the Department of Urology of the Azerbaijan Medical University, physicians and staff of the urology departments of the Republican Clinical Hospital and the Central Hospital of Seafarers who helped in the collection of material.

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THE RESULTS OF SURGICAL TREATMENT OF CROHN'S DISEASE AND NONSPECIFIC ULCERATIVE COLITIS

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Abstract

The purpose of the study was to improve the results of surgical treatment of patients with Crohn's disease and ulcerative colitis. ***Materials and methods:*** *In the period from 2007 to 2015, 170 patients were hospitalized, 109 were diagnosed with Crohn's disease and 61 patients were diagnosed with ulcerative colitis. 48 patients were operated on (38 patients with Crohn's disease and 10 patients with non-specific ulcerative colitis) aged 16 to 58 years. Of these, 4 patients were operated using by laparoscopic method and 44 using by open method. Three groups were created: in the first group, 14 patients: 11 (22.9%) underwent total colectomy with formation of a reservoir from the small intestinal loop and 3 patients (6.3%) had a temporary ileostomy. In the second group there were 8 patients: in 2 (4.2%) resection of the small intestine with the imposition of the small intestinal anastomosis, and in 6 (12.5%) patients, right-sided hemicolectomy + ileotransversely. In the third group of 24 patients: 12 patients (25%) total proctocolectomy + terminal ileostomy and 12 patients (25%) subtotal proctocolectomy + terminal ileostomy.* ***Results:*** *reconstructive surgery provided an opportunity to improve the objective assessment of the severity of the disease, reduce the occurrence of complications, optimize the results of surgical treatment and reduce the rates of disease recurrence as well as postoperative complications and mortality. In patients of the first group (total colectomy with the formation of a reservoir from the small intestinal loop), the quality of life becomes better compared with other groups.*

Keywords
Crohn's disease, Nonspecific Ulcerative Colitis, colonoscopy, reservoir from the intestinal loop.

Крон ауруы мен арнайы емес колиттің хирургиялық емдеудің нәтижелері

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Аңдатпа

Зерттеу мақсаты: *Крон ауруына және арнайы емес колитіне шалдыққан ауруларды хирургиялық емдеу нәтижелерін жақсарту болып табылады.* ***Материалдары мен әдістері:*** *2007 жылдан бастап 2015 жылға дейінгі мерзімінде стационарлық 170 ауру ем алған, соның ішінде 109 пациент Крон ауруына және 61 пациент арнайы емес колитіне шалдыққандар болған. Сондай аурулардың 48-не ота жасалған 16 жастан 58 жасқа дейінгі мөлшеріндегі (38 пациент Крон ауруына және 10 пациент спецификалық емес ойықжара колитіне шалдыққандар). Соның ішінен 4 ауруға лапароскопиялық әдісімен және 44 ауруға ашық түрінде ота жасалған. 3 топ құрылған: бірінші топта 14 аурудың: 11-інде (22,9%) жұқа ішектен ілмек жасап, резервуар қалыптастырып, жаппай колэктомия отасы жасадған, ал 3 ауруға (6,3%) уақытша илеостома әдісі қолданып, салынған. Екінші топта 8 ауру: 2-не (4,2%) жұқа ішек арқылы анастомоз салынып, жұқа ішектің резекциялау отасы жасалған, ал аурулардың 6-ына (12,5%) оңжақтық гемиколэктомия+илеотранверзостомия отасы жасалған. Үшінші топта 24 аурудың: 12 ауруға (25%) жаппай проктоколэктомия+терминалды илеостомия жасалып, ал 12 ауруға (25%) субтотальдық проктоколэктомия+ терминалдық илеостомия әдісімен ота жасалған.* ***Нәтижелері:*** *реконструктивтік пен бұрынғы қалпына келтіру тұрғысынан оталар аурудың ауырлығын объективті түрде бағалауын жақсартуға, қабынулардың шығуын азайтуға, хирургиялық емдеу нәтижелерін оңтайландыруға, аурулардың рецидивтерінің көрсеткіштерін азайтуға, сондай-ақ отадан кейінгі асқынуларды және де өлім-жітім оқиғаларын төмендетуге ықпалын тигізді. Бірінші топтағы аурулардың (жұқа ішектен ілмек жасап, резервуар қалыптастырып, жаппай колэктомия отасы жасағандардың) басқа топтармен салыстырғанда, өмір сүру сапасы артығырақ болуда.*

