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SURGICAL SOFT TISSUE INFECTION IN UZBEKISTAN - state of the problem and ways of so- lution

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ABSTRACT

Skin and soft tissue infections are the most common reason for patients seeking surgical care. In the USA, SSITs are the cause of 330,000 hospitalizations per year. According to expert estimates, this pathology is observed in about 700,000 patients annually in the Russian Federation. The problem of diagnostics and treatment of SSIT becomes more complicated when the process develops against the background of immunodeficiency conditions, in particular diabetes mellitus, when necrotic changes dominate, the clinical course is accompanied by special severity, atypicality and high lethality, which reaches 76%. The work includes the analysis of treatment results of 7113 patients with SSIT treated in the department of purulent surgery and surgical complications of diabetes mellitus in the multidisciplinary clinic of the Tashkent Medical Academy for the period of 2022 - 2024. The patients were divided into two groups, the first group is those in whom surgical infection developed against the background of diabetes mellitus. The second - surgical infection developed in patients who did not have diabetes mellitus. The problem in the treatment of these patients was the lack of criteria for early clinical diagnosis of SSIT, especially in patients with diabetes mellitus, which is the reason for the development of neglected forms, inadequate volume of surgical intervention and local treatment.

Keywords: purulent surgery, surgical soft tissue infection, diabetes mellitus, diagnostics

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INTRODUCTION

Widespread introduction of modern methods of diagnostics and treatment, allowed to improve the rates of treatment of patients with purulent pathology, but their frequency for the last three four decades practically did not change [1, 2, 3]. Moreover, about 42% of lethal outcomes of surgical manipulations are associated with purulent-inflammatory complications [4, 5]. The rates of detection of patients with various purulent-inflammatory diseases are stable at the level of 35-40% of the total number of surgical patients [1, 6].

To date, purulent surgery remains an area of surgery that receives little attention from both outpatient and inpatient specialists; therefore, in recent years, this area of surgery has been referred to as surgical skin and soft tissue infections (SSSI). Infections of skin and soft tissues are the most frequent reason for patients to seek surgical care, so in the United States of America surgical skin and soft tissue infections are the cause of 330,000 hospitalizations per year. According to expert estimates, this pathology is observed in about 700,000 patients annually in the Russian Federation [7, 9, 10, 11].

In European countries, 1.3 million patients were hospitalized for ICMT, among them cellulitis (52.7%), local surgical infection (15.8%), diabetic foot (15.3%), pressure sores (12%) [8].

The problem of SSTI diagnosis and treatment becomes more complicated when the process develops against the background of immunodeficiency conditions, in particular diabetes mellitus, when necrotic changes dominate, the clinical course is accompanied by special severity, atypicality and high mortality, reaching 76% [12-14, 16].

Analysis of literature data shows that this problem exists everywhere and there is no tendency to reduce it.

In Uzbekistan, the Republican Center of purulent surgery and surgical complications of diabetes mellitus was established on 28.07.1994, #597 to provide qualified assistance to the population. The last statistics on active purulent surgery was conducted in 2009 [15] and was presented at the Society of Surgeons of Uzbekistan, as well as presented a report to the Ministry of Health of the Republic, the consequence of which was the issuance of an order on the standards of treatment of patients with purulent pathology, and the organization of the parent institution (order № 192 from 29.06.2011). This made it possible to conduct a static study of this problem. The center was closed in 2016, in connection with which there is no accurate data on this area.

Study of the state of purulent surgery, or as it is usually called in modern interpretation - surgical soft tissue infection (SSTI) in the Republic of Uzbekistan, on the example of the activities of the department of purulent surgery and surgical complications of diabetes mellitus, where patients with neglected forms and identification of the main problems in its diagnosis and treatment.

MATERIAL AND METHODS

This work is based on the analysis of the results of treatment of patients with SSTI treated in the department of purulent surgery and surgical complications of diabetes mellitus in the multidisciplinary clinic of the Tashkent Medical Academy for the period 2022-2024. During this period, 7113 patients were treated. We divided the patients into two groups, the first group is those in whom surgical infection developed against the background of diabetes mellitus. The second - surgical infection developed in patients who did not have diabetes mellitus. As it is seen on the presented diagram patients with CIMT developed against the background of diabetes mellitus prevailed, they were represented by 5381 (75,7%) patients. In 1732 patients (24,3%) the infection developed without concomitant diabetes mellitus (Diagram 1).

