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СВИЩИ ПРЯМОЙ КИШКИ: АКТУАЛЬНЫЕ ВОПРОСЫ ЭТИОЛОГИИ И ПАТОГЕНЕЗА

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Резюме статьи

Цель. Прояснить этиологию и патогенез свищей прямой кишки.

Материалы и методы исследования. В основу настоящей работы положен анализ наблюдений и лечения 317 больных с транссфинктерными и экстрасфинктерными, I-II степени сложности, свищами прямой кишки, находившихся на стационарном лечении в проктологическом отделении Национального госпиталя при Министерстве здравоохранения Кыргызской Республики

Результаты. Сравнительно чаще высеивалась кишечная палочка, которая в 44,8% наблюдений высеяна в монокультуре и в 14,2 % - в ассоциации со стафилококками. В монокультуре стафилококки обнаружены в 32,5% наблюдений, а в ассоциации с протеем – 3,8%.

Выводы:

1) При хроническом парапроктите наиболее часто высеиваются кишечная палочка и стафилококк.

2) Выделенная микрофлора проявляла сравнительно высокую резистентность к пенициллинам, включая полусинтетические, левомицитину и тетрациклину, сохраняя высокую чувствительность к цефалоспоринам и аминоглюкозидам.

Ключевые слова: свищ прямой кишки, этиология, патогенез, бактериологическое исследование, микробиология.

RECTAL FISTULAS: TOPICAL ISSUES OF ETIOLOGY AND PATHOGENESIS

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Annotation

Purpose. To clarify the etiology and pathogenesis of rectal fistulas.

Materials and methods of research. The present work is based on the analysis of observations and treatment of 317 patients with transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas who were on inpatient treatment in the Proctological Department of the National Hospital under the Ministry of Health of the Kyrgyz Republic

Results. E. coli was sown relatively more often, which in 44.8% of cases was sown in monoculture and in 14.2% - in association with staphylococci. In monoculture, staphylococci were found in 32.5% of observations, and in association with proteus – 3.8%.

Conclusions:

1) With chronic paraproctitis, Escherichia coli and staphylococcus are most often sown.

2) The isolated microflora showed relatively high resistance to penicillins, including semi-synthetic ones, levomycitin and tetracycline, while maintaining high sensitivity to cephalosporins and aminoglucosides.

Key words: rectal fistula, etiology, pathogenesis, bacteriological examination, microbiology.

Introduction

Fistulous disease is one of the commonest colorectal conditions. Prevalence ranges from 8.6 to 10 per 100,000 people per year, with a difference of 8:1 between males and females.

One of the most common diseases is rectal fistulas. According to statistics, approximately 95% of patients with rectal fistulas associate the onset of the disease with acute paraproctitis. In 30-50% of cases, after acute paraproctitis, patients develop a rectal fistula. A simple opening and drainage of the abscess without eliminating the entrance gate of infection predisposes to the formation of a rectal fistula. Through the area of the affected anal crypt or through the entrance gate of another etiology (trauma), there is a constant infection of pararectal tissues from the lumen of the intestine. In the course of the fistula, infiltrates and purulent cavities may form in the fiber with insufficiently good drainage [1-5].

Materials and methods

The present work is based on the analysis of observations and treatment of 317 patients with transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas who were on inpatient treatment in the proctological department of the National Hospital under the Ministry of Health of the Kyrgyz Republic.

Among the patients, there were 262 men (82.6%) and 55 women (17.4%).

The majority of patients were aged 20 to 59 years – 297 (93.1%) and most often at the most able–bodied age, that is, at the age of 20 to 49 years - 255 (80.4%). The average age was 40.2 ± 1.15 years.

According to the nature of their work, the patients were divided into 3 groups: those engaged in physical labor, mental labor and mixed labor. Patients engaged in physical labor made up the overwhelming majority of 60.2%, there were slightly fewer patients engaged in mental labor – 23.8%, even fewer patients engaged in mixed labor – 16%.

Results

When analyzing the admission of patients to the hospital by month, it was found that the largest number of admissions falls on the months – October, November, December, January, February, March, April, that is, in the autumn-winter-spring period (Fig.1). There are slightly fewer patients admitted in the summer months. This is probably due to the holiday period and agricultural work.

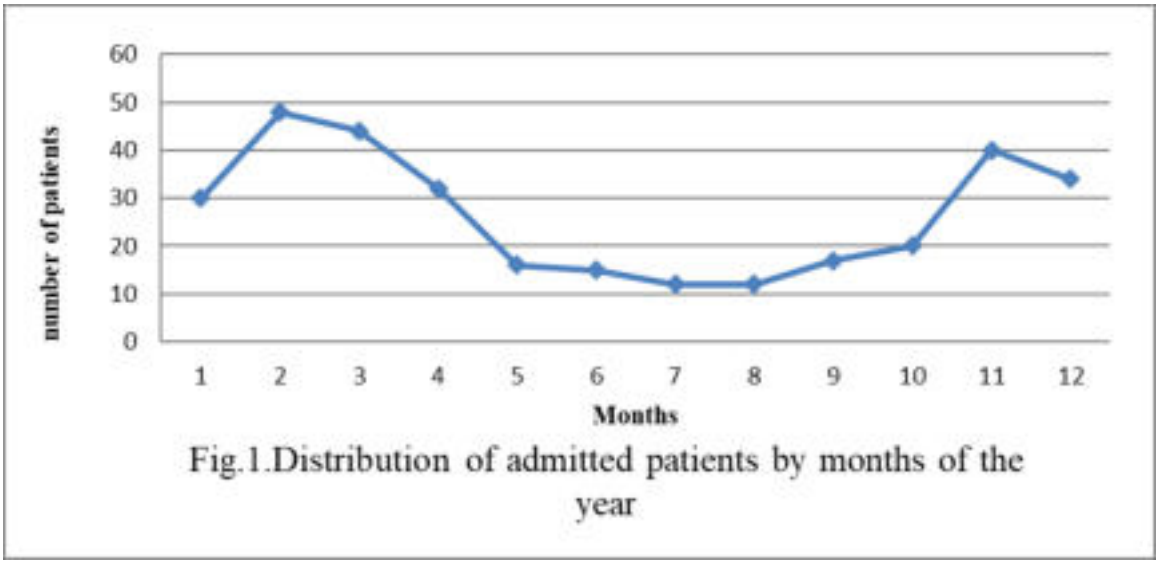

Fig.1.Distribution of admitted patients by months of the year

A microbiological study aimed at identifying the pathogen and determining its sensitivity to antibacterial drugs was carried out in the bacteriological laboratory of the National Hospital under the Ministry of Health of the Kyrgyz Republic.

The material for microbiological examination was a detachable fistula, which was taken into a sterile tube and delivered immediately to the bacteriological laboratory. The results of the study showed (Table 1) that Escherichia coli was sown relatively more often, which in 44.8% of cases was sown in monoculture and in 14.2% - in association with staphylococci. In monoculture, staphylococci were found in 32.5% of observations, and in association with proteus – 3.8%.

Table 1

Characteristics of aerobic microbes seeded with rectal fistulas (n=317)

Type of microflora	Seeding frequency	
	abs.	%

E. coli	142	44,8
Staphylococci	103	32,5
Proteus	8	2,5
Streptococci	7	2,2
Staphylococci and Escherichia coli	45	14,2
Proteus and staphylococci	12	3,8

The results of the microbiological study we obtained confirmed the literature data indicating that Escherichia coli and staphylococcus are most often sown in chronic paraproctitis.

The isolated microflora showed relatively high resistance to penicillins, including semi-synthetic ones, levomycitin and tetracycline, while maintaining high sensitivity to cephalosporins and gentamicin (Table 2).

Table 2

Sensitivity of microflora to antibiotics

Antibiotics	**Microflora sensitivity (%)**		
	staphylococci	**E. coli**	**Proteus**
Penicillin	2	23	16
Oxacillin	20	32	43
Ampicillin	28	29	35
Erythromycin	35	45	36
Levomycetin	33	46	32
Tetracycline	35	34	20
Mandol	56	60	54
Kefzol	48	61	53
Cefazolin	58	62	55
Gentamicin	60	54	38

Conclusions:

1) Paraproctitis, as a rule, occurs in young people, the most able–bodied age from 20 to 59 years - 297 (93.1%). Among the patients, 262 males (82.6%) predominate, and 55 females (17.4%).

2) The results of the microbiological study we obtained confirmed the literature data indicating that Escherichia coli and staphylococcus are most often sown in chronic paraproctitis.

3) The isolated microflora showed relatively high resistance to penicillins, including semi-synthetic ones, levomycitin and tetracycline, while maintaining high sensitivity to cephalosporins and aminoglucosides.

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МЕТОДЫ ВИЗУАЛЬНОЙ ДИАГНОСТИКИ СВИЩЕЙ ПРЯМОЙ КИШКИ

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Резюме

Цель. Изучение свищей прямой кишки посредством применения передовых методов визуальной диагностики.

Материалы и методы исследования. Для обследования у 317 больных с транссфинктерными и экстрасфинктерными, I-II степени сложности, свищами прямой кишки, находившихся на стационарном лечении в проктологическом отделении Национального госпиталя при Министерстве здравоохранения Кыргызской Республики были применены, кроме, общеклинических исследований, инструментальные и специальные методы.

Результаты. Обследование пациентов начинали с тщательного сбора жалоб, выяснения анамнеза болезни и жизни, осмотра пациента. Особое внимание уделяли тем симптомам и признакам, которые были выявлены при сборе жалоб и анамнеза.

Жалобы	Количество пациентов	
	абс.	%
Наличие свища в области промежности	317	100,0
Выделение гноя из свищевых отверстий	317	100,0
Боли в заднем проходе и промежности	68	21,4
Подъём температуры тела	56	17,6
Недержание газов	8	2,5

Второй жалобой больных были боли в области промежности и заднего прохода, возникающие при опорожнении кишечника, физической нагрузке, в положении сидя. На боли жаловались 68 (21,4%) пациентов.

На периодические подъёмы температуры тела жаловались 56 (17,6%) пациентов.

У 87% больных хроническим парапроктитом имелось одно наружное свищевое отверстие. У остальных больных были от 2 до 5 наружных свищевых отверстий.

Среди больных у 274 (86,43%) пальпаторно определялся свищевой ход, а у 43 (13,57%) пациентов свищевой ход пальпаторно не определялся. Зондирование свища проведено у 268 (84,5%) больных. В тех случаях, когда

пуговчатый зонд не проходил в просвет прямой кишки, осуществляли красящую пробу. Красящую пробу мы выполнили у 49 (15,5%) больных. Всем 317 больным произведена ректороманоскопия. Из 317 пациентов фистулография выполнена у 239 (75,4%) больных. Мы также проводили ультразвуковое исследование у 52 (16,4%) больных. Для оценки функционального состояния анального сфинктера осуществляли сфинктерометрию у всех 317 больных.

Показатель	Состояние анального сфинктера	Значение в граммах
Тонус анального сфинктера	Нормальный (n=309)	441±13,8
	Недостаточность анального сфинктера I степени (n=8)	269±7,0
Волевое сокращение	Нормальный (n=309)	541±14,1
	Недостаточность анального сфинктера I степени (n=8)	318±9,0

Достоверность: P<0,05

Выводы:

1. Диагноз свища прямой кишки часто не представляет сложностей.
2. Диагностика транссфинктерных и экстрасфинктерных, I-II степени сложности, свищей прямой кишки требуют тщательного, комплексного обследования больных с использованием опроса, осмотра, общеклинических и специальных методов исследования.

Ключевые слова: свищ прямой кишки, клиника, диагностика.

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METHODS OF VISUAL DIAGNOSIS OF RECTAL FISTULAS

Annotation

Purpose. The study of rectal fistulas through the use of advanced methods of visual diagnostics.

Materials and methods. In addition to general clinical studies, instrumental and special methods were used to examine 317 patients with transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas who were on inpatient treatment in the Proctological Department of the National Hospital under the Ministry of Health of the Kyrgyz Republic.

Results. The examination of patients began with a thorough collection of complaints, clarification of the anamnesis of the disease and life, examination of the patient. Special attention was paid to those symptoms and signs that were identified during the collection of complaints and anamnesis.

Complaints	**Number of patients**	
	abs.	**%**
Presence of a fistula in the perineal region	317	100,0
Discharge of pus from fistula openings	317	100,0
Pain in the anus and perineum	68	21,4
Body temperature rise	56	17,6
Gas incontinence	8	2,5

The second complaint of patients was pain in the perineum and anus, arising from bowel emptying, physical exertion, in a sitting position. 68 (21.4%) patients complained of pain.

56 (17.6%) patients complained of periodic rises in body temperature.

87% of patients with chronic paraproctitis had one external fistula opening. The remaining patients had from 2 to 5 external fistula openings.

Among the patients, 274 (86.43%) palpated the fistula course, and 43 (13.57%) patients did not palpate the fistula course. The fistula was probed in 268

(84.5%) patients. In cases where the button probe did not pass into the lumen of the rectum, a coloring test was carried out. We performed the coloring test in 49 (15.5%) patients. All 317 patients underwent rectoromanoscopy. Out of 317 patients, fistulography was performed in 239 (75.4%) patients. We also performed ultrasound examination in 52 (16.4%) patients. To assess the functional state of the anal sphincter, sphincterometry was performed in all 317 patients.

Indicator	**Condition of the anal sphincter**	**Value in grams**
Anal sphincter tone	Normal (n=309)	441±13,8
	Grade I anal sphincter insufficiency (n=8)	269±7,0
Volitional reduction	Normal (n=309)	541±14,1
	Grade I anal sphincter insufficiency (n=8)	318±9,0

Keywords: rectal fistula, clinic, diagnosis.

Introduction

Fistula-in-ano affects 1 to 2 in 10,000 of Western populations and causes significant morbidity and financial costs. Anal fistula is diagnosed in 8.6 to 10 per 100,000 individuals, 2–4 times more frequently in males than in females [1-3].

The objective of the study was to analyze resource use, costs and sick leave for newly diagnosed patients with anal fistula in Sweden.The sample included 362 patients of which 27% had no surgery, 37% had one surgery and 36% had multiple surgeries. Patients with multiple surgeries underwent over four surgeries on average. Approximately 67% of the contacts occurred during the first year after diagnosis. Estimated mean sick leave was 10.4 full-time equivalent days per patient. Total discounted costs were €5,561 per patient where approximately 80% were direct costs [4].

Given that the accurate diagnosis of the fistula and the internal opening plays a key role in the surgical procedure, the pre-operative evaluation of fistula is significant in producing an ideal therapeutic effect [5].

Conventional contrast material-enhanced fistulography was the first

modality used in the diagnosis of perianal fistula. The inability to evaluate the anal sphincter complex, secondary extensions of the fistula as well as relevant anatomic compartments and musculature stand as the major drawbacks of this technique.

The accuracy of CT is much better compared to MRI when it comes to detection of air within fistulous tracts as well as the abscess cavities. However, MRI is superior to CT for evaluation of secondary extensions from the fistulous tract and differentiating it from adjacent pelvic soft tissue structures [6-9].

Materials and methods

In addition to general clinical studies, instrumental and special methods were used to examine 317 patients with transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas who were on inpatient treatment in the proctological department of the National Hospital under the Ministry of Health of the Kyrgyz Republic.

The examination of patients began with a thorough collection of complaints, clarification of the anamnesis of the disease and life, examination of the patient. Special attention was paid to those symptoms and signs that were identified during the collection of complaints and anamnesis.

Results

Upon admission to the hospital, all patients complained of pus discharge from fistula holes located on the skin of the perineum (Table 1). Pain is not characteristic of chronic paraproctitis, but pain appears when the process worsens.

Table 1

The nature of complaints of patients who were on inpatient treatment (n=317)

Complaints	**Number of patients**	
	abs.	**%**
Presence of a fistula in the perineal region	317	100,0
Discharge of pus from fistula openings	317	100,0
Pain in the anus and perineum	68	21,4

Body temperature rise	56	17,6
Gas incontinence	8	2,5

The second complaint of patients was pain in the perineum and anus, arising from bowel emptying, physical exertion, in a sitting position. 68 (21.4%) patients complained of pain.

56 (17.6%) patients complained of periodic rises in body temperature.

When collecting anamnesis, we paid special attention to the nature of previous surgical interventions, since as a result of repeated surgical interventions, anatomical relations in the rectum area change, and information about the methods of operations and their complications may indicate the presence of a scarring process in the anal canal area.

Patients were examined on a gynecological chair in the position for perineal calcification and knee - elbow position. When examining the perineum, special attention was paid to the appearance of the skin, the presence and location of external fistula openings, the presence of scars formed as a result of previous surgical interventions.

It should be noted that the external fistula opening during previous surgical interventions was most often located in the projection of the postoperative scar. 87% of patients with chronic paraproctitis had one external fistula opening. The remaining patients had from 2 to 5 external fistula openings. The distance of the external opening of the fistula from the anus is not crucial for determining the type of fistula. According to the location of the external opening of the fistula, it is impossible to reliably judge the localization of the internal opening, although the Salmon–Gudzel rule indicates it with a significant degree of probability. The essence of the rule is as follows: the anal canal is conditionally divided into two semicircles – the upper and lower. If the external fistula opening is located above this line, then often the internal opening is located on the upper semicircle of the anal canal and vice versa.

After the examination, palpation of the perianal area was performed, which

made it possible to determine the degree of scarring process along the course of the fistula. With intra-sphincter and chressfincter fistulas of the rectum, when the fistula penetrates a small portion of the sphincter, it can be easily identified as a string running from the external fistula opening to the lumen of the rectum. When the fistula course is not determined by palpation, it can be assumed that there is an extrasphincter fistula. Thus, among our patients, 274 (86.43%) had a fistula stroke palpated, and 43 (13.57%) patients had no fistula stroke palpated. All patients with rectal fistulas underwent a finger examination of the rectum. At the same time, the tone and volitional efforts of the anal sphincter were evaluated, the presence of scarring changes in the anal canal was revealed. Special attention was paid to the area of the jagged line. Here, during a finger examination, it was possible to determine the internal opening of the fistula in 245 (77.3%) patients. At the same time, the internal opening of the fistula was most often located in the area of the crypts of the Blink along the posterior semicircle of the anal canal in 214 (87.3%) people, in 31 (12.7%) patients along the anterior semicircle. In 72 (22.7%) patients, finger examination of the rectum failed to accurately determine the internal opening of the fistula, in these patients, a seal was determined along the posterior or anterior semicircle of the anal canal. The presence and prevalence of scars in the area of the internal fistula and cicatricial-inflammatory changes in the tissues of the pararectal fiber makes it possible to assess the degree of complexity of the fistula.

The next stage in the diagnosis of rectal fistulas was probing with a metal button probe. At the same time, a button probe was inserted through the external opening of the fistula into the fistula passage, which was carefully pushed into the depth as far as possible. This manipulation was carried out very carefully so as not to form a false move. The progress of the probe along the fistula was controlled by a finger inserted into the anal canal. In cases where the fistula had a straight course, the tip of the probe exited through its internal opening into the lumen of the rectum or was palpated in the submucosal layer, near the interested morganium crypt. In the same cases when the fistula chord had a tortuous branching course, the probe did not pass into the lumen of the rectum, but only helped to establish the direction

and give an idea of the depth of the fistula course. The main point during the sounding of the fistula was to determine the ratio of the fistula to the fibers of the anal sphincter. The fistula was probed in 268 (84.5%) patients. In cases where the button probe did not pass into the lumen of the rectum, a coloring test was carried out. We performed the coloring test in 49 (15.5%) patients in the following way: Before the examination, a gauze buffer was inserted into the anal canal. Then, using a syringe, the end of which was inserted into the external fistula opening, a 1% solution of diamond greens was slowly injected into the fistula passage. The coloring solution was injected in portions of 0.2 – 0.5 ml. After the introduction of each portion of diamond greens, a gauze buffer was removed from the anal canal and examined. By the location of the dye stain on the gauze, it was possible to assume a possible localization of the internal fistula opening.

The next stage in the diagnosis of transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas, was rectoromanoscopy. Rectoromanoscopy is a valuable method of differential diagnosis of rectal diseases. All 317 patients underwent rectoromanoscopy. One of the main methods of studying patients with transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas is fistulography.

This study allowed us to visualize the relationship of the fistula passage with the fibers of the anal sphincter and to identify the branches of the fistula passages, purulent congestion and cavities, if any. The patient was prepared for this study by prescribing cleansing enemas on the eve of the study. After emptying the intestines from the last enema, a drainage tube was inserted into the anus to remove the remnants of washing water.

The method of fistulography was as follows: a water-soluble contrast agent was injected into the external opening of the fistula with a syringe, the amount of which depended on the length of the fistula passages, the size and dimensions of the contrasted cavities and lumps. Out of 317 patients, fistulography was performed in 239 (75.4%) patients.

We also performed ultrasound examination in 52 (16.4%) patients. To assess

the functional state of the anal sphincter, sphincterometry was performed. Sphincterometry was performed according to the method of A.M. Aminev (1973). The clinical assessment of anal sphincter insufficiency was carried out according to the generally accepted method.

Sphincterometry was performed in all 317 patients (Table 2)

Table 2

Sphincterometry data in patients with transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas

n = 317 (M±m)

Indicator	**Condition of the anal sphincter**	**Value in grams**
Anal sphincter tone	Normal (n=309)	441±13,8
	Grade I anal sphincter insufficiency (n=8)	269±7,0
Volitional reduction	Normal (n=309)	541±14,1
	Grade I anal sphincter insufficiency (n=8)	318±9,0

Confidence: P<0.05

The volume of studies performed is shown in Table 3.

Table 3

The volume of studies performed in patients with transsphincter and extrasphincter, III degree of complexity, rectal fistulas (n=317)

Type of research	**Number of examined patients**	
	abs.	**%**
Patient survey	317	100,0
Examination of the patient	317	100,0
Palpation of the perianal area and perineum	317	100,0
Digital examination of the rectum	317	100,0
Rectoromanoscopy	317	100,0
Fistulography	239	75,4

Probing the fistula course	268	84,5
Sample with dye	49	15,5
Sphincterometry	317	100,0
Microbiological research	317	100,0
Ultrasound examination	52	16,4
Histological examination	317	100,0

It should be noted that as a result of the complex examination, the diagnosis of transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas, including the location of the internal fistula, localization of purulent congestion and cavities, the presence of scarring in the anal canal and pararectal tissue, was established in all patients.

Statistical processing of the obtained data was carried out on an IBM PC Pentium 116 MMX using the software packages "Statgrafics" and "Exsel", which implemented parametric Fisher-Student methods.

The level of critical significance of the differences was taken as $P<0.05$.

Results

The formation of a rectal fistula was more often associated with self-opening of acute paraproctitis externally in 132 (41.6%) patients. And 185 (58.4%) patients admitted to the proctology department had previously been operated on for acute paraproctitis in other medical institutions, mainly by general surgeons. Moreover, before admission to the proctology department, 102 (55.1%) patients out of 185 patients underwent palliative surgery - simple opening and drainage of the abscess, 83 (44.9%) patients underwent radical surgery. The reason for the formation of a rectal fistula in these patients is not the elimination of the site of infection in the area of one of the anal crypts. Of 317 patients, 129 (40.7%) patients had combined diseases of the rectum. Thus, rectal fistula was combined with hemorrhoids in 113 (35.7%) patients, an anal fissure was found in 9 (2.8%), and anal polyps were detected in 7 (2.2%) patients.

Conclusions:

1. The diagnosis of rectal fistula is often not difficult.

The doctor should determine the type of fistula, its relationship to the fibers of the anal pulp, establish the localization of the internal opening of the fistula, the presence of purulent cavities in the pararectal cellular spaces, the degree of branching of the fistula course and the development of scarring in the anal canal wall and along the fistula, identify complications of chronic paraproctitis.

2. Diagnostics of transsphincter and extrasphincter, I-II degree of complexity, rectal fistulas require a thorough, comprehensive examination of patients using a survey, examination, general clinical and special research methods.

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ХИРУРГИЧЕСКАЯ СТОМАТОЛОГИЯ

ОПЕРАТИВНОЕ ЛЕЧЕНИЕ ВТОРИЧНОГО ОДОНТОГЕННОГО МЕДИАСТИНИТА С АКЦЕНТОМ НА ГЛУБОКИЕ ФЛЕГМОНЫ ШЕИ

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Резюме статьи

Цель работы: Повышение эффективности лечения одонтогенных медиастинитов вызванных глубокими флегмонами шеи и дна полости рта за счет активной тактики хирургического лечения.

Материалы и методы исследования. При глубоких флегмонах шеи и дна полости рта, осложненных острым гнойным медиастинитом, хирургическое лечение проведено у 48 больных в челюстно – лицевой хирургии и торакальном отделениях Национального госпиталя министерства здравоохранения Кыргызской Республики.

Чресшейная медиастинотомия по Разумовскому применена у 42-х больных в экстренном порядке, которая предполагает несколько способов дренирования средостения – открытый, закрытый и полузакрытый.

При открытом способе шейной медиастинотомии шейная рана раскрыта на всем протяжении. Она применяется при распространенном гнойном процессе в шейной области с захватом нескольких клетчаточных пространств. Заднее средостение может быть дренировано дренажной трубкой, а также тампоном с мазью левомиколь и резиновыми полосками. По этому способу прооперировано 25 больных. Закрытый способ Каншина мы применили у 12 больных.

Нами разработан и внедрен закрытый способ чресшейного дренирования заднего средостения при вторичных медиастинитах

(изобретение № A61B 17/00). Способ осуществляют следующим образом. Из шейного бокового разреза вдоль переднего края левой грудинно-ключично-сосцевидной мышцы послойно рассекают кожу, подкожную клетчатку, поверхностную и вторую фасции шеи. Вместе с мышцей кнаружи отводят сосудисто-нервный пучок. Пальцем осторожно создают канал, проникая вглубь и книзу позади пищевода, по направлению к заднему средостению. Вскрывают гнойник, промывают и дренируют рану. Одну дренажную трубку, подведенную к дну полости рта, а другую опускают в заднее средостение. При этом шейную рану ушивают герметичными швами сверху и снизу до дренажных трубок и дополнительно обеспечивают герметичность мазевым тампонированием. Сами дренажные трубки подключают к системе активной аспирации. При отхождении некротических тканей дренажи часто забиваются, при этом на ежедневных перевязках тампоны убираются трубки подтягиваются и очищаются, после чего вновь устанавливаются в исходные места, этим и осуществляют контроль за течением гнойного раневого процесса дна полости рта, шейной ране и заднего средостения. По данному способу прооперировано 15 больных.

Результаты исследования. В торакальном отделении из 48-ми больных со вторичным медиастинитом несмотря на позднюю госпитализацию более 3 суток (72 часа) были прооперированы в экстренном порядке. 34 (70,84%) больных выписаны с выздоровлением и 14 (29,16 %) пациентов умерли.

Выводы.

1. При всех гнойных процессах челюстно-лицевой области и шеи необходимо прибегать к ранним хирургическим вмешательствам, так как в зависимости от целого ряда условий воспалительный процесс из области зубочелюстной системы может настолько быстро распространиться в средостение, что промедление с операцией на 12-18 ч может привести к медиастиниту**.**
2. Разработтаный полузакрытый чрезшейный способ дренирования заднего средостения сокращает сроки послеоперационного периода;

улучшает качество жизни больного в раннем послеоперационном периоде.

3. Активная хирургическая тактика при лечении одонтогенных медиастинитов с комплексным вскрытием и дренированием соответствующих гнойников шеи и дна полости рта позволило снизить летальность до 29,16%.

Ключевые слова: одонтогенный медиастенит, глубокая флегмона шеи, средостение, дренирование, хирургия.

SURGICAL TREATMENT OF SECONDARY ODONTOGENIC MEDIASTINITIS WITH AN EMPHASIS ON DEEP NECK PHLEGMONS

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Objective: To increase the effectiveness of the treatment of odontogenic mediastinitis caused by deep phlegmon of the neck and bottom of the oral cavity due to the active tactics of surgical treatment.

Materials and methods. With deep phlegmon of the neck and the floor of the oral cavity, complicated by acute purulent mediastinitis, surgical treatment was performed in 48 patients in Maxillofacial Surgery and Thoracic Departments of the National Hospital of the Ministry of Health of the Kyrgyz Republic.

Percutaneous mediastinotomy according to Razumovsky was used in 42 patients in an emergency, which involves several methods of drainage of the mediastinum - open, closed and semi–closed.

With an open method of cervical mediastinotomy, the cervical wound is open throughout. It is used for a widespread purulent process in the cervical region with the seizure of several cellular spaces. The posterior mediastinum can be drained with a drainage tube, as well as a swab with levomicol ointment and rubber strips. According to this method, 25 patients were operated on. We used the closed Kanshin method in 12 patients.

We have developed and implemented a closed method of transversal drainage of the posterior mediastinum with secondary mediastinitis (invention No. A61B 17/00). The method is carried out as follows. From the cervical lateral incision along the anterior edge of the left sternocleidomastoid muscle, the skin, subcutaneous tissue, superficial and second fascia of the neck are dissected in layers. Together with the muscle, a neurovascular bundle is withdrawn outward. A finger gently creates a channel, penetrating deep and down behind the esophagus, towards the posterior mediastinum. The abscess is opened, the wound is washed and drained. One drainage tube connected to the bottom of the oral cavity is brought to the bottom of the oral cavity, and the other is lowered into the posterior mediastinum. At the same time, the neck wound is sutured with sealed seams from above and below to the drainage tubes and additionally ensure tightness by ointment tamponing. The drainage tubes themselves are connected to the active aspiration system. During the discharge of necrotic tissues, drains are often clogged, while tampons are removed on daily dressings, the tubes are tightened and cleaned, after which they are re-installed in their original places, this is what controls the course of the purulent wound process of the bottom of the oral cavity, neck wound and posterior mediastinum. According to this method, 15 patients were operated on.

Results. In the Thoracic Department, out of 48 patients with secondary mediastinitis, despite late hospitalization, more than 3 days (72 hours) were operated on urgently. 34 (70.84%) patients were discharged with recovery and 14 (29.16%) patients died.

Conclusions.

1. With all purulent processes of the maxillofacial region and neck, it is necessary to resort to early surgical interventions, since, depending on a number of conditions, the inflammatory process from the area of the maxillary system can spread so quickly into the mediastinum that delay in surgery for 12-18 hours can lead to mediastinitis.

2. The developed semi-closed trench method of drainage of the posterior

mediastinum shortens the postoperative period; improves the quality of life of the patient in the early postoperative period.

3. Active surgical tactics in the treatment of odontogenic mediastinitis with complex opening and drainage of the corresponding ulcers of the neck and the bottom of the oral cavity allowed to reduce mortality to 29.16%.

Keywords: odontogenic mediastenitis, deep neck phlegmon, mediastinum, drainage, surgery.

Keywords: odontogenic mediastinitis, deep phlegmon of the neck, mediastinum, drainage, surgery.

Introduction

Deep neck infections (DNI) usually originate in pharyngeal or oral infections. It is estimated that up to 36% of cases are of dental origin as a result of periodontal disease periapical abscesses without or with previous dental interventions or radicular cysts [1-5].

The incidence of deep neck infection (DNI) is increasing, and the mortality of DNI complications remains high. DNI involves the spaces of the neck and can spread from the base of the skull to the mediastinum [6].

A retrospective audit was carried out of patients with deep odontogenic infections at an institution, over a 7-year period. Four hundred and sixty two patients met the inclusion criteria. The average cost per patient was $12 228 Australian Dollars. After multivariate analysis, variables most significantly associated with increased cost of care and length of admission LOS were high-risk infections with airway compromise, high admission white cell count and age.Hospital-based management of deep-space odontogenic infections engender significant costs compared to early primary care intervention such as a dental extraction ($181/extraction) [7].

Early and aggressive surgical drainage of the fluid collection from infection is required for DNI.

The management of deep neck infections is challenging [8-10].

In a single-center analysis, 63 patients with deep neck infections were

treated surgically. There was a predominance of male patients (58.7%) and a mean age of 57.9 years. Cardio/pulmonary diseases and diabetes mellitus were the most common comorbidities. There was a significantly longer hospital stay for patients with diabetes mellitus. In 29 patients, a multiple space infection was observed, with a significantly longer duration of hospitalization and a higher rate of complications. The main life-threatening complication was the development of airway obstruction in 20 patients (31.7%), who all received a tracheostomy. The duration of hospitalization for patients with complications was significantly longer [11].

Materials and methods

Of 48 patients with acute secondary mediastinitis, in 26 cases (54.2%), the cause of mediastinitis was odontogenic phlegmon with involvement in the process of the bottom of the oral cavity, in 6 (12.5%) – paratonsilar abscess, 2 (4.2%) were treated for a pharyngeal abscess, one (2.1%) was diagnosed with epiglottis abscess and in 13 people (27.0%), the cause of secondary mediastinitis was superficial phlegmon of the neck. We consider it necessary to emphasize at once that all patients, both from districts and city medical institutions, were hospitalized in the clinic after 72 hours (3 days) from the onset of the disease. In the largest number of patients, the inflammatory process was localized in the cervical region – 14 people (29.1%), anterior mediastinitis was detected in 2 patients (3.9%), upper-posterior mediastinitis in 17 patients (33.3%), posterior in 13 (25.5%) and total mediastinitis was diagnosed in 2 people, which was 9.8% of the total number of patients in this group. Percutaneous mediastinotomy according to Razumovsky was used in 42 patients in an emergency, which involves several methods of drainage of the mediastinum - open, closed and semi–closed.