Түйін сөздер
спецификалық емес ойықжара колиті, Крон ауруы, жұқа ішектен ілмек жасалған резервуары, колоноскопия

Результаты хирургического лечения болезни Крона и неспецифического язвенного колита

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Аннотация

Цель исследования *была улучшить результаты хирургического лечения больных с болезнью Крона и неспецифическим язвенным колитом.* ***Материалы и методы:*** *В период с 2007 по 2015 годы на стационарном лечение находились 170 больных, 109 с диагнозом болезни Крона и 61 больных с диагнозом неспецифического язвенного колита. Было оперировано 48 больных (38 больных с болезнью Крона и 10 больных с неспецифичеким язвенным колитом) в возрасте от 16 до 58 лет. Из них 4 больных были оперированы лапароскопическим методом и 44 открытым методом . Было создано 3 группы: в первой группе 14 больных: у 11 (22,9%) произведена тотальная колэктомия с формированием резервуара из тонкокишечной петли и у 3-х больных наложена (6,3%) временная илеостома. Во второй группе 8 больных : у 2-х (4,2%) резекция тонкой кишки с наложением тонкокишечного анастомоза и у 6-и (12,5%) больных правосторонная гемиколэктомия+илеотранверзостомия. В третьей группе 24 больных: 12 больных (25%) тотальная проктоколэктомия+терминальная илеостомия и 12 больных (25%) субтотальная проктоколэктомия+ терминальная илеостомия.* ***Результаты:*** *реконструктивно-восстановительные операции дали возможность улучшить объективное оценивание тяжести заболевания, уменьшить возникновения осложнений, оптимизировать результаты хирургического лечения и уменьшить показателей рецидивов заболеваний а также послеоперационных осложнений и смертности. У больных первой группы (тотальная колэктомия с формированием резервуара из тонкокишечной петли) качество жизни становится лучше по сравнению с другими группами.*

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Ключевые слова
болезнь Крона, неспецифический язвенный колит, колоноскопия, резервуар из кишечной петли

Background

Diagnose and treatment of Crohn's disease and Nonspecific Ulcerative Colitis which occurs mostly in developed countries nowadays is an actual problem in coloproctology. Doctors and researchers donşt know what causes both diseases, but they speculate that a number of factors such as genetics, heredity, mucosal immunity, gut microbes, diet, environmental factors, vascular problems, psychosocial problems, and certain drugs may be triggers that may participate in causing these diseases [3]. Because the diseases have unknown causes, it is difficult to know what triggers their development. However, if you carefully note in a diary when symptoms reappear in Crohn's disease or worsen in UC, you may be able to identify triggers that affect your disease [3].

About 11,2 million people were affected as of 2015 with Crohn's disease and Nonspecific Ulcerative Colitis [5]. Often it begins in people aged 15 to 30 years or among those over 60 [8]. Males and females appear to be affected in equal proportions [4].It is common to use colonoscopy, histology and radiology to diagnose Crohn's disease and Nonspecific Ulcerative Colitis. The literature indicates that there are different tactics of treatment of Crohn's disease and Nonspecific Ulcerative Colitis (chemotherapy, surgical treatment, combined method etc.) [1, 2, 6, 7] People over age 50 that need surgery have increased mortality due to colitis-associated postoperative complications [3]. Therefore the pharmacologicaltherapy and surgical tacticsof this disease still need to be improved.

The aim of research is to improve the results of the surgical treatment of the patients with Crohn's disease and Nonspecific Ulcerative Colitis.

Material and methods

In period of 2007-2015 years 109 patients with Crohn's disease and 61 patients with Nonspecific Ulcerative Colitis (common 170 patients) were treated in colorectal surgery department. All patients had check up diagnostic and colonoscopy, histology, CT or MRT. 48 of them (28,24%) were operated. 4 of them (8,3%) were operated laparoscopically and the rest (44 p. - 91,7%) were operated in open way. 21patients (43,8%) were man and 27 patients(56,2%) were woman. The ages of the patients were between 16-58 years (average age - 30ұ12,7). 2 patients (5.3%) were operated with the isolated segmental intestinal defect, 11 patients (5.3%) with the ileocecal valve defect+ulcerative lesion (cancer) of the intestinal and colon walls and 26 patients (47.4%) were with the multiple segmental coliculcerative and erosive lesion combined with the total rectal defect.

