ISSN 2181-5674

PROBLEMS OF BIOLOGY and MEDICINE

БИОЛОГИЯ ва ТИББИЁТ МУАММОЛАРИ

2021, № 3 (128)

UDK: 616-089.168-06:616.441-008.64

CHARACTERISTICS OF CLINICAL MANIFESTATIONS OF PURULENT DISEASES IN THE PATHOLOGY OF THE ENDOCRINE GLANDS (LITERATURE REVIEW)

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ЭНДОКРИН БЕЗЛАР ПАТОЛОГИЯСИДА ЙИРИНГЛИ КАСАЛЛИКЛАРНИНГ КЛИНИК НАМОЁН БЎЛИШ ХУСУСИЯТЛАРИ (АДАБИЁТЛАР ШАРҲИ)

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ХАРАКТЕРИСТИКА КЛИНИЧЕСКИХ ПРОЯВЛЕНИЙ ГНОЙНЫХ ЗАБОЛЕВАНИЙ ПРИ ПАТОЛОГИИ ЭНДОКРИННЫХ ЖЕЛЕЗ (ОБЗОР ЛИТЕРАТУРЫ)

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Резюме. *Республикамизда 2019-2020 йилларда олиб борилган тадқиқотларга кўра, 2-типдаги қандли диабетнинг тарқалиши 35 ёшдан юқори шахслар орасида 8,7% фоизни ташкил этади. Қандли диабет билан бир қаторда қалқонсимон без касалликлари ҳозирги кунда барча эндокринопатиялар таркибида этакчи ўринни эгаллайди. Бу, аввало, Ўзбекистон ҳам тегишли бўлган, ёд танқис бўлган ҳудудларда диффуз токсик бўқоқнинг кенг тарқалиши билан изоҳланади. Қандли диабет ва диффуз токсик бўқоқ асоратлари ҳам тиббий ҳам ижтимоий-иқтисодий нуқтаи назардан муҳим муаммо бўлиб қолмоқда. Тақдим этилган адабиётлар шарҳида эндокрин патологиялар, қандли диабет ва диффуз токсик бўқоқ фонида келиб чиқадиган йирингли жарроҳлик касалликлари клиник кечишининг хусусиятлари ҳақидаги замонавий маълумотлар дунё манбаларига асосланган ҳолда ўрганилади. Маълумотларни танлаш учун қуйидаги маълумотлар базалари ишлатилган: Scopus, SpringerNature, PubMED, GoogleScolar, РИНЦ базаси, elibrary маълумотлар базаси ва бошқалар.*

Калит сўзлар: *юмшоқ тўқималарнинг йирингли жарроҳлик касалликлари, қандли диабет, диффуз токсик бўқоқ, клиник кечишининг хусусиятлари.*

Abstract. *In our Republic, according to studies carried out in 2019-2020, the prevalence of type 2 diabetes in Uzbekistan is 8.7% among people over the age of 35. Along with diabetes mellitus, currently thyroid diseases occupy a leading place in the structure of all endocrinopathies. First of all, this is explained by the breadth of prevalence of diffuse goiter in iodine-deficient regions, to which Uzbekistan also belongs. Complications of diabetes mellitus and diffuse toxic goiter is an important problem for the Republic of Uzbekistan, both from a medical and socio-economic point of view. The presented literature review examines modern data on the features of the clinical course of purulent surgical diseases against the background of concomitant endocrine pathologies, diabetes mellitus and diffuse toxic goiter based on world sources. For data selection, the following databases were used: Scopus, Springer Nature, PubMED, Google Scolar, the RSCI Elibrary database, etc.*

Key words: *purulent surgical diseases of soft tissues, diabetes mellitus, diffuse toxic goiter, features of the clinical course.*

Relevance. All types of diabetes can cause various complications in many organs of the human body and increase the risk of premature death. In 2012, the cause of death of 1.5 million people worldwide was diabetes mellitus. According to the International Diabetes Federation (IDF), there are currently 415 million people in the world who have diabetes. By 2040, the number of people with diabetes is pro-

jected to increase to 642 million people. Due to the increase in the number of patients with DM, the possibility of obtaining reliable information about the health status of such patients (the development of complications, life expectancy, disability, etc.) is relevant. It is possible to implement the collection and storage of information using the "Diabetes Mellitus" register. The DM register is an automated information and analytical system for monitoring diabetes mellitus throughout the country, which provides for monitoring the patient from the moment of his inclusion in the register and the dynamics of his treatment [1,4,6,23].