With the open method of cervical mediastinotomy, the cervical wound is open throughout. It is used for a widespread purulent process in the cervical region with the seizure of several cellular spaces. The posterior mediastinum can be drained with a drainage tube, as well as a swab with levomikol ointment and rubber strips. According to this method, 25 patients were operated on. We used the

closed method of Kanshin in 12 patients.

We have developed and implemented a closed method of transversal drainage of the posterior mediastinum with secondary mediastinitis (invention No. A61B 17/00). The objective of our invention is to develop a semi-closed method of drainage of the posterior mediastinum with a transversal access, which makes it possible to control the course of the purulent wound process of the bottom of the oral cavity, neck wound and posterior mediastinum, eliminating repeated operations by cleaning drains.

The invention is explained in Fig. 1, where 1 is a drainage tube connected to the bottom of the oral cavity; 2 is a drainage tube lowered into the posterior mediastinum; 3 is a cervical lateral incision; 4 is sealing sutures; 5 is tamponing; 6 is the esophagus; 7 is the stomach.

The method is carried out as follows. From incision 3 along the anterior edge of the left sternocleidomastoid muscle, the skin, subcutaneous tissue, superficial and second fascia of the neck are dissected in layers. Together with the muscle, a neurovascular bundle is withdrawn outward. A finger gently creates a channel, penetrating deep and down behind the esophagus, towards the posterior mediastinum. The abscess is opened, the wound is washed and drained. One drainage tube 1 is brought to the bottom of the oral cavity, and the other 2 is lowered into the posterior mediastinum. At the same time, the neck wound 3 is sutured with sealed seams 4 from above and below to the drainage tubes 1,2 and additionally ensure tightness by ointment tamponing 5. The drainage tubes 1,2 themselves are connected to the active aspiration system. During the discharge of necrotic tissues, drains are often clogged, while tampons are removed on daily dressings, the tubes are tightened and cleaned, after which they are re-installed in their original places, this is what controls the course of the purulent wound process of the bottom of the oral cavity, neck wound and posterior mediastinum. According to this method, 15 patients were operated on (Fig. 1). The advantages of this method are: This method allows you to control the course of the purulent wound process of the bottom of the oral cavity, neck wound and posterior

mediastinum; the method is easy to perform and does not require daily time-consuming dressings compared to the open method; the postoperative period is shortened; the quality of life of the patient in the early postoperative period is improved.

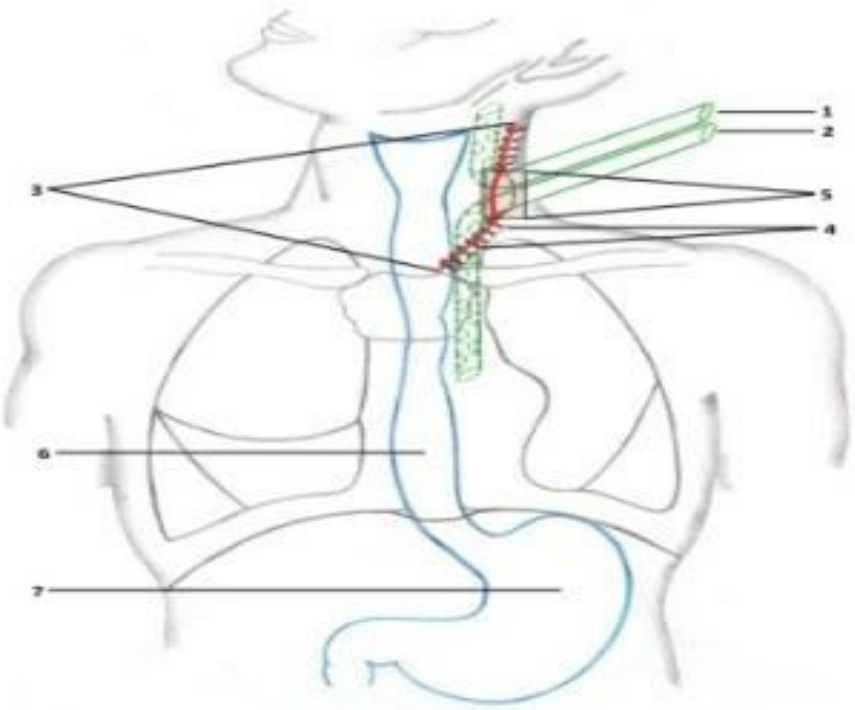

Fig. 1. Closed method of percutaneous drainage of the posterior mediastinum in secondary mediastinitis.

Results

In the thoracic department, out of 48 patients with secondary mediastinitis, despite the late hospitalization, more than 3 days (72 hours) were operated on urgently. 34 (70.84%) patients were discharged with recovery and 14 (29.16%) patients died.

Conclusions

With all purulent processes of the maxillofacial region and neck, it is necessary to resort to early surgical interventions, since, depending on a number of conditions, the inflammatory process from the area of the maxillary system can spread so quickly into the mediastinum that delay with the operation for 12-18 hours can lead to mediastinitis.

The developed semi-closed trench method of drainage of the posterior mediastinum shortens the postoperative period; improves the quality of life of the patient in the early postoperative period.

Active surgical tactics in the treatment of odontogenic mediastinitis with complex opening and drainage of the corresponding ulcers of the neck and the bottom of the oral cavity allowed to reduce mortality to 29.16%.

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МИКРОБИОЛОГИЯ ГЛУБОКОЙ ФЛЕГМОНЫ ШЕИ И ДНА ПОЛОСТИ РТА ПРИ ОДОНТОГЕННОМ МЕДИАСТИНИТЕ

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Резюме

Цель. Исследование микробиологических культур при глубокой флегмоне шеи и дна полости рта, осложненных одонтогенным медиастинитом.

Материалы и методы исследования. У 83-х больных с глубокой флегмоной шеи и дна полости рта и вторичным медиастинитом были проведены исследования микробной флоры. У больных в 94,5% случаев были высеяны микроорганизмы из содержимого гнойных ран и в 5,5% случаях роста в исследуемом материале не получено.Из раневой полости всего выделено 18 штаммов различных микроорганизмов.

Результаты. В 69,5% случаев обнаружена монокультура и 30,5% случаев были также выявлены микробные ассоциации возбудителей. Отмечена также тенденция к возрастанию грамотрицательной флоры в монокультуре: в 12,5% случаев были выделены в раневом содержимом энтеробактерии, в 7,4% кишечная и 9,6% синегнойная палочки.

У 33% больных с острым одонтогенным медиастинитом микробиологические данные свидетельствуют о том, что доля микробных ассоциаций значительно увеличилась: у 11,5% выделялись штаммы золотистого стафилококка в сочетании с вульгарным протеем, у 10,5% золотистый стафилококк + синегнойная палочка, у 8,3% - золотистый стафилококк + различные штаммы стрептококка, у 3,2% - ассоциация стафилококка с грибковой инфекцией, в частности с грибами рода Candida.

Выводы. При развитии одонтогенного медиастинита имеет место значение бактериальной инфекции как грамположительной и грамотрицательной, так и их ассоциаций, при этом роль грамотрицательной флоры в последние годы возрастает. Однако, учитывая крайнюю тяжесть и опасность заболевания,

начало антибактериальной терапии не может быть отложено до получения данных о виде возбудителя и его чувствительности к антибактериальным средствам, и связи с этим необходимо начинать эмпирическую терапию антибактериальными средствами широкого спектра действия. А в дальнейшем проводится коррекция антибиотикотерапии с учетом полученных данных о виде и антибиотикочувствительности возбудителей.

Ключевые слова: глубокая флегмона шеи и дна полости рта, вторичный медиастинит, микробиология, чувствительность к антибактериальной терапии.

MICROBIOLOGY OF DEEP PHLEGMON OF THE NECK AND BOTTOM OF THE ORAL CAVITY IN ODONTOGENIC MEDIASTINITIS

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Purpose. Study of microbiological cultures with deep phlegmon of the neck and bottom of the oral cavity complicated by odontogenic mediastinitis.

Materials and methods. Studies of microbial flora were conducted in 83 patients with deep phlegmon of the neck and bottom of the oral cavity and secondary mediastinitis. In 94.5% of patients, microorganisms were seeded from the contents of purulent wounds and in 5.5% of cases, no growth was obtained in the studied material.A total of 18 strains of various microorganisms were isolated from the wound cavity.

Results. Monoculture was detected in 69.5% of cases and microbial associations of pathogens were also detected in 30.5% of cases. There was also a tendency to increase gram-negative flora in monoculture: in 12.5% of cases enterobacteria were isolated in the wound contents, in 7.4% intestinal and 9.6% Pseudomonas aeruginosa.

In 33% of patients with acute odontogenic mediastinitis, microbiological data indicate that the proportion of microbial associations increased significantly:

11.5% had strains of Staphylococcus aureus in combination with vulgar proteus, 10.5% had Staphylococcus aureus + Pseudomonas aeruginosa, 8.3% had Staphylococcus aureus + various strains of streptococcus, 3.2% had an association of Staphylococcus aureus with fungal infection, in particular with fungi of the genus Candida.

Conclusions. With the development of odontogenic mediastinitis, the importance of bacterial infection of both gram-positive and gram-negative and their associations takes place, while the role of gram-negative flora has been increasing in recent years. However, given the extreme severity and danger of the disease, the beginning of antibacterial therapy cannot be postponed until data on the type of pathogen and its sensitivity to antibacterial agents are obtained, and therefore it is necessary to begin empirical therapy with broad-spectrum antibacterial agents. And in the future, correction of antibiotic therapy is carried out taking into account the data obtained on the type and antibiotic sensitivity of pathogens.

Keywords: deep phlegmon of the neck and bottom of the oral cavity, secondary mediastinitis, microbiology, sensitivity to antibacterial therapy.

Introduction

Deep neck infections (DNI) usually originate in pharyngeal or oral infections. It is estimated that up to 36% of cases are of dental origin as a result of periodontal disease periapical abscesses without or with previous dental interventions or radicular cysts [1].

The choice of antimicrobial agents depends on the pathogens. Obtaining cultures before empirical antibiotic treatment is mandatory in DNI patients [2-3].

The microorganisms isolated in patients with DNI are aerobic and anaerobic pathogens of pharyngeal flora, such as Streptococcus pyogenes, Staphylococcus aureus, Streptococcus viridians, Streptococcus anginosus, Hemophilus influenza, Peptostreptococcus, Fusobacterium species, Provetella species [4-7].

Therefore, the antibiotic choice for DNI must include agents with spectrum of activity against both aerobic and anaerobic pathogens, including penicillin, amoxicillin/clavulanic acid, ampicillin/sulbactam, clindamycin and metronidazole.

piperacillin/tazobactam, third generation cephalosporin along with metronidazole, or carbepenems in more serious clinical conditions [8].

Deep neck abscesses are less common today than in the past. The impact of antibiotic treatment and improved dental care are the most likely reasons for this change. In spite of widespread use of antibiotics, deep neck infections do not disappear and remain one of the difficult emergencies encountered in daily clinical practice [9].

Materials and methods

Studies of microbial flora were conducted in 83 patients with deep phlegmon of the neck and bottom of the oral cavity and secondary mediastinitis. One of the criteria for the effectiveness of the therapy was the conduct of bacteriological studies of the contents of purulent cavities after their surgical treatment at admission and in the dynamics of treatment. In 94.5% of patients, microorganisms were seeded from the contents of purulent wounds and in 5.5% of cases no growth was obtained in the studied material, perhaps this is due to the presence of anaerobic pathogens that lead to the accumulation of a significant amount of bacterial metabolism products in the wound, which may have an overwhelming effect on the growth of the existing microflora.

Results

A total of 18 strains of various microorganisms were isolated from the wound cavity (Fig. 1).

1. It follows that in 69.5% of cases monoculture was detected and microbial associations of pathogens were also detected in 30.5% of cases. At the same time, the monoculture was represented by gram-positive flora – staphylococci, streptococci and gram-negative flora - Enterobacteria, Pseudomonas aeruginosa. Staphylococci are potentially pathogenic, because they are found on the skin and mucous membranes of the oral cavity, while streptococcal strains were determined much less frequently. There was also a tendency to increase gram-negative flora in monoculture: in 12.5% of cases enterobacteria were isolated in the wound contents, in 7.4% intestinal and 9.6% Pseudomonas aeruginosa. This fact significantly

affected patients with acute odontogenic mediastinitis by the fact that it was characterized by a malignant and more severe course, pronounced symptoms of intoxication and with the spread of the purulent-inflammatory process to other cellular spaces of the mediastinum with deeper tissue necrosis, which increased the time of cleansing and wound healing.

Fig.1. The ratio of microbial associations and monoculture sown with deep phlegmon of the neck and bottom of the oral cavity

In 33% of patients with acute odontogenic mediastinitis, microbiological data indicate that the proportion of microbial associations increased significantly: 11.5% had strains of Staphylococcus aureus in combination with vulgar proteus, 10.5% had Staphylococcus aureus + Pseudomonas aeruginosa, 8.3% had Staphylococcus aureus + various strains of streptococcus, 3.2% had an association of Staphylococcus aureus with fungal infection, in particular with fungi of the genus Candida.

For a rational choice of antimicrobial therapy, it is necessary to identify the microorganism, determine the sensitivity of the isolated microflora to various antibiotics.

The sensitivity of the isolated strains of microorganisms to antibacterial drugs is presented in Table 1.

As can be seen from Table 1, in 74% of cases, Staphylococcus aureus strains were resistant to penicillin, in 46% - to roxithromycin, in 82% erythromycin, in 48% - to cefazolin (cephalosporins of the first generation), in 20% - to cefamandol (cephalosporin of the second generation), in 50% - gentamicin (aminoglycoside of the second generation).

Also, it follows from this Table 1 that there is a tendency for the appearance of penicillin–resistant strains of streptococci, and this may require the appointment of antibacterial agents, such as glycopeptides (vancomycin, teicoplanin).

Table 1

Sensitivity of the most significant isolated strains of microorganisms to antibacterial drugs

Antibacterial drug	**Microflora sensitivity (in absolute numbers)**								
	S.aureus (n=50)			**Streptococcus (n=10)**			**P.aeruginosa (n=18)**		
	S	I	R	S	I	R	S	I	R
Penicillin	5	8	37	5	3	2	-	-	18
Oxacillin	19	12	19	7	2	1	-	-	18
Amoxiclapv	22	15	13	10	-	-	-	-	18
Erythromycin	4	5	41	8	2	-	-	-	18
Roxithromycin	10	17	23	9	1	-	-	-	18
Cefazolin	12	14	24	8	1	1	-	-	18
Cefamandol	16	18	16	10	-	-	-	3	15
Cefataxime	28	15	7	10	-	-	1	3	14
Ceftriaxone	25	22	3	10	-	-	1	2	15
Gentamicin	14	11	25	-	-	10	10	4	4
Ciprofloxacin	31	17	2	6	2	2	16	1	1

Note:S-high sensitivity, I-moderate sensitivity, R-resistance to this antibacterial drug.

Determination of the sensitivity of the gram-negative flora of P.aeruginosa to antimicrobial drugs revealed almost one hundred percent resistance to b-lactam antibiotics and macrolides (erythromycin and roxithromycin), 83.3% of P.aeruginosa strains showed resistance to cefamandol (cephalosporins of the second generation), 27.7% - to cefotaxime and 16.16% - to ceftriaxone (cephalosporins of the third generation) .

The lowest percentage of P.aeruginosa resistance was detected to ciprofloxacin in no more than 5% of the studied strains. In this regard, the use of modern fluoroquinolones, glycopeptides, carbopenems, monobactams in the treatment of purulent mediastinitis is of the greatest interest.

The high proportion of resistant forms of strains identified as pathogens is probably associated with previously conducted "uncontrolled" irrational antibacterial therapy.

If the antibacterial therapy is ineffective, it is necessary to change the drug according to the "antibioticogram".

Along with full-fledged drainage of the infection focus, systemic antibiotic therapy should be carried out. Prior to obtaining the data of microbiological studies, empirical therapy was performed using ampicillin + gentamicin, cefotaxime, ceftriaxone in combination with metronidazole. After identifying the pathogen and determining its sensitivity to antimicrobial agents, the treatment regimen is changed by prescribing a drug selectively active against the isolated pathogen.

In addition to antimicrobial therapy, patients underwent infusion therapy, including standard solutions of electrolytes, glucose, protein preparations of blood, fat emulsions, preparations of hemodynamic and rheological action against the background of forced diuresis, which contributed to the reduction of toxemia. When using active detoxification methods, such as indirect electrochemical oxidation of blood by intravenous administration of sodium hypochloride solution at a concentration of 0.5 g / l and plasmapheresis, the most pronounced effect was observed. With the help of plasmapheresis, it was possible to remove up to 1 liter

of extremely toxic plasma containing small and medium-weight molecules, pathological immune complexes, antibodies, cytokines and other cytotoxic substances within 30-40 minutes.

In patients with deep phlegmon of the neck and bottom of the oral cavity and odontogenic mediastinitis, when using the developed treatment principles, clinical signs of purulent intoxication disappeared after 12-14 days, the leukocyte formula and body temperature normalized. An X-ray examination with contrast through drains was also performed weekly to control the cavities in the mediastinum, their size and shape, which remained for a long period. As the obliteration of the cavities occurred, the drains were gradually tightened and then removed.

Conclusions

With the development of odontogenic mediastinitis, the importance of bacterial infection of both gram-positive and gram-negative and their associations takes place, while the role of gram-negative flora has been increasing in recent years. However, given the extreme severity and danger of the disease, the beginning of antibacterial therapy cannot be postponed until data on the type of pathogen and its sensitivity to antibacterial agents are obtained, and therefore it is necessary to begin empirical therapy with broad-spectrum antibacterial agents. And in the future, correction of antibiotic therapy is carried out taking into account the data obtained on the type and antibiotic sensitivity of pathogens.

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ГНОЙНАЯ ХИРУРГИЯ

КЛИНИЧЕСКАЯ КАРТИНА ПРИ КРИТИЧЕСКОЙ ИШЕМИИ НА ФОНЕ САХАРНОГО ДИАБЕТА

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Резюме

Цель. Дать клиническую характеристику пациентам с критической ишемией нижних конечностей, осложненной сахарным диабетом.

Материалы и методы исследования. Общая клиническая характеристика обследованных групп была следующей. В 1 группе у всех 30 (100,0%) больных был СД II типа, из них у 5 (16,7%) при поступлении СД был впервые выявлен, в остальных случаях длительность заболевания от момента установления диагноза «Сахарный диабет» была от 1 до 20 лет, в среднем 8,2±1,1 лет. Во 2 группе – также у всех 30 (100,0%) больных был СД II типа, из них у 4 (13,3%) при поступлении СД был впервые выявлен, в остальных случаях длительность заболевания от момента установления диагноза «Сахарный диабет» была от 1 до 18 лет, в среднем 7,3±1,0 лет.

Результаты. В большинстве случаев у больных имелось атеросклеротическое поражение артерий нижних конечностей: у 27 (90,0%) больных 1 группы и у 26 (86,7%) больных 2 группы. Также в большинстве случаев у обследованных больных имелась сопутствующая патология: у 24 (80,0%) больных 1 группы и у 25 (83,3%) больных 2 группы. В нашем исследовании III степень ХИНК была у 10 (33,3%) больных 1 группы и 12 (40,0%) больных 2 группы, IV степень ХИНК, соответственно – у 20 (66,7%) и 18 (60,0%). Таким образом, у всех 30 (100,0%) больных 1 группы и 30 (100,0%) больных 2 группы – была КИНК. Кроме того, у больных с IV степенью ХИНК на момент поступления во всех 20 (100,0%) случаях в 1

группе и во всех 18 (100,0%) случаях во 2 группе отмечались следующие изолированные или сочетанные язвенно-некротические изменения нижних конечностей, соответственно: трофическая язва пальца – у 3 (10,0%) и у 6 (20,0%) больных, сухая гангрена пальца – у 8 (26,7%) и у 8 (26,7%), трофические язвы пальцев – у 5 (16,7%) больных 2 группы, а также сухая гангрена пальцев – у 1 (3,3%) больного 1 группы и незаживающая рана после экзартикуляции пальца (пальцев) – у 10 (33,3%) 1 группы и у 9 (30,0) больных 2 группы.

Ключевые слова: сахарный диабет, синдром диабетической стопы, критическая ишемия нижних конечностей.

CLINICAL PICTURE IN CRITICAL ISCHEMIA ON THE BACKGROUND OF DIABETES MELLITUS

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Annotation

Purpose. To give clinical characteristics to patients with critical lower limb ischemia complicated by diabetes mellitus.

Materials and methods. The general clinical characteristics of the examined groups were as follows. In group 1, all 30 (100.0%) patients had type II diabetes, of which 5 (16.7%) were diagnosed with diabetes for the first time upon admission, in other cases, the duration of the disease from the moment of diagnosis "Diabetes mellitus" was from 1 to 20 years, on average 8.2± 1.1 years. In group 2, all 30 (100.0%) patients also had type II diabetes, of which 4 (13.3%) were diagnosed with diabetes for the first time upon admission, in other cases, the duration of the disease from the moment of diagnosis "Diabetes mellitus" was from 1 to 18 years, on average 7.3± 1.0 years.

Results. In most cases, patients had atherosclerotic lesion of the arteries of the lower extremities: in 27 (90.0%) patients of group 1 and in 26 (86.7%) patients of group 2. Also, in most cases, the examined patients had concomitant pathology: 24 (80.0%) patients of group 1 and 25 (83.3%) patients of group 2. In our study, the III degree of CLTI was in 10 (33.3%) patients of group 1 and 12 (40.0%) patients of group 2, the IV degree of CLTI, respectively, in 20 (66.7%) and 18 (60.0%). Thus, all 30 (100.0%) patients of group 1 and 30 (100.0%) patients of group 2 had CLI. In addition, at the time of admission in all 20 (100.0%) cases in group 1 and in all 18 (100.0%) cases in group 2, the following isolated or combined ulcerative-necrotic changes of the lower extremities were noted in patients with grade IV CLTI, respectively: trophic finger ulcer – in 3 (10.0%) and in 6 (20.0%) patients, dry finger gangrene – in 8 (26.7%) and 8 (26.7%), trophic finger ulcers – in 5 (16.7%) patients of group 2, as well as dry finger gangrene – in 1 (3.3%) patient of group 1 and a non-healing wound after exarticulation finger(s) – in 10 (33.3%) patients of group 1 and in 9 (30.0) patients of group 2.

Keywords: diabetes mellitus, diabetic foot syndrome, critical ischemia of the lower extremities.

Introduction

Critical limb ischemia represents the advanced stage of peripheral artery disease, a health problem with increasing prevalence. Critical limb ischemia is associated with significant mortality, limb loss, pain, and diminished health-related quality of life. There are 6.5 million patients with critical limb ischemia in the US, Europe, and Japan based on global population-based studies. At least 75% of these patients, accounting for approximately 4.8 million patients, are amenable to endovascular therapy [1-3].

The aim of a study was to evaluate factors affecting mortality within 1 year after endovascular revascularization in CLI patients. 1-year survival probability was 58.8%. Cox proportional hazard analysis showed that duration of diabetes (HR 3.52; 95% CI 1.34-9.22), anemia (HR 2.59; 95% CI 1.47-4.56), and smoking (HR

2.49; 95% CI 1.46-4.27) were significantly associated with mortality within 1 year after endovascular revascularization [4].

More than 25% of diabetic patients develop CLI during their lifetime, and more than 50% of patients with CLI are diabetics. CLI in DM carry a poor prognosis with amputation rates up to 30% and mortality up to 25% after 1 year [5-9].

The diagnosis of PAD in patients with DM is often delayed because of the presence of neuropathy, as PAD-related symptoms go unnoticed until more severe critical limb ischemia (CLI) symptoms develop [10].

Material and methods

The general clinical characteristics of the examined groups were as follows (Table 1). In Group 1, all 30 (100.0%) patients had type II diabetes, of which 5 (16.7%) were diagnosed with diabetes for the first time upon admission, in other cases the duration of the disease from the moment of diagnosis "Diabetes Mellitus" was from 1 up to 20 years, on average 8.2 ± 1.1 years. In group 2, all 30 (100.0%) patients also had type II diabetes, of which 4 (13.3%) were diagnosed with diabetes for the first time upon admission, in other cases the duration of the disease from the moment of diagnosis "Diabetes mellitus" was from 1 to 18 years, on average 7.3± 1.0 years.

Table 1

General clinical characteristics of groups 1 and 2, number of patients (%)

Clinical indicators	**1 group, n=30**	**Group 2, n=30**
DM II type	30 (100,0)	30 (100,0)
DM detected for the first time	5 (16,7)	4 (13,3)
Diabetic vascular damage in other target organs	30 (100,0)	30 (100,0)
Atherosclerosis of the lower limb arteries	27 (90,0)	26 (86,7)

Combined pathology of other organs and systems	24 (80,0)	25 (83,3)
CLTI degree according to Fontaine-Pokrovsky: *III degree* *IV degree*	 10 (33,3) 20 (66,7)	 12 (40,0) 18 (60,0)

All patients, both in group 1 and in group 2, had DM in the decompensation stage. Also, in all cases, except diabetic angiopathy of the vessels of the lower extremities, there was diabetic damage to the vessels of other target organs: kidneys, eyes. In most cases, patients had atherosclerotic lesion of the arteries of the lower extremities: in 27 (90.0%) patients of group 1 and in 26 (86.7%) patients of group 2.

Also, in most cases, the examined patients had concomitant pathology (Table 2): 24 (80.0%) patients of group 1 and 25 (83.3%) patients of group 2. 20 (66.7%) patients of group 1 and 21 (70.0%) patients of group 2 had coronary heart disease and hypertension (of which 3 (10.0%) patients of group 1 and 5 (16.7%) patients of group 2 had previously suffered a myocardial infarction), which also indicated vascular damage in other basins (coronary arteries). There were also the following concomitant diseases: chronic bronchitis, lung cancer, chronic gastritis, peptic ulcer of the stomach and duodenum, etc. The presence of concomitant pathology significantly complicated the general condition of patients, especially in the postoperative period, and also influenced the planning and execution of our surgical interventions for CLI.

Table 2

Concomitant diseases in patients with CLI groups 1 and 2, number (%)

Concomitant diseases	**1 group (n=30)**	**Group 2 (n=30)**
Coronary heart disease	10 (33,3)	10 (33,3)

Hypertension	10 (33,3)	11 (36,7)
History of myocardial infarction	3 (10,0)	5 (16,7)
Chronic bronchitis	9 (30,0)	8 (26,7)
Lung cancer	1 (3,3)	-
Chronic gastritis	5 (16,7)	5 (16,7)
Peptic ulcer of the stomach and duodenum 12	1 (3,3)	2 (6,7)
Other	5 (16,7)	6 (20,0)

In our study, the III degree of CLTI was in 10 (33.3%) patients of group 1 and 12 (40.0%) patients of group 2, the IV degree of CLTI, respectively, in 20 (66.7%) and 18 (60.0%). Thus, all 30 (100.0%) patients of group 1 and 30 (100.0%) patients of group 2 had CLI.

Results

The main clinical symptoms during the examination of patients with CLI were: pain in the lower extremities at rest, swelling, pallor of the skin, decreased sensitivity, paresthesia, trophic disorders of the distal parts of the lower limb (hair loss, signs of hyperkeratosis, hyperkeratic overgrowth of nail plates) (Fig. 1).

Fig. 1.Trophic disorders of the distal parts of the lower limb (hair loss, signs of hyperkeratosis, hyperkeratic overgrowth of nail plates).

During palpation, there was a sharp weakening or absence of pulsation on the main arteries of the lower extremities (CFA, PA, PTA, artery of the rear of the foot), local hypothermia.

Fig.2. Ulcerative-necrotic complications of DM. Trophic ulcer of the first finger.

Fig. 3. Ulcerative-necrotic complications of DM.

Dry gangrene of the third finger, non-healing wound after exarticulation of the finger.

In addition, at the time of admission in all 20 (100.0%) cases in group 1 and in all 18 (100.0%) cases in group 2, the following isolated or combined ulcerative-necrotic changes of the lower extremities were noted in patients with grade IV CLTI (Fig. 2, 3), respectively: trophic finger ulcer – in 3 (10.0%) and 6 (20.0%) patients, dry finger gangrene – in 8 (26.7%) and 8 (26.7%), trophic finger ulcers – in 5 (16.7%) patients of group 2, as well as dry gangrene of the fingers – in 1 (3.3%) patient of group 1 and a non–healing wound after exarticulation of the finger (fingers) - in 10 (33.3%) of group 1 and in 9 (30.0) patients of Group 2 (Table 3).

Table 3

Ulcerative-necrotic complications of DM in patients of groups 1 and 2, number of patients (%)

Localization and nature of ulcerative-necrotic complications	**1 group, n=30**	**Group 2, n=30**
Trophic ulcer of one finger	3 (10,0)	6 (20,0)
Dry gangrene of one finger	8 (26,7)	8 (26,7)
Trophic ulcers of several fingers	-	5 (16,7)
Dry gangrene of several fingers	1 (3,3)	-
Non-healing wound after finger (s)exarticulation	10 (33,3)	9 (30,0)

In most cases, patients had a neuroischemic form of diabetic foot (according to the classification of V.K.Gostischev et al.) 2-4 degrees of lesion. In other cases, there was an ischemic form of diabetic foot, also 2-4 degrees of lesion.

Discussion and conclusions

It should be noted here that patients with initial gangrene or trophic ulcers of the lower leg or heel area were not included in the work, because trophic disorders of this localization, according to the literature and our experience, are unpromising for surgical revascularization.

It should also be noted that we took into account the clinical picture, respectively, and the analyzed degree of CLTI, on the limb on which our surgical

interventions were performed. In all 100.0% of cases, both in groups 1 and 2, there was an obliterating vascular lesion of varying severity on the other lower limb with an appropriate degree of CLTI clinic. And often on the opposite limb, the CLTI was more pronounced. At the same time, indications for revascularization were determined mainly on the basis of instrumental examination data.

In accordance with the above, our analysis took into account only the side of the lesion that was subjected to our main surgical intervention. At the same time, there was the following distribution according to the analyzed (operated) on the affected side: on the right - 16 (53.3%) in group 1 and 15 (50.0%) cases in group 2; on the left, respectively - 14 (46.7%) and 15 (50.0%) cases.

All patients of groups 1 and 2 received standard conservative therapy upon admission to the hospital. Including infusions of rheological solutions (rheopolyglucin) with disaggregants (curantil, trental) and antispasmodics (papaverine, no-shpa). Given the frequent presence of concomitant cardiac pathology, the volume of infusion did not exceed 200-250 ml, with slow administration of solutions and, if necessary, the use of diuretics.

In all cases, pre- and postoperative rational antibiotic therapy was performed according to generally accepted standards. Mainly, cephalosporins of the 2nd and 3rd generation, fluoroquinolones, aminoglycosides, metronidazole were used separately and in combination. At the same time, the results of bacterial inoculation from the wound with the determination of sensitivity to antibiotics were taken into account.

In patients with ulcerative-necrotic complications in the pre- and postoperative periods, local treatment was performed in compliance with the principles of purulent surgery: bandages with ointments (Levomecol, Levosil), enzyme therapy (chymotrypsin, trypsin), local use of antibiotics, necrectomy, etc.
Considering that in our study all patients with DM were in the stage of decompensation, both during preoperative preparation and in the postoperative period, special attention was paid to the correction of glycemia. These activities were necessarily carried out together with endocrinologists.

All patients of both groups 1 and 2 had a mandatory study of blood sugar content at admission and in dynamics. In group 1, upon admission, blood sugar levels were from 8 to 25 mmol/l, on average 14.5± 2.1 mmol/l, in group 2 - from 8 to 24 mmol/l, on average 15.0±2.1 mmol/l. It should be noted that often a high level of glycemia was associated with inadequate therapy of diabetes before admission.

As a rule, regardless of previous hypoglycemic therapy, patients were transferred to fractional administration of short-acting insulin upon admission.

Before surgery, in all cases, the sugar level was maintained within the limits (surgical zone) of 8.0-10.0 mmol/l. These indicators of the level of glycemia were considered optimal, because a moderate increase in blood sugar is not dangerous for the patient, while the achievement of normoglycemia after surgical treatment of a purulent focus can contribute to the development of hypoglycemia with severe consequences.

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ИНСТРУМЕНТАЛЬНАЯ ДИАГНОСТИКА ПРИ СИНДРОМЕ ДИАБЕТИЧЕСКОЙ СТОПЫ

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Резюме

Цель. Дать данные инструментальной диагностики пациентов с синдромом диабетической стопы.

Материалы и методы исследования. В основу работы положены результаты клинического обследования и лечения 60 больных с КИНК на фоне СД.

Все больные были разделены на 2 группы. 1 группу составили 30 (50,0%) больных, которым были произведены реконструктивные операции на артериях нижних конечностей (прямые методы реваскуляризации нижних конечностей). 2 группу составили 30 (50,0%) больных, которым производились нереконструктивные методы хирургического лечения критической ишемии нижних конечностей (КИНК) (в т. ч. непрямые методы реваскуляризации нижних конечностей).

У всех 30 (100,0%) больных 1 группы и у всех 30 (100,0%) больных 2 группы, при поступлении выполняли ультразвуковую допплерографию.

Результаты. Измерение регионарного систолического давления (РСД) до операции в 1 группе у больных при III степени ХИНК значения РСД были в пределах 49,5-55,5 в среднем 50,0±0,5, при IV степени ХИНК – 30,0-48,0, в среднем 41,0±3,5. До операции во 2 группе у больных при III степени ХИНК значения РСД были в пределах 48,0-55,0 в среднем 49,0±0,5, при IV степени ХИНК - 30,0-48,0, в среднем 39,0±3,0. Значение РСД в 1 и 2 группе при соответствующих степенях ХИНК были сопоставимы и достоверной разницы не имели ($p>0,05$).