The absolute indications to operation were: perforation of intestine walls, intestinal bleeding, the toxic colon dilation, inflammatory infiltration, intestine or colon strictures, deep perianal defects, the heavy chronic recurrence and acute lightning forms of Crohn's disease, inflammatory infiltrates, severe

changes of mucosa (multiple ulcers and fissures), inflammated pseudopolyps, without remission chronic form of disease, noneffective pharmacotherapy or non treatable patients due to side medicament's effects and colon or intestine cancer.

All patients were operated on conditionally radical, restorational, reconstructive – restorational method.The patients were in 3 groups: First group (14 p.) included11 (22,9%) patients, which had total proctocolectomy + reconstruction of the reservoir from the intestinal loop, 3 patients (6,3%) had temporary ileostomy. The second group (8 p.) included 2 patients (4,2%), which had intestinal resection + intestinal anastomosis and 6 patients (12,5%) which had right hemicolectomy + ileotransversostomy. The third (24 p.) group included 12 patients (25,0%) had total proctocolectomy + terminal ileostomy and 12 (25.0%) patients had subtotal proctocolectomy + terminal ileostomy in first step and ileosigmaanastomosis in second step.

Analysis

In postoperative 6 months in first group11 patients (78,6%) of 14 had no complications. 1 patient(9,1%) had malign and died 4 month after operation during chemotherapy because of continuous intoxication, liver failure andheart failure. The other 2(18,2%) had recurrence and intestinal stricture in 3 - 5 months of operation and operated late. 1 (9,1%) of patients which had ileostomy late had total proctocolectomy + reconstruction of the reservoir from the intestinal loop and the other 1 (9,1%) died 6 days after the operation. The reasons were intoxication, liver failure and heart failure. In second group 8 patients had recurrence and took pharmacotherapy. 2 (25,0%) patients died.Other 6 (75,0%) needed surgical treatment. In third group 10 patients (41,67%) of 24 with proctocolectomy + terminal ileostomy and other 10 patients (41,67%) with two steppedoperations had recurrence, 4 patients (16,67%)in this group died.

Results

Reconstructive - restorational operations (total proctocolectomy + reconstruction of the reservoir from the intestinal loop) have permitted to improve objective estimation of the disease severity, to reduce the complications occurrence, to optimize the results of surgical treatment and to reduce the disease recurrence rate, postoperative complications and postoperative lethality. The viability of patients after this type of operations is higher than in other groups.

Conclusions

Patients in first group had 14,3% lethality and 21,4% postoperative complications, patients in second group had 25% lethality and 75% postoperative complications, patients in third group had lethality 16,7% and 41,7% postoperative complications.

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XXIV СЪЕЗД ХИРУРГОВ УКРАИНЫ, ПОСВЯЩЕННЫЙ 100-ЛЕТИЮ СО ДНЯ РОЖДЕНИЯ АКАДЕМИКА А.А. ШАЛИМОВА

С 26 по 28 сентября 2018 года в Киеве (Украина) прошел XXIV съезд хирургов Украины, посвященный 100-летию со дня рождения академика А.А. Шалимова, в работе которого приняли участие Председатель правления АО «ННЦХ им. А.Н. Сызганова» проф. Баймаханов Б.Б., врач-хирург Серикулы Е. Выполнены доклады на следующие темы:

1. Особенности трансплантации печени от живого донора.
2. Панкреатодуоденальная резекция с резекцией воротной вены при опухолях периампулярной зоны
3. Мануально-ассистированная лапароскопическая нефрэктомия донорской почки – опыт 300 операций без единой конверсии

В работе съезда приняли участие более 2000 делегатов. Это были общие хирурги, сердечно-сосудистые хирурги, трансплантологи, детские хирурги, пластические хирурги и эндокринологи. Прошли пленарные и секционные заседания, посвященные лечению огнестрельных повреждений, связанных с военными действиями, современным технологиям хирургической коррекции патологии органов пищеварения, анализу современного состояния хирургической помощи населению и задачи по улучшению ее организации. Ведущие хирурги провели секционные заседания, посвященные ранним послеоперационным осложнениям, нынешнему состоянию и проблемам сердечно-сосудистой, детской, эндокринной, бариатрической, пластической хирургии и трансплантологии в целом.