Alikhanov N. M. et al. (2016) published data on the epidemiological aspects of type 1 and type 2 diabetes mellitus (DM) in Tashkent. For the study, a unified map of the national register was used, developed by the center's staff taking into account the recommendations of the European Association for the Study of Diabetes and the experience of other countries [2,5,9,16,22]. 16,356 patients were registered in Tashkent, their data were entered into a specialized computer program and processed accordingly. The course of the disease and treatment of registered patients were analyzed, including 1225 patients with type 1 diabetes and 15,131 patients with type 2 diabetes. In Tashkent, 1225 patients with type 1 diabetes are registered, which is 7.5 % of the entire population with diabetes. The average fasting glycemic level was 10.9 mmol / l for type 1 diabetes and 8.8 mmol / l for type 2 diabetes. Total cholesterol was determined only in 3144 (20.8 %) patients, of which 2380 (91.4 %) had a total cholesterol level of more than 4.8 mmol/l. The content of triglycerides was determined in a total of 507 (3.34 %) patients, of which 374 (91.9%) had a level of more than 1.7 mmol / l. The vast majority of patients with DM are in a state of decompensation in terms of glycemic control. To date, the provision of medical and preventive care for patients with diabetes in Tashkent does not meet modern criteria, which is why the risk of developing and progressing both cardiovascular diseases and chronic microvascular diabetic complications is high [2,7,8,19].

Scientists of Uzbekistan are concerned about the insufficient diagnosis and registration of complications of diabetic nephropathy and diabetic retinopathy in the Bukhara and Khorezm regions, in the Karakalpak Republic, insufficient diagnosis and registration of macroangiopathies in the Bukhara, Navoi, Khorezm regions, in Karakalpak. There is practically no achievement of the target glycemic levels in all regions, the intensive insulin therapy regimen in all regions is insufficiently prescribed, and biguanide preparations are used among patients with type 2 diabetes in all regions, which contributes to an increased risk of diabetes complications. There is no alertness of doctors on macrovascular diabetic complications and treatment of arterial hypertension, not enough angiotensin converting enzyme inhibitors are prescribed (especially in the Khorezm region and the Republic of Karakalpakistan), which contribute to the prevention of complications of diabetes, and in particular diabetic nephropathy. Analysis of the register data for four regions of Uzbekistan showed insufficient work on the diagnosis, treatment and prevention of complications of DM [3,11,18,25].

Chronic hyperglycemia in diabetes mellitus is accompanied by damage, dysfunction and insufficiency of various organs, especially the eyes, kidneys, nerves, heart and blood vessels. Diabetes mellitus leads to the early development of complications and disability of patients. The most common complication of diabetes mellitus is diabetic neuroangiopathy. This is a collective concept that means a disorder of the nervous system associated with damage to the nerves and small blood vessels in diabetes. The manifestations of diabetic neuroangiopathy are very diverse. They depend on which part of the nervous system is most affected. Most often, people complain of numbness, loss of sensitivity, severe pain in the limbs and impotence. But the most dangerous consequence is diabetic foot syndrome. A person does not feel pain from minor injuries on the legs, they turn into non-healing ulcers that can lead to gangrene and amputation of the limb [10, 12,15,24].

The literature data report that the reduction in the prevalence of the main complications caused by diabetes mellitus, as a result of the introduction of new modern technologies in the prevention, diagnosis and treatment of diabetes mellitus, contributed to a significant reduction in the costs of treating the main complications of this disease.