Измерение лодыжечно-плечевого индекса (ЛПИ) до операции в 1 группе у больных при III степени ХИНК значения ЛПИ были в пределах 0,35-0,45, в среднем 0,38±0,11, при IV степени ХИНК - 0,2-0,34, в среднем 0,30±0,05. До операции во 2 группе у больных при III степени ХИНК значения ЛПИ были в пределах 0,35-0,45, в среднем 0,38±0,12, при IV степени ХИНК - 0,2-0,34, в среднем 0,30±0,04. Значение ЛПИ в 1 и 2 группе при соответствующих степенях ХИНК были сопоставимы и достоверной разницы не имели (p>0,05).

Гемодинамически значимый стеноз (ГЗС) (< 50%) у больных с КИНК на фоне СД в 1 группе и во 2 группе, соответственно, на стороне поражения был диагностирован: на общей бедренной артерии (ОБА) – в 10 (33,3%) и в 13 (43,3%) случаев, на ПБА – в 12 (40,0%) и в 18 (60,0%), на глубокой бедренной артерии(ГБА) – в 10 (33,3%) и в 10 (33,3%), на ПА – в 8 (26,7%) и в 7 (23,3%), на ЗББА – в 15 (50,0%) и в 5 (16,7%), на передней большеберцовой артерии (ПББА) - 17 (56,7%) и в 5 (16,7%), на малоберцовой артерии (МБА) – в 8 (26,7%) и в 9 (30,0%).

Окклюзия у больных с КИНК на фоне СД в 1 группе и во 2 группе, соответственно, на стороне поражения была диагностирована: на ПБА – в 15 (50,0%) и в 10 (33,3%) случаев, на ПА – в 20 (66,7%) и в 23 (76,7%), на ЗББА – в 4 (13,3%) и в 25 (83,3%), на ПББА – в 12 (40,0%) и в 20 (66,7%), на МБА – в 20 (66,7%) и в 21 (70,0%). Полная окклюзия ОБА и ГБА – не были диагностированы ни в одном случае, ни в 1 группе, ни во 2 группе.

ГЗС и окклюзия в целом у обследованных нами больных с КИНК на фоне СД в 1 группе и во 2 группе, соответственно, на стороне поражения были диагностированы: на ОБА – в 10 (33,3%) и в 13 (43,3%) случаев, на ПБА – в 27 (90,0%) и в 28 (93,3%), на ГБА – в 10 (33,3%) и в 10 (33,3%), на ПА – в 28 (93,3) и в 30 (100,0%), на ЗББА – в 19 (63,3%) и в 30 (100,0%), на ПББА – в 29 (96,7%) и в 25 (83,3%), на МБА – в 28 (93,3) и в 30 (100,0%).

Заключение. При КИНК у больных с СД имеется мультисегментарное поражение артерий нижних конечностей, причем в большей степени имеется

значимое поражение дистального артериального русла – ПА и артерий голени. Из артерий проксимального русла значительно чаще имеется значимое поражение ПБА. На наш взгляд, данные факты определяют тяжесть клинических проявлений КИНК у больных с СД, а также имеют решающее значение при определении тактики и метода хирургического лечения и влияют на его результаты.

Ключевые слова: сахарный диабет, синдром диабетической стопы, критическая ишемия нижних конечностей, диагностика.

INSTRUMENTAL DIAGNOSIS OF DIABETIC FOOT SYNDROME

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Annotation

Objective. To provide data on instrumental diagnostics of patients with diabetic foot syndrome.

Materials and methods. The work is based on the results of clinical examination and treatment of 60 patients with CLI on the background of DM.

All patients were divided into 2 groups. Group 1 consisted of 30 (50.0%) patients who underwent reconstructive surgery on the arteries of the lower extremities (direct methods of revascularization of the lower extremities). Group 2 consisted of 30 (50.0%) patients who underwent nonreconstructive methods of surgical treatment of critical lower limb ischemia (CLI) (including indirect methods of revascularization of the lower extremities). In all 30 (100.0%) patients of group 1 and in all 30 (100.0%) patients of group 2, ultrasound dopplerography (USD) and ultrasound duplex scanning (UDS) with color Doppler mapping of blood flow (CDMBF) were performed upon admission.

Results. Measurement of regional systolic pressure (RSP) before surgery in group 1 in patients with grade III CLTI, the values of RSP were in the range of 49.5-55.5

on average 50.0 ± 0.5, with grade IV CLTI – 30.0-48.0, on average 41.0± 3.5. Before surgery, in group 2, in patients with grade III CLTI, the values of RSP were in the range of 48.0-55.0 on average 49.0±0.5, with grade IV CLTI - 30.0-48.0, on average 39.0±3.0 (Table 1). The values of RSP in Group 1 and 2 with the corresponding degrees of CLTI were comparable and reliable there was no difference (p>0.05). Measurement of the ankle-brachial index (ABI) before surgery in group 1 in patients with grade III CLTI, the values of ABI were in the range of 0.35-0.45, on average 0.38 ± 0.11, with grade IV CLTI - 0.2-0.34, on average 0.30± 0.05. Before the operation, in group 2 patients with grade III CLTI, the ABI values were in the range of 0.35-0.45, on average 0.38±0.12, with grade IV CLTI - 0.2-0.34, on average 0.30±0.04 (Table 2). The ABI values in Group 1 and 2 with the corresponding degrees of CLTI were comparable and there was no significant difference (p>0.05).

Hemodynamically significant stenosis (HSS) (< 50%) in patients with CLI on the background of DM in group 1 and group 2, respectively, on the side of the lesion was diagnosed: on the common femoral artery (CFA) – in 10 (33.3%) and 13 (43.3%) cases, on SFA – in 12 (40.0%) and in 18 (60.0%), on the deep femoral artery (DFA) – in 10 (33.3%) and 10 (33.3%), on PA – in 8 (26.7%) and 7 (23.3%), on PTA – in 15 (50.0%) and in 5 (16.7%), on the anterior tibial artery (ATA) - 17 (56.7%) and in 5 (16.7%), on the fibular artery (FA) – in 8 (26.7%) and in 9 (30.0%).

Occlusion in patients with CLI on the background of DM in group 1 and group 2, respectively, on the affected side was diagnosed: in SFA – in 15 (50.0%) and 10 (33.3%) cases, in PA – in 20 (66.7%) and 23 (76.7%), on PTA – in 4 (13.3%) and 25 (83.3%), ATA – in 12 (40.0%) and 20 (66.7%), FA – in 20 (66.7%) and 21 (70.0%). Complete occlusion of both and DFA – were not diagnosed in any case, neither in group 1 nor in group 2.

Conclusion. In case of CLI, patients with DM have a multisegmental lesion of the arteries of the lower extremities, and to a greater extent there is a significant lesion of the distal arterial bed – PA and the arteries of the lower leg. From the arteries of

the proximal bed, there is much more often a significant lesion of SFA. In our opinion, these facts determine the severity of clinical manifestations of CLI in patients with DM, and are also crucial in determining the tactics and method of surgical treatment and affect its results.

Keywords: diabetes mellitus, diabetic foot syndrome, critical ischemia of the lower extremities, diagnosis.

Introduction

A lower limb is amputated due to diabetes every 30 s [1-4],
and the average annual cost of diabetic foot is $8659 per patient. The total medical cost for treating diabetic foot diseases in America ranges from $9 to $13 billion and is an additional cost associated with diabetes [5-6].

Of all amputations in diabetic patients, 85% are preceded by a foot ulceration which subsequently deteriorates to a severe gangrene or infection.

As a result of a systematic meta-analysis, the global diabetic foot ulcer prevalence was 6.3% (95%CI: 5.4–7.3%), which was higher in males (4.5%, 95%CI: 3.7–5.2%) than in females (3.5%, 95%CI: 2.8–4.2%), and higher in type 2 diabetic patients (6.4%, 95%CI: 4.6–8.1%) than in type 1 diabetics (5.5%, 95%CI: 3.2–7.7%). North America had the highest prevalence (13.0%, 95%CI: 10.0–15.9%), Oceania had the lowest (3.0%, 95% CI: 0.9–5.0%), and the prevalence in Asia, Europe, and Africa were 5.5% (95%CI: 4.6–6.4%), 5.1% (95%CI: 4.1–6.0%), and 7.2% (95%CI: 5.1–9.3%), respectively. Australia has the lowest (1.5%, 95%CI: 0.7–2.4%) and Belgium has the highest prevalence (16.6%, 95%CI: 10.7–22.4%), followed by Canada (14.8%, 95%CI: 9.4–20.1%) and USA (13.0%, 95%CI: 8.3–17.7%). The patients with diabetic foot ulcer were older, had a lower body mass index, longer diabetic duration, and had more hypertension, diabetic retinopathy, and smoking history than patients without diabetic foot ulceration [7].
Securing an early accurate diagnosis of diabetic foot infections and assessment of their severity are of paramount importance since these infections can cause great morbidity and potentially mortality and present formidable challenges in surgical and antimicrobial treatment [8].

The aim of a study was to describe the abnormalities found on Doppler ultrasonography of patients hospitalized for the diabetic foot in the Ivory Coast. A retrospective descriptive study including 235 patients hospitalized for the diabetic foot in the Endocrinology department of the Yopougon University Hospital was conducted from February 2002 to December 2015. On ultrasonography, 98.7% of the patients had an arterial abnormality of the lower limbs. It was bilateral in 62.2% of cases, dominated by atheromatous overloads and mediacalcosis in 46.4% and 43.8% of cases, respectively. Arterial stenosis was lesions hemodynamically found in 76.3% of cases and arterial occlusions in 32.7% of cases. The amputation rate was 72.7%.This study shows the high frequency of arterial abnormalities in patients with the diabetic foot with a predominantly distal involvement. Arterial Doppler ultrasound of the lower limbs remains an essential tool in the care of diabetic foot.

Nevertheless, the question of the effectiveness of instrumental diagnosis of diabetic foot syndrome remains open and relevant due to various contradictions and disputes [9].

In June 2018, the literature using PuEbMed and EMBASE for published studies on the diagnosis of diabetic foot infection was searched. On the basis of predetermined criteria, prospective controlled, as well as non-controlled, studies in any language, seeking translations for those not in English were reviewed. Then evidence statements on the basis of the included papers was developed. From the 4242 records screened, 35 papers that met the inclusion criteria were selected. The quality of all but one of the evidence statements was low because of the weak methodology of nearly all of the studies [10].

Materials and methods

The work is based on the results of clinical examination and treatment of 60 patients with CLI on the background of DM.

All patients were divided into 2 groups. Group 1 consisted of 30 (50.0%) patients who underwent reconstructive surgery on the arteries of the lower extremities (direct methods of revascularization of the lower extremities). Group 2

consisted of 30 (50.0%) patients who underwent nonreconstructive methods of surgical treatment of critical lower limb ischemia (CLI) (including indirect methods of revascularization of the lower extremities).

In all 30 (100.0%) patients of group 1 and in all 30 (100.0%) patients of group 2, ultrasound dopplerography (USD) and ultrasound duplex scanning (UDS) with color Doppler mapping of blood flow (CDMBF) were performed upon admission. The following results were obtained with ultrasound methods of vascular examination.

Table 1

RSP values in patients of groups 1 and 2 before surgery, M±m (min-max)

RSP values	**1 group, n=30**	**Group 2, n=30**
By III CLTI degrees	41,0±3,5 (30,0-48,0)	49,0±0,5 * (48,0-55,0)
By IV CLTI degrees	50,0±0,5 (49,5-55,5)	39,0±3,0 * (30,0-48,0,)

Note: * - the value of p>0.05 in relation to the indicators in group 1.

Results

Measurement of regional systolic pressure (RSP) before surgery in group 1 in patients with grade III CLTI, the values of RSP were in the range of 49.5-55.5 on average 50.0 ± 0.5, with grade IV CLTI – 30.0-48.0, on average 41.0± 3.5. Before surgery, in group 2, in patients with grade III CLTI, the values of RSP were in the range of 48.0-55.0 on average 49.0±0.5, with grade IV CLTI - 30.0-48.0, on average 39.0±3.0 (Table 1). The values of RSP in Group 1 and 2 with the corresponding degrees of CLTI were comparable and reliable there was no difference (p>0.05).

Measurement of the ankle-brachial index (ABI) before surgery in group 1 in patients with grade III CLTI, the values of ABI were in the range of 0.35-0.45, on average 0.38 ± 0.11, with grade IV CLTI - 0.2-0.34, on average 0.30± 0.05. Before the operation, in group 2 patients with grade III CLTI, the ABI values were in the

range of 0.35-0.45, on average 0.38±0.12, with grade IV CLTI - 0.2-0.34, on average 0.30±0.04 (Table 2). The ABI values in Group 1 and 2 with the corresponding degrees of CLTI were comparable and there was no significant difference (p>0.05).

Table 2

ABI values in patients of groups 1 and 2 before surgery, M±m (min-max)

ABI values	**1 group, n=30**	**Group 2, n=30**
By III CLTI degrees	0,38±0,11 (0,35-0,45)	0,38±0,12 * (0,35-0,45)
By IV CLTI degrees	0,30±0,05 (0,2-0,34)	0,30±0,04 * (0,2-0,34)

Note: * - the value of p>0.05 in relation to the indicators in group 1.

According to the data of the UDS with CDMBF, in both groups 1 and 2, atherosclerotic plaques were visualized in the common femoral artery (CFA) and the superficial femoral artery (SFA) in almost all cases, calcified in most cases. A significant thickening of the intima-media complex was also noted at almost all levels of the lesion of the lower extremities.

It is noteworthy that in almost all of the studied there was a marked decrease in the linear velocity of blood flow compared with generally accepted norms, moreover, in the largest number of patients, as well as a change in its nature – also in almost all patients it had a changed main or collateral character, and we regarded this as signs of stenosis (Fig. 1). In cases of arterial occlusion, both with USD and with UDS with CDMBF, blood flow was not determined in the projection of this artery (Fig. 2).

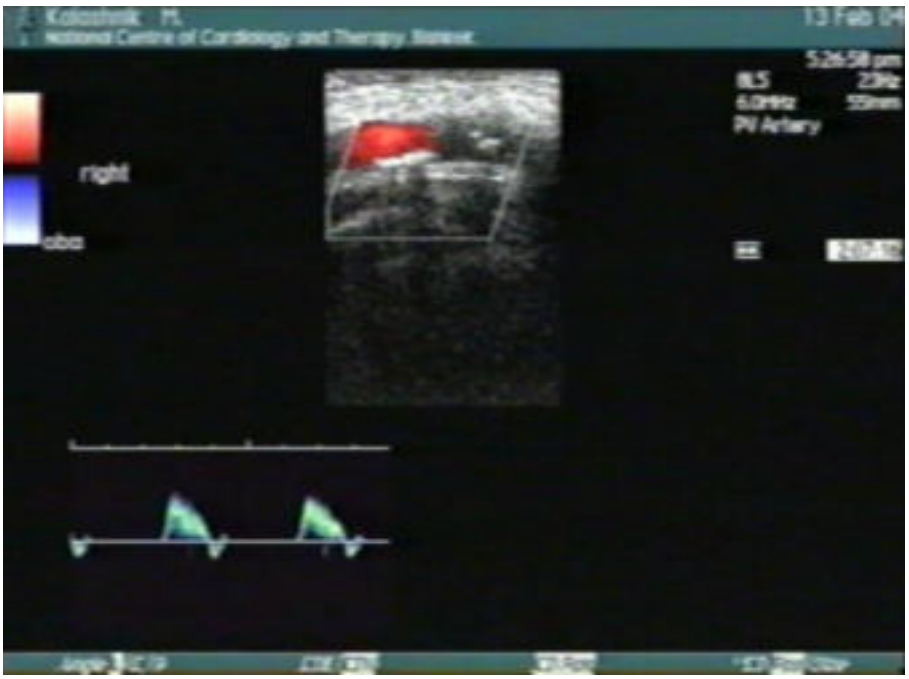

Fig. 1. UDS with CDMBF. SFA - stenosis, altered arterial blood flow, atherosclerotic plaque.

Fig. 2. UDS with CDMBF. Posterior tibial artery (PTA) – blood flow is practically not determined.

When performing shunting operations, it is very important to correctly assess the localization and nature of the vascular lesion, as well as to choose a place for applying a proximal anastomosis, i.e. to assess the flow pathways in the femoral arteries. Equally important is the correct choice of a place for distal

anastomosis, with an assessment of the distal arterial bed, i.e. outflow routes in the popliteal artery (PA) and lower leg arteries. For this purpose, radiopaque angiography (RPAG) (lumbar aortoarteriography or femoral arteriography) was performed before the operation, which was performed in all 30 (100.0%) patients of group 1 and in all 30 (100.0%) patients of group 2.

It should be noted here that our results of instrumental examination of patients with CLI on the background of DM before surgery showed the following. The sensitivity and specificity of the methods of UDS with CDMBF and RPAG separately at different levels of the study of the arterial bed of the lower extremities ranges from 78-89%. And a comprehensive assessment of the results of ultrasound and angiographic studies allows us to improve these indicators up to 90-98% and confirm the definition of the "gold standard" of diagnostics in relation to these studies in this pathology.

In our study, when analyzing the data of an instrumental examination of the arterial bed of the lower extremities before surgery, we in all cases evaluated the results of ultrasound and angiographic studies in a complex – this allowed us to most accurately obtain information about the occlusive-stenotic lesion of specific arteries of the lower extremities and was crucial in determining the tactics and method of surgical treatment of patients with CLI on the background of DM.

In general, the results of instrumental examination (ultrasound and angiographic) of the patients of groups 1 and 2 studied by us before the operation showed the following (Table 3).

According to ultrasound and angiographic studies, in all cases, patients with CLI on the background of DM had multisegmental inflammation of the arteries of the lower extremities with predominant lesions of medium and small diameter arteries (PA, arteries of the lower leg and foot) – i.e., the perceiving distal bed (Fig. 7-12).

Hemodynamically significant stenosis (HSS) (< 50%) in patients with CLI on the background of DM in group 1 and group 2, respectively, on the side of the lesion was diagnosed: on the common femoral artery (CFA) – in 10 (33.3%) and

13 (43.3%) cases, on SFA – in 12 (40.0%) and in 18 (60.0%), on the deep femoral artery (DFA) – in 10 (33.3%) and 10 (33.3%), on PA – in 8 (26.7%) and 7 (23.3%), on PTA – in 15 (50.0%) and in 5 (16.7%), on the anterior tibial artery (ATA) - 17 (56.7%) and in 5 (16.7%), on the fibular artery (FA) – in 8 (26.7%) and in 9 (30.0%).

Table 3

Localization and nature of vascular lesions in patients of groups 1 and 2 according to ultrasound and angiographic studies, number of patients (%)

Lesion localization	**Lesion characteristics**					
	HSS (< 50%)		*Occlusion*		*Total (HSS+occlusion)*	
	1 group, n=30	**2 group, n=30**	**1 group, n=30**	**2 group, n=30**	**1 group, n=30**	**2 group, n=30**
CFA	10 (33,3)	13 ** (43,3)	-	-	10 (33,3)	13 (43,3)
SFA	12 (40,0)	18 ** (60,0)	15 (50,0)	10** (33,3)	27 (90,0)	28 (93,3)
DFA	10 (33,3)	10 ** (33,3)	-	-	10 (33,3)	10 (33,3)
PA	8 (26,7)	7 ** (23,3)	20 (66,7)	23 ** (76,7)	28 (93,3)	30 (100,0)
PTA	15 (50,0)	5 * (16,7)	4 (13,3)	25 * (83,3)	19 (63,3)	30 (100,0)
ATA	17 (56,7)	5 * (16,7)	12 (40,0)	20 * (66,7)	29 (96,7)	25 (83,3)
STA	8 (26,7)	9 ** (30,0)	20 (66,7)	21 ** (70,0)	28 (93,3)	30 (100,0)

Note: * - the value of $p<0.05$ in relation to the indicators in group 1,** - the value of $p>0.05$ in relation to the indicators in group 1

Fig. 3. *RPAG. Occlusion of SFA, stenosis of DFA.*

Fig. 4. RPAG. Occlusion of SFA and PA. Pronounced development of collaterals.

Fig.5. RPAG. Stenosis of the PA and arteries of the lower leg.

PA stenosis, occlusion of the lower leg arteries.

Occlusion in patients with CLI on the background of DM in group 1 and group 2, respectively, on the affected side was diagnosed: in SFA – in 15 (50.0%) and 10 (33.3%) cases, in PA – in 20 (66.7%) and 23 (76.7%), on PTA – in 4 (13.3%) and 25 (83.3%), ATA – in 12 (40.0%) and 20 (66.7%), FA – in 20 (66.7%) and 21 (70.0%). Complete occlusion of both and DFA – were not

diagnosed in any case, neither in group 1 nor in group 2.

Fig. 7. RPAG. Occlusion of the PA and arteries of the lower leg.

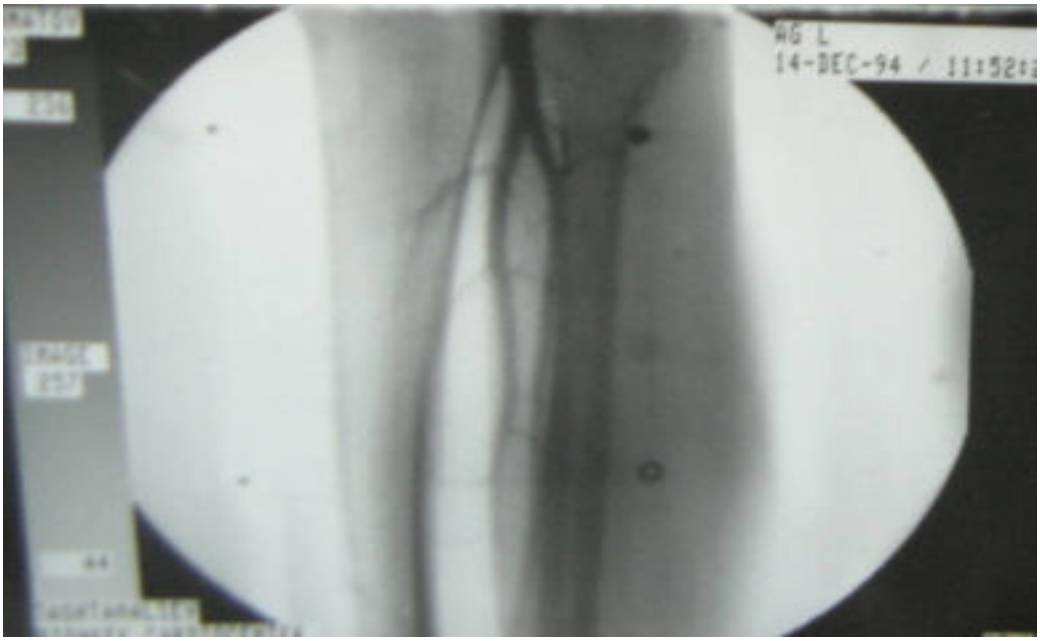

Fig. 8. RPAG. Occlusion of PTA and ATA, stenosis of FA.

Thus, HSS and occlusion in general in the examined patients with CLI on the background of DM in group 1 and in group 2, respectively, were diagnosed on the lesion side: in CFA cases – in 10 (33.3%) and in 13 (43.3%) cases, in SFA – in 27 (90.0%) and in 28 (93.3%), on DFA – in 10 (33.3%) and in 10 (33.3%), on PA – in 28 (93.3) and in 30 (100.0%), on PTA – in 19 (63.3%) and in 30 (100.0%), on ATA – in 29 (96.7%) and 25 (83.3%), in the STA – in 28 (93.3) and 30 (100.0%). It should be noted that a statistically significant difference ($p>0.05$) between group 1 and group 2 in terms of the number of cases of HSS and occlusion of PTA and

ATA, i.e. the state of the receiving distal bed, explains the differences in the choice of tactics and method of surgical treatment – in group 1, reconstructive operations were performed on the arteries of the lower extremities (direct methods revascularization of the lower extremities), in group 2, these reconstructive interventions were not performed, but other methods of treating CLI (including indirect methods of revascularization of the lower extremities) were used.

At the same time, the analysis of patency and the possibility of using PA and lower leg arteries for applying distal anastomosis, i.e. as a receiving distal bed, showed that in group 1, 6 (20.0%) patients had the possibility of using PA for this purpose, 2 lower leg arteries – in 8 (26.7%), 1 lower leg artery - in 19 (63.3%), 3 arteries of the lower leg were not present in any case, occlusion of all arteries of the lower leg was in 3 (10.0%) patients. Accordingly, in group 2, there was no possibility of using PA, 3, 2 or even 1 arteries of the lower leg for this in any case.

Conclusion

In case of CLI, patients with DM have a multisegmental lesion of the arteries of the lower extremities, and to a greater extent there is a significant lesion of the distal arterial bed – PA and the arteries of the lower leg. From the arteries of the proximal bed, there is much more often a significant lesion of SFA. In our opinion, these facts determine the severity of clinical manifestations of CLI in patients with DM, and are also crucial in determining the tactics and method of surgical treatment and affect its results.

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КЛИНИЧЕСКОЕ НАБЛЮДЕНИЕ ПРИ ОСТРОМ ГЕМАТОГЕННОМ ОСТЕОМИЕЛИТЕ ДЛИННЫХ ТРУБЧАТЫХ КОСТЕЙ СРЕДИ ВЗРОСЛОГО НАСЕЛЕНИЯ

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Резюме

Цель. Выявить клиническую картину у пациентов с острым гематогенным остеомиелитом длинных костей.

Материалы и методы. Мы изучили результаты обследования и хирургического лечения 70 взрослых пациентов с ОГО длинных костей, госпитализированных в отделение гнойной хирургии Национальной больницы Министерства здравоохранения Кыргызской Республики. Все пациенты были разделены на основную и контрольную группы. В основную группу вошли 34 (48,6%) пациента, которым была произведена операция по оригинальной методике остеоперфорации с усиленной санацией и дренированием гнойного очага с последующим промыванием костномозгового канала. Контрольную группу составили 36 (51,4%) пациентов, оперированных другими хирургическими методами.

Результаты. Изучение клинических проявлений заболевания у пациентов с ОГО длинных костей выявило наличие характерной триады клинических симптомов: острой и нарастающей возникающей локализованной боли, ограничения функций сегментов опорно-двигательного аппарата, ремиттирующей лихорадки. Эта триада наблюдалась у всех 70 (100,0%) пациентов уже на догоспитальном этапе. Новая боль в конечностях в других областях тела в течение нескольких дней стала постоянной и интенсивной, усилилась за ночь, и анальгетики не были сняты. Росло беспокойство пациентов по поводу нарушенного сна.

Из 70 (100,0%) пациентов и контрольной группы в 51 (72,9%) случае указанная боль, локализованная в соседних суставах и отдаленной области, была оценена как проявление другого заболевания.

В большинстве случаев мы диагностировали раннюю форму заболевания. При этом преобладают симптомы, вызванные воспалением костей и мягких тканей; общее состояние может быть умеренно тяжелым или даже удовлетворительным.

У 11 (15,7%) пациентов был диагностирован отечный геморрагический миелит, при котором воспаление костного мозга сопровождается отеком, клеточной инфильтрацией; повышается внутрикостное давление, из кости после трепанации черепа выделяется под давлением геморрагический экссудат. У 23 (32,9%) наших пациентов с диагнозом острого миелитического абсцесса наблюдается внутрикостный целлюлит, который распространяется по костномозговому каналу.

В большинстве случаев - у 36 (51,4%) наших пациентов диагностирован острый гнойный остеомиелит, некротический с экссудатом и гноем, проникающим в гаверсовы каналы, воспаление и нарушения кровообращения приводят к некрозу и секвестрации костной ткани. Это вызывает образование язв в мозговом канале - жидкого гноя.

Таким образом, в форме клинического течения ОГО длинных костей у взрослых преобладала местная форма заболевания, которая была, а по характеру местных изменений в костях наиболее часто встречался острый гнойный остеомиелит, некротизирующий.

Самыми ранними признаками ОГО длинных костей являются утолщение и деформация мягких тканей, окружающих кость, которые мы обнаружили на 2-3-й день болезни.

Однако наиболее значимым рентгенологическим симптомом мы ощутили наличие периодонтита - появление линейного оттенка рядом с кортикальной костью пораженной кости. По нашим данным, абсцесс был обнаружен только через 2-3 недели после начала заболевания.

70 (100,0%) пациентов имели преимущественную патологию крупных трубчатых костей: бедренная кость - 27 (38,6%) больных, берцовая кость - 21 (30,0%) больной, плечевая кость - 11 (15,8%) больных. Значительно меньше

костей предплечья - 8 (11,4%) пациентов, ключицы - 1 (1,4%) пациент. Множественная потеря костной массы наблюдалась у 2 (2,8%) пациентов.

Заключение. У взрослых пациентов при форме клинического течения ОГО длинных костей преобладала местная форма заболевания, по характеру местных изменений в костях наиболее часто встречался острый гнойный остеомиелит, некротизирующий. Факторами, влияющими на результаты лечения ОГО длинных костей у взрослых, являются: сложность ранней диагностики заболевания, длительный период догоспитального лечения, связанный с неправильным диагнозом и, как следствие, неправильная тактика лечения, что привело в конечном итоге к запоздалой госпитализации.

Ключевые слова: острый гематогенный остеомиелит, клиническое течение, взрослые.

CLINICAL OBSERVATION IN ACUTE HEMATOGENOUS OSTEOMYELITIS OF LONG TUBULAR BONES AMONG THE ADULT POPULATION

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Objective. To identify the clinical picture in patients with acute hematogenous osteomyelitis of long bones.

Materials and methods. We have studied the results of examination and surgical treatment of 70 adult patients with CSO of long bones hospitalized in the Department of purulent Surgery of the National Hospital of the Ministry of Health of the Kyrgyz Republic. All patients were divided into the main and control groups. The main group included 34 (48.6%) patients who underwent surgery according to the original method of osteoperforation with enhanced sanitation and drainage of the purulent focus, followed by washing of the bone marrow canal. The control group consisted of 36 (51.4%) patients operated with other surgical methods.

Results. The study of the clinical manifestations of the disease in patients with long bone CSOs revealed the presence of a characteristic triad of clinical symptoms: acute and increasing localized pain, restriction of the functions of segments of the musculoskeletal system, remitting fever. This triad was observed in all 70 (100.0%) patients already at the prehospital stage. The new pain in the extremities in other areas of the body became constant and intense for several days, intensified overnight, and the analgesics were not removed. Patients' anxiety about disturbed sleep was growing.

Of 70 (100.0%) patients and the control group, in 51 (72.9%) cases, the indicated pain localized in adjacent joints and a distant area was assessed as a manifestation of another disease.

In most cases, we diagnosed an early form of the disease. At the same time, symptoms caused by inflammation of bones and soft tissues prevail; the general condition may be moderately severe or even satisfactory.

Edematous hemorrhagic myelitis was diagnosed in 11 (15.7%) patients, in which inflammation of the bone marrow is accompanied by edema, cellular infiltration; intraosseous pressure increases, hemorrhagic exudate is released from the bone after cranial trepanation under pressure. In 23 (32.9%) of our patients diagnosed with acute myelitic abscess, intraosseous cellulitis is observed, which spreads through the bone marrow canal.

In most cases, 36 (51.4%) of our patients were diagnosed with acute purulent osteomyelitis, necrotic with exudate and pus penetrating into the Haversov channels, inflammation and circulatory disorders lead to necrosis and sequestration of bone tissue. This causes the formation of ulcers in the brain canal - liquid pus.

Thus, in the form of the clinical course of long bones in adults, the local form of the disease prevailed, which was, and by the nature of local changes in the bones, acute purulent osteomyelitis, necrotizing, was most common.

The earliest signs of long bones are thickening and deformation of the soft tissues surrounding the bone, which we found on the 2nd-3rd day of the disease.

However, the most significant radiological symptom we felt was the presence of periodontitis - the appearance of a linear shade next to the cortical bone of the affected bone. According to our data, the abscess was detected only 2-3 weeks after the onset of the disease.

70 (100.0%) patients had predominant pathology of large tubular bones: femur - 27 (38.6%) patients, tibia - 21 (30.0%) patients, humerus - 11 (15.8%) patients. Significantly fewer bones of the forearm - 8 (11.4%) patients, clavicle - 1 (1.4%) patient. Multiple bone loss was observed in 2 (2.8%) patients.

Conclusion. In adult patients with the form of the clinical course of long bones, the local form of the disease prevailed, according to the nature of local changes in the bones, acute purulent osteomyelitis, necrotizing, was most common. The factors influencing the results of treatment of CSO long bones in adults are: the complexity of early diagnosis of the disease, a long period of pre-hospital treatment associated with an incorrect diagnosis and, as a consequence, incorrect treatment tactics, which ultimately led to delayed hospitalization.

Keywords: acute hematogenous osteomyelitis, clinical course, adults.

Introduction

Hard-to-treat, deep infections such as osteomyelitis remain a significant healthcare problem in the United States and around the world. Even with major advances in surgical procedures, and novel antimicrobial therapies, the treatment failure rate remains high.

Osteomyelitis treatment costs rose to $1.62 billion per year by 2020 due to an aging population in the United States. There has been little or no reduction in infection-related outcomes in several decades as the current standard of care treatments, developed in the 1970s, are still being employed in the US hospitals [1-2].