УЧАСТИЕ В МЕЖДУНАРОДНОМ СИМПОЗИУМЕ В ЧЕСТЬ ВЫПОЛНЕНИЯ 5000 ТРАНСПЛАНТАЦИИ ПЕЧЕНИ ОТ ЖИВОГО ДОНОРА В МЕДИЦИНСКОМ ЦЕНТРЕ «АСАН», СЕУЛ, ЮЖНАЯ КОРЕЯ

Заведующий отделением гепатобилиарной хирургии и трансплантации печени Досханов М.О., врач отделения Скакбаев А.С. и врач Батталова Г.А. приняли участие в Международном симпозиуме в медицинском центре «Асан» (Южная Корея) с 29 ноября по 3 декабря 2018 г.

С 1994 по 2018 г выполнены 5000 LDLT в самой большой клинике страны с мощностью 2690 коек (205 реанимационных коек включительно).

В клинике «Асан» впервые в мире выполнены:

– Интраоперационная портография (1998г);
– Трансплантация правой доли печени + Neo Middle (1999г);
– Dual Graft Adult LDLT (2000г);
– Симультанная трансплантация сердца и печени ребенку (2007г) и т.д.

Были заслушаны 66 научных докладов. Из ННЦХ им. А.Н. Сызганова были 3 постерных доклада на темы:

1. Comparative analysis of using biliary splint and without splint for duct-to-duct anastomosis during LDLT (Досханов М.О.)
2. Biliary Strictures after LDLT using Right Lobe graft (Скакбаев А.С.)
3. The role of MRCP and IOC in LDLT (Батталова Г.А.)

К 80 ЛЕТИЮ ПРОФЕССОРА ТУРАРА КОЙШИГАРАЕВИЧА КУКЕЕВА

Т.К.Кукеев родился в с.Ушарал Таласского района Жамбылской области. В 1952 году по окончании семи классов, с отличием закончил медицинское училище в г. Тараз и вне конкурса был зачислен на 1 курс лечебный факультет Казахского Государственного Медицинского института в г. Алматы, который закончил с отличием в 1958 году. Лидерские качества, отличная учеба были залогом того, что начиная со 2 курса Т.К.Кукеев стал Сталинским стипендиатом, членом комитета комсомола ВУЗа.

После окончания медицинского института, с отличием, в 1958 году он был направлен заместителем главного врача в Таласскую районную больницу Жамбылской области, где совмещал эту работу с работой практического врача-хирурга. Профессор Брякин М.И. пригласил своего выпускника для поступления в аспирантуру по конкурсу на кафедру госпитальной хирургии КазМИ

Поступил в аспирантуру на кафедру своего учителя, аспирант Кукеев Т.К. досрочно написал и защитил диссертацию на соискание ученой степени кандидата медицинских наук, которая вскоре была подтверждена ВАКом СССР. С этого времени вся трудовая и научно-педагогическая деятельность Т.К.Кукеева неразрывно связана с кафедрой госпитальной хирургии, где он прошел все ступени: аспирант, ассистент, доцент, профессор, и по рекомендации своего учителя профессора Брякина М.И. стал заведующим этой кафедрой в 1979 году

Вместе со своим учителем профессором М.И.Брякиным, Т.К.Кукеев является одним из пионеров развития и становления сосудистой хирургии в Казахстане на научной основе. Под руководством М.И.Брякина, Т.К.Кукеевым в Казахстане с 1965 года стали выполнятся реконструктивно-восстановительные операции при окклюзионных заболеваниях артерий нижних конечностей: аорто-бедренное и подвздошно-бедренное шунтирование, аллопротезирование, резекция окклюзированного сегмента артерии с пластикой аутовеной и аллопротезом. Он внедрил в широкую практику такие сложные операции на кровеносных сосудах, как: резекция травматической аневризмы бедренной артерии с аутовенозной пластикой, операции при сложных гемангиомах бедра, ягодичной области, ранениях подвздошной и бедренной артерий, операция тромбинтимэктомии и эндартерэктомии при стенозирующих заболеваниях сосудов, операции при ПТФС.

При облитерирующем эндартериите Т.К.Кукеев стал широко, впервые в Республике, применять поясничную и грудную симпатэктомию. Им опубликованы ряд наблюдений успешной антикоагулянтной и фибринолитической терапии при тяжелых илеофеморальных флеботромбозах и синдроме Педжета-Шреттера и продолжительной ремиссии при болезни Бюргера.