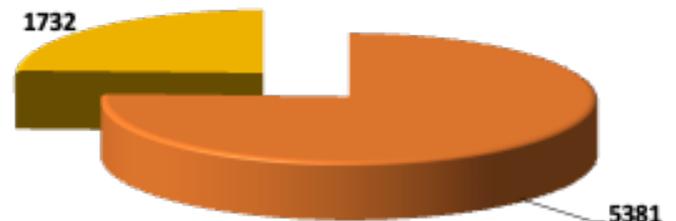


Diagram 1. Distribution of patients depending on the presence of diabetes mellitus.

According to the type of diabetes mellitus, type II patients were predominant with 81.9% (4411) of patients and 970 (18.1%) patients with type I diabetes mellitus. Among the patients with diabetes mellitus, the data were as follows (Table 1). Diabetic gangrene of the lower extremities, which is lesions identified in the feet, was identified in 3974 patients, which constituted the main population (73.9%). Surgical infections of soft tissues were the second most frequent.

This group included such nosologic forms as rheumatic inflammation, abscess, phlegmon, carbuncle, necrotizing fasciitis, necrotizing cellulitis and myonecrosis. The number of these patients was 854 (15.8%). Sur-

gical infection of the perineum was diagnosed in 468 patients (8.7%). This group included patients with proctitis, bartolinitis and Fournier's phlegmon. Less frequently there were patients with surgical infections of fingers and hand - 85 (1.6%).

Table 1. Nature of distribution of patients by localization of the focus among patients with diabetes mellitus.

Name	Quantity	%
Diabetic gangrene of n/extremities	3974	73,9
Surgical soft tissue infection	854	15,8
Surgical infection of perineum	468	8,7
Surgical infection of fingers and hand	85	1,6
Total	5381	100

Among patients who were not diagnosed with diabetes mellitus, the picture was as follows. Patients with surgical infections of soft tissues dominated, which were detected in 729 patients (42.1%). In 610 patients (35.2%) there were various degrees of severity of purulent-necrotic processes on the background of decompensated blood circulation and in 314 patients the main pathology was localized in the perineum area (Table 2). As in the patients of the previous group, less frequent were the suppurative diseases of fingers and hand, which were detected in 79 patients (4.6%).

Table 2. Nature of distribution of patients by localization of the nidus in patients without diabetes mellitus.

Name	Quantity	%
Occlusive lesions of n/limbs	610	35,2
Surgical soft tissue infection	729	42,1
Surgical infection of perineum	314	18,1
Surgical infection of fingers and hand	79	4,6
Total	1732	100

We analyzed the incidence of SSTI in patients with diabetes mellitus according to gender. It showed that men dominated, they were diagnosed 3858, which amounted to 71.7%. There were 1523 women - 28.3% (Diagram 2).

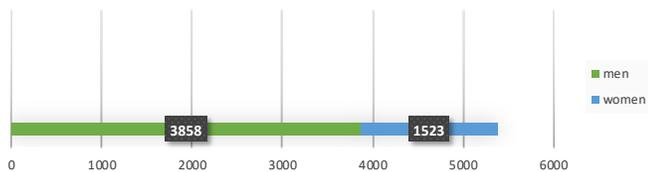


Diagram 2. Distribution of patients with diabetes mellitus depending on gender.

This is due to the lifestyle and the predominance of male patients of the effects that cause irreparable effects

on the body, especially those consumed in younger years. Harmful habits contribute to untimely aging and susceptibility to various kinds of diseases.

In-depth analysis of SSTI development in diabetes mellitus, depending on sex and age, showed that middle-aged and elderly patients dominated among men. Thus, middle-aged patients were 1130 (29.3%) and elderly patients were 1552 (40.2%), while patients of other ages were less frequent (Table3).

Table 3. Distribution of patients by sex and age, among patients with diabetes mellitus.

Age groups	Gender	Men		Women		
		n	%	n	%	
	less than 41 years	less than	2,9	45	2,9	
	41-50 years old	41-50	8,1	144	9,5	
	51-60 years	51-60	29,3	179	11,8	
	61-70 years	61-70	40,2	721	47,3	
	71-80 years	71-80	17,5	375	24,6	
	81 and more	81 and	2,0	59	3,9	
Total			3858	100	1523	100

Among women, elderly and senile patients prevailed, 721 (47.3%) and 375 (24.6%) of them. There were fewer patients of other age groups. This can be explained by the fact that diabetes mellitus develops gradually in women and its first manifestations appear more often during menopause.

The group of patients without diabetes mellitus was dominated by young patients, so 367 patients less than 41 years of age were identified, which amounted to 32.9% (Table 4).

Table 4. Distribution of patients by sex and age, among patients without diabetes mellitus.