Typically, monomicrobial AHO represents about 20% of all osteomyelitis cases and is most prevalent in children and related to rapid bone growth; about 85% of AHO patients are under 17 years of age [3-5].

Most research on bone infections has centered on Staphylococcus aureus (S. aureus) due to its frequency, plasticity and resistance, and because it causes the majority of osteomyelitis cases [6-7].

Early diagnosis is the key to the successful treatment of osteomyelitis, but diagnosing osteomyelitis is often a difficult challenge, as there are vast variations in clinical presentation [8-10].

Materials and methods.

We have studied the results of examination and surgical treatment of 70 adult patients with AHOs long bones were hospitalized in the department of purulent surgery of the National Hospital of the Ministry of Health of the Kyrgyz Republic. The observation period was from 1988 to 2009. All patients were divided into study and control groups. The study group included 34 (48,6%) patients who had surgery using an original technique of osteoperforation with enhanced sanitation and drainage of purulent focus, followed by lavage of the medullary canal were produced. The control group consisted of 36 (51,4%) patients who were operated on by other surgical techniques.

Results

The distribution of patients by age group shows that the AHO in long bones in adults occur at any age, with a significant increase in young people. The largest number of patients were in the age group 20-29 years, 45 (64,3%) patients.

In studying the history of the disease in all patients received particular attention was paid to the patient's history of life, in particular children's anamnesis. It revealed that 5 (7,4%) patients aged from 1 year to 15 years earlier had diagnosed AHs about which had surgery. Also attention is drawn to the fact that from 70 (100,0%) patients in the children's history 20(28,6%) patients revealed the presence of suffering one or more septic disease.

Noteworthy is the fact that of all the 70 patients and control group admitted to the Department of Purulent Surgery, the correct diagnosis of "Acute hematogenous osteomyelitis of the long bones", was made in only 48 (68,6%) patients.

The remaining 22 (31,4%) patients received other (incorrect) diagnoses. In addition, 29 (41,4%) patients and control group were transferred from other departments and hospitals.

The prevalence in the study and control groups of patients in a state of moderate severity due to the long period of pre-hospital related to incorrect diagnosis and, consequently, the wrong tactics of treatment, which led eventually to the belated hospitalization. So, after 10 days from the onset of the disease are hospitalized 39 (55,7%) patients.

Out of 70 (100,0%) of patients in 46 (65.7%) cases, the disease occurred in the autumn-winter period, ie seasonality observed in the emergence of AHOs long bones and in 9 (12,9%) patients had a variety of acute purulent-septic diseases in 62 (88,6%) patients - chronic inflammatory diseases, including trauma from 15 (21,4%) patients, against which developed AHOs.

In 16 (22,8%) patients, severity of the condition was exacerbated by the presence of concomitant pathology therapy - ischemic heart disease, hypertension, diabetes, peptic ulcer, bronchial asthma, etc. Serious condition at admission was noted in 9 (12,8%) patients. In most cases, the general condition of patients with AHOs long bones were of moderate severity - 41 (58,6%).

To determine the severity of the condition patients, we evaluated the severity of the syndrome of systemic inflammatory reaction of the body, as well as the shape of the clinical course AHO.

The study of the clinical manifestations of the disease in patients revealed the presence of AHOs long bones characteristic triad of clinical symptoms: acute and growing emerging localized pain, restricting segments of the musculoskeletal system functions, remitting fever. This triad occurred in all 70 (100,0%) of patients already on the pre-hospital stage. New limb pain in other areas of the body within a few days become constant and intense amplified overnight and analgesics were not removed. There was a growing concern of patients disturbed sleep.

Of the 70 (100,0%) of the patients and control group, 51 (72,9%) case, referred pain localized in adjacent joints and remote area assessed as a manifestation of another disease.

In most cases we diagnosed early form of the disease. At the same time dominated the symptoms caused by inflammation of the bone and soft tissues; general condition can be moderately severe or even satisfactory.

To characterize the changes occurring in the bone, we used the classification of AHOs long bones in adults, reflecting the pathogenesis of the disease with the most characteristic changes in the bone, the proposed AA Kutin and NI Mosiyenko. In this case the following results were obtained: 11 (15,7%) Patients diagnosed with edematous hemorrhagic myelitis, in which the bone marrow inflammation is accompanied by edema, cellular infiltration; increased intraosseous pressure from bone after craniotomy, is released under pressure hemorrhagic exudate. In 23 (32,9%) our patients diagnosed with acute myelitis abscess, cellulitis intraosseous is observed, which is distributed by the medullary canal. Bone marrow is transformed into a thick purulent hemorrhagic "weight".

In most cases - 36 (51,4%) our patients diagnosed with acute suppurative osteomyelitis, necrotic with exudate and pus penetrate the Haversian canals, inflammation and circulatory disorders lead to necrosis and sequestration of bone tissue. It causes formation of ulcers in the medullary canal - liquid pus.

The shape of the clinical course of AHOs long bones in adults dominated the local form of the disease that was, and the nature of local changes in the bones most frequently encountered acute suppurative osteomyelitis, necrotizing.

All the patients, according to the plan of the survey were to carry out X-ray of the affected limb segment at admission and in dynamics after the operation and at different times the nearest and remote postoperative period.

The earliest signs of AHOs long bones are thickening and deformation of soft tissues surrounding the bone, which we found on the 2-3 day of illness.

However, the most significant radiological symptom we felt the presence of periodontitis - the emergence of the linear shade next to the cortical bone of the

affected bone. According to our data abscess was detected only in 2-3 weeks after the onset of the disease.

According to our data, 70 (100,0%) patients with predominant pathology of large tubular bones: the femur - 27 (38,6%) patients, shin bone - 21 (30,0%) sick, Humerus - 11 (15,8%) patients. Much less of the forearm bones - 8 (11.4%) patients, the collarbone - 1 (1,4%) patient. Multiple bone loss was observed in 2 (2,8%) patients.

Microbiological studies of the microflora osteomyelitic foci performed in 26 (37,0%) patients. These studies were carried out by the usual method and consisted of qualitative evaluation of the microflora isolated from the pus of bone cavities and abscesses paraossalnyh. Thus the exciter is verified in 14 (87,5%) patients of the main and 9 (90,0%) patients from the control group.

The causative agent of the inflammatory process in the bone according to microbiological analysis in most cases is staphylococcus aureus, are sown in monoculture in the main and control group, respectively, 56,3% and 50,0% of cases, as well as in association with other agents, respectively, in 6,2 % and 10.0%, Proteus vulgaris allocated respectively 12,6% and 10,0%, of Ps. Aeruginosa in 6,2% and 10,0%, hemolytic Staphylococcus aureus in 6,2% and 10.0% of patients in the study and control groups, respectively.

Conclusions

In adult patients in the form of clinical course of AHOs long bones dominated the local form of the disease, the nature of local changes in the bones most frequently encountered acute suppurative osteomyelitis, necrotizing. Factors that influence the results of treatment of AHO long bones in adults are: difficulty of early diagnosis of disease, a long period of pre-hospital related to the incorrect diagnosis and, as a result, the wrong tactics of treatment, which led eventually to the belated hospitalization.

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МОДИФИЦИРОВАННЫЙ ВАРИАНТ ДРЕНИРОВАНИЯ ПИЩЕВОДА ВСЛЕДСТВИЕ НАНЕСЕННОГО НОЖЕВОГО РАНЕНИЯ С ПРИМЕНЕНИЕМ «Т»-ТРУБКИ (КЛИНИЧЕСКИЙ СЛУЧАЙ)

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Резюме

Цель. Указать на модифицированный способ хирургического дренирования первичного медиастинита вследствие ножевого ранения посредством «Т»-трубки.

Материалы и методы. Клинический случай: Больная А. 20 лет ИБ № 6391/162 уроженка села Кулан, Джамбульской области, Казахстан. Поступила из Куланской ЦРБ 18.03.2015г. с направительным диагнозом: Проникающее ножевое ранение грудной клетки слева с повреждением легкого и пищевода. Открытый гемопневмоторакс и пищеводно-плевральный свищ. Эмпиема плевры слева.

Произведены операции: 1) Левосторонняя торакотомия, санация плевральной полости; 2) Плеврэктомия, ушивание дефекта нижней доли левого легкого; 3) Дренирование дефекта нижней трети пищевода с введением в желудок и выведением через плевральную полость наружу однопросветной толстой дренажной трубки; 4) Медиастинотомия, дренирование заднего средостения.

На шестые сутки после операции из нижней трубки, что в плевральной полости, выделяется желудочное содержимое. Торакотомная рана нагнаивается, с исходящим неприятным запахом и желудочным содержимым вокруг нижнего дренажа и эзофагогастроплевральной трубки, выведенной через восьмое межреберье кнаружи. В экстренном порядке произвести санацию плевральной полости с дренированием дефекта пищевода модифицированной «Т» - образной трубкой, с фиксацией его к стенке пищевода.

Результаты. Больная с дренажной трубкой в плевральной полости в VIII межреберье и «Т» - образной трубкой в пищеводе, на 24 сутки после операции выписана домой на время.

Произвели рентген - контрастное исследование пищевода: Пищевод свободно проходим, контуры его ровные, в области пищеводно - диафрагмального угла определяется небольшой затек контраста. Дефект прикрыт «Т» - образной трубкой.

Повторная госпитализация ИБ№ 20172/474 через 3,5 месяцев после установления «Т» - образной трубки.

Произведено рентген - контрастное исследование пищевода барием: Акт глотания не нарушен, пищевод проходим до нижней трети, где имеется трубка. Затека в плевральную полость нет.

Под внутривенным наркозом «Т» - образная трубка из просвета пищевода удалена, в свищевой ход после обработки введен тампон с мазью «Левомеколь».

Удалена трубка из плевральной полости. Свищевой ход с дефекта пищевода закрылся грануляционной тканью самостоятельно.

Больная с выздоровлением выписана домой.

Заключение.

1. Благодаря применению модифицированной «Т» - образной трубки, для прикрытия дефекта стенки пищевода, под углом 45^0 кверху сформировался пищеводно - торакальный свищ, который после удаления трубки самостоятельно закрылся. «Т» - образная трубка находилась в просвете пищевода 3,5 месяцев, применение которой позволило избежать второго этапа хирургического лечения для создания герметичности и непрерывности пищевода.
2. Преимуществами данного способа являются: исключает повторные реконструктивные операции на пищеводе, исключается выпадение трубки из просвета пищевода, сформированный пищеводно-грудной свищ после удаления модифицированной «Т» - образной трубки затягивается

самостоятельно, так как направлен вверх под углом 45^0, снижается летальность данной группы пациентов, тому же способ техники прост по сравнению с другими способами.

Ключевые слова: медиастинит, пищевод, средостения, дренирование, хирургия.

MODIFIED DRAINAGE OPTION OF ESOPHAGUS DUE TO A STAB WOUND WITH THE USE OF A "T" TUBE (CLINICAL CASE)

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Annotation

Objective. To indicate a modified method of surgical drainage of primary mediastinitis due to a knife wound by means of a "T" tube.

Materials and methods. Clinical case: Patient A. 20 years of illness case No. 6391/162, a native of Kulan village, Dzhambul region, Kazakhstan. She was admitted from the Kulansk Central District Hospital on 18.03.2015 with a diagnosis: Penetrating knife wound of the chest on the left with damage to the lung and esophagus. Open hemopneumothorax and esophageal-pleural fistula. Empyema of the pleura on the left.

Operations performed: 1) Left-sided thoracotomy, rehabilitation of the pleural cavity; 2) Pleurectomy, suturing of the defect of the lower lobe of the left lung; 3) Drainage of the defect of the lower third of the esophagus with the introduction into the stomach and removal through the pleural cavity to the outside of a single-light thick drainage tube; 4) Mediastinotomy, drainage of the posterior mediastinum.

On the sixth day after the operation, gastric contents are released from the lower tube in the pleural cavity. Thoracotomy wound is suppressed, with an outgoing unpleasant odor and gastric contents around the lower drainage and

esophagogastropleural tube, removed through the eighth intercostal space to the outside. Urgently perform the sanitation of the pleural cavity with drainage of the esophageal defect with a modified "T"-shaped tube, with its fixation to the esophageal wall.

Results. A patient with a drainage tube in the pleural cavity in the VIII intercostal space and a "T"-shaped tube in the esophagus, was discharged home for a while on the 24th day after the operation.

An X-ray contrast study of the esophagus was performed: The esophagus is freely traversed, its contours are smooth, a small contrast congestion is determined in the esophageal - diaphragmatic angle. The defect is covered by a "T"-shaped tube.

Re-hospitalization of illness case No. 20172/474 3.5 months after the establishment of the "T"-shaped tube.

An X-ray contrast study of the esophagus with barium was performed: The act of swallowing is not violated, the esophagus is passed to the lower third, where there is a tube. There is no leakage into the pleural cavity.

Under intravenous anesthesia, the "T"-shaped tube was removed from the lumen of the esophagus, a tampon with Levomekol ointment was inserted into the fistula after treatment.

The tube was removed from the pleural cavity. The fistula passage from the esophagus defect was closed by granulation tissue independently.

The patient was discharged home with recovery.

Conclusion.

1. Due to the use of a modified "T"-shaped tube, to cover the defect of the esophageal wall, an esophageal - thoracic fistula was formed at an angle of 450 upwards, which closed itself after removing the tube. The "T"-shaped tube was in the lumen of the esophagus for 3.5 months, the use of which allowed avoiding the second stage of surgical treatment to create tightness and continuity of the esophagus.

2. The advantages of this method are: eliminates repeated reconstructive operations

on the esophagus, eliminates the loss of the tube from the lumen of the esophagus, the formed esophageal-thoracic fistula after removal of the modified "T"-shaped tube is tightened independently, since it is directed upwards at an angle of 450, the mortality of this group of patients is reduced, besides, the technique method is simple compared to in other ways.

Keywords: mediastinitis, esophagus, mediastinum, drainage, surgery.

Introduction

The mortality rate from primary mediastinitis complicated (up to 90% of cases) by esophageal perforation is 19-47%, and in the presence of concomitant diseases can reach 67%. More than 90% of cases of primary mediastinitis are caused by perforation of the esophagus [1-2]. Since the esophagus is colonized by both communal and nosocomial microorganisms, any loss of integrity of the esophageal wall can lead to mediastinitis [3].

Non-surgical treatment is acceptable only in cases of small leaks without contamination of the pleura, drainage of the cavity back into the esophagus, clinical stability and minimal clinical signs of sepsis.

In case of esophageal perforations, drainage of purulent material and treatment of affected tissues in the mediastinum is the main goal in the treatment of primary mediastinitis [4].

Esophageal tissue is less recoverable after the first 24 hours (mortality from surgery after 24 hours is approaching 40%) [5].

The use of a T-shaped tube is ideal for delayed perforation (after 24 hours) of the esophagus.

The treatment of esophageal perforation (EP) remains a significant clinical challenge [6-9].

Materials and methods

Clinical case:

Patient A. 20 years of IB No. 6391/162, a native of Kulan village, Dzhambul region, Kazakhstan. She was admitted from the Kulansk CRH on 18.03.2015 with a directional diagnosis: Penetrating knife wound of the chest on the left with

damage to the lung and esophagus. Open hemopneumothorax and esophageal-pleural fistula. Empyema of the pleura on the left.

Complaints at admission of severe pain in the chest and around the drainage tubes. Severe shortness of breath, pain in the epigastric region, dry mouth, weakness, insomnia.

From anamnesis: According to the patient, on 12.03.2015 at 13:15 h. she received a knife wound from behind and to the left in the chest area. After 30 minutes, the patient was taken to the Surgical Department of the central district hospital (CDH) in a state of moderate severity. At the level of ThVI - ThVIII on the left there is a wound in the oblique direction up to 3 cm in size with smooth edges, subcutaneous emphysema is noted. Breathing on the left is weakened.

12.03.2015 15:45h. An operation was performed – primary surgical debridement (PSD) and suturing of the wound. Prescribed treatment: Penicillin 1.0 x 6 r / d, Gentamicin 80 mg x 3p/ d. Drainage of the pleural cavity on the left in the II intercostal space was performed.

On 17.03.2015, when eating per os, the latter began to be released through the drainage tube. A patient in extremely serious condition was sent to Bishkek, Kyrgyzstan, the National Hospital under the Ministry of Health, the I.K. Akhunbaev Clinic, Department of Thoracic Surgery.

On 18.03.2015, at 18:00, operations were performed: 1) Left-sided thoracotomy, rehabilitation of the pleural cavity; 2) Pleurectomy, suturing of the defect of the lower lobe of the left lung; 3) Drainage of the defect of the lower third of the esophagus with the introduction into the stomach and removal through the pleural cavity to the outside of a single-light thick drainage tube; 4) Mediastinotomy, drainage of the posterior mediastinum.

Postoperative diagnosis: Penetrating stab wound of the chest on the left, with damage to the lower lobe of the left lung and the lower third of the esophagus. Esophageal-pleural fistula. Posterior inferior purulent mediastinitis. Clotted hemothorax with suppuration and intrapleural bleeding. Empyema of the pleura on the left, a carapace lung with atelectasis of the lower lobe. Creeping phlegmon of

the chest wall. Hemorrhagic shock. Hypovolemia. Posthemorrhagic anemia. DIC syndrome. Intoxication syndrome.

On the sixth day after the operation, gastric contents are released from the lower tube in the pleural cavity. The thoracotomy wound is suppressed, with an outgoing unpleasant odor and gastric contents around the lower drainage and esophagogastropleural tube, removed through the eighth intercostal space to the outside.

Therefore, it was decided to urgently sanitize the pleural cavity with drainage of the esophageal defect with a modified "T"-shaped tube, with its fixation to the wall of the esophagus (Fig. 1).

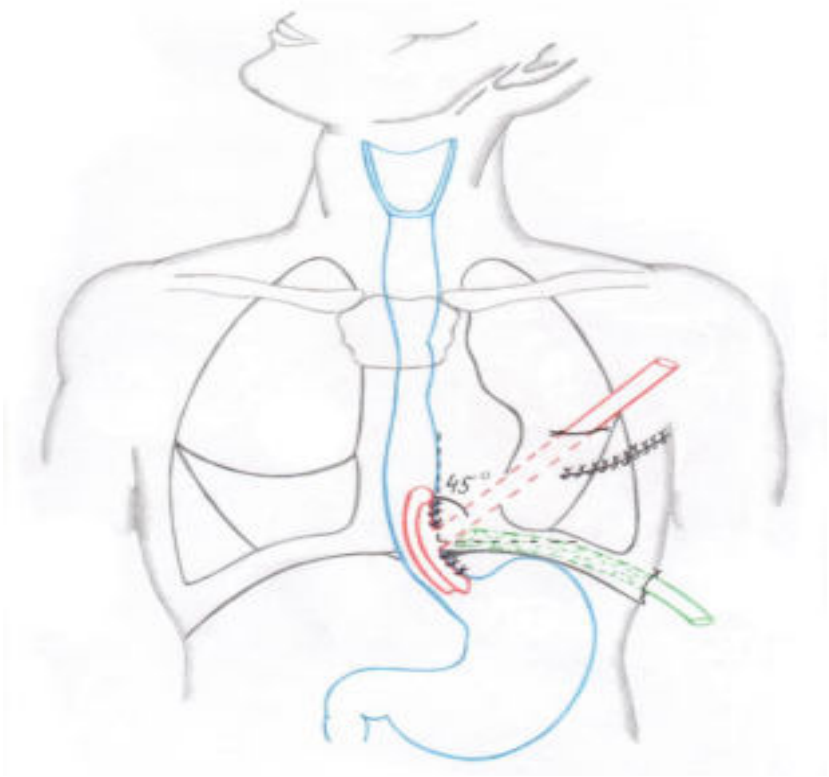

Fig. 1. Method of drainage of the defect of the lower third of the esophagus with a modified "T"–shaped tube.

30.03.2015 at 13:00 h operation: Retoracotomy - sanitation of the pleural cavity, pleuroectomy with lung decortication. Drainage of the lower third of the esophagus with a modified "T"-shaped tube.

The course of the operation: During the revision, a 4.5 x 2 cm esophageal defect was found in the lower posterior bone-phragmatic corner. A modified "T"-shaped tube with a diameter of 2.0 cm was inserted into the lumen of the

esophagus through the defect, while the lower lobe of the proximal end of the tube was fixed to the stomach, and the upper lobe to the lower third of the esophagus with nodular sutures with a absorbable polyfilament thread. Then the distal end was removed through the intercostal space at an angle of 450 in the fourth intercostal space along the anterior axillary line.

A drainage tube was brought to the line of the bruised defect of the esophagus and below the "T"-shaped tube in the pleural cavity for control with removal to the VIII intercostal space along the posterior axillary line on the left. The wound was sutured through all layers according to Donati. The phlegmon zones of the chest wall were drained with tampons and rubber graduates.

Feeding was carried out through a modified "T"-shaped tube, since the lower lobe directly flows into the stomach.

Results

On 11.04.2015, a patient with a drainage tube in the pleural cavity in the VIII intercostal space and a "T"-shaped tube in the esophagus, was discharged home for a period of 24 days after surgery.

On 18.05.2015, an X-ray contrast study of the esophagus was performed: The esophagus is freely traversed, its contours are smooth, a small contrast leak is detected in the esophageal - diaphragmatic angle. The defect is covered by a "T"-shaped tube.

Re-hospitalization on 11.06.2015 to 30.06.015 of case history No. 20172/474 3.5 months after the establishment of the "T"-shaped tube.

On 12.06.2015, an X-ray contrast study of the esophagus with barium was performed: The act of swallowing is not violated, the esophagus is passed to the lower third, where there is a tube. There is no leakage into the pleural cavity.

On 19.06.2015, under intravenous anesthesia, the "T"-shaped tube was removed from the lumen of the esophagus, a tampon with Levomekol ointment was inserted into the fistula after treatment.

On 28.06.2015, the tube was removed from the pleural cavity. The fistula passage from the esophagus defect was closed by granulation tissue independently.

On 30.06.2015, the patient was discharged home with recovery.

Conclusions

Due to the use of a modified "T"-shaped tube, to cover the defect of the esophageal wall, an esophageal - thoracic fistula was formed at an angle of 450 upwards, which closed itself after removing the tube. The "T"-shaped tube was in the lumen of the esophagus for 3.5 months, the use of which allowed avoiding the second stage of surgical treatment to create tightness and continuity of the esophagus.

The advantages of this method are: eliminates repeated reconstructive operations on the esophagus, eliminates the tube falling out of the esophageal lumen, the formed esophageal-thoracic fistula after removal of the modified "T"-shaped tube is tightened independently, since it is directed upwards at an angle of 45^0, the mortality of this group of patients is reduced, besides, the technique method is simple compared to other methods.

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НОВАТОРСКИЙ ВАРИАНТ ДРЕНИРОВАНИЯ ПИЩЕВОДА С ИСПОЛЬЗОВАНИЕМ «Т» - ТРУБКИ

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Резюме

Цель. Указание результатов применения модифицированного варианта дренирования пищевода «Т»-образной трубкой

Материалы и методы. Под нашим наблюдением находилось 35 больных с различными формами острого медиастинита, находившиеся на стационарном лечении в отделениях торакальной хирургии, челюстно-лицевой хирургии и отделении головы и шеи НГ МЗ КР за 10 лет. В ходе оперативных вмешательств нами предложены некоторые видоизменения способов ушивание дефекта и дренирования пищевода при его повреждениях с применением модифицированной «Т» - образной трубки.

Нами предложен способ дренирования и ушивания пищевода при больших дефектах модифицированной «Т» образной трубкой (Заявка на изобретение).

По нашей методике мы вставляем модифицированную Т-образную трубку в просвет пищевода и трубку направляем вверх под углом 45 ° по отношению к пищеводу и выводим через межреберный промежуток вне торакотомной раны или же через шейную рану. Длинный, узкий и направленный вверх дренирующий канал, способствует оттоку содержимого слизи, слюны и желудочного содержимого из просвета пищевода.

Способствует формированию пищеводно-плеврального свища или пищеводно-шейного свища, которые после удаления Т-образной трубки самостоятельно затягиваются.

Результаты. В отдаленные сроки после лечения больных по поводу первичного медиастинита из 35 обследованных хорошие результаты отмечены у 24-х больных (68,6%), удовлетворительные – у 8-ми (22,8%) и неудовлетворительные – у 3-х (8,6%). Среди больных с первичным

медиастинитом умерли 18 человек, что составило 31,6% летальности.

Выводы:

1. Фактор времени является одним из основных определяющих успешного лечения острых медиастинитов. Не меньшее значение имеют характер воспалительного процесса (его стадия) и локализация, тактика комплексного лечения заболевания, а именно – выбор метода оперативного вмешательства.

2.Хирургическое лечение является основным и заключается в герметичном дренировании средостения с последующим длительным промыванием полости растворами антисептиков и активной аспирации.

3. У больных с гнойным медиастинитом, вызванном перфорацией пищевода, важной задачей хирургического вмешательства является исключение постоянного поступления в средостение инфицированной слюны или агрессивного желудочного содержимого. Для решения этой задачи мы использовали ушивание дефекта пищевода модифицированной «Т» - образной трубкой, применение которой позволяет избежать второго этапа хирургического лечения для создания герметичности и непрерывности пищевода.

Ключевые слова: медиастинит, пищевод, средостения, дренирование, хирургия.

AN INNOVATIVE VARIANT OF ESOPHAGEAL DRAINAGE USING A "T" TUBE

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Purpose. Indication of the results of the use of a modified variant of drainage of the esophagus with a "T"-shaped tube

Materials and methods. We observed 35 patients with various forms of acute mediastinitis who were hospitalized in the Departments of Thoracic Surgery, Maxillofacial Surgery and the Department of Head and Neck of the NH of the Ministry of Health of the Kyrgyz Republic for 10 years. In the course of surgical interventions, we have proposed some modifications of the methods of suturing the defect and drainage of the esophagus in case of its damage using a modified "T"-shaped tube.

We have proposed a method for draining and suturing the esophagus with large defects with a modified "T" shaped tube (Application for invention).

According to our method, we insert a modified T-shaped tube into the lumen of the esophagus and direct the tube upwards at an angle of 45 ° with respect to the esophagus and output it through the intercostal space outside the thoracotomy wound or through the neck wound. A long, narrow and upward-pointing drainage channel promotes the outflow of mucus, saliva and gastric contents from the lumen of the esophagus.

Promotes the formation of an esophageal-pleural fistula or esophageal-cervical fistula, which, after removal of the T-shaped tube, are independently tightened.

Results. In the long term after treatment of patients with primary mediastinitis out of 35 examined, good results were noted in 24 patients (68.6%), satisfactory - in 8 (22.8%) and unsatisfactory – in 3 (8.6%). Among patients with primary mediastinitis, 18 people died, which accounted for 31.6% of mortality.

Conclusions:

1. The time factor is one of the main determinants of successful treatment of acute mediastinitis. No less important are the nature of the inflammatory process (its stage) and localization, the tactics of complex treatment of the disease, namely, the choice of the method of surgical intervention.

2. Surgical treatment is basic and consists in hermetic drainage of the mediastinum, followed by prolonged rinsing of the cavity with antiseptic solutions and active aspiration.

3. In patients with purulent mediastinitis caused by perforation of the esophagus, an important task of surgical intervention is to exclude the constant entry of infected saliva or aggressive gastric contents into the mediastinum. To solve this problem, we used the suturing of the esophageal defect with a modified "T"-shaped tube, the use of which avoids the second stage of surgical treatment to create tightness and continuity of the esophagus.

Keywords: mediastinitis, esophagus, mediastinum, drainage, surgery.

Introduction

With an annual incidence of 3.1 per million people, mortality from primary mediastinitis caused by esophageal perforation is up to 20%. In almost 20% of cases, the diagnosis is made only at autopsy.

Complications can lead to sepsis and organ failure with mortality approaching 100% if the diagnosis is missed and not treated [1].

Iatrogenic damage to the esophagus as a result of surgical manipulations is the most common cause of perforation and subsequent mediastinitis. This is clearly spelled out in the most recent European clinical guidelines [2].

In case of esophageal perforations, drainage of purulent material and treatment of affected tissues in the mediastinum is the main goal in the treatment of primary mediastinitis [3].

The use of a T-shaped tube is ideal for delayed perforation (after 24 hours) of the esophagus [4-5]. Modifications of methods of surgical treatment of primary mediastinitis caused by perforation of the esophagus are required [6-7].

We have proposed a method for draining and suturing the esophagus with large defects with a modified "T" shaped tube (Application for the invention (Fig-1).

Fig. 1 - Modified "T"-shaped tube

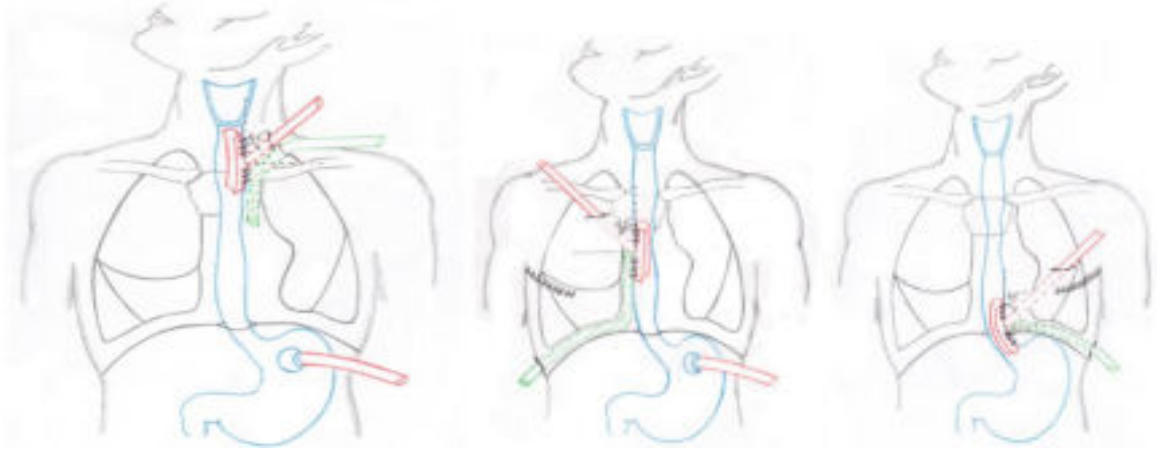
Materials and methods

The essence of the method consists in the application of our modification of the "T"-shaped tube of various diameters from 0.5 to 2.0 cm, used in 12 patients. When draining the esophagus with a modified "T"-shaped tube, the use of various diameters, in turn, depended on the size of the esophageal defect, both in its longitudinal and transverse values.

The method is carried out as follows. Our modification of the "T"-shaped tube is that in a conventional "T"-shaped tube, the horizontal knee is excised along the outer circumference. With the formation of two half-pipes from the inner circle of the so-called "petals". The edges of the obtained "petals" are carefully processed, with the rounding of sharp corners and chamfering, in order to exclude the formation of bedsores in the esophagus. Thus, we achieve the transformation of the "T"-shaped tube by comparing the "petals" tightly fitted to each other into a single single-light tube. Further, from the side of the defect, taking into account the level of perforation, we perform thoracotomy in the IV; V; VI or VII intercostal space, mediastinotomy, and revision of the esophagus. When a defect of the esophagus is detected, we install the "petals" of the modified "T"-shaped tube into

the lumen of the esophagus through the detected defect. In the case of drainage of the lower third of the esophagus, the lower "petal" partially descends into the stomach, and the upper "petal" of the modified "T"-shaped tube is completely located in the lumen of the esophagus. The inner semicircle of the upper and lower "petals" of the proximal end of the tube is hermetically fixed with nodular sutures with a absorbable polyfilament or monofilament thread throughout their entire length to the esophagus, and when draining the lower third partially to the stomach. Thus, we achieve hermetic elimination of the esophageal defect. Then the distal end is removed outside the thoracotomy wound, through the intercostal space at an angle of 450 with respect to the esophagus along the anterior axillary line, and in case of damage to the upper third of the esophagus through the neck wound.

For control, a single-light drainage tube is supplied to the site of the bruised defect by a modified "T"-shaped tube. When draining the middle and lower third of the esophagus, control drainage is installed outside the thoracotomy wound with removal to the VII-VIII intercostal space or through a neck wound when draining the upper third of the esophagus. The operation is completed by laparotomy and the imposition of a gastrostomy on the Cader for enteral nutrition. The lower third of the esophagus passes directly into the stomach. Considering this fact, when draining the lower third of the esophagus, we intentionally carried out enteral nutrition into the stomach through a modified "T"–shaped tube. Which in turn eliminates the need for the imposition of a gastrostomy on the Frame. The long, narrow and upward-directed drainage channel of the modified "T"-shaped tube promotes the outflow of continuous intake of new portions of saliva and aggressive stomach contents into the mediastinum from the esophageal lumen (Fig. 5;6;7).



A B C

Fig. 4;5;6; – Our method of suturing esophageal defects and drainage with a modified "T"-shaped tube.

A- the upper third of the esophagus; B-the middle third of the esophagus; C. the lower third of the esophagus.

Thus, after the expiration of time, an esophageal - pleural or esophageal–cervical fistula is formed along the course of the modified "T"–shaped tube. The indication for the removal of the modified "T"-shaped tube in the postoperative period was the complete formation of a fistula course with the absence of a contrast agent leak outside the esophagus. The timing of the removal of the "T" -shaped tube is decided individually for each patient. When draining the upper third of the esophagus, the complete formation of esophageal – cervical fistula ranged from 28 to 36 days. When draining the middle and lower third of the esophagus, the complete formation of esophageal – pleural fistulas ranged from 2 to 4 months, and in some cases up to 6.5 months.