Впервые в Казахстане Т.К.Кукеевым в 1967 году, вместе с профессором Брякиным, доцентом Г.Н.Андреевым выполнена операция наложения спленоренального анастомоза при портальной гипертензии. Благодаря активной деятельности внедрены сложные ангиографические исследования: транслюмбальная аортография, артериография, восходящая и нисходящая флебография, диагностическая и лечебная лимфография для устранения последствий рожистого воспаления конечности.

Работая на кафедре госпитальной хирургии с 1958 года, Т.К.Кукеев внес неоценимый вклад в подготовке практических хирургов через субординатуру и интернатуру. Он является одним из первых организаторов интернатуры в РК, и руководителей хирургической интернатуры в АГМИ.

Профессор Т.К.Кукеев был в числе пионеров внедрения преподавания и издания учебных пособий по хирургии на государственном языке. Им подготовлены и изданы на государственном языке «Избранные лекции по госпитальной хирургии», также он был соавтором трех учебников по хирургии для 5 и 6 курсов, двух монографий, 15 учебно-методических пособий.

Активная врачебная и научно-педагогическая деятельность Кукеева Т.К. была по достоинству, высоко оценена Родиной. За заслуги в области хирургии Т.К.Кукеев в 1970 году Минздравом СССР награжден нагрудным знаком «Отличник здравоохранения СССР». В 1981 году указом Президиума Верховного Совета Казахской ССР Турару Койшигараевичу Кукееву присвоено почетное звание «Заслуженный работник Высшей школы Казахской ССР».

За особые заслуги в учебно – педагогической деятельности АГМИ, вклад в развитие и становление ангиохирургии в Казахстане доценту Т.К.Кукееву, в 1994 г. решением ВАК РК было присвоено звание «Профессора медицины».

За особые заслуги в организации и развитии неотложной, плановой сосудистой хирургии, подготовки хирургических ка-

дров в РК он, решением Ученого совета НЦХ им. А.Н.Сызганова, в 1997 году избран «Почетным профессором» Национального Научного Центра Хирургии им. А.Н.Сызганова» Республики Казахстан.

В 2002 году, общественность, администрация Жамбылской области с чувством глубокой признательности за развитие хирургической службы и в связи с 2000-летием г.Тараза, избрала профессора Т.К. Кукеева «Почетным гражданином Жамбылской области», а в 2013 г. он избран «Почетным гражданином Алма-Атинской области»

В 2011 году, на очередном Международном конгрессе хирургов РК, Т.К. Кукеев стал обладателем Золотой медали ННЦХ им. акад. А.Н.Сызганова, также он обладатель золотой медали «Алтын Дәрігер» Национальной Ассоциации врачей и провизоров РК (2012 год), награжден высшей наградой МОН РК медалью «Ыбырая Алтынсарина», избран академиком общественной академии им. Куртка Табиба, а в 2013 г. Т.К. Кукеев избран «Почетным профессором Каз НМУ им. С.Д. Асфендиярова»

Профессор Т.К. Кукеев скоропостижно ушел из жизни 31 декабря 2016 г.

Медицинская наука, хирургия понесла невосполнимую утрату.

Свой богатый, жизненный опыт, практику поливалентного хирурга, педагогический талант и энергию профессор Т.К. Кукеев отдавал своему важнейшему долгу жизни – подготовке научно-практических хирургов и врачебных кадров для РК.

Турар Койшигараевич с супругой воспитали замечательных детей, каждый из них достойный гражданин РК, средняя дочь, Ж.Т. Кукеева, продолжает династию врачей. Ученики профессора Т.К. Кукеева работают во всех уголках РК и стран СНГ, как в практической медицине, так и научных, и научно-исследовательских учреждениях медицинского направления,достойно представляя и продолжая дело учителя.

Профессор А.С. Ибадильдин,
к.м.н. С.А.Ибадильдина

ТРЕБОВАНИЯ ДЛЯ АВТОРОВ ЖУРНАЛА «ВЕСТНИК ХИРУРГИИ КАЗАХСТАНА»

Уважаемые авторы!

С 1 апреля 2018 года все статьи на публикацию принимаются на государственном или русском языках с обязательным переводом всей статьи на английский язык. Статьи без версии на английском языке будут отклонены.

Также учитывая требования Консультативной Комиссией (CSAB) Scopus об интернационализации авторов и аудитории редколлегия журналов рекомендуют публиковать статьи в соавторстве с учеными дальнего и ближнего зарубежья.

В журнале публикуются научные статьи и заметки, экспресс-сообщения о результатах исследований в различных областях естественно-технических и общественных наук.