In diabetes mellitus, the developed gangrene of the limb is of two types: in the first case, gangrene is a consequence of occlusion of the arteries of the middle and small caliber, in the second case, a violation of blood circulation is observed in the microcirculation zone, but the infectious process is leading in its pathogenesis. A set of therapeutic measures is given, and if conservative therapies are ineffective, when the question of amputation of a limb arises, the level of amputation of the affected limb is of no small importance. The number of high amputations of the lower extremities due to the development of critical ischemia and diabetic gangrene in such patients reaches 50-60% and has no tendency to decrease. The scope and optimal timing of operations remains the subject of discussion [7,13,14,21].

Against the background of diabetes mellitus, the risk of developing atherosclerosis, hypertension, ischemic disease, heart attack and stroke increases tenfold, and kidney and vision pathology develops 20 times more often. This disease is the main cause of

chronic kidney failure, non-traumatic limb amputations, and blindness [7,8,13,20].

Efimov E. V. et al. (2015) found that in patients with diabetes mellitus, with an increase in the duration of the disease, there is a decrease in the thickness of the epidermis and an increase in the frequency of signs of corneal dystrophy in the epidermis. In the area of dermoepidermal contact and in the dermis in patients with diabetes mellitus, the appearance of areas of adipose tissue is noted. At the same time, the occurrence of adipose tissue correlates with the duration of the disease. 180 patients were examined: 122 women (67.8%) and 58 men (32.2%). Traditional methods of assessing the morphology of wound healing were used: smear-print from the edge of the wound according to the method of M. P. Pokrovskaya and M. S. Makarov, staining of paraffin sections according to the histochemical method proposed by D. D. Zerbina and L. L. Lukasevich, studying the thickness of the epidermis and the degree of its keratinization, measuring the zone of the epidermis and dermoepidermal contact. All measurements in histological sections were carried out using an eyepiece-micrometer, the results are presented in micrometers. It was found that in patients with diabetes mellitus, with an increase in the duration of the disease, there is a decrease in the thickness of the epidermis and an increase in the frequency of signs of corneal dystrophy in the epidermis. In the area of dermoepidermal contact and in the dermis in patients with diabetes mellitus, the appearance of areas of adipose tissue is noted. At the same time, the occurrence of adipose tissue correlates with the duration of the disease. The value of the regenerative-degenerative index correlates with the nature of the course of the wound process. The course of the wound process in patients suffering from DM is characterized by a prolonged phase of inflammation and a delay in regenerative processes. The absence of a significant decrease in the number of neutrophil granulocytes on day 7-9, single fibroblasts on day 5, and a significant increase in the number of fibroblasts on day 9-11 after admission during cytological examination of wound prints in dynamics, as well as a long-lasting RDI of less than one in patients with DM indicate the development of wound complications. In the skin of patients with diabetes mellitus, there are manifestations of parenchymal dysproteinosis and fatty dystrophy, which reflects a violation of tissue metabolism. The course of the wound process in patients suffering from diabetes mellitus is characterized by a prolonged phase of inflammation and a delay in regenerative processes [4,17,23,25]. A group of scientists of Uzbekistan (Okhunov A. O., Pulatov U. I., Okhunova D. 2018) analyzed the results of examination and treatment of 56 patients with purulent-inflammatory diseases of soft tissues who were treated and examined at the Republican Center for Purulent Surgery and Surgical Complications of Diabetes Mellitus of the Ministry of Health of the Republic of Uzbekistan for the period from 2015 to 2017. According to the classification of the level of soft tissue damage, severe purulent-inflammatory diseases were diagnosed in 32% of cases. The entire contingent of patients was operated on urgently. Clinical assessment of the condition of the examined patients and dynamic prediction of the wound process, in addition to routine methods (complaints, anamnesis, examination, hemodynamic parameters, body temperature, general clinical blood and urine tests), also included the determination of the leukocyte index of intoxication, the determination of the size of the wound area, bacteriological and cytological studies of the wound, and also subtracted the prognostic coefficient of the course of the wound process. All of them complained of weakness, malaise, pain in the area of postoperative suppurating wounds, an increase in body temperature to 37.4-390C, sleep disorders and lack of appetite. The next criterion for assessing the dynamics of the wound process was to determine the timing of cleaning the wound from infection, resorption of the wound infiltrate, the appearance of granulation and the beginning of the appearance of epithelialization. The characteristic changes in the wound by this time were reflected in the objective criteria for evaluating the wound process. In particular, this was expressed in a change in the cytograms. A characteristic feature of the latter is their connection with the dynamics of the process [14, 15,17,19]. The group of authors presents morphological ultrastructural analysis of wound samples in 90 patients aged 27-80 years with diabetic foot syndrome and purulent-necrotic complications, who were hospitalized in the Department of Wounds and Wound Infections of the Vishnevsky Institute of Surgery in 2013-2016 [9,17].