After the final formation of the fistula in the postoperative period, an X–ray contrast examination of the esophagus is performed for the purpose of control. If we are convinced that there is no leakage of contrast material outside the esophagus, the modified "T"-shaped tube is freely removed along the course of the formed fistula, by the previously indicated transformation of the "petals" into a single single-light tube. Which seems impossible when installing a conventional "T"-shaped tube.

Formed at an angle of 45^0 up and forward, the esophageal – cervical and pleural fistula is tightened independently. In what an important role is played by the angle of formation of the fistula course, which eliminates the leakage into the fistula channel of food masses, and various aggressive liquids. (Application for invention).

An indispensable condition for the success of the treatment of traumatic mediastinitis with esophageal damage is to turn it off from the passage of food masses, fluid and saliva. It should be emphasized that pronounced metabolic disorders occur much faster than with normal fasting, that is, situations where the natural supply of nutrients stops. But the body continues to receive water through a modified "T"-shaped tube during drainage of the lower esophagus, as well as a gastrostomy during upper and middle drainage of the esophagus without loss of saliva. Thus, in patients with purulent mediastinitis, the problem of compensation is solved not only for complete starvation, but also for progressive energy losses due to the sharp predominance of catabolic processes.

Conclusions:

1. The time factor is one of the main determinants of successful treatment of acute mediastinitis. No less important are the nature of the inflammatory process (its stage) and localization, the tactics of complex treatment of the disease, namely, the choice of the method of surgical intervention.
2. Surgical treatment is basic and consists in hermetic drainage of the mediastinum, followed by prolonged rinsing of the cavity with antiseptic solutions and active aspiration.
3. In patients with purulent mediastinitis caused by perforation of the esophagus, an important task of surgical intervention is to exclude the constant entry of infected saliva or aggressive gastric contents into the mediastinum. To solve this problem, we used the suturing of the esophageal defect with a modified "T"-shaped tube, the use of which avoids the second stage of surgical treatment to create tightness and continuity of the esophagus.

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СОСУДИСТАЯ ХИРУРГИЯ

УЛЬТРАЗВУКОВОЕ АНГИОСКАНИРОВАНИЕ ПРИ ЭМБОЛОГЕННОМ ТРОМБОЗЕ ВЕН НИЖНИХ КОНЕЧНОСТЕЙ

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Резюме

Цель исследования. Изучение частоты выявления, локализации и характера флотирующего тромбоза вен нижних конечностей у пациентов различного профиля по результатам ультразвукового ангиосканирования.

Материалы и методы исследования. Всем больным основной группы (385) проведено УЗАС при поступлении, после операции и в динамике наблюдения.

Результаты. С помощью УЗАС флотирующий тромб выявлен нами у 254 (66,0%) больных из 385. При этом обнаружено движение тромботических масс в поперечном направлении по отношению к оси сосуда. Флотирующая часть тромба движется асинхронно со стенкой вены. У пациентов с флотирующей верхушкой эмболия тромба наблюдалась у 34 (13,4%) из 254 больных. Более половины флотирующих тромбов было расположено в бедренном сегменте, причем 76,4% из них – в общей бедренной вене. Протяженность нефиксированной части тромба варьировала от 2,0 до 20,0 см. У 87 (22,6%) больных основание флотирующего тромба было меньше по диаметру, чем его средняя часть и верхушка. Однако мы не получили статистически значимой зависимости эмболических осложнений от длины флотирующей части ($r = 0,14$ при $p > 0,05$) и наличия узкого основания тромба ($r = 0,04$ при $p > 0,05$). У 56 (22,0%) пациентов отмечалась выраженная подвижность тромботических масс при спокойном дыхании и даже при задержке дыхания. В 138 (54,4%) случаях умеренная подвижность тромба определялась только при проведении

функциональных проб – компрессия датчиком и форсированное дыхание. В остальных 60 случаях (23,6%) отмечалось преимущественное смещение стенок вены относительно тромботических масс при проведении функциональных проб, подвижностьсамого тромба была минимальной.

Выводы.На основании исследования УЗАС в динамическом наблюдении за нашими больными мы считаем, что эмболоопасному тромбозу вен присущи следующие особенности:

1) расположение флотирующего тромба выше верхней трети голени;
2) наличие растущих тромбов, распространяющихся как в проксимальном, так и дистальном направлении;
3) слабая связь тромба с сосудистой стенкой и наличие кровотока в тромбированной вене.

Ключевые слова: острый тромбоз вен, ультразвуковое ангоисканирование, обширные операции брюшной полости, флотирующий тромб, нижние конечности.

ULTRASOUND ANGIOSCANNING FOR EMBOLOGENIC THROMBOSIS OF THE VEINS OF THE LOWER EXTREMITIES

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Annotation

Purpose. To study the frequency of detection, localization and nature of floating thrombosis of the veins of the lower extremities in patients of various profiles based on the results of ultrasound angioscanning.

Materials and methods. All patients of the main group (385) underwent ultrasound at admission, after surgery and in the dynamics of observation.

Results. With the help of ultrasound, we detected a floating thrombus in 254 (66.0%) patients out of 385. At the same time, the movement of thrombotic masses in the transverse direction with respect to the axis of the vessel was detected. The

floating part of the thrombus moves asynchronously with the vein wall. In patients with a floating tip, thrombus embolism was observed in 34 (13.4%) of 254 patients. More than half of the floating blood clots were located in the femoral segment, with 76.4% of them in the common femoral vein. The length of the unfixed part of the thrombus varied from 2.0 to 20.0 cm. In 87 (22.6%) patients, the base of the floating thrombus was smaller in diameter than its middle part and tip. However, we did not obtain a statistically significant dependence of embolic complications on the length of the floating part ($g = 0.14$ at $p > 0.05$) and the presence of a narrow thrombus base ($g = 0.04$ at $p > 0.05$). In 56 (22.0%) patients, pronounced mobility of thrombotic masses was noted with calm breathing and even with respiratory retention. In 138 (54.4%) cases, moderate thrombus mobility was determined only during functional tests – compression by a sensor and forced breathing. In the remaining 60 cases (23.6%), there was a predominant displacement of the vein walls relative to the thrombotic masses during functional tests, the mobility of the thrombus itself was minimal.

Conclusions.Based on the study of USAS in the dynamic observation of our patients, we believe that emboloid venous thrombosis has the following features:

1) the location of the floating thrombus above the upper third of the lower leg;

2) the presence of growing blood clots spreading both in the proximal and distal direction;

3) weak connection of the thrombus with the vascular wall and the presence of blood flow in the thrombosed vein.

Keywords: acute venous thrombosis, ultrasound angioscanning, extensive abdominal surgery, floating thrombus, lower extremities.

Introduction

In a Mexican research deep vein thrombosis (DVT) constituted 69% (1223/1785) of cases. From all the patients registered, 47 (2.63%) died. The highest mortality rate was observed in older patients, and patients with a longer hospital stay [1].

A complication of DVT is pulmonary embolism (PE), where a clot breaks away from a deep vein wall and becomes lodged in a pulmonary blood vessel, obstructing blood flow to the lungs and causing respiratory dysfunction. For more specifics, we are talking about the floating thrombus [2-3].

PE is accountable for up to 10% in-hospital mortality, and 75% of fatal PE cases occur in medically ill patients [4-6].

Deep vein thrombosis (DVT) and pulmonary embolism (PE) are part of the family of venous thromboembolism [7-9].

Materials and methods

All patients of the main group (385) underwent ultrasound at admission, after surgery and in the dynamics of observation.

We found blood clots of various localization and size in all 385 patients. The main feature in USAS was an echopositive thrombotic mass in the lumen of the vessel. At the same time, the diameter of the affected vein increases 2-2.5 times compared to the contralateral vessel, the vein ceases to respond to compression by the sensor.

Data on the localization and nature of acute venous thrombosis of the lower extremities detected in patients with ultrasound are presented in Table 1.

Indicators	**Localization and nature of thrombosis**	
	abs. h.	***%***
Proximal border of the lesion (segment)		
Tibio-popliteal joint	58	15,1
Femoral	200	51,9
Iliocaval	127	33,0
Side of defeat		
On the right	165	42,8
Leftward	195	50,7
On both sides	25	6,5
Character of the proximal part of the blood clot		
Floating	254	66,0

Wall-mounted	93	24,2
Occlusive	38	9,8
Total	385	100

When analyzing the localization of thrombosis of the lower extremities, all our patients were divided into 3 groups depending on the lesion segment (Fig. 1).

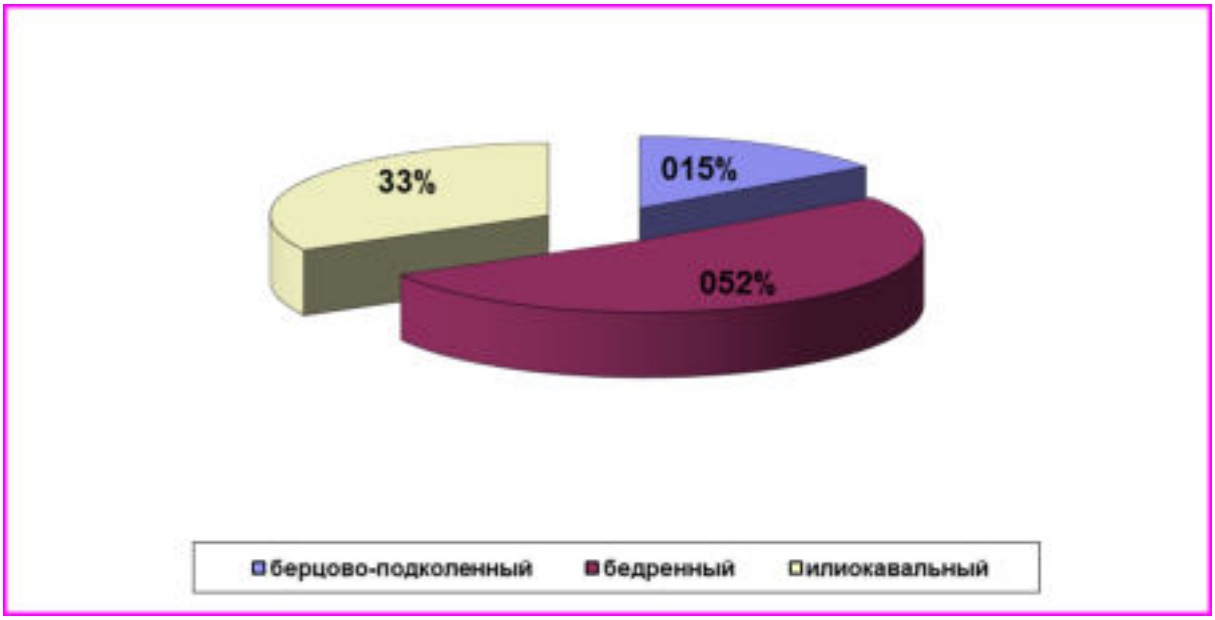

Fig. 1. Localization of thrombosis by segments (in %).

The left lower limb was affected more than the right one (Fig.2). Left-sided localization of the pathological process was observed in 195 (50.7%) patients, and right-sided localization was observed in 165 (42.8%), which coincides with the data of other authors and is associated with difficulty in blood outflow in the area of the left common iliac vein.

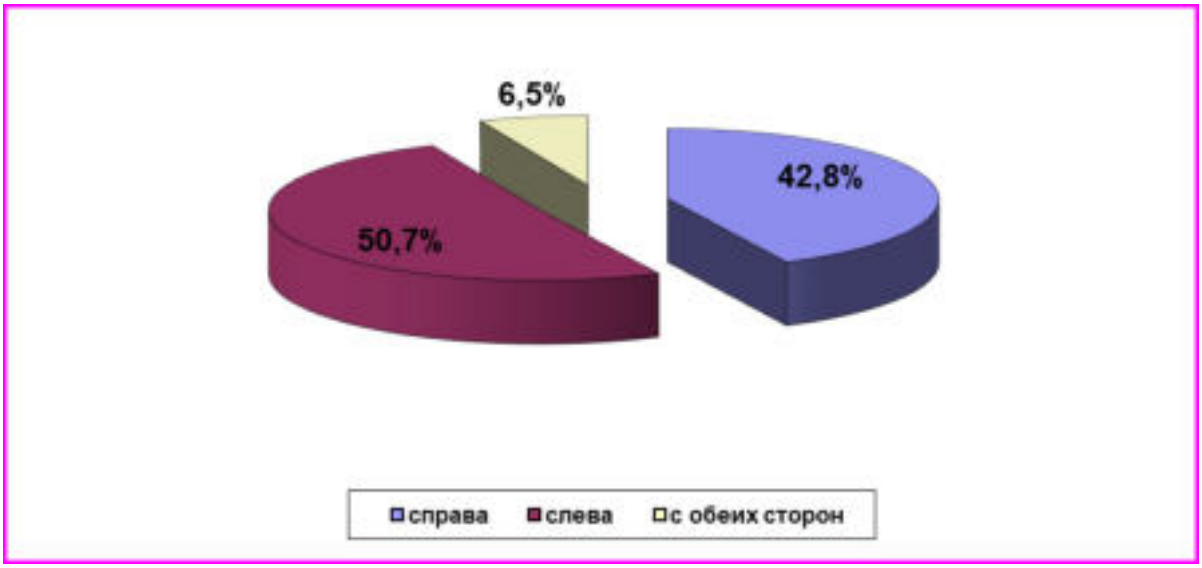

Fig. 2. The side of thrombosis lesion (in %).

Results

By the nature of the proximal part of the thrombus, a floating thrombus was found in 254 (66.0%) patients, a parietal thrombus in 93 (24.2%), and an occlusive thrombus in 38 (9.8%) patients (Fig.3).

Thrombosis on both sides was present in 25 (6.5%) patients.

It is noteworthy that the period between the appearance of the first clinical signs of thrombosis and the patient's admission to a specialized department was longer in patients with floating thrombi compared to patients with occlusive proximal border: 17.0 and 4.0 ($p < 0.05$), respectively.

A greater number of emboloid forms of thrombosis with late treatment of patients for specialized care may be due to the unhindered spread of thrombosis in the proximal direction and the repeated transition of the process from smaller diameter veins to larger ones.

Common forms of thrombosis were characteristic of patients (122 patients-31.6%) who sought medical help when severe swelling of the lower leg and thigh developed over several days or even weeks.

Asymptomatic phlebothrombosis on the contralateral limb was found in 22.1% of patients with acute deep vein thrombosis. The overwhelming majority of patients had asymptomatic thrombosis of a non-occlusive nature.

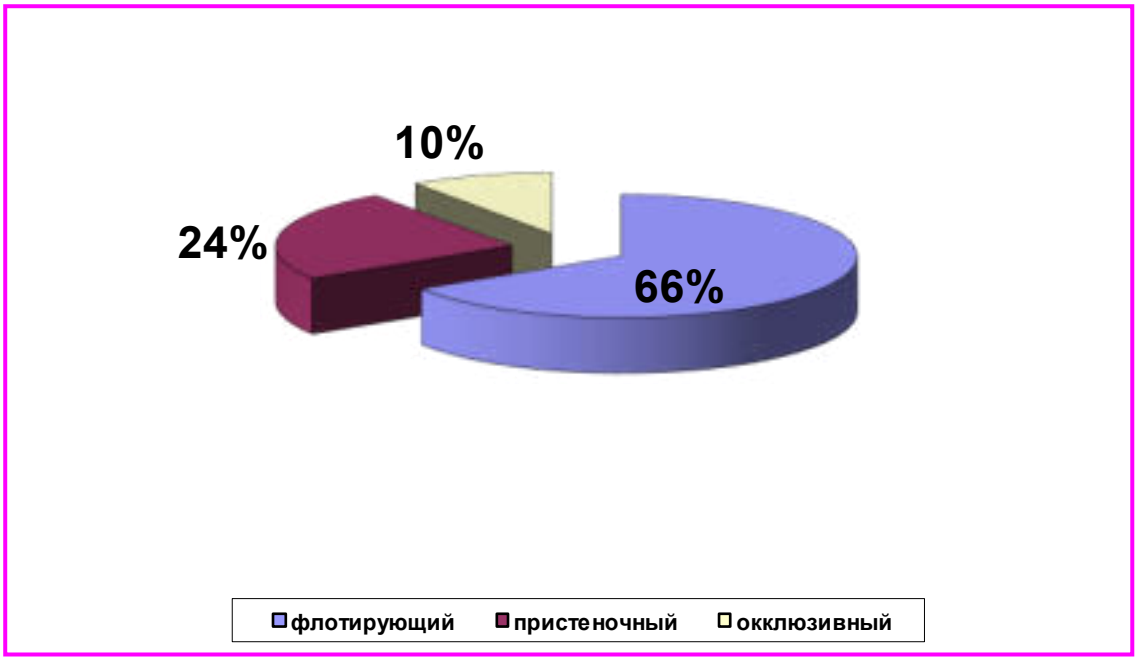

Fig. 3. The nature of the proximal part of the thrombus (in %).

In addition, in 8 patients (2.1%), we observed multifocal thrombosis, when the primary foci of thrombosis were located in two or three areas of the venous system.

With non-occlusive floating thrombi fig. 4, soldered to the vascular wall only in the distal part of the affected vein. Such thrombi are freely located in the lumen of the vessel, mobile in a transverse direction with respect to the axis of the vessel. They appear to be embolitic, since they can fragment and cause the occurrence of pulmonary thromboembolism. That is why their detection usually requires emergency measures to prevent possible embolization of the small circle.

An absolutely reliable sign of a floating thrombus when examined in B-mode is the absence of fixation to the walls of the vein and the detection of its movements in the lumen of the vessel in the transverse, and sometimes in the longitudinal direction. In some cases, with a noticeable difference in the diameters of the vein and the proximal part of the thrombus, the absence of its adherence to the wall is clearly noticeable both during longitudinal and transverse scanning (Fig. 5).

With the help of ultrasound, we detected a floating thrombus in 254 (66.0%) patients out of 385. At the same time, the movement of thrombotic masses in the

transverse direction with respect to the axis of the vessel was detected. The floating part of the thrombus moves asynchronously with the vein wall.

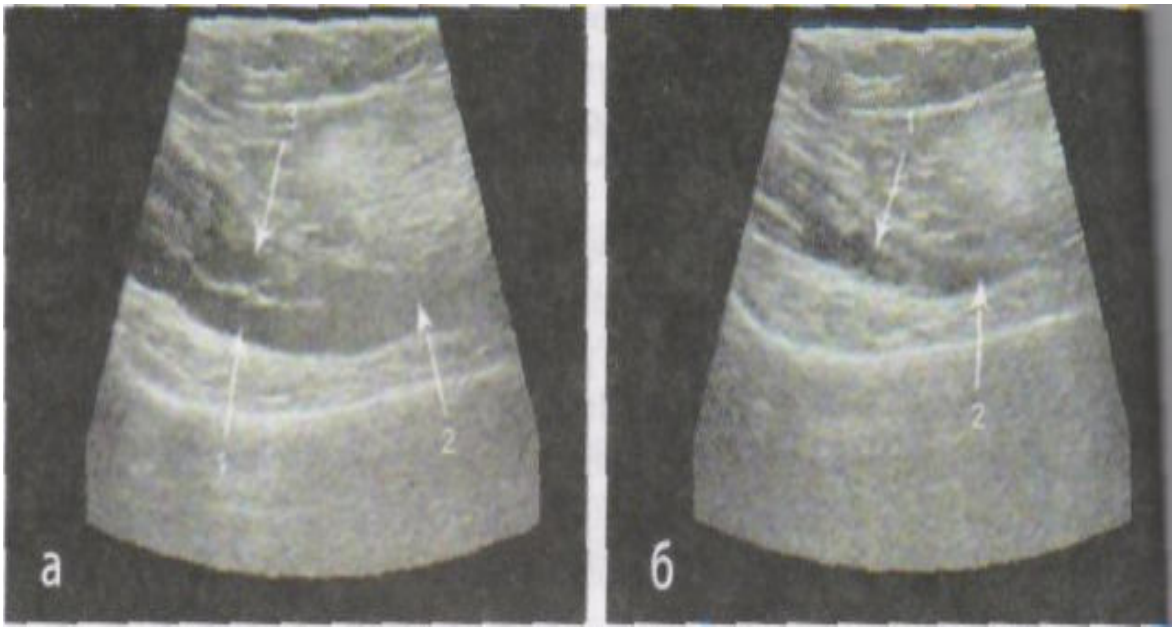

Fig. 4. Change in the lumen of a non-occlusively thrombosed vein.

To finally clarify the nature of the thrombus and exclude its floating nature, a Valsalva sample was used. The Valsalva test makes it possible to finally find out whether the proximal part of the thrombus is fixed to the vein wall or not (Fig. 6).

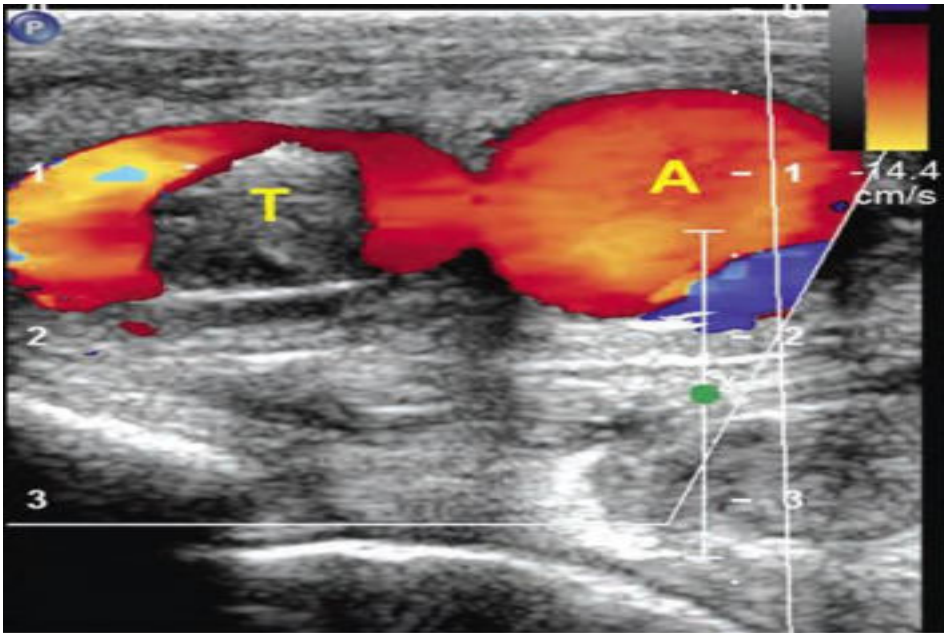

Fig. 5. Floating thrombus of the superficial femoral vein

Often, at the height of the Valsalva sample, the floating part of the thrombus is clearly visualized throughout. Under the same conditions, the parietal thrombus does not move away from one of the vessel walls and moves synchronously with it,

and with an occlusive lesion, the thrombosed vein at the height of the sample does not change its diameter at all.

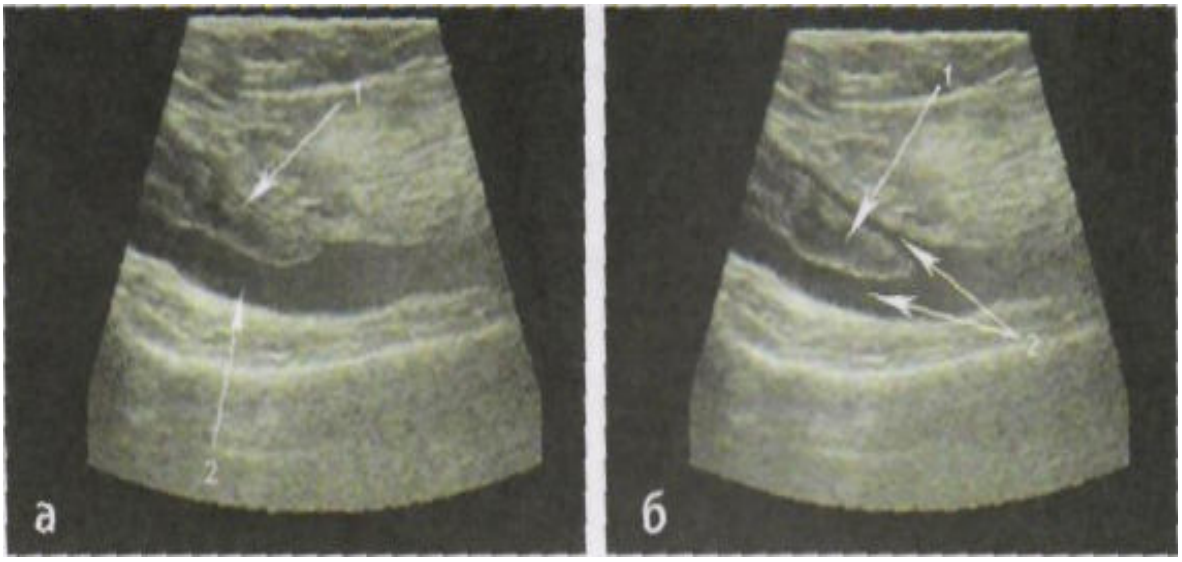

Fig. 6. Detection of a floating thrombus during the Valsalva test

Sometimes only signs of pulmonary embolism may indicate their presence. Usually, the site of primary thrombosis is the flap of the venous valve and the valvular sinus, i.e. regions in which the blood flow rate is extremely low.

In the dynamic observation of operated patients, we tried to establish the echographic features of blood clots, with the help of which it was possible to assess the probability of embolism. The localization and length, the ratio of the sizes of the base, middle part and tip of the floating part of the thrombus, its echostructure and the nature of the external contour, as well as the degree of mobility of thrombotic masses were evaluated.

In patients with a floating tip, thrombus embolism was observed in 34 (13.4%) of 254 patients. Thus, embolic complications both at the time of admission to the hospital and during dynamic observation prevailed in groups with parietal and floating thrombi. Under dynamic observation, the maximum number of embolic complications was determined in the group with the floating character of the proximal border.

More than half of the floating blood clots were located in the femoral segment, with 76.4% of them in the common femoral vein. Such a frequent localization of floating blood clots in the common femoral vein is probably due to

the fact that the deep femoral vein and the large subcutaneous vein flow into it, which in femoral-popliteal phlebothrombosis act as the main collateral outflow routes. Obviously, the intense flow of blood from these veins prevents the fixation of thrombotic masses to the walls of the vein.

Blood clots located in the superficial femoral and popliteal veins have never led to embolic complications. Thus, one of the conditions for embolic complications is an intense blood flow that takes place in the proximal parts of the inferior vena cava system.

The length of the unfixed part of the thrombus varied from 2.0 to 20.0 cm. In 87 (22.6%) patients, the base of the floating thrombus was smaller in diameter than its middle part and tip. However, we did not obtain a statistically significant dependence of embolic complications on the length of the floating part ($g = 0.14$ at $p > 0.05$) and the presence of a narrow thrombus base ($g = 0.04$ at $p > 0.05$).

It is logical to assume that the probability of separation of thrombotic masses and their migration into the pulmonary arteries is greater the more pronounced the oscillatory movements of the thrombus. According to our data, the degree of flotation of thrombotic masses can be estimated as insignificant, moderate and pronounced (Fig.7).

In 56 (22.0%) patients, pronounced mobility of thrombotic masses was observed with calm breathing and even with respiratory retention. In 138 (54.4%) cases, moderate thrombus mobility was determined only during functional tests – compression by a sensor and forced breathing. In the remaining 60 cases (23.6%), there was a predominant displacement of the vein walls relative to the thrombotic masses during functional tests, the mobility of the thrombus itself was minimal. Embolic complications, according to our data, were observed much more often with pronounced mobility of thrombotic masses.

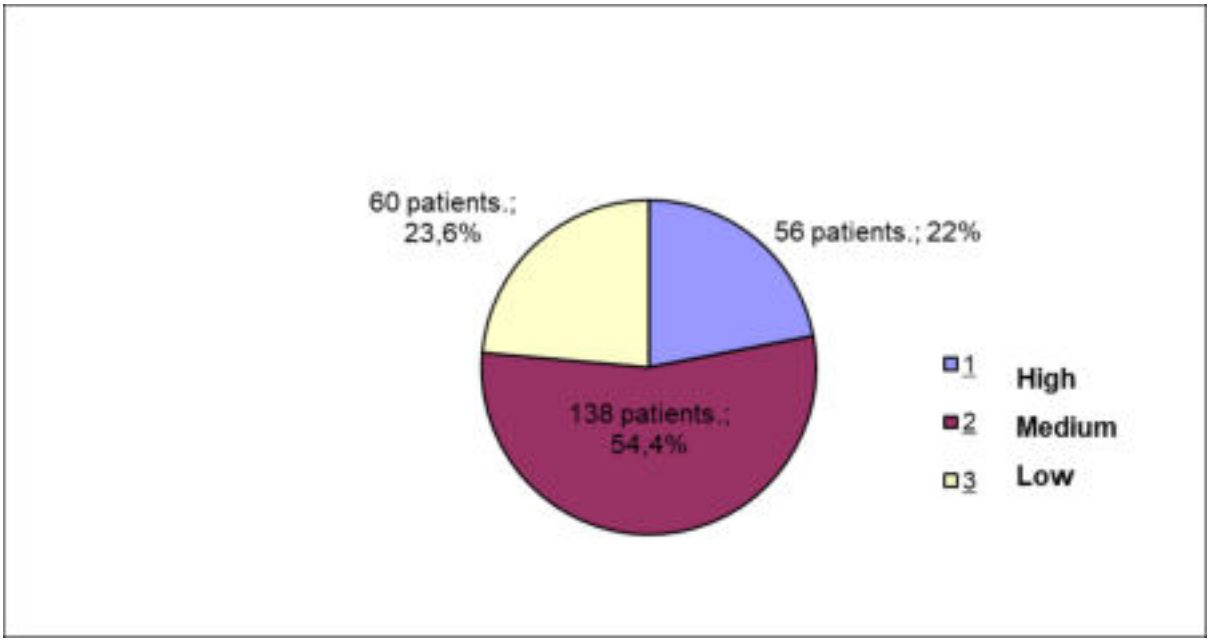

Fig. 7. Mobility of thrombotic masses and the frequency of embolic complications in thrombosis with a floating tip.

A floating thrombus in the femoral vein may originate from a large thrombosed tributary. At the same time, the trunk of the large subcutaneous vein is passable and does not contain blood clots (Fig. 8).

But, of course, the danger of pulmonary embolism is most likely when thrombosis, spreading along the subcutaneous highway in the proximal direction, passes to the femoral vein through the saphenofemoral junction.

In this case, duplex scanning accurately determines the localization of the tip of the thrombus, which is usually freely located in the lumen of a deep vein and is not fixed to the walls of the vessel. A floating thrombus can be of considerable size, spreading to the external iliac vein.

The extent of the thrombus located in the deep venous system directly affects the operative access and the nature of the intervention, which may vary significantly depending on the data obtained.

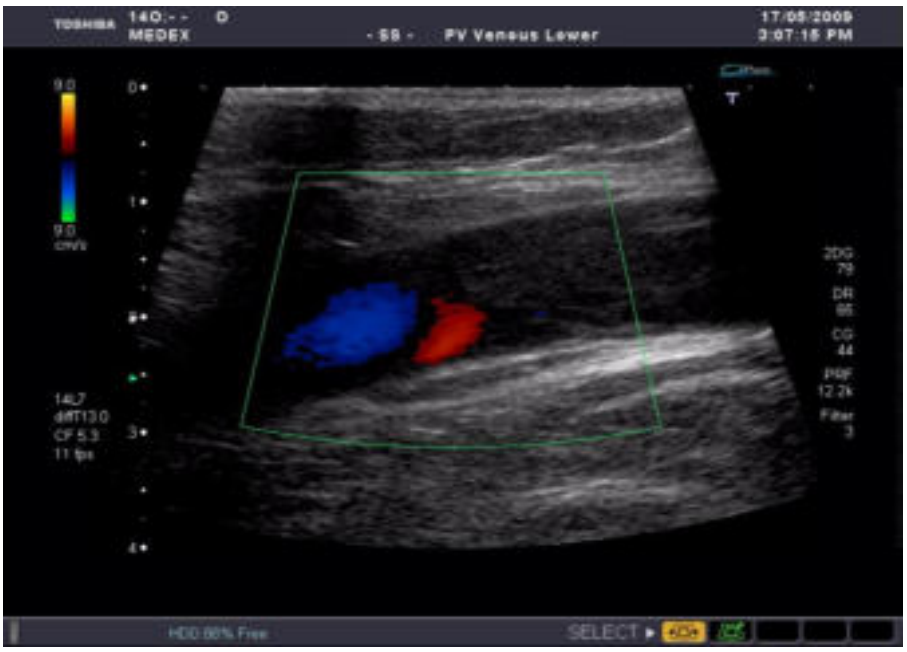

Fig. 8. A floating thrombus emanating from a large thrombosed tributary of the great saphenous vein and spreading to the saphenofemoral anastomosis. The trunk of the large saphenous vein does not contain blood clots.

In all cases of thrombophlebitis, especially with its ascending nature, as well as thrombotic lesions of the fustular tributaries and suprapubic veins, the fustular section of the large saphenous vein should be examined most carefully. When a blood clot is located in this zone, the distance from it to the confluence of the large subcutaneous and femoral veins is measured.

Conclusions

Based on the study of USAS in the dynamic observation of our patients, we believe that emboloid venous thrombosis has the following features:

1) The location of the floating thrombus above the upper third of the lower leg;

2) The presence of growing blood clots spreading both in the proximal and distal direction;

3) Weak connection of the thrombus with the vascular wall and the presence of blood flow in the thrombosed vein.