Решение о публикации принимается редакционной коллегией журнала после рецензирования, учитывая научную значимость и актуальность представленных материалов. Статьи, отклоненные редакционной коллегией, повторно не принимаются и не рассматриваются. Рукописи, оформленные не по правилам, возвращаются авторам без рассмотрения.

Рукопись направляется на отзыв члену редколлегии и одному из указанных рецензентов; в спорных случаях по усмотрению редколлегии привлекаются дополнительные рецензенты; на основании экспертных заключений редколлегия определяет дальнейшую судьбу рукописи: принятие к публикации в представленном виде, необходимость доработки или отклонение. В случае необходимости рукопись направляется авторам на доработку по замечаниям рецензентов и редакторов, после чего она повторно рецензируется, и редколлегия вновь решает вопрос о приемлемости рукописи для публикации. Переработанная рукопись должная быть возвращена в редакцию в течение месяца после получения авторами отзывов; в противном случае рукопись рассматривается как вновь поступившая. Рукопись, получившая недостаточно высокие оценки при рецензировании, отклоняется как не соответствующая уровню или профилю публикаций журнала.

Авторы несут ответственность за достоверность и значимость научных результатов и актуальность научного содержания работ. Не допускается **ПЛАГИАТ** – умышленно совершаемое физическим лицом незаконное использование чужого творческого труда, с доведением до других лиц ложных сведений о себе как о действительном авторе.

Редакция принимает на рассмотрение рукописи на казахском, русском и английском языках, присланные через официальный сайт журнала **www.vhk.kz.**

Материал статьи – текст, включая резюме на казахском, русском и английском языках, список литературы, рисунки, подписи к рисункам и таблицы, оформляется одним файлом; дополнительно каждый рисунок оформляется в виде отдельного файла. Если пересылаемый материал велик по объему, следует использовать программы для архивирования. Все страницы рукописи, в том числе таблицы, список литературы, рисунки и подписи к ним, следует пронумеровать.

Представленные для опубликования материалы должны удовлетворять следующим требованиям:

1. Содержать результаты оригинальных научных исследований по актуальным проблемам в области физики, математики, механики, информатики, биологии, медицины, геологии, химии, экологии, общественных и гуманитарных наук, ранее не опубликованные и не предназначенные к публикации в других изданиях. Статья сопровождается разрешением на опубликование от учреждения, в котором выполнено исследование.
2. Размер статьи 7-10 страниц (статьи обзорного характера – 15-20 стр.), включая аннотацию в начале статьи перед основным текстом, которая должна отражать цель работы, метод или методологию проведения работы, результаты работы, область применения результатов, выводы (**аннотация** не менее **20** предложений (150»300 слов) - (на английском языке) через 1 компьютерный интервал), таблицы, рисунки, список литературы (через 1 компьютерный интервал, размер шрифта – 14), напечатанных в редакторе Word, шрифтом Times New Roman, поля – верхнее и нижнее – 2 см, левое –3 см, правое –1,5 см. Количество рисунков – 5-10.

Структура должна соответствовать международной формуле IMRAD, где I – introduction (вступление), M – Methods (методы), R – Results (исследование), A – и, D – conclusion+ discussion (заключение, обсуждение результатов и выводы).

Название • Отображает суть работы • Краткое • Без аббревиатур.

Необходимо официально закрепить название организации на английском и сокращение

Резюме • Структурировано • Без аббревиатур • Передает структуру статьи – Зачем (актуальность) – Какими методами? – Что получено – Как это изменило картину знаний. Именно его читают в первую очередь, только хорошее резюме может привлечь внимание!

Вступление • Актуальность работы • Какая задача поставлена • Почему

Методы • Перечисление • Если известные - дать ссылку • Если модифицировали – указать как • Описывать так что б могли повторить • Статистика!

Результаты • Допускается не хронологическое, а логическое повествование • Основные, а не все что были сделаны •

Иллюстрируются минимально необходимыми сводными данными (исходные могут быть в дополнительных материалах)

Обсуждения • Не повторять результаты • Сопоставить полученные данные с имеющимися • Обсудить возможные причины и следствия

Функции списка литературы: • Аргументировать идею • Сопоставить с существующими аналогами • Обозначить место данного исследования • Избежать плагиата • Для журнала и ученого = признание • Часто указаны только собственные работы или очень старые (самоцитирование допускается только 10-15% от общего списка литературы) • Кочующие ошибки

Различайте • Ссылки • Список литературы • Библиография

Что могут цитировать • Книги, (монографии, главы) • Статьи научных журналов • Материалы конференций • Патенты • Диссертации • Неопубликованные данные • СМИ • Веб ресурсы (протоколы, веб странички) Источник должен быть надежным и легко доступным.