Belik B. M. et al. (2020) The presented strategy of complex treatment of pio-necrotic complications of the neuropathic form of diabetic foot syndrome allowed group II patients to significantly reduce the degree of microbial contamination of wounds, to achieve a faster regression of the content of pro-inflammatory and inflammatory cytokines in the wound exudate, as well as to reduce the time of wound cleansing and the transition of the pyo-necrotic process to the reparative stage. On the other hand, this allows this category of patients to perform plastic wound closure at an earlier time, avoid generalization of infection and amputation of the limb at a high level [3,21,23,24].

Thyroid diseases currently occupy a leading place in the structure of all endocrinopathies. First of all, this is due to the wide prevalence of diffuse goiter in iodine-deficient areas, which include the vast territories of the Russian Federation, many other states, including Uzbekistan. According to the WHO recommendation, the daily requirement for inorganic

iodine is 150 micrograms per day. With insufficient iodine intake (less than 50 mcg/day), hormone synthesis in the thyroid gland decreases, which leads to the development of goiter and, ultimately, to hyperthyroidism [14, 15]. French authors (Pauleau G., Goin G., Cazeres C., Sebag F. 2015) believe that endemic goiter (Class 1 and 2) tends to regress with iodine therapy. Surgery is indicated only for its complications: mechanical, neoplastic, or associated with hyperthyroidism. The choice of surgery depends on the specific disease, as well as on the likelihood that thyroxine will be constantly available throughout the patient's life. Thyroidectomy should be avoided whenever possible if thyroxine supplies are unreliable. Hemithiroidectomy and subtotal thyroidectomy are methods that should be used as a priority [12,18,19,22].

The study of the operating material showed that endemic goiter is a heterogeneous concept and includes diffuse colloidal goiter, nodular (multinodular) goiter and diffuse nodular goiter. The most common form of endemic goiter is nodular goiter (61.3%), which is characterized by the presence of a node with an indistinct pronounced capsule, polymorphic structure, violation of the histological structure, epithelial proliferation, and secondary changes. The indicators of the regions of the nucleolar organizers in endemic goiter increase and amount to 2.0±0.03 in diffuse colloidal goiter, 2.3±0.01 in nodular goiter, and 3.5±0.03 in proliferating goiter. A comprehensive histological, histochemical, morphometric, and immunohistochemical study and determination of the indicators of the nucleolar organizers allowed us to determine objective criteria, the degree of goiter proliferation, the possibility of goiter recurrence, and the risk of malignancy [3, 12,17]. Complications of endemic goiter occur as a result of a strong increase in the thyroid gland. The gland, increasing in size, can compress blood vessels, nerves, trachea and esophagus. Compression of the vessels that depart from the heart can lead to hyperfunction of the heart, followed by dilation of the chambers of the right department, and a "goiter heart" is formed. There may also be a malignant degeneration of the thyroid gland or strumitis. Overgrowth of the thyroid gland can cause cancer [3,7,17]. Scientists of Uzbekistan (Urmanova Yu. M. et al., 2018) note that the Republic of Uzbekistan belongs to iodine-deficient regions. The development of 170 adolescents was monitored for the purpose of early diagnosis of various abnormalities of the reproductive sphere and the general development of adolescents in conditions of iodine deficiency. Screening revealed various disorders of sexual and general development in 170 adolescents (49.6 %), of which 141 (82.8%) had this pathology combined with an iodine deficiency state of varying severity [21,22].