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ПРОГНОЗИРОВАНИЕ РИСКА ОСТРОГО ТРОМБООБРАЗОВАНИЯ ВЕН НИЖНИХ КОНЕЧНОСТЕЙ

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Резюме

Цель. Выявить основные прогностические факторы риска острого тромбоза вен нижних конечностей.

Материалы и методы исследования. В отделении сосудистой хирургии Национального госпиталя Министерства здравоохранения Кыргызской Республики за период с 2010 по 2018 год под нашим наблюдением находилось 1259 больных с острым тромбозом вен нижних конечностей.

Результаты. Основными факторами риска острого тромбоза вен нижних конечностей были варикозная болезнь (38,5%), большие операции при патологии органов брюшной полости (8,9%), беременность и роды (8,4%), травмы (5,7%), злокачественные новообразования (6,3%), КБС ГБ (11,7%), анемия (2,2%). Необходимо отметить, что у 231 (18,3%) больных не смогли указать истинный фоновый фактор развития у них острого тромбоза вен нижних конечностей.

Выводы:

1) У женщин, по сравнению с мужчинами, частота заболеваемостинесколько выше и составила соотношение 1,9:1. Эта тенденция наиболее выражена в трудоспособном возрасте от 40 до 60 лет.
2) Неблагоприятным признаком в отношении риска тромбообразования после операции можно считать сочетание более чем 15%-го увеличения числа тромбоцитов, повышение уровня тромбинемии в 2,5-3 раза и сохранение его в последующие сроки, дискоординацию в системе естественных антикоагулянтов. Безусловно, свой вклад в формирование протромботической тенденции также вносит наличие воспалительной реакции.
3) Полученные результаты предполагают необходимость внедрения в практику динамического гемостазиологического мониторинга для каждого хирургического больного с высокой степенью риска развития ВТЭО, который включает в себя полноценное обследование, проводимое на строго определенных временных этапах (до операции, в первые сутки после операции, на 7-14-е сутки после операции).

Ключевые слова: острый тромбоз вен, гемостаз, тромбоцитемия, обширные операции брюшной полости, нижние конечности.

PREDICTION OF THE RISK OF ACUTE VENOUS THROMBOSIS OF THE LOWER EXTREMITIES

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Purpose. To identify the main prognostic risk factors for acute venous thrombosis of the lower extremities.

Materials and methods. In the Department of Vascular Surgery of the National Hospital of the Ministry of Health of the Kyrgyz Republic for the period from 2010 to 2018, 1259 patients with acute venous thrombosis of the lower extremities were under our supervision.

Results. The main risk factors for acute venous thrombosis of the lower extremities were varicose veins (38.5%), major operations for abdominal pathology (8.9%), pregnancy and childbirth (8.4%), trauma (5.7%), malignant neoplasms (6.3%), CHD HD (11.7%), anemia (2.2%). It should be noted that in 231 (18.3%) patients, they could not indicate the true background factor for the development of acute venous thrombosis of the lower extremities.

Conclusions:

1. In women, compared with men, the incidence rate is slightly higher and amounted to a ratio of 1.9:1. This trend is most pronounced in the working age from 40 to 60 years.

2. An unfavorable sign in relation to the risk of thrombosis after surgery can be considered a combination of more than a 15% increase in the number of platelets, an increase in the level of thrombinemia by 2.5-3 times and its preservation in subsequent periods, discoordination in the system of natural anticoagulants. Of

course, the presence of an inflammatory reaction also contributes to the formation of a prothrombotic tendency.

3. The obtained results suggest the need to introduce dynamic hemostasiological monitoring into practice for each surgical patient with a high risk of developing VTEC, which includes a full-fledged examination conducted at strictly defined time stages (before surgery, on the first day after surgery, on the 7th-14th day after surgery).

Keywords: acute venous thrombosis, hemostasis, thrombocytemia, extensive abdominal surgery, lower extremities.

Introduction

The global prevalence of DVT is 100 people per 100,000 inhabitants per year. The incidence of DVT and its recurrence is higher in men than in women. However, due to the risk factors associated with reproduction (i.e., pregnancy, puerperium, and oral contraceptives) the rates are higher in young women. Likewise, it has been identified more frequently in the African-American and Hispanic ethnic communities than in the Caucasian [1-4].

In an Indonesian research, overall, the incidence of DVT in eligible and evaluable patients was 37.1% and 40.3%, respectively. Mean (SD) Wells score and bedridden days were 3 (1.20) and 9 (6.89) [5].

PREFER VTE was a prospective, observational study, conducted in 7 European countries, designed to provide data concerning treatment patterns, resource utilization, mortality, and QoL. Health-related QoL (HrQoL) —as measured by the EuroQoL 5-Dimension 5-Level instrument (EQ-5D-5L)—was analyzed using Tobit regression with repeated measures, assessing the impact of baseline characteristics stratified by cancer activity. At baseline, patients with DVT had a 0.14 lower EQ-5D-5L index score (0.72 for total sample) compared to the reference UK population (0.85). The EQ-5D-5L index score improved from baseline to 12 months in patients with active cancer (from 0.70 to 0.79) and those without (0.72-0.87); 7.3% died within a year, a 5.2% excess mortality compared to

the age- and gender-adfjusted general population. The 12-month mortality rate of DVT varied between 2.9% in the pooled data from Germany, Switzerland, or Austria and 15.4% in Italy. Furthermore, the mortality rate differed between patients with active cancer and those without (42.9% vs 4.7%). Deep vein thrombosis is associated with a substantial burden of illness in terms of HrQoL at baseline, which following treatment normalizes after 12 months and has a significant mortality rate. In addition, active cancer has a significant impact on mortality and the HrQoL of patients with DVT [6].

Despite the prevalence and associated morbidity of DVT, the underlying causes are not well understood. However, without increasing the understanding of risk factors of DVT, it is impossible to talk about its effective prevention [7-8].

Materials and methods

In the Department of Vascular Surgery of the National Hospital of the Ministry of Health of the Kyrgyz Republic for the period from 2010 to 2018, 1259 patients with acute venous thrombosis of the lower extremities were under our supervision.

The distribution of patients by gender and age is given in Table 1.

Table 1

Distribution of patients by gender and age

Sex	**Total patients**								
	abs. number	**% %**	**Up to 20**	**21-30**	**31-40**	**41-50**	**51-60**	**61-70**	**Older than 71**
Men	428	34,00	6	33	62	82	121	95	29
Women	831	66,00	11	50	115	132	214	147	162
Total	1259	100	11	53	114	138	216	156	191
			1,35	6,59	14,06	17,00	26,61	19,22	15,17

Table 1 shows that there were 428 men (34%) and 831 women (66%). The patients ranged in age from 18 to 79 years. The main number of them were young,

able-bodied patients. The average age was 40.19+ 1.16 years.

The duration of the disease ranged from several days to 30 years. The average duration of the disease was 8.9 + 0.9 years.

201 patients (16%) had concomitant diseases. Diseases of the cardiovascular system and respiratory organs (hypertension, atherosclerosis, coronary heart disease, pneumosclerosis) prevailed among them, requiring careful preoperative preparation.

Upon careful examination and examination, we identified provoking risk factors that were the cause of venous thrombosis of the lower extremities (Table 2.).

Table 2

Factors provoking the development of acute venous thrombosis of the lower extremities

Provoking factor	**Number of patients**	
	Abs. number	**%**
Pregnancy and childbirth	106	8,4
Limb injury	71	5,7
Operations	111	8,9
Malignant neoplasms	79	6,3
Varicose veins	487	38,5
CHD HD	147	11,7
Anemia	27	2,2
Couldn't indicate a reason	231	18,3
Total	1259	100

The main risk factors for acute venous thrombosis of the lower extremities were varicose veins (38.5%), major operations for abdominal pathology (8.9%), pregnancy and childbirth (8.4%), trauma (5.7%), malignant neoplasms (6.3%), CHD HD (11.7%), anemia (2.2%

Analyzing the data given in the table, it should be noted that in 231 (18.3%) patients they could not indicate the true background factor for the development of acute venous thrombosis of the lower extremities, which fully corresponds to the

literature data studied on this issue.

To achieve this goal and task, our patients were divided into two groups. The first group included 597 patients (47.4%) with acute venous thrombosis of the lower extremities operated on in the period from 2010 to 2015, for whom the complex of measures for the prevention of thromboembolic complications was initiated in the preoperative period and continued at all stages of surgical treatment, up to the day of discharge from the hospital (the main group).

Of them 123 patients who underwent abdominal cavity operations were treated in the surgical department of the NH of the Ministry of Health of the Kyrgyz Republic.

The provoking backgrounds of the development of acute venous thrombosis of the lower extremities in these patients and the qualitative characteristics of moderate and high risk of PE are presented in Table 3.

Table 3

Characteristics of surgical patients by pathology and degree of risk of VTEC development

Nature of pathology	**Degree of risk (n=123)**			
	moderate		**high**	
	abs. h.	%	abs. h.	%
Peptic ulcer of the stomach and duodenum	34	27,6	14	11,4
Echinococcosis of the liver	16	13,0	8	6,5
Malignant neoplasms of the abdominal cavity	39	31,8	12	9,7
Total	89	72,4	34	27,6

The age of the patients ranged from 21 to 83 years.

It should be noted that the average age was 49+5 years. The number of men and women was distributed respectively: 51 (41.5%) and 72 (58.5%).

In order to stratify patients and determine the degree of risk of developing VTE, when studying anamnestic data, complaints and the condition of patients, a "screening card of examination of patients" was filled in, which included the

necessary information at all stages of hospital stay up to discharge. During the initial examination, the risk factors for the development of PE were clarified, including signs of lower limb vein disease, respectively, the stage of chronic venous insufficiency according to the clinical and pathological classification CEAP, as well as the degree of obesity.

The study of the state of the hemostasis system was carried out in 123 patients (main group) with acute venous thrombosis of the lower extremities who underwent abdominal surgery and was studied at three stages of hospital stay: 1st - before surgery, 2nd - from the 7th to the 14th day of the postoperative period, 3rd - before discharge from

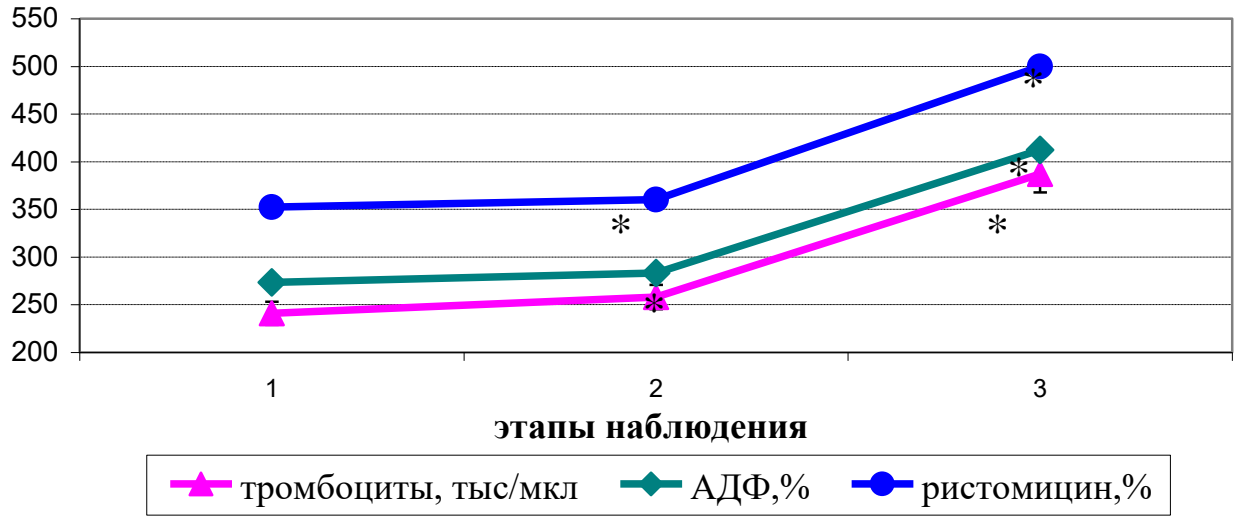
Of 123 patients, 48 patients were operated on for complicated forms of gastric and duodenal ulcer, 24 – with echinococcosis of the liver and 51 - with malignant diseases of the abdominal cavity.

In order to prevent postoperative VTEC, pathogenetically justified methods of accelerating venous blood flow in the lower extremities were used: medical elastic compression products: elastic bandages of long extensibility, or antiembolic (hospital) stockings of graduated compression and pneumatic sequential compression of the lower extremities.

Basic pharmacoprophylaxis included heparins of various molecular weights (unfractionated heparin, sodium enoxaparin, calcium nadroparin).

In the main group, the state of the hemostasis system at all stages of observation was characterized as "compensated normocoagulation with an extremely moderate tendency to hypercoagulation."

In a dynamic study, the initial low platelet count increased slightly in the first 2 weeks after surgery, and at a later date showed a sharp increase, almost 1.5 times (Fig.1).



*Significant difference from the previous stage of observation ($p<0.05$).

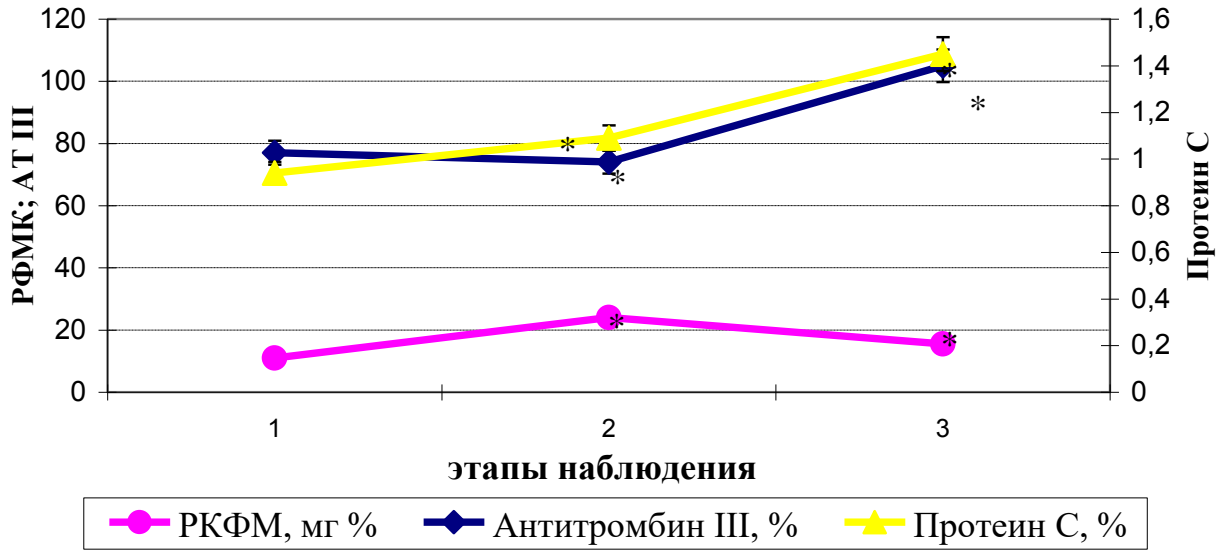
Fig. 1. Dynamics of the state of platelet hemostasis in the main group.

Results

The overall functional activity of platelets, determined by the degree of ADP-induced aggregation, was normal at all stages. However, attention is drawn to a persistent increase in ristomycin-induced aggregation, indicating an increased expression of Willebrand factor and/or platelet membrane receptors for this factor. Initially, moderate thrombinemia (a slight increase in the concentration of RFMC) and a decrease in the activity of natural anticoagulants were noted in the main group, as shown in Figure 2.

In the first 2 weeks after surgery, patients in the main group showed a significant increase in thrombinemia (2.1 times), compensated by a constant level of ATIII and an increase in the activity of protein C. A further increase in the power of anticoagulant systems led to a decrease in the level of thrombinemia.

The reasons for the revealed changes are obviously due to the development and preservation of signs of inflammation in the postoperative period for a long time. Attention is drawn to the continuing trend towards an increase in ESR within 2-3 weeks after surgery. Such an inflammatory response is a factor supporting the formation of thrombin, an increase in the concentration of fibrinogen and the activity of the Willebrand factor. It should be noted that in this group of patients there was a simultaneous depletion of fibrinolytic activity.



*Significant difference from the previous stage of observation ($p<0.05$).

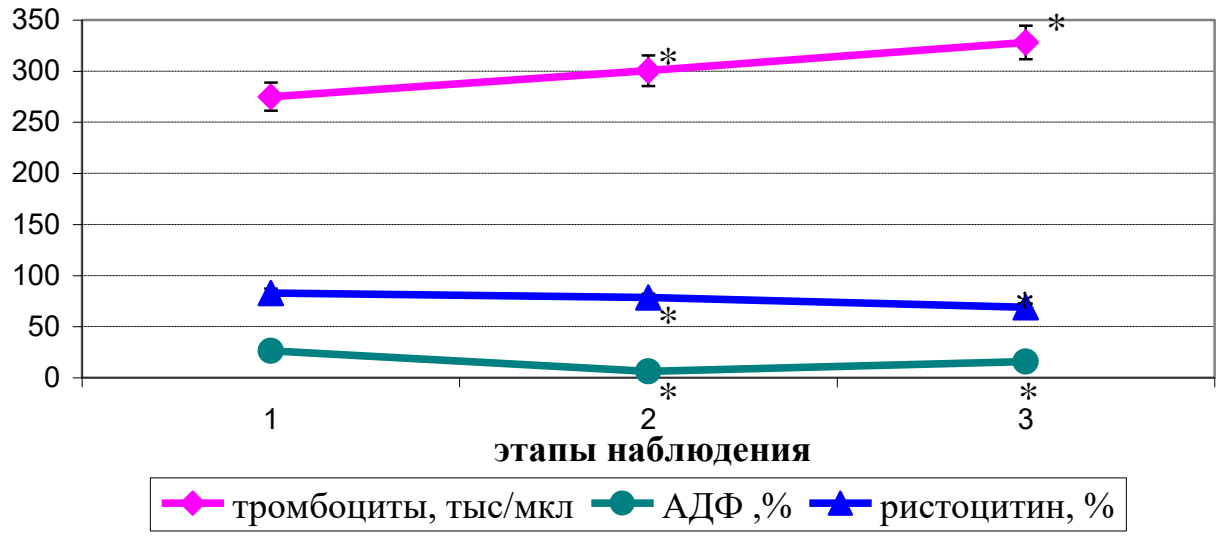
Fig. 2. Dynamics of RFMC concentration and activity of natural anticoagulants in the main group.

Nevertheless, such prothrombotic changes were adequately compensated by the strengthening of the system of natural anticoagulants. It cannot be excluded that the absence of hemoconcentration at all stages of observation also made a positive contribution to thromboprophylaxis.

Thus, the patients of the main group received adequate thromboprophylaxis and at the same time had significant compensatory reserves.

In patients of the comparison group with thrombosis in the venous system of the lower extremities at the initial stage of the postoperative period, the state of normocoagulation was initially noted for 10-14 days, which was then replaced by hypercoagulation, which persisted later.

In this group, there was a 15% increase in the number of platelets immediately after surgery and a continued increase in the concentration of these cells in the future, which is shown in Figure 3.



*Significant difference from the previous stage of observation ($p<0.05$).

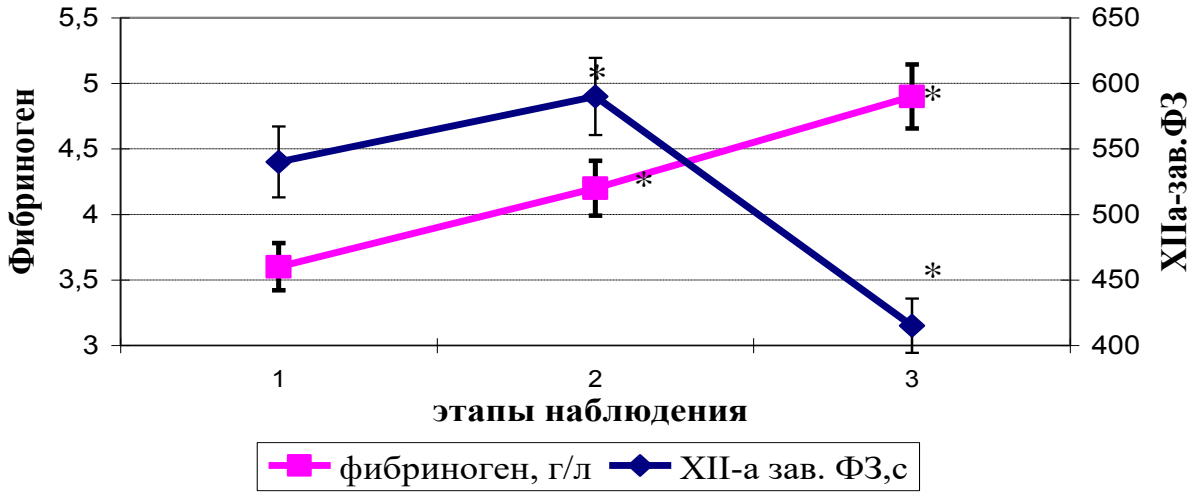
Fig. 3. Dynamics of the state of the platelet link of hemostasis in patients with thrombosis in the control group.

It should be noted that the low values of this indicator by the end of the hospital period can be explained by the continued consumption of platelets (their involvement in the process of hemocoagulation) against the background of persistent hypercoagulation. In turn, the overall aggregation activity decreased slightly, and then reached the initial level. At the same time, ristomycin-induced aggregation was increased both before and during the first 2 weeks after surgery, decreasing moderately by the 21st-28th days of the postoperative period.

The concentration of fibrinogen in patients of the comparison group showed a persistent tendency to increase at the postoperative stages of follow-up. The dynamics of fibrinogen concentration and fibrinolytic activity in patients with thrombosis is shown in the graph (Fig. 4.).

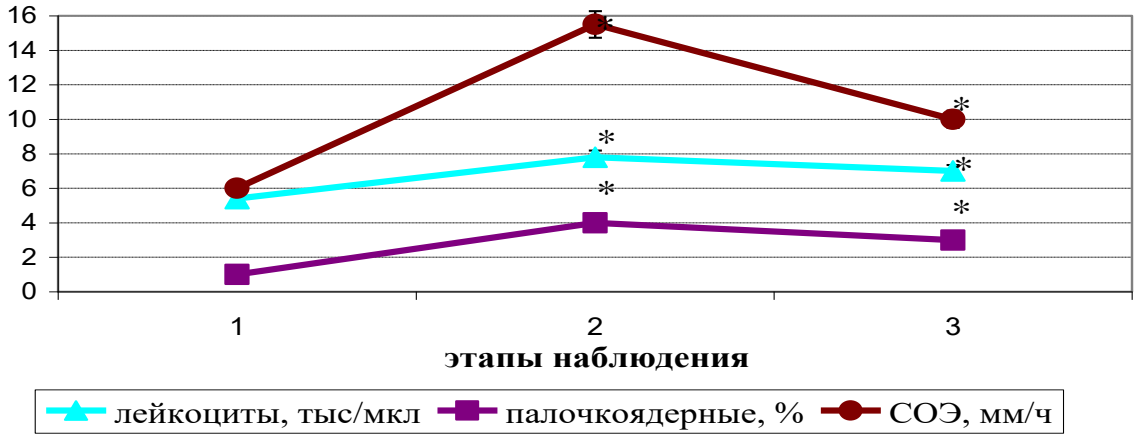
Fibrinolytic activity in the first 2 weeks showed a downward trend, which could be one of the causes of thrombosis.

Another reason for thrombosis in the first 2 weeks after surgery may be the development of a pronounced inflammatory response during these periods, primarily manifested by an increase in ESR and the number of rod-shaped forms of leukocytes, which is shown in Figure 5.



*Significant difference from the previous stage of observation ($p<0.05$).

Fig. 4. Dynamics of fibrinogen concentration and fibrinolytic activity in patients with thrombosis in the comparison group.



*Significant difference from the previous stage of observation ($p<0.05$).

Fig. 5. Dynamics of the inflammatory response in patients with thrombosis in the comparison group.

At a later date, as can be seen, the severity of the inflammatory reaction decreased somewhat, which, apparently, was sufficient to prevent cases of repeated thrombosis.

Conclusions

1. In women, compared with men, the incidence rate is slightly higher and amounted to a ratio of 1.9:1. This trend is most pronounced in the working age from 40 to 60 years.

2. An unfavorable sign in relation to the risk of thrombosis after surgery can be considered a combination of more than a 15% increase in the number of platelets, an increase in the level of thrombinemia by 2.5-3 times and its preservation in subsequent periods, discoordination in the system of natural anticoagulants. Of course, the presence of an inflammatory reaction also contributes to the formation of a prothrombotic tendency.

3. The obtained results suggest the need to introduce dynamic hemostasiological monitoring into practice for each surgical patient with a high risk of developing VTEC, which includes a full-fledged examination conducted at strictly defined time stages (before surgery, on the first day after surgery, on the 7th-14th day after surgery).

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РЕЗЕКЦИЯ ТРОМБА НИЖНЕЙ ПОЛОЙ ВЕНЫ НА ФОНЕ РАКА ПОЧКИ

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Резюме

Цель. Приведение данных клинического случая по резекции тромба нижней полой вены, осложненной раком почки.

Материалы и методы. Приводится наше клиническое наблюдение пациента с опухолевым флотирующим тромбозом наддиафрагмального отдела нижней полой вены при опухолевом поражении почек. Пациент Б.К. 62 года, женского пола. Поступила с предварительным диагнозом: Cancer правой почки C2T3NXMX.

На консилиуме было решено оперативное лечение: Тромбоэктомия из наддиафрагмального сегмента НПВ. ТРЭКС.

Результаты. Послеоперационный период у пациента протекал гладко, без осложнений. Выписалась из стационара на 7 сутки после операции.

Выводы: таким образом, представленный больной является клинической иллюстрацией возможного осложнения рака почки в виде эмбологенного опухолевого тромбоза нижней полой вены. Высокий уровень тромбоза, доходящий почти до правого предсердия, показывает высокий риск у подобных пациентов при применении как эндоваскулярной хирургии, так и обычных открытых операций. В литературе описаны случаи и более высокого роста тромба вплоть до интравентрикулярного расположения. Однако такие случаи достаточно редки. Описание приведенного клинического случая поможет в анализе и выборе тактики ведения подобных пациентов в будущем.

Ключевые слова: опухолевый тромб, эндоваскулярная тромбэктомия

RESECTION OF A THROMBUS OF THE INFERIOR VENA CAVA AGAINST THE BACKGROUND OF KIDNEY CANCER

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Annotation

Objective. Presentation of clinical case data on resection of a thrombus of the inferior vena cava complicated by kidney cancer.

Materials and methods. Our clinical observation of a patient with tumor floating thrombosis of the naddiaphragmal inferior vena cava with a tumor lesion of the kidneys is given. Patient B.K. is 62 years old, female. She was admitted with a preliminary diagnosis: Cancer of the right kidney C2T3NXMX.

At the consultation, surgical treatment was decided: Thromboectomy from the super-diaphragmal segment of the NSAID.TREX.

Results. The postoperative period of the patient proceeded smoothly, without complications. She was discharged from the hospital on the 7th day after the operation.

Conclusions: thus, the presented patient is a clinical illustration of a possible complication of kidney cancer in the form of embologenic tumor thrombosis of the inferior vena cava. A high level of thrombosis, reaching almost to the right atrium, shows a high risk in such patients when using both endovascular surgery and conventional open operations. The literature describes cases of higher growth of a blood clot up to an intraventricular location. However, such cases are quite rare. The description of the given clinical case will help in the analysis and selection of tactics for the management of such patients in the future

Keywords: tumor thrombus, endovascular thrombectomy

Introduction

Renal cell carcinoma (RCC) represents the most common form of kidney cancer, with a peak incidence in the sixth and seventh decade of life and a 1.5:1 male predominance [1].

Kidney cancer has a preference for invading the venous system in 10% of cases, with the possibility of affecting the renal vein and the inferior vena cava with the presence of tumor thrombi [2-5].

Embologenic, floating thrombus is a risk factor for pulmonary embolism (PE) [6-7].

Between 5 and 10% of in-hospital deaths are a direct result of PE. In the United States, PE is responsible for 100,000 deaths per year [8-10].

Materials and methods

This article presents our clinical observation of a patient with tumor floating thrombosis of the supra-diaphragmal inferior vena cava with a tumor lesion of the kidneys. Patient B.K. is 62 years old, female. She was admitted with a preliminary diagnosis: Cancer of the right kidney C2T3NXMX.

Ultrasound examination: in the subhepatic part of the inferior vena cava, a thrombus with a length of 9 cm, a thickness of 16.5 mm is determined, the lumen is incomplete, there is a parietal blood flow. The right kidney is enlarged 152x47mm, in the lower third a solid formation of 95x54mm with uneven contours is determined. An expanded vein is defined around the tumor, curved in the form of a loop covering the tumor from below and along the inner surface. Data for c-r of the right kidney, thrombosis of the inferior vena cava. The condition after supravaginal amputation of the uterus with appendages. Chronic cholecystitis.

ECG data: the rhythm is correct, sinus, heart rate-67, horizontal position of the EOS. Biochemical blood test: total protein - 80g/l, total bilirubin 15.0microns/l, thymol sample 2.0units, urea 4.0mmol/l, creatinine 61.0mmol/l, residual nitrogen 16.0mmol/L.

At the consultation, surgical treatment was decided: Thromboectomy from the supra-diaphragmatic segment of the IVC. TREX.

The first stage: the internal jugular vein was exposed for 6 cmd-12 mm veins, taken on 2 turnstiles, venotomy was performed for 4 cm, a conductor, catheter was carried out under the control of the scopia to the L3 level. Next, a retrograde cavography was performed: an angiogram in the lumen of the inferior vena cava contrasts with a tumor thrombus originating from the right renal vein

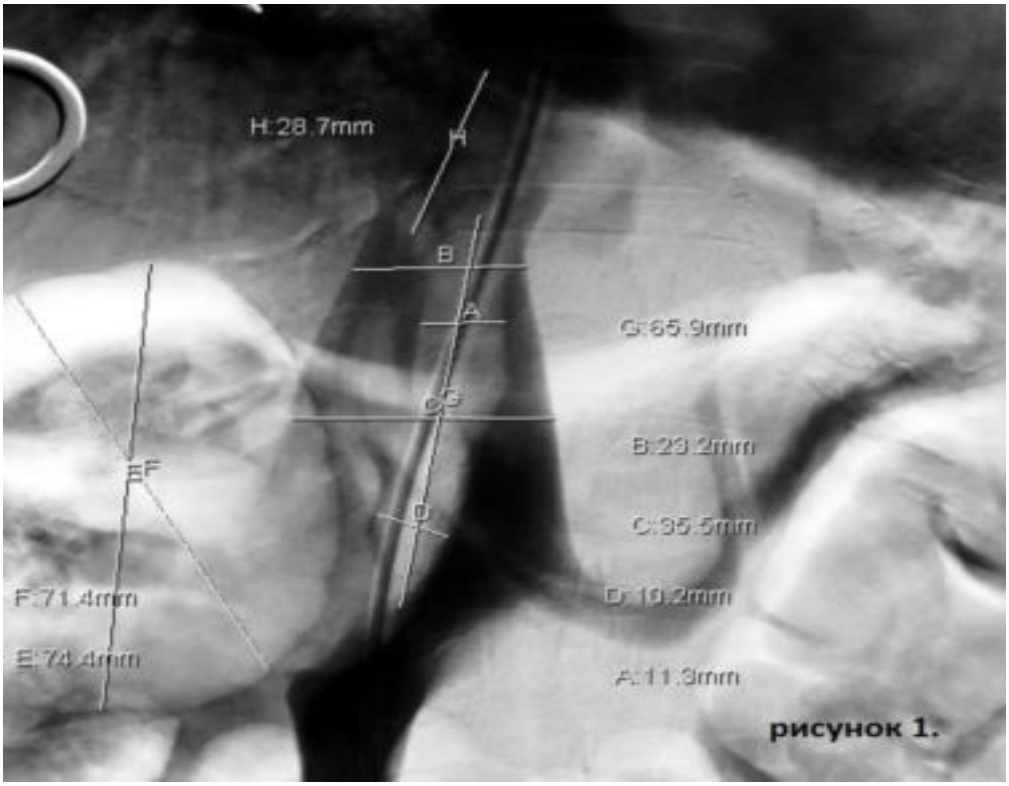

рисунок 1.

and the proximal end not reaching the mouth of the right atrium 28mm (Figure 1.)

The second stage: in the folded state, the thrombextractor was inserted through the conductor into the right internal jugular vein, passed through the SVC, RA, from


Рисунок 2.

the mouth of the confluence of the IVC into the right atrium, the TREX was straightened (Figure 2).

Results

Under the control of scopia, a hood was put on the floating part of the thrombus, the cutting end of the hood was cut off from the supposed mouth of the renal vein, and the thrombus was removed - 11 cm in size. It is worth noting that the extraction of the thrombus from the lumen of the vein was difficult due to the large size of the thrombus, despite the diameter of the vein of 12mm.

Macropreparation (Figure 3.) is an old tumor thrombus. With control contrast, the inferior vena cava and the left renal vein are passable (Figure 4.). There are no complications. A continuous suture was applied to the wall of the jugular vein with a thread of Prolene No. 6. Layered stitches on the wound, stitches

рисунок 3.

Рисунок 4.

on the skin. Aseptic dressing.