Статья начинается на английском языке. В начале, посередине страницы, идет название статьи прописными жирными буквами, название статьи должно быть коротким и емким, согласно проведенного анализа около 30-40 символов на английском языке.

Далее на следующей строчке – инициалы и фамилии авторов обычным жирным шрифтом, затем на следующей строчке – название организации(ий), в которой выполнена работа, город, страна, затем на новой строчке – адреса E-mail авторов. С красной строки идут ключевые слова **(Key words),** а на новой строчке – сама аннотация (**Abstract** – не менее **150** и более **300 слов**).

Далее, после отбивки одной строки, начинается на русском языке. В начале статьи вверху слева следует указать индекс **УДК, МРНТИ.**

Затем, посередине страницы, пишется: 1) название статьи; 2) авторы; 3) название организации; с красной строки – **Ключевые слова,** затем – **Аннотация** (оформление шрифтов, как на английском языке).

Отбиваем одну строку и начинается сама **статья.** Следом за статьей идет список **Литературы.** Ссылки на литературные источники даются цифрами в прямых скобках по мере упоминания (не менее 20).

Для каждой статьи обязателен DOI (Digital Object Identifier) - это цифровой идентификатор документа. DOI выполняет функцию гиперссылки, которая всегда помогает найти нужный документ, даже если сайт, где он находился ранее, был впоследствии изменен. Благодаря этому индексу поиск научной информации в Интернете стал проще и эффективнее. Каждое издание, журнал размещает на своих веб-страницах в интернете, как текущие, так и архивные номера, и материалы. Таким образом, в открытом доступе можно увидеть резюме, которые включают в себя название статьи, фамилию, имя, отчество автора, аннотацию и ключевые слова, место выполнения работы, а также выходные данные опубликованных статей (название журнала, год издания, том, номер, страница).

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Для всех ссылок на статьи, опубликованные в международных рецензируемых журналах следует указывать DOI (Digital Object Identifier). DOI указываются в PDF версии статьи и/или на основной интернет-странице статьи, также можно воспользоваться системой поиска CrossRef: http://www.crossref.org/guestquery/. Ниже приводятся примеры оформления ссылок:

Статья в международном журнале:

1. Campry TS, Anders T. (1987) SNAP receptors implicated in vesicle targeting and fusion, Environ Pollut, 43:195-207. DOI: 10.1016/0269-7491(87)90156-4 (in Eng)

Статья в русскоязычном журнале, не имеющая англоязычной версии:

2. Ivanova TV, Samoilova NF (2009) Electrochemical Energetics [Elektrohimicheskaya energetika] 9:188-189. (In Russian)

Книги:

Timrat TA (2008) Soil pollution: origins, monitoring and remediation, second edition. Springer, Germany. ISBN: 978-3-540-70777-6

Материалы конференции:

Monin S.A. (2012) Treatment techniques of oil-contaminated soil and water aquifers. Proceedings of International Conference on Water Resources and Arid Environment, Riyadh, Saudi Arabia. P.123.

Патенты:

Barin AB, Mukamedzhan NT (2000) A method for determination of 1,1-dimethylhydrazine and nitrosodimethylamine [Metodopredeleniya 1,1-dimetilgidrazina initrosodimetilamina]. Preliminary Patent of the Republic of Kazakhstan [Predvaritelnyi patent Respubliki Kazakhstan]. (In Russian)

Стандарты, ГОСТы:

RMG 61-2003. Indexes of accuracy, precision, validity of the methods of quantitative chemical analysis, methods of evaluation [GSI.Pokazatelitochnosti, pravilnosti, retsizionnosti metodik kolichestvennogo himicheskogo analiza. Metodyiotsenki]. Moscow, Russia, 2003. (In Russian)

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В конце статьи дается резюме на казахском языке. Оформляется аналогично русскому варианту. Посередине страницы пишется: 1) название статьи; 2) авторы; 3) название организации; с красной строки – **Тірек сөздер,** после – **Аннотация.**

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3. Статьи публикуются на английском языке.

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