Abdulkhalikov A. S. et al. (2015) found that in the thyroid residue in 28.1% of operated patients, various small focal changes are detected, including small residual nodes, which, according to the literature, are the causes of early relapses of nodular goiter. For their prevention, a sample of 86 patients showed the need to describe (in addition to the traditional protocol of preoperative ultrasound of the thyroid gland) areas of interest in terms of the formation of the thyroid residue. Additional information in the ultrasound protocol helps surgeons choose the least compromised area of the thyroid gland for the formation of a thyroid residue in multi-node colloidal euthyroid goiter. It is believed that the recurrence of ultrasound in the thyroid residue is due to the active proliferation of thyrocytes in the goiter-altered (compromised) thyroid tissue, especially in the perinodular zone. The development of nodes in these zones is predicted in terms of more than 10 years after the operation. In earlier periods, relapse, according to scientists, is mainly due to the growth of small residual nodes remaining in the thyroid residue. The share of such cases of relapse is up to 44.3% of all cases of recurrent nodular goiter, which makes the problem of timely visualization of such nodes relevant [1,3,12,23].

Total thyroidectomy has become the predominant type of surgical intervention used today for the treatment of thyroid diseases. Misiakos E.P, Liakakos T, Macheras A, Zachaki A. (2006) A retrospective analysis of patients who underwent thyroid surgery during the last 11 years was performed. The study period was divided into two parts: phase A (1995-1999) and phase B (2000-2005). Patient characteristics, type of surgery, histological diagnosis, and postoperative complications were compared in the two study periods, depending on the type of surgery. During the study period, 264 patients aged 18 to 89 underwent thyroid surgery (133 in phase A and 131 in phase B). Common histopathological diagnoses: nodular goiter (54.9%), hyperplastic nodules (14.7%), adenoma (8.3%), thyroid cancer (18.2%), and Hashimoto's thyroiditis (3.8%). Total thyroidectomy was performed in 91 patients in phase A compared to 115 patients in phase B ($P < 0.001$), while the use of subtotal thyroidectomy and lobectomy decreased over time. The trend towards an increase in morbidity was noted in phase B. Seven patients had hypocalcemia in phase A, while 11 patients had hypocalcemia in phase B. Similarly, 5 patients had some degree of vocal cord paralysis in phase A compared to 7 in phase B ($P > 0.05$). The incidence increased significantly in the case of cancer or repeated surgery. Despite the slightly higher risk of complications associated with total thyroidectomy, it has gradually replaced more conservative approaches to the treatment of both benign and malignant thyroid diseases. Repeated surgeries and operations for thyroid cancer carry a higher risk of complications [12,18,20].

Benign nodular goiter is endemic in Germany, and diagnostic thyroidectomy is one of the most common surgical procedures. Less than 10% lead to malignancy, which is a poor indicator compared to other European countries. According to current literature, women predominate in almost all thyroid pathologies, but little is known about gender differences in thyroid nodules. The researchers sought to find gender differences in the diagnosis and treatment of non-toxic thyroid nodules and focused on preoperative examination, as well as on cytological and histological data of patients with single and multi-node non-toxic goiter. 392 cases out of 693 cases of thyroid disease were retrospectively analyzed.

Treated on an interdisciplinary basis by the endocrine commission of the university center in the period from January 2015 to December 2018. (4 years old). A combination of fine-needle biopsy and interdisciplinary case discussion resulted in a 28.9% malignancy rate in patients undergoing surgery for single and multi-node non-toxic goiter. Although there were no significant gender differences in the distribution and level of malignancy of the Bethesda categories, male patients had significantly higher levels of malignancy - 40% in the group (p=0.04). The authors believe that preference should be given to surgical treatment of male patients with suspected hypofunction of thyroid nodes. However, well-planned prospective studies are needed to investigate gender-specific recommendations for the treatment of benign thyroid diseases in the future [22,23].