The next day, an operation was performed – a nephrectomy on the right with a pararectal access. After revision of the abdominal part of the inferior vena cava in the area of the confluence of the right renal vein for the germination of the oncoprocess into the vein wall. The vein wall is intact. A nephrectomy was performed.

The postoperative period of the patient proceeded smoothly, without

complications. She was discharged from the hospital on the 7th day after the operation.

Conclusions

The presented patient is a clinical illustration of a possible complication of kidney cancer in the form of embologenic tumor thrombosis of the inferior vena cava. A high level of thrombosis, reaching almost to the right atrium, shows a high risk in such patients when using both endovascular surgery and conventional open operations. The literature describes cases of higher growth of a blood clot up to an intraventricular location. However, such cases are quite rare. The description of the given clinical case will help in the analysis and selection of tactics for the management of such patients in the future.

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ХИРУРГИЧЕСКОЕ ПРОТЕЗИРОВАНИЕ ПРИ ЛОЖНОЙ АНЕВРИЗМЕ БРЮШНОГО ОТДЕЛА АОРТЫ (КЛИНИЧЕСКИЙ СЛУЧАЙ)

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Резюме

Цель. Проведение хирургического протезирования в случае ложной аневризмы брюшного отдела аорты.

Материалы и методы. Представленное клиническое наблюдение является случаем протезирования терминального отдела брюшной аорты. Пациентка Б.С. возраст – 11лет. Диагноз при поступлении: Гематома забрюшинного пространства слева. *Основной диагноз:* ложная аневризма инфраренального отдела брюшной аорты с угрозой разрыва. Вторичный катаральный аппендицит. Межпетлевые спайки. Мезаденит. Мешотчатая аневризма бифуркации брюшной аорты. Гематома забрюшинного пространства.

Было произведено оперативное лечение: 1. Лапаротомия. 2. Ликвидация ложной аневризмы инфраренального отдела брюшной аорты. 3. Протезирование брюшной аорты. 4. Аппендэктомия.

Результаты. Послеоперационный период у данного пациента протекал гладко, без осложнений. Пульсация на магистральных артериях на всех уровнях отчетливая. Была выписана на 13 сутки после операции, швы сняты. Дальнейшее наблюдение было предоставлено педиатрам, ангиохирургам.

Выводы. Хирургическое лечение аневризм торакоабдоминального отдела брюшной аорты у детей раннего возраста возможно с применением имплантатов. Несмотря на малый диаметр висцеральных и почечных артерий необходимо реконструктивно – восстановительные операции. Данный контингент пациентов требует постоянного динамического наблюдения за состоянием протезированного участка аорты, в связи с неуклонным ростом организма. При подозрении на повреждение сосудов в любом возрасте необходимо адекватное специализированное лечение.

Ключевые слова: ложная аневризма брюшной аорты, сосудистая хирургия.

SURGICAL PROSTHETICS FOR FALSE ANEURYSM ABDOMINAL AORTA (CLINICAL CASE)

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Annotation

Objective. Performing surgical prosthetics in case of a false abdominal aortic aneurysm.

Materials and methods. The presented clinical case is a case of prosthetics of the terminal abdominal aorta. Patient B.S. age – 11 years. Diagnosis upon admission: Hematoma of the retroperitoneal space on the left. The main diagnosis: a false aneurysm of the infrarenal abdominal aorta with the threat of rupture. Secondary catarrhal appendicitis. Inter-loop spikes. Mesadenitis. Baggy aneurysm of abdominal aortic bifurcation. Hematoma of the retroperitoneal space.

Surgical treatment was performed: 1. Laparotomy. 2. Elimination of a false aneurysm of the infrarenal abdominal aorta. 3. Prosthetics of the abdominal aorta. 4. Appendectomy.

Results. The postoperative period in this patient proceeded smoothly, without complications. Pulsation on the main arteries at all levels is distinct. She was discharged on the 13th day after the operation, the stitches were removed. Further observation was provided to pediatricians, angiosurgeons.

Conclusions. Surgical treatment of thoracoabdominal abdominal aortic aneurysms in young children is possible with the use of implants. Despite the small diameter of the visceral and renal arteries, reconstructive and reconstructive operations are necessary. This contingent of patients requires constant dynamic monitoring of the state of the prosthetic part of the aorta, due to the steady growth of the body. If vascular damage is suspected at any age, adequate specialized treatment is necessary.

Keywords: false abdominal aortic aneurysm, vascular

Introduction

False aneurysms of the aorta, known as pseudoaneurysms, are hematomas formed outside the aortic wall, resulting from transmural disruption with the leak contained by surrounding mediastinal tissues [1].

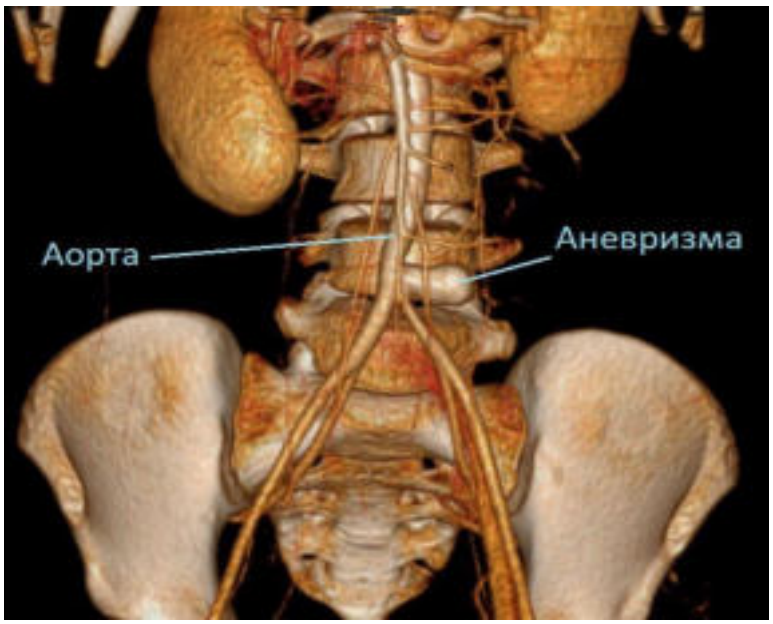
Aortic pseudoaneurysm is unique as the pulsatile hematoma escapes the vascular lumen through a defect on the vessel wall but contained by the surrounding perivascular adventitia or matrix. This in turn may lead to catastrophic vessel rupture with a near 100% fatality rate [2-3].

Early detection and timely intervention are the keys to optimal outcome [4-8].

Surgical treatments vary according to the features and locations of the pseudoaneurysm. Surgical challenges are frequent, especially in the presence of infection, prior cardiac surgery, and proximity of the pseudoaneurysm with the posterior sternal table making reentry particularly challenging. Less invasive options with coil embolization and pseudoaneurysm exclusion have also been reported. Few studies have addressed the treatment of this complication [9].

Materials and methods

The presented clinical case is a case of prosthetics of the terminal abdominal aorta.



There is no description of such operations in young children in literary sources. Next, we present our clinical experience:

Patient B.S. age – 11 years. Diagnosis upon admission: Hematoma of the retroperitoneal space on the left. The main diagnosis: a false aneurysm of the infrarenal abdominal aorta with the threat of rupture. Secondary catarrhal appendicitis. Inter-loop spikes. Mesadenitis. Baggy aneurysm of abdominal aortic bifurcation. Hematoma of the retroperitoneal space.

From anamnesis in 2017, she fell from a tree in the summer while picking apples. She was taken to the 3rd children's hospital. With a suspected rupture of internal organs. A laparotomy was performed and a retroperitoneal hematoma was found. Vascular surgeons were called to the operating room with suspected damage to the abdominal aorta and bleeding from it. The revision revealed a posttraumatic rupture of the posterolateral part of the abdominal aorta in the infrarenal segment, with the formation of a pulsating hematoma. Our surgeons eliminated the pulsating hematoma, sutured the wound of the abdominal aorta, and drained the retroperitoneal space. The postoperative period proceeded smoothly, the child was discharged in a satisfactory condition.

After eight months, the pain in the lower back area on the left began to bother. The parents turned to the pediatrician, then she was hospitalized for examination. Multispiral angiography of the aorta and its branches revealed a false

aneurysm of the infrarenal segment of the abdominal aorta.

Laboratory data from the patient before the operation: UAC from 12.03.2018: Hb-110g/l; Er.-3,7x1012; CP-0.9; Leukocytes – 4,0x109 ; p-2; c-36; E-6; m-2; l-59; ESR-10mm/h.

During the operation and the preoperative period, colloidal solutions were infused and hemodynamic parameters were corrected.

Surgical treatment was performed:

1. Laparotomy.
2. Elimination of a false aneurysm of the infrarenal abdominal aorta.
3. Prosthetics of the abdominal aorta.
4. Appendectomy.

From the protocol of the operation: After the treatment of the surgical field, a median laparotomy was performed, with excision of the old scar. In the course of hemostasis. The abdominal cavity was opened. The intestines are pushed up and to the right. During the revision, an aneurysmal sac 60x35mm was found along the left wall of the aorta. In an acute and blunt way, due to the adhesive process, with technical difficulties, the abdominal aorta was isolated above the aneurysmal sac with a diameter of 1 cm, bifurcation and iliac arteries on both sides – with a diameter of 6 mm, the iliac veins on both sides with a diameter of 1 cm., then the aneurysmal sac was revised, while the lower mesenteric artery passes over the aneurysmal sac, is tightly soldered to the wall, the latter is bluntly isolated and pushed away, with further isolation along the posterior wall of the aneurysmal sac, the ureter is exposed, which is also soldered to the wall, by blunt isolation and moved away. After isolation of the aneurysmal sac, the aorta above the lower mesenteric artery and the iliac arteries on both sides are clamped, the aneurysmal sac is opened, while there is an aortic defect 2.5-3.0 cm long, old organized blood clots in the aneurysmal sac, the latter are removed, the posterior wall of the aorta is tightly soldered to the spine – separated, there is practically no posterior wall, due to with what it was decided to perform prosthetics of the abdominal aorta. Then the abdominal aorta was crossed, the edges were refreshed, the distal part was almost

bifurcated, the proximal part was stitched and bandaged below the mesenteric artery, a longitudinal aortotomy was performed 1.5 cm long above the mesenteric artery, proximal anastomosis was formed, kapron (hair) No. 5 atraumatic thread, and distal anastomosis was extended end to end with atraumatic thread No. 5, ECOFLON prosthesis with a diameter of 10mm. The blood flow is started, the seams are sealed, the pulsation on the prosthesis and iliac arteries is distinct. Hemostasis control. The second stage of the operation to eliminate intestinal adhesions was provided to a team of pediatric surgeons.

Results

The postoperative period in this patient proceeded smoothly, without complications. Pulsation on the main arteries was distinct at all levels. She was discharged on the 13th day after the operation, the stitches were removed. Further observation was provided to pediatricians, angiosurgeons.

Conclusions

Surgical treatment of thoracoabdominal abdominal aortic aneurysms in young children is possible with the use of implants. Despite the small diameter of the visceral and renal arteries, reconstructive and reconstructive operations are necessary. This contingent of patients requires constant dynamic monitoring of the state of the prosthetic aortic area, due to the steady growth of the body. If vascular damage is suspected at any age, adequate specialized treatment is necessary.

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Вопросы Онкологии

ЛУЧЕВАЯ ТЕРАПИЯ ФОЛЛИКУЛЯРНОЙ ЛИМФОМЫ НА РАННИХ И ПОЗДНИХ СТАДИЯХ

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Цель: Оценить результаты лучевой терапии (ЛТ) фолликулярной лимфомы (ФЛ) при различных сценариях ведения.

Материалы и методы: Мы ретроспективно оценили последовательных пациентов с ФЛ, которые подверглись облучению в период с 2010 по 2018 год. У всех пациентов была подтвержденная биопсией ФЛ, и им была проведена позитронно-эмиссионная томография, хотя некоторые (35,3%) были повторно обследованы с помощью компьютерной томографии только после лечения. Ритуксимаб был доступен только пациентам с ФЛ после 2016 года.

Результаты: Были отобраны тридцать четыре пациента, средний возраст которых на момент постановки диагноза составлял 61,6 года (34-89 лет). Средняя продолжительность наблюдения составила 49,4 месяца. Большинство пациентов были женского пола (58,8%) и показали хорошие показатели по шкале Восточной кооперативной онкологической группы (ECOG) (ECOG 0-55,9%). Средняя общая выживаемость (OB) и выживаемость без прогрессирования составили 48,7 и 33,6 месяца соответственно, при этом было зарегистрировано четыре смертельных случая. Показатели ОС через 2 и 3 года составили 94,1% и 91,2% соответственно. У четырех пациентов наблюдалась трансформация в агрессивные лимфомы, и они прошли системное лечение на основе ритуксимаба. Выживаемость без трансформации составила 47,8 месяцев, и все пациенты с трансформированным заболеванием были живы на момент оценки. У пяти пациентов был рецидив в полевых условиях, у всех них также

был рецидив в других местах, и среднее время безрецидивной выживаемости составило 40,3 месяца. При оценке не было достигнуто никаких медианных конечных точек.

Выводы: ФЛ - это вялотекущая болезнь. Наши результаты показывают хорошие результаты у пациентов, получавших лучевую терапию, с низкой скоростью трансформации и отличным лечением рецидивов заболевания. RT является важной частью этих результатов.

Уключевые слова: Лучевая терапия; Фолликулярная лимфома; Индолентная лимфома.

RADIOTHERAPY FOR EARLY AND ADVANCED STAGES FOLLICULAR LYMPHOMA

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Objectives: To evaluate the results of radiotherapy (RT) for follicular lymphoma (FL) under different management scenarios.

Methods: We retrospectively assessed consecutive patients with FL who had undergone irradiation between 2010 and 2018. All patients had biopsy-proven FL and were positron emission tomography-staged, although some (35.3%) were reassessed with computed tomography after treatment alone. Rituximab was only available to FL patients after 2016.

Results: Thirty-four patients were selected, with a mean age at diagnosis of 61.6 years (34–89 years). The median follow-up duration was 49.4 months. Most patients were female (58.8%) and showed good performance on the Eastern Cooperative Oncology Group (ECOG) scale (ECOG 0-55.9%). The mean overall survival (OS) and progression-free survival were 48.7 and 33.6 months, respectively, with four deaths reported. OS rates at 2 and 3 years were 94.1% and 91.2%, respectively. Four patients showed transformation into aggressive lymphomas and underwent rituximab-based systemic treatment. Transformation-free survival was 47.8 months, and all patients with transformed disease were alive

at assessment. Five patients had in-field relapse, all of them also relapsed elsewhere, and the mean relapse-free survival time was 40.3 months. No median end points were reached on assessment.

Conclusion: FL is an indolent disease. Our findings show good outcomes for patients treated with radiation, with a low transformation rate and excellent management of relapsed disease. RT is an important part of these results.

Keywords: Radiotherapy; Follicular Lymphoma; Indolent Lymphoma.

INTRODUCTION

Follicular lymphoma (FL) is an indolent B-cell lymphoma that is often treated with radiotherapy (RT) alone at early stages and with a combination of immunochemotherapy and RT at advanced-stage disease.

Although the remission rate has been stable and high for a long time, typical management has changed over the years.

The most important development in the management of FLs is the introduction of rituximab. The introduction of rituximab, one of the most efficient oncological drugs, has changed how non-Hodgkin lymphomas have been treated since the publication of the MabThera International Trial. For indolent and low-grade lymphomas, notably FL, the drug also has an impact on the remission rate, also shown in earlier stages.

Prognostic scores have also improved. The Follicular Lymphoma International Prognostic Index 2 (FLIPI-2) was validated in 2009. This prognostic index, which is used worldwide and in our institution, is one of the main tools used to predict prognosis and to correctly assess patients with FL. Although FL is a very indolent disease and seldom causes death, its management can be difficult if patients are not correctly assessed and necessary treatment is not performed.

The way how this disease is staged also has changed recently. Positron emission tomography with 18F-fluorodeoxyglucose (18F-FDG) plays an important role in staging non-Hodgkin lymphomas. For FL, this was assessed in prospective

data and correctly correlated with survival, although it has a low accuracy in detecting bone marrow involvement.

Treatment for the different stages has also evolved. Limited-stage FL has been treated with involved-field RT for decades, with good outcomes. Recent studies have demonstrated improved results with rituximab, as previously stated, and also with cytotoxic chemotherapy. For stage III disease, the largest report of treatment is still from radiotherapy alone, but combination of radiotherapy, chemotherapy and rituximab is current practice. Limited data are available on stage IV disease, and treatment approaches can vary from observation to combination treatments, depending on the patients' performance and prognoses.

Death because of FL progression is rare, but a far more common concern is its transformation to aggressive lymphomas. Different publications have reported an approximately 10% chance of transformation of FL to aggressive histologies. This event can change the natural history of disease progression and is an important cause of events in this population [1-7].

This study aims to report our single-institutional experience with FL, to describe our current treatment and management approaches and results in a universal public system as a university hospital in the setting of FL staged with 18F-FDG PET/CT, and to describe our results.

MATERIAL AND METHODS

All patients diagnosed as having non-Hodgkin lymphoma and treated with RT between 2010 and 2018 were retrospectively assessed. Patients treated with chemotherapy alone or those who were only observed were not selected. Only patients with FL confirmed in biopsied tissue were included. Patients also must have at least 6-months of follow up or followed until death. Patients were staged according to the Ann Arbor staging system, and therapy response was assessed using the Lugano criteria. RT was used either as the only prescribed treatment or as a consolidative treatment after chemotherapy and immunotherapy.

Overall survival (OS), progression-free survival (PFS), transformation-free survival (TFS), and survival free of infield progression (SFIFP) were evaluated

from the diagnosis date. Second progression-free survival (PFS2) was assessed as the period from the date the first progression was recorded to the date of second progression or death. Toxicity related to RT was evaluated according to the National Cancer Institute criteria (Common Terminology Criteria for Adverse Events v4.0 [CTCAE]).

The Kaplan-Meier method was used for survival analysis. Univariate analysis was performed for each variable. Multivariate analysis was not performed because of the limited number of events. The significance level was set at 5% (p less than 0.05).

RESULTS

During the study period, 34 patients with FL were treated with radiation at our institution. Patients with an uncertain histology or in whom histological analysis could not be performed were excluded. The median follow-up duration was 49.4 months. Most patients were female (58.8%), and the mean age at diagnosis was 61.7 years. The performance status was assessed using the Eastern Cooperative Oncology Group scale, and most patients scored 0–1, whereas only seven (20.6%) had a compromised performance at diagnosis. Most patients had low-grade disease (79.4%). Stages were diverse, and almost half (47.1%) were diagnosed as having limited disease (stages I and II). Seven patients (20.6%) had extranodal disease at diagnosis.

The FLIPI-2 prognostic scale was used to establish the prognosis. Although all patients had already been scored on their charts, we retrospectively reviewed all examinations to correctly determine the FLIPI-2 score at diagnosis and to prevent bias. Thereafter, the most common FLIPI-2 class was intermediate risk (70.6%). Patient characteristics are described in Table 1.

The outcomes of this study reflect previously published data. The mean OS, TFS, SFIFP, and PFS were 48.7, 47.8, 40.3, and 33.6 months, respectively, and are presented in Figures 1–4, respectively.

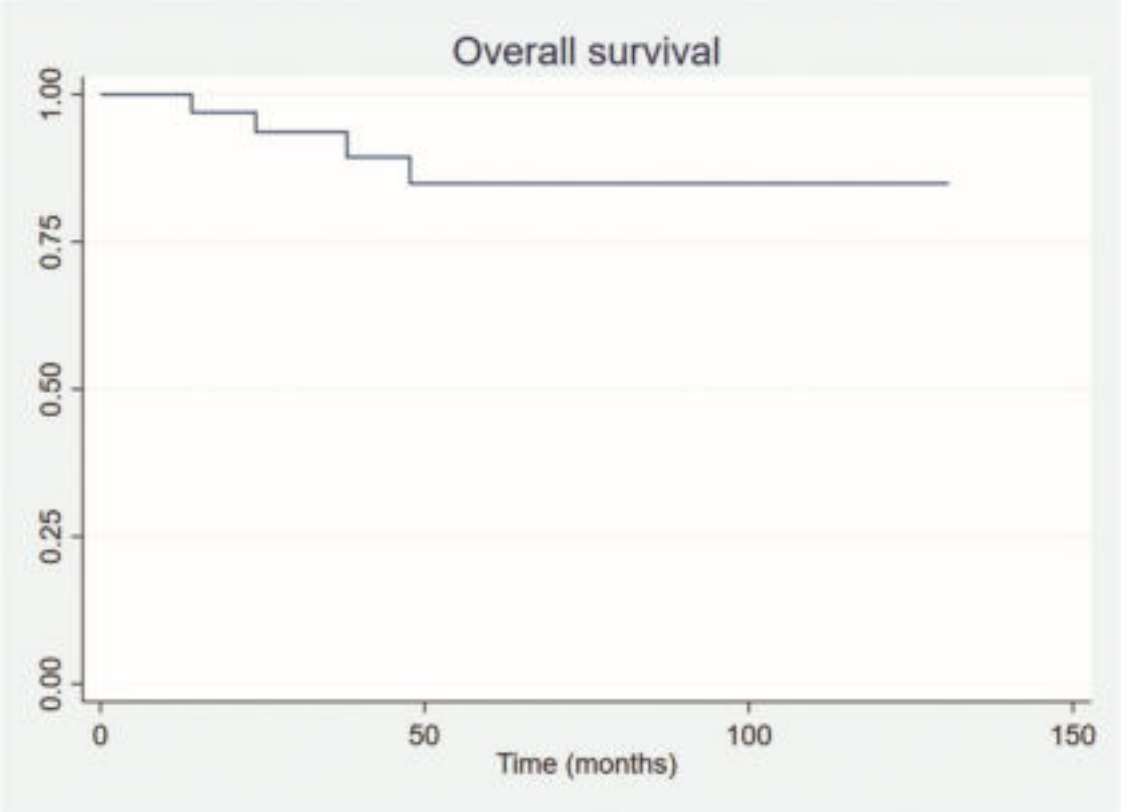

Fig 1 - Overall survival.

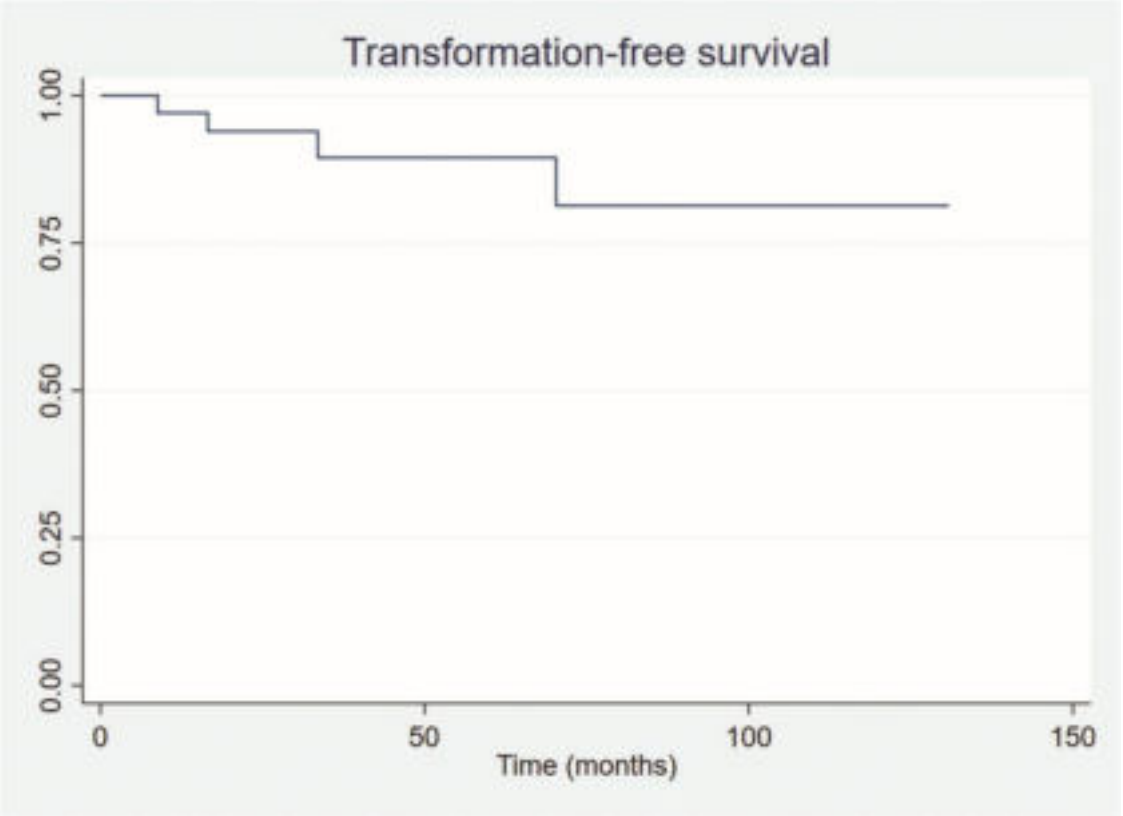

Fig 2 - Transformation-free survival.

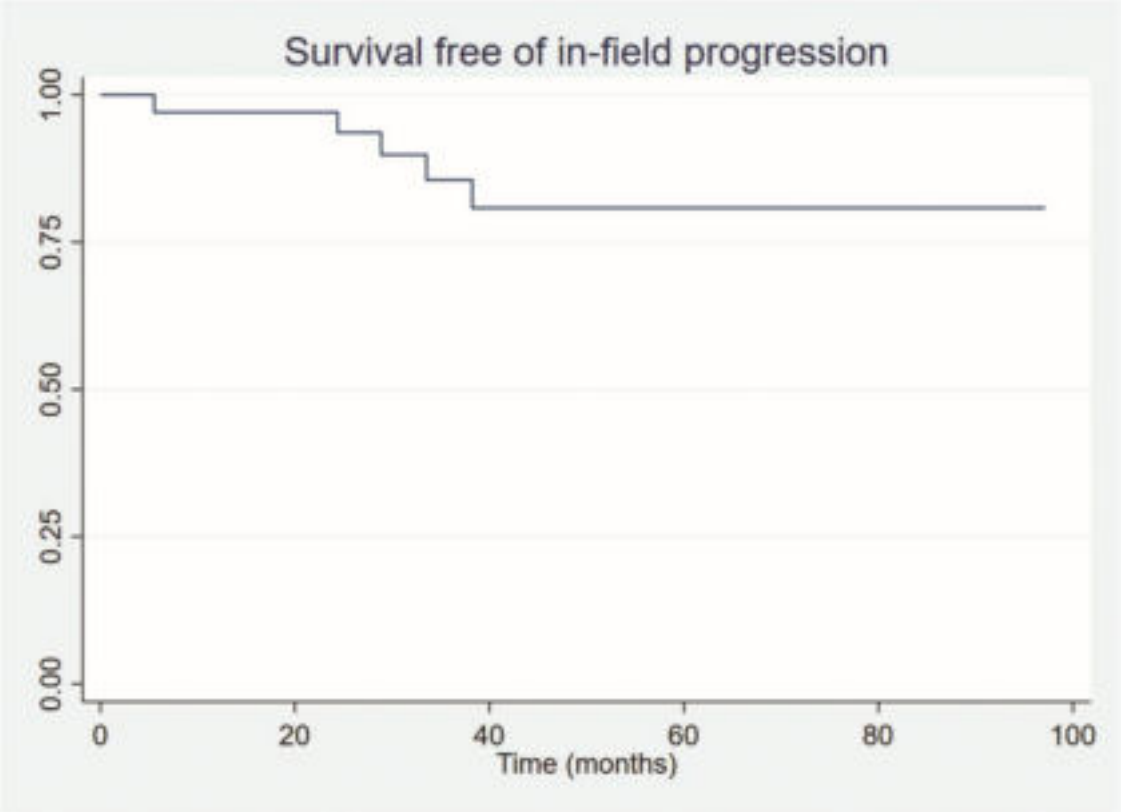

Fig 3 - Survival free of in-field progression.

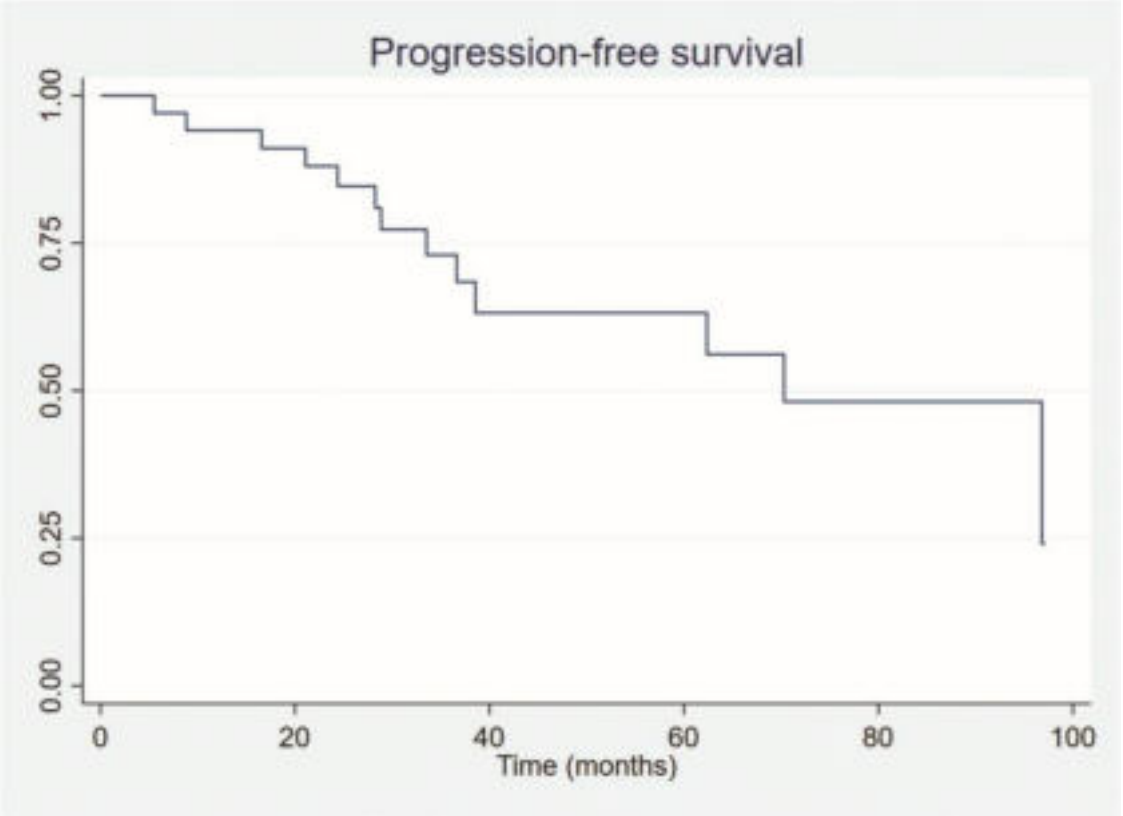

Fig 4 - Progression-free survival.

Figure 5 shows OS by stage.

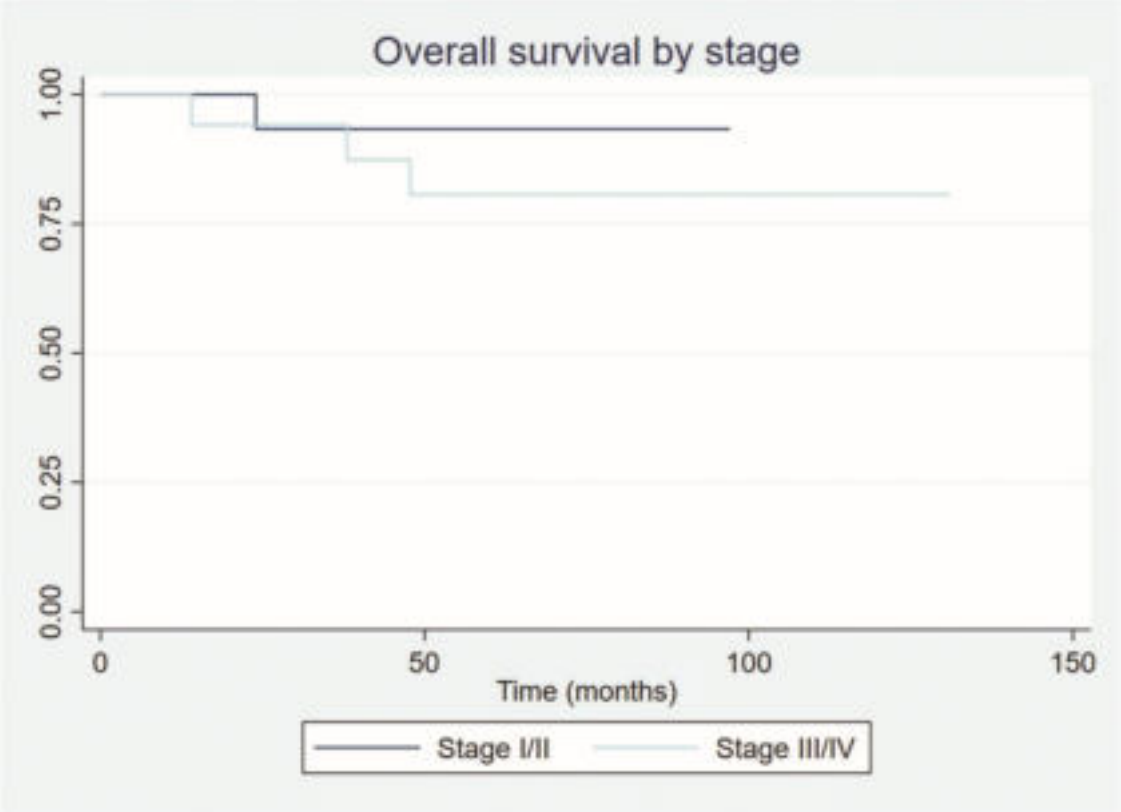

Fig 5 - Overall survival by stage.