Age groups	Gender	Men		Women	
		n	%	n	%
	less than 41 years	367	32,9	192	31,1
	41-50 years old	209	18,8	85	13,7
	51-60 years	183	16,4	107	17,3
	61-70 years	194	17,4	123	19,9
	71-80 years	118	10,6	61	9,9
	81 and more	43	3,9	50	8,1
Total			100	618	100

The second place was occupied by patients of young and middle age. They were represented by 209 patients - 18.8%. Patients of other age categories were less frequently encountered. Among women, the indicators were as follows: young - 192 (31.1%) and elderly - 123 (19.9%) patients also prevailed.

RESULTS

Patients were divided into two groups, which differed in the frequency of treatment. The first group - primary

patients, these are those who applied directly to our clinic for primary care. There were 2560 such patients, which amounted to 36.0%. More than half of the patients were secondary, i.e. those who applied for the first time for therapeutic help either in private or public institutions at the place of residence (Diagram 3).

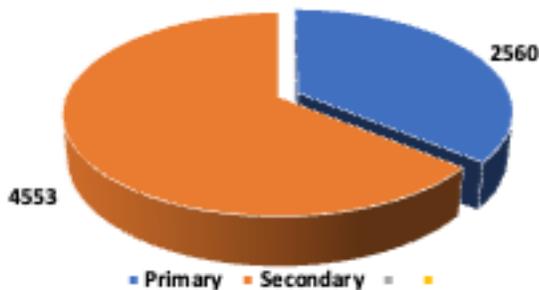


Diagram 3. Distribution of patients by frequency of treatment.

As can be seen on the presented diagram, they amounted to 4553 patients (64.0%). This group of patients was hospitalized and received conservative or operative treatment (Diagram 4).

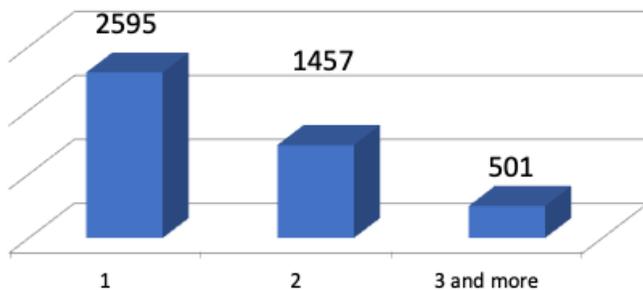


Diagram 4. Number of performed surgical interventions.

The study of this criterion showed that the duration of inpatient treatment of secondary patients was in terms of: 1724 patients - 37.9% were hospitalized at the place of residence for up to 5 days, 43.3% (1973) for up to 10 days and the remaining 856 patients received inpatient treatment for more than 10 days.

Being on inpatient treatment at the place of residence the overwhelming majority of patients were operated, and 2595 patients underwent one operation, which amounted to 56.9%, 1457 patients (32.0%) underwent two operations and in 11.0% of cases (501) patients un-

derwent 3 or more operations. The scope of these operations included dissection and necrectomy.

Analysis of the reasons for unsatisfactory treatment showed that one of the frequent reasons (69.9%) was late diagnosis, when against the background of atypical clinical picture these patients were diagnosed late. This criterion was identified in 3187 patients. The second place was occupied by inadequate volume of surgical intervention, when incisions were made to empty the nidus without adequate necrectomy. It was diagnosed among 3005 (65.9%) patients. This in turn led to the preservation of the pathologic focus in the underlying tissues, which was revealed in 1958 (43.0%) patients.

One of the main indicators were deficiencies in the local administration of the wound process in the postoperative period. They consisted in the following: dressings without taking into account the phases of the wound process and the severity of the purulent-necrotic process (multiplicity of wound process sanitation depending on exudation and the nature of necrotic changes), use of preparations with their ineffectiveness known in advance (lanolin-based ointments, furacilin) or water-soluble ointments without taking into account the course of the wound process, underestimation of the possibilities of using biological, chemical and physical methods of sanitation (proteolytic enzymes, local antibacterial agents), the use of therapeutic agents with their ineffectiveness known in advance (ointments on the lanolin base, furacilin) or ointments on the water-soluble base without taking into account the course of the wound process.

CONCLUSION

The analysis of the results of treatment of patients showed a number of existing problems. In the first place is the lack of criteria for early clinical diagnosis of SSTI, especially in patients with diabetes mellitus, which is the reason for the development of neglected forms. The nature of surgical intervention should be radical, with adequate incisions, allowing to regulate the wound process. In local treatment a strict differentiated approach is necessary depending on the phase of the course of the wound process.