German scientists (Müller PE, Schmid T, Spelsberg F.) show that the degree of goiter resection can be difficult due to the large multi-node transformation. Total thyroidectomy of the goiter is refused due to the expected increase in complications. The high frequency of recurrent goiter, together with an increased risk of complications, indicates problems of insufficient resection. This study examines the incidence of complications after total thyroidectomy of goiter. 4,767 surgical procedures (partial thyroidectomy, hemithiroidectomy, or complete thyroidectomy) of goiter were examined. Retrospectively, the frequency of postoperative complications (bleeding, wound infection, recurrent nerve paralysis, hypocalcemia) after strumectomy or hemithiroidectomy was analyzed in patients and compared with the literature data. Total thyroidectomy (n = 176) did not cause a higher level of complications (bleeding: 0.6%, hypocalcemia: 0.6%; recurrent nerve paralysis: 0.6%) compared to the control group and literature. Thus, a complete thyroidectomy can be an effective treatment option for large multi-node goiter [13,24].

Conclusion. Thyroid surgery today is not burdened with a high frequency of major complications. Different surgical institutions with different surgical approaches, surgical techniques, and radicality have published reports with a large discrepancy in the incidence of complications, analyzing them using different diagnostic methods and evaluating the results. Similarly, it is well known that a higher breadth of surgical intervention allows better control of thyroid diseases, but can be accompanied by a large number of complications. All this leads a number of authors to analyze the complications of surgical treatment in our patients according to well-known criteria, with the hypothesis that a higher radical surgical intervention does not increase the frequency of complications, and that this frequency correlates with the results published in the world literature. The aim of the authors of this non-randomized study was to analyze the results of surgical treatment of a huge number of sequentially operated patients, to analyze and compare the results by disease groups and surgical procedures, and to compare the final results with the results published in the world literature.

Minimally invasive parathyroidectomy procedures have revolutionized the surgical treatment of primary hyperparathyroidism. The co-existence of goiter is considered the main contraindication for these approaches, especially for unilateral ones. A particular advantage of video-assisted parathyroidectomy over other endoscopic methods is the ability to combine it with thyroidectomy when necessary and when the selection criteria for video-assisted thyroidectomy are met.

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ХАРАКТЕРИСТИКА КЛИНИЧЕСКИХ ПРОЯВЛЕНИЙ ГНОЙНЫХ ЗАБОЛЕВАНИЙ ПРИ ПАТОЛОГИИ ЭНДОКРИННЫХ ЖЕЛЕЗ (ОБЗОР ЛИТЕРАТУРЫ)

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Резюме. *В нашей Республике, согласно исследованиям, проведенным в 2019-2020 гг., распространенность сахарного диабета 2 типа в Узбекистане составляет 8,7% среди лиц в возрасте старше 35 лет. Наряду с сахарным диабетом в настоящее время заболевания щитовидной железы занимают ведущее место в структуре всех эндокринопатий. Прежде всего, это объясняется широтой распространенности диффузного зоба в йоддефицитных районах, к которому относится и Узбекистан. Осложнения сахарного диабета и диффузного токсического зоба является для Республики Узбекистан важной проблемой, как с медицинской, так и с социально-экономической точки зрения. В представленном литературном обзоре рассматриваются современные данные об особенностях клинического течения гнойных хирургических заболеваний на фоне сопутствующих эндокринных патологий, сахарного диабета и диффузного токсического зоба на основе мировых источников. Для подбора данных использованы базы данных: Scopus, Springer Nature, PubMED, Google Scolar, база РИНЦ elibrary и др.*

Ключевые слова*: гнойные хирургические заболевания мягких тканей, сахарный диабет, диффузный токсический зоб, особенности клинического течения.*