Subsequently, for reliability of indicators of prevalence of surgical soft tissue infection, as well as to create a vertical in the provision of qualified medical care to the population of the Republic. On April 22, 2025, the Decree of the President of the Republic of Uzbekistan №-149 “On measures to radically improve the system of training in the field of medicine” was adopted. According to the new decree of the President, Tashkent State Medical University will be established in Uzbekistan on the

basis of three leading medical universities. The reform is aimed at cardinal improvement of the system of medical personnel training and their compliance with international standards. In this regard, it is advisable to revive or open the Center of Surgical Infection of the Republic of Uzbekistan on the basis of the Tashkent State Medical University, where there will be a focused research work on training of highly qualified specialists in the field of surgical infection, with the introduction of treatment experience of leading scientific clinics dealing with this pathology.

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O‘ZBEKISTONDA YUMSHOQ TO‘QIMALARNING XIRURGIK INFEKSIYASI: MUAMMONING HOLATI VA UNI YECHISH YO‘LLARI

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**Umumiy va bolalar xirurgiyasi kafedrası
Toshkent tibbiyot akademiyasi**

Annotatsiya

Teri va yumshoq to‘qimalar infeksiyasi – bemorlarning xirurgik yordamga murojaat qilishining eng keng tarqalgan sabablardan biridir. AQShda bu infeksiyalar yiliga 330 000 bemorning kasalxonaga yotqizilishiga sabab bo‘ladi. Mutaxassislarining baholashicha, Rossiya-da bu patologiya har yili taxminan 700 ming bemorda uchraydi. Teri va yumshoq to‘qimalar infeksiyasini (TYTI) tashxislash va davolash muammosi ayniqsa immunitet yetishmovchiligi, xususan, qandli diabet fonida rivojlanganda yanada murakkablashadi. Bunday hollarda nekrotik o‘zgarishlar ustunlik qiladi, kasallik og‘ir kechadi, klinik belgilari noaniq bo‘ladi va o‘lim holati 76% gacha yetadi.

Mazkur ishda 2022–2024 yillarda Toshkent tibbiyot akademiyasining ko‘p tarmoqli klinikasidagi yiringli xirurgiya va qandli diabetning xirurgik asoratlari bo‘limida davolangan 7113 nafar bemorning TYTI bo‘yicha davolanish natijalari tahlil qilindi. Bemorlar ikki guruhga ajratildi, birinchisi - qandli diabet fonida xirurgik infeksiyasi rivojlangan bemorlar. Ikkinchisi – xirurgik infeksiyasi qandli diabete bo‘lmagan bemorlarda rivojlangan.

Davolashdagi asosiy muammo – ayniqsa qandli diabet bilan kasallangan bemorlarda – yumshoq to‘qimaning xirurgik infeksiyasining erta klinik tashxis mezonlarining yo‘qligidir. Bu holat kasallikning kech aniqlanishiga, noto‘g‘ri va yetarli bo‘lmagan xirurgik aralashuvga hamda mahalliy davolashning samarasizligiga olib kelmoqda.

Kalit so‘zlar: yiringli xirurgiya, yumshoq to‘qimalar xirurgik infeksiyasi, qandli diabet, diagnostika.

ХИРУРГИЧЕСКАЯ ИНФЕКЦИЯ МЯГКИХ ТКАНЕЙ В УЗБЕКИСТАНЕ.

СОСТОЯНИЕ ПРОБЛЕМЫ И ПУТИ РЕШЕНИЯ.

Касимов У.К.

**Кафедра общей и детской хирургии
Ташкентская медицинская академия**

Аннотация

Инфекции кожи и мягких тканей – наиболее частая причина обращения пациентов за хирургической помощью. В США ИКМТ являются причиной 330 000 госпитализаций в год. По экспертным оценкам, ежегодно в РФ эта патология наблюдается примерно у 700 тыс. пациентов. Проблема диагностики и лечения ИКМТ усложняется, когда процесс развивается на фоне иммунодефицитных состояний, в частности сахарного диабета, когда доминируют некротические изменения, клиническое течение сопровождается особой тяжестью, атипичностью и высокой летальностью, достигающей 76%. В работу включен анализ результатов лечения 7113 больных с ИКМТ, находившихся на лечении в отделении гнойной хирургии и хирургических осложнений сахарного диабета многопрофильной клинике Ташкентской Медицинской Академии, за период 2022 – 2024 годы. Больные были разделены на две группы, первая – это те у которых хирургическая инфекция развилась на фоне сахарного диабета. Вторая – хирургическая инфекция развилась у пациентов, не имеющих сахарный диабет. Проблема в лечении данных больных заключалась в отсутствие критериев ранней клинической диагностики ХИМТ, особенно у больных сахарным диабетом, что является причиной развития запущенных форм, неадекватном объеме хирургического вмешательства и местном лечении.

Ключевые слова: гнойная хирургия, хирургическая инфекция мягких тканей, сахарный диабет, диагностика.