Only PFS reached a median value of 69.3 months. The OS rates at 2 and 3 years were 94.1% and 91.2%, respectively.

Patients showed a good response rate to chemotherapy. Of the 20 patients who received chemotherapy, 8 (40%) showed a complete response, and 11 (55%) a partial response. Only one patient showed progression after first-line chemotherapy and was treated with 36 Gy radiation to the site of disease progression thereafter; this patient did not have another event and is currently disease-free. Two patients had stage IIXB disease with large abdominal masses. All other patients were diagnosed as having advance-stage disease. As stated previously, all patients receive RT as part of their treatment. After chemotherapy, the outcomes for limited and advancedstage disease did not differ, as can be seen in Figure 6 (p=0.608).

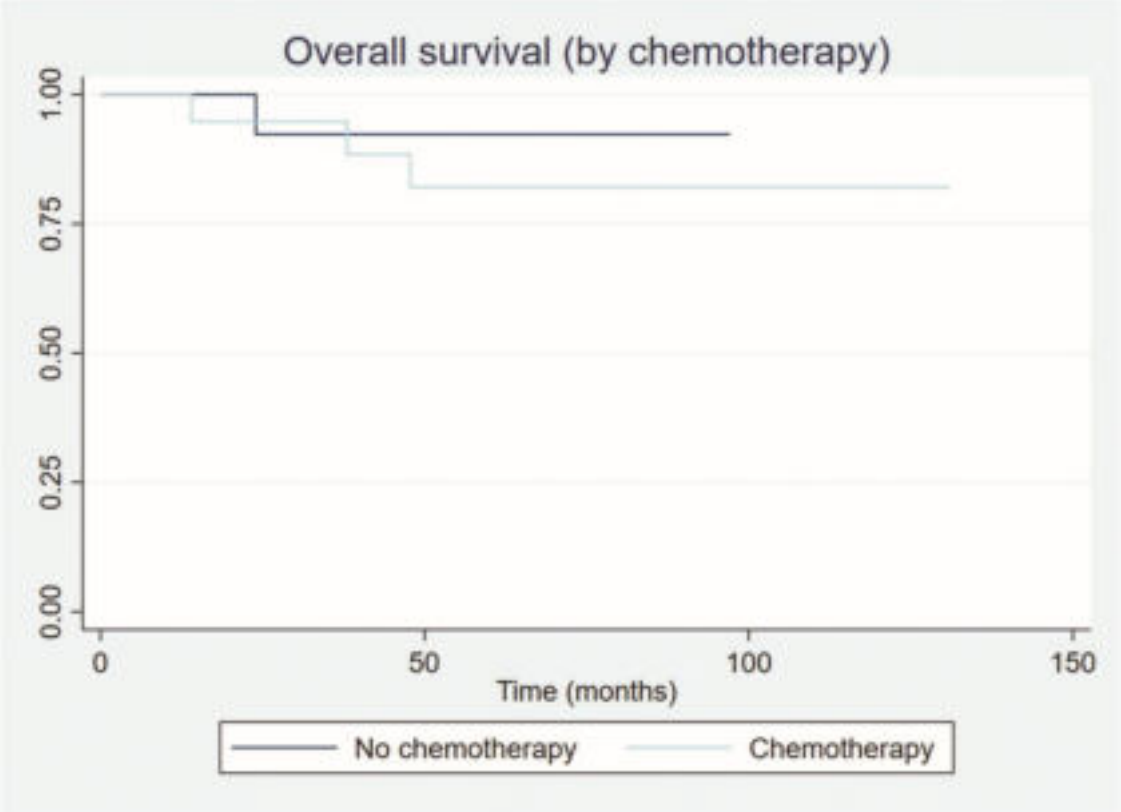

Fig 6 - Overall survival by chemotherapy group.

Patients with extranodal disease were often more likely to have advanced-stage disease (6/9) and received chemotherapy. The other three patients were stage IIXE with cervical presentations and received radiation to their nodal and extranodal disease sites.

Rituximab is often used as part of the treatment regimen. Half of the patients who received chemotherapy also received rituximab. At our institution, we did not have the drug available for earlier stages of RT alone, but it was available for advanced stages, concurrent with chemotherapy. Primary treatment is indicated for patients on the basis of the GELF/NBLI criteria, and prognosis is stated according to FLIPI-2. There was no statistical impact of immunotherapy on univariate analysis, but this is mainly because of the very low frequency of events in our sample.

All 13 progressions were treated with second-line chemotherapy, and only 5 (38.5%) progressed subsequently. For the patients who PFS2 could be measured, one patient received third-line chemotherapy and is still alive by last evaluation and one patient died without receiving any further chemotherapy treatment; all

other three other patients are currently under watchful-waiting. Figure 7 shows PFS2 recorded from the date of first progression.

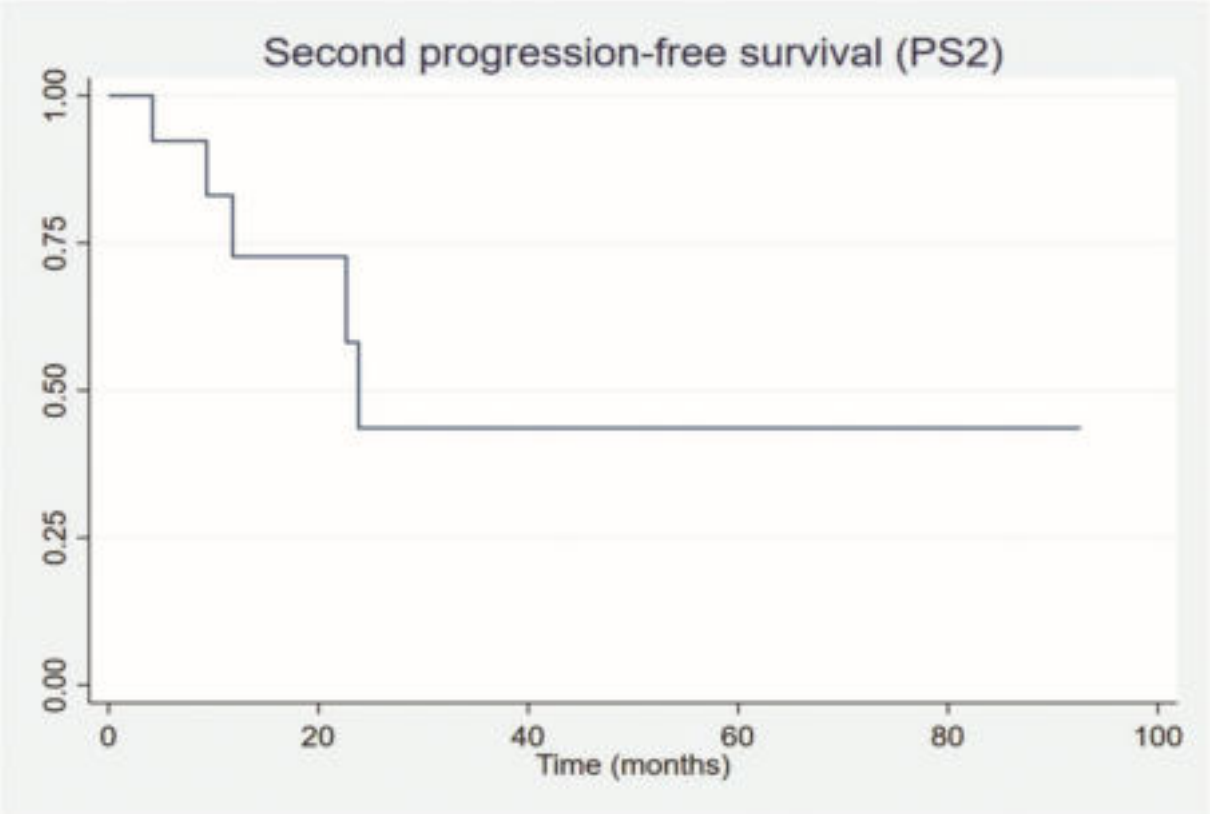

Fig 7 - Second progression-free survival (from the date of first progression).

Four patients (11.8%) who were diagnosed as having transformed disease were treated with second-line chemotherapy (CHOP) plus rituximab. No other patient presented any other event.

In-field progression (IFP) is also rare. IFP was defined as disease progression within previously irradiated sites. Five patients (14.7%) presented progression within the radiation field, which also progressed outside the radiation field. All patients with IFP had advanced disease stages. Nevertheless, all patients with IFP received second-line chemotherapy and had no other events.

Mortality was low and preceded by other events. An important cause of death in our group was secondary malignances, which occurred in two patients. One patient with FL stage IVXEB and an abdominal bulky disease developed stage IV rectal adenocarcinoma that began marginally to the prior radiation field. A second patient with stage IIB FL treated with exclusive RT was subsequently diagnosed as having squamous carcinoma of the pelvis outside the radiation field.

Both patients died because of secondary malignances. Another cause of death was progression. One patient showed progression, could not receive second-line chemotherapy because of low performance, and eventually died. The last patient died while receiving third-line chemotherapy for FL.

DISCUSSION

Our study has some limitations that should be addressed. It includes a small, single-institution sample that was retrospectively assessed. Another important aspect of our cohort that should be highlighted is that FL is a very indolent disease and prospective studies in this setting are usually performed for longer follow-up periods. Although some of our patients were under follow-up for more than 10 years, the median follow-up period was still short. Another point of consideration is the staging procedure. All patients were staged using PET, but only 23.5% of the responses were assessed using this method. None of the end points reached the median values, as is common with very curable diseases in the early stages.

This study shows the results of radiation as part of FL management. All patients underwent radiation as the first-line treatment for their disease. Our study shows good results in both early and advanced stages, with most patients being alive at assessment. Progression, although not unusual, can be managed by immunochemotherapy or RT, often a combination of both. Further, transformation is also quite rare and manageable.

Our findings show good treatment results for FL, notably in the early-stage setting. Brady et al. reported on a multi-institutional cohort of early-stage FL with similar progression and survival outcomes over the same follow-up period, which allows us to believe that our indications and protocols are consistent with international consensus.

Findings on RT for advanced-stage FL are neither as common nor as current as those for early disease. This study presents new data on RT as a consolidative treatment for advanced FL, with a large group of patients, which is scarce in the literature. When chemotherapy and rituximab are added to radiation in this setting, survival results are similar to those of early disease and therefore when

combination treatment is favored, results in advanced stages can be enhanced to become similar to those at earlier stages.

Toxicities were rare with RT. RT for FL is often well tolerated, and late toxicities are seldom seen. Secondary malignances were also observed and were rare, although life-threatening. It is important to keep these in mind when treatment with radiation is favored, as these can be late complications. However, not all secondary malignances can be traced back to RT. These results demonstrate that radiation is an option with few side effects and a good cost–benefit ratio.

CONCLUSION

The outcomes of RT for patients with FL are good, mainly in combination with systemic treatment.

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МЕЛАНОМА СЛИЗИСТОЙ ОБОЛОЧКИ ПОЛОСТИ РТА

(клинический случай и обзор литературы)

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Цель: В данном исследовании сообщается о случае меланомы, диагностированном и наблюдавшемся хирургической бригадой Национальной больницы при Министерстве здравоохранения Кыргызской Республики.

Описание случая: 69-летний пациент мужского пола был направлен в больницу с жалобами на боль и кровотечение в верхнем альвеолярном отростке, а также на наличие “шишки” в том же месте. Внутриротовой физикальный осмотр выявил пурпурный узелок мягкой консистенции в передней части верхней челюсти диаметром 2,0 см с поверхностными изъязвлениями. Была проведена послеоперационная биопсия, и гистопатологический анализ выявил интенсивную пролиферацию атипичных меланоцитов, характеризующихся различной степенью плеоморфизма и ядерного гиперхроматизма. Диагноз - меланома слизистой оболочки полости рта. Пациенту была проведена хирургическая резекция, состоящая из полного удаления опухоли с широкими запасами прочности, химиотерапии и адъювантной лучевой терапии.

Результаты. Пациент продолжил находиться под наблюдением, и через год после операции рецидива поражения не выявлено.

Заключение: Меланома слизистой оболочки полости рта проявляет агрессивное поведение и быстрый рост, как это наблюдалось в настоящем случае. Знание клинических и этиопатогенетических особенностей важно для ранней диагностики заболевания с целью улучшения выживаемости пациентов.

Ключевые слова: Меланома; Новообразования полости рта; Пигментация; Здоровье полости рта.

MELANOMA OF THE ORAL MUCOSA: case and review of the literature

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Objective: This study reports a case of melanoma diagnosed and followed up by the surgical team of the National Hospital under the Ministry of Health of the Kyrgyz Republic.

Case report: A 69-year- -old dark-skinned male patient was referred to the the hospital reporting pain and bleeding in the upper alveolar ridge, as well as the presence of a “lump” at the same site. Intraoral physical examination revealed a purple nodule of soft consistency in the anterior maxilla, which measured 2.0 cm in diameter and exhibited superficial ulcerations. An incisional biopsy was performed and histopathological analysis revealed intense proliferation of atypical melanocytes characterized by variable degrees of pleomorphism and nuclear hyperchromatism. The diagnosis was melanoma of the oral mucosa. The patient underwent surgical resection consisting of complete removal of the tumor with wide safety margins, chemotherapy, and adjuvant radiotherapy.

Results. The patient continues under follow-up and showed no recurrence of the lesion one year after surgery.

Conclusion: Melanoma of the oral mucosa exhibits an aggressive behavior and rapid growth, as observed in the present case. Knowledge of the clinical and etiopathogenic features is important for the early diagnosis of the disease in order to improve patient survival.

Keywords: Melanoma; Mouth Neoplasms; Pigmentation; Oral Health.

INTRODUCTION

Pigmented lesions of the oral cavity represent alterations in the natural color of the mucosa that depend on the degree of keratinization, melanogenic activity, number of melanocytes, and/or vascularization in the area. These lesions can manifest in different circumstances, either as physiological alterations such as

racial pigmentation or as systemic events such as Addison's disease. Moreover, these manifestations can also be found in rare oral neoplasms such as melanomas.

Melanoma is a malignant neoplasm of uncertain etiology that arises from the atypical proliferation of melanocytes. The latter are cells derived from the neuroectoderm that produce the pigment melanin and reside in the basal layer of the epithelium. Although the third most common skin cancer, melanoma is extremely rare in the oral cavity, accounting for less than 1% of all melanomas and for about 0.5% of all malignant oral tumors.

Clinically, melanoma is characterized by dark pigmented lesions with a brown-purple to black color and irregular and asymmetric borders. In rare cases, the lesions have a normal mucosa-like color, a fact that makes their diagnosis difficult. These lesions are called amelanotic melanomas. Melanomas first appear with a macular surface that extends laterally and subsequently form a nodule that exhibits aggressive vertical growth. An association with pain, bleeding and bone destruction has been described, especially when accompanied by tissue ulceration. However, melanomas are commonly asymptomatic at the time of diagnosis.

Melanoma of the oral cavity mainly affects the hard palate, but can also be found at other sites of the oral mucosa such as the soft palate, gingiva and alveolar ridge. Less common sites are the tongue and floor of the mouth. This cancer affects men and women at a proportion of 2:1 and more commonly occurs at older ages (mean of 60 years).

The epidemiological and clinical characteristics cited are important signs so that histopathological examination can subsequently define the correct diagnosis of the disease. Important histological features of melanomas are pleomorphic and hyperchromatic cells with intense mitotic activity forming sheets at the junction between the epithelium and underlying connective tissue, or deeply invading the latter tissue. Atypical melanocytes also exhibit important nuclear alterations such as large hyperchromatic, sometimes multiple, nuclei with prominent nucleoli.

Despite the low frequency of this cancer in the oral cavity, it is important that dentists are able to identify these alterations, differentiating this cancer from

lesions such as amalgam tattoo which is caused by the entry of restorative material into the mucosa; physiologic melanin pigmentation which is caused by endocrine factors that increase the production and deposition of melanin, and nevi which are small dark pigmented maculae that can occur in any area of the oral mucosa. Thus, careful evaluation and adequate consideration are necessary for a correct diagnosis.

The currently best method for the treatment of melanoma is radical surgical excision consisting of the removal of the tumor with wide margins, combined with radiotherapy and/or chemotherapy as adjuvant treatment. The prognosis is guarded and is directly related to the size and depth of the tumor, presence or absence of vascular invasion, necrosis, population of polymorphic neoplastic cells, lymph node involvement, and metastasis [1-7].

In view of the rarity and generally obscure prognosis of oral mucosal melanoma, the objective of this study was to report a case of extensive melanoma diagnosed and followed up by the surgical team of the National Hospital under the Ministry of Health of the Kyrgyz Republic.

CASE REPORT

A 69-year-old dark-skinned male patient was referred to the surgical team of the National Hospital under the Ministry of Health of the Kyrgyz Republic, for assessment of an extensive lesion in the oral cavity. Wearing an upper denture, the patient complained of pain and bleeding in the upper alveolar ridge, which provided support to the denture, as well as of the presence of a “lump” at the same site.

During anamnesis, the patient reported to have been an active smoker for 50 years, consuming 20 cigarettes per day during this period, but had quit smoking 4 years prior to the occurrence of the lesion. He also reported no family history of malignant neoplasms and no history of alcoholism, systemic diseases or childhood diseases.

No palpable lymph nodes or any other alterations were detected upon extraoral physical examination. Initial intraoral examination showed an exophytic, sessile, variably colored nodule of soft consistency in the anterior maxilla, which

measured 2.0 cm in diameter and exhibited superficial ulcerations. In addition, black and brown spots extending bilaterally to the upper lip and ridge of the jaw were observed (Fig. 1).

Figure 1. Intraoral clinical aspect of the lesion.

Based on these features, the diagnostic hypothesis was melanoma of the oral mucosa. A panoramic radiograph was requested for the evaluation of bone involvement. Preoperative blood tests and an incisional biopsy were obtained.

Radiography did not show extension of the lesion into bone (Fig. 2) and the region of the anterosuperior ridge had a normal pattern. The biopsy specimen was sent for histopathological analysis, which revealed proliferation of spindle-shaped, sometimes epithelioid, atypical melanocytes throughout the connective tissue.

Figure 2. Panoramic radiograph showing no evidence of bone involvement.

These cells were arranged in bundles or nests and exhibited variable degrees of pleomorphism and cellular hyperchromatism (Fig. 3).

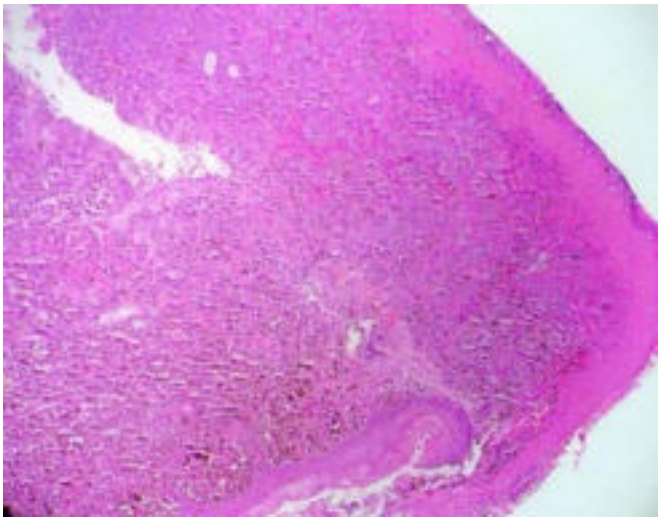

Figure 3. Photomicrograph showing proliferation of atypical, epithelioid to spindle-shaped melanocytes exhibiting variable degrees of pleomorphism and hyperchromatism (HE, 40X).

Many of these neoplastic cells contained brown cytoplasmic granules compatible with melanin. The lesion was lined with parakeratinized stratified squamous epithelium exhibiting atypical and pleomorphic melanocytes in the basal and suprabasal layers. Some of these melanocytes contained brown cytoplasmic pigments compatible with melanin. An area of ulceration with extravasation of erythrocytes was also observed. The combined analysis of these findings led to the diagnosis of melanoma of the oral mucosa.

The patient was referred to the head and neck surgery sector of the National Hospital under the Ministry of Health of the Kyrgyz Republic, where he underwent mucosectomy with partial maxillectomy and reconstruction of the area with a nasolabial flap. A few days after surgery, the patient was referred to a clinical oncologist who opted for chemotherapy as adjuvant treatment.

The treatment regimen consisted of six cycles of temozolomide (Temodal®) every 28 days, with each cycle lasting five days. Three capsules of 100 mg and one capsule of 20 mg of temozolomide were administered after fasting, totaling a daily

dose of 320 mg. In addition, 1 mg/ml cisplatin was prescribed for four consecutive days.

Good healing of the graft and of the area of bone exposure on the left side of the maxillary alveolar ridge was observed 30 days after surgery. In addition, hair growth was noted due to the origin of the graft (Fig. 4).

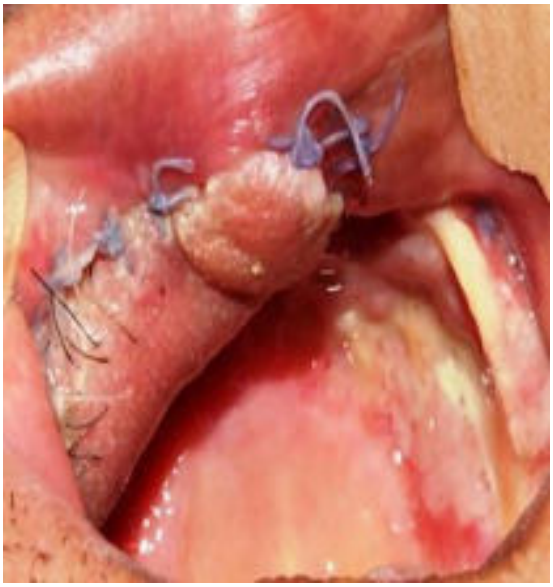

Figure 4. Clinical aspect 30 days after excision of the lesion

During chemotherapy, specifically after the fourth cycle of temozolomide, the patient developed nephropathy and the medication was discontinued. The patient was then referred for assessment by a radiotherapist who requested a computed tomography scan, which revealed a lytic lesion in the right upper alveolar ridge.

In view of this presentation, the radiotherapist referred the patient for head and neck surgery. A new biopsy was obtained from the area and the histopathological analysis showed an oral mucosa with acanthosis and papillomatosis and cancer-free bone and fibroadipose connective tissue. After the histopathological result, the patient was submitted to adjuvant radiotherapy consisting of 10 irradiations with a dose of 30 Gy. Radiotherapy was delivered without interruption due to toxicity, with the patient only reporting odynophagia at the end of treatment.

The patient showed no recurrence of the disease one year after surgical resection and was asked to periodically come to the hospital for evaluation of the health conditions related to the lesion removed. The patient is undergoing

continuous follow-up by the medical and dental team to ensure the early diagnosis of any sign of recurrence or metastasis of melanoma.

DISCUSSION

The present study describes a case of melanoma of the oral mucosa, a rare and aggressive disease that arises from the malignant transformation of cells found in the epithelium, called melanocytes. The prognosis of melanoma is generally unfavorable. Melanoma is a malignant neoplasm with a tendency for metastasis because of the easy penetration of vascular and lymphatic structures and, consequently, with greater lethality than other tumors of the oral cavity.

Melanoma generally appears as dark pigmented lesions and may have an unresolved differential diagnosis with other pigmented lesions. Thus, the ABCD system of evaluation was developed to classify these entities based on their asymmetry (A), border irregularity (B), color (C), and diameter (D). According to these parameters, a melanoma would be characterized as an asymmetric lesion with irregular borders, color variation of brown, black, white, red or blue, and a diameter greater than 6.0 mm. The lesion of the present patient met all of these specifications, except for its greater dimension (diameter of 2.0 cm) which can be attributed to the advanced stage of the cancer. Importantly, all clinically suspicious lesions should be biopsied to establish the definitive diagnosis.

Melanocytes are found in the basal layer of the epithelium. Under normal conditions, these cells are responsible for the production of melanin, a physiological pigment present in the epidermis. In melanomas, melanocytes are atypical, exhibiting variable degrees of pleomorphism and nuclear hyperchromatism and proliferating in a disordered manner through the epithelium into the underlying connective tissue. These features are similar to those obtained in the histopathological analysis of the present case, supporting the diagnosis of melanoma.

Immunohistochemistry is a tool used in situations in which the histopathological report is not conclusively diagnostic. Specific tumor markers such as S-100, Melan-A, HMB-45 and Ki-67 are used for the differential diagnosis

of melanoma. However, the clinical and histopathological evidence of the present case rules out any possibility of doubtful interpretation of the diagnosis, differing clearly from the pigmented lesions found in Addison's disease, Peutz-Jeghers syndrome, Kaposi's sarcoma, amalgam tattoo, nevus, melanotic pigmentation, and melanoacanthoma.

The etiopathogenesis of melanoma remains unknown. The proliferation of neoplastic cells is not related to any causal factor and the lesions tend to arise from melanocytes in apparently normal mucosa or from benign melanocytic lesions. Rani et al. [3] and Misir et al. [8] highlight that, in the past, melanoma was associated with habits such as smoking, alcohol consumption and exposure to ultraviolet radiation. These facts would explain the occurrence of melanoma in the case reported here since the patient had been exposed to the deleterious effects of smoking for many years. However, there is currently no scientific evidence that would solidly validate this theory.

According to Lourenço et al. [9], melanoma mainly affects adults, with a peak incidence in the fourth decade of life and extending until the seventh decade. The present patient was within the age group described, with 69 years old. Regarding ethnicity, Smith et al. and Pandey et al. indicate that 80% of cases of oral mucosal melanoma are whites, especially of Asian origin. However, it is assumed that studies like those of the authors were conducted in countries without the racial miscegenation characteristics of the Brazilian population, which is formed by individuals with multiple ethnic characteristics, such as dark-skinned individuals that possess white, black and indigenous traits.

In the present case, the lesion arose in the mucosa of the upper alveolar ridge. According to Kumar et al. [10], this is a common site for the occurrence of dark pigmented lesions, with 80% of oral melanomas occurring in the maxilla. Rubio-Correa et al. report the base of the tongue also to be susceptible to development of the disease.

Melanoma of the oral mucosa is generally painless, a fact that leads to a delay in seeking dental care until common symptoms occur such as denture

problems, ulcers, bleeding, nodules, pain, tooth mobility, and paresthesia. Corroborating these data, the clinical presentation of the case described here was initially asymptomatic and the patient sought a specialized service only after the lesion had grown significantly and the swelling interfered with the use of the denture. Thus, because of the asymptomatic behavior of melanomas in their early phases, most patients are diagnosed in an advanced stage of the disease.

The present patient was submitted to surgical resection consisting of complete removal of the tumor with wide safety margins, in agreement with the study of Lazarev et al. [6]. In a systematic literature review, these authors found that primary melanomas are well controlled by the surgical methods cited, if properly executed.

Chemotherapy and radiotherapy are effective adjuvant therapies in cancer treatment and were therefore included in the treatment plan reported here. The objective of radiotherapy is to promote better regional control and prevent recurrence of the disease. Chemotherapy is used as a palliative measure in cases of extensive lesions, surgical impossibility or refusal of the patient to undergo invasive procedures. Adjuvant therapies were indicated in the present case because of the extensive, and probably advanced, lesion, the aggressive vertical growth detected in the histopathological exam, and the considerable size observed by clinical examination.

In the present study, chemotherapy consisted of the combination of two substances: temozolomide and cisplatin. Temozolomide is an orally administered drug that has been introduced by the Chinese Society of Clinical Oncology as an effective drug for the treatment of melanomas. The potent effect of the drug is due to its ability to prevent the formation of brain metastases, which are observed in more than 50% of cases of metastatic melanoma.

In a clinical study involving a large sample, temozolomide provided the best clinical outcomes when compared to treatments with traditional drugs. In that study, the recommended daily dose was 250 mg for 5 consecutive days, repeating

the cycle after 4 weeks. A higher dose, 320 mg/day, was used in the present case because of the extent and aggressiveness of the lesion.

Cisplatin, a platinum-based antitumor medication, shows high effectiveness in the treatment of patients with melanoma. Despite these positive results, the effects exerted by this drug are short-lived and are associated with high toxicity. Thus, cisplatin is indicated for combination cancer therapy with other drugs such as temozolomide so that cisplatin would only be prescribed for a few days, potentiating the effect of chemotherapy and minimizing its undesired effects.

Although melanoma is a rare malignant neoplasm in the oral mucosa, it exhibits a very aggressive behavior and, consequently, an unfavorable prognosis. These facts highlight the importance of an early diagnosis and intervention for any pigmented lesion arising in the oral mucosa since lesions that are detected early and removed before the development of metastases will have a better prognosis and are associated with higher survival rates.

CONCLUSIONS

Melanoma of the oral mucosa is a rare malignant neoplasm of obscure diagnosis that is usually asymptomatic. This generally results in the identification of the disease at advanced stages, as evidenced in the present case, whose biological behavior exhibited aggressiveness and rapid growth, clinically demonstrated by the extent of the lesion as well as the histopathological appearance of atypical melanocytes with vertical expansion. The knowledge of these characteristics by dentist is extremely relevant for the identification of melanoma, even as its differentiation from other oral pigmented lesions, thus making it possible to cure the patient by early treatment of the disease.

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Требования к оформлению статей

1. Статьи предоставляются в редакцию журнала тщательно отредактированными. Статья должна быть выполнена в формате Microsoft Word шрифт Times New Roman, Tamga KIT (кириллица) размером - 14; все поля2,0смсовсехсторон,абзацныйотступ-1,5см(недопускаетсяабзацный отступ с помощью клавишей «пробел»), интервал 1,5 выравнивание текста по ширине. Уплотнение интервалов запрещено. Нумерация страниц не проставляется. Обязательна проверка автороморфографии.
2. В статье должны быть проанализированы, сопоставлены и выявлены наиболееважныеиперспективныенаправленияразвитиянауки(практики),ее отдельныхотраслей,явлений,событий.Материалдолженноситьпроблемный характер, демонстрировать различные взгляды на развитие научных (практических) знаний, содержать выводы, обобщения, сводныеданные.
3. Фамилия, имя, отчество автора (без сокращений). По правому краю, курсив (шрифт 14 Times New Roman) (на русском и английскомязыках)
4. Должность, звание, ученая степень. По правому краю, курсив(шрифт 14 Times New Roman) (на русском и английскомязыках)
5. Полное название организации - место работы каждого автора в именительном падеже, страна, город. Если все авторы статьи работают в одном учреждении, можно не указывать место работы каждого автора отдельно и адрес электронной почты. По правому краю, курсив (шрифт 14 Times NewRoman).
6. Название статьи. По центру ПРОПИСНЫМИ БУКВАМИ, полужирным, шрифтом 14, (на кыргызском, русском и английскомязыках)
7. Аннотация. По ширине, полужирным шрифтом 12 (на кыргызском, русском и английскомязыках)
8. Ключевые слова. По ширине, полужирным шрифтом 12 (на кыргызском, русском и английскомязыках).
9. Основной текст набирается (шрифтом 14 Times New Roman). Сокращенные названия в тексте должны быть расшифрованы, нумерация формул производится справа в конце строки в круглых скобках - (1), ссылки на литературу в квадратных скобках - [1]. Формулы и символы (нежирный шрифт) в тексте следует набирать в

редакторе формул EquationEditor.

10. Иллюстрации и таблицы должны иметь названия, законченный вид и располагаться по тексту непосредственно после ссылки. Выравнивание таблиц и рисунков - по центру страницы. Названия иллюстраций не должны включаться в поле иллюстраций. Название иллюстраций и таблиц должны быть набраны с использованием шрифта (Times New Roman12).
11. Список использованной литературы, приводится в алфавитном порядке. Список литературы - в конце статьи с отступом в 1 см от основного текста. Желательно, чтобы последняя страница статьи была полностью заполненной.
12. Правила оформления статей могут совершенствоваться в соответствии с требованиями ВАК КР - следите за изменениями на сайте:www.imu.edu.kg, а также в последнем вышедшем номережурнала.
13. Объем статьи - до 10-12 страниц, (страница - 1836 знаков), выполненных в формате А4, со ссылкой на литературу; объем кратких сообщений - 5 стр., обзорных и проблемных статей - 18-20 страниц, включая список литературы. Датой поступления рукописи считается день получения редакцией окончательного варианта статьи, после исправления замечаний рецензента и ответственного редактора. Рукописи статей редакция не возвращает. Статьи в печатном виде в 2-х экземплярах и на электронных носителях направлять по адресу: 720000, ул. Анкара, 1/17, отдел научно- инновационной работы и по e-mail:sh.sulaimanov.omokb@gmail.com.
14. На страницах журнала предполагается размещение рекламы о медицинских и оздоровительных организациях, сведений о лекарственных препаратах,изделияхмедицинскойтехники.Повопросуразмещенияреклам ы в журнале и возникающим вопросам обращаться в редколлегию журнала: Сулайманов Шайирбек Алибаевич (главный редактор): e-mail:sh.sulaimanov.omokb@gmail.com, Алиев Медер Самудинович (ответственный секретарь редколлегии): e-mail:meder.ali@mail.ru, тел.: 0777 190068, 0552 909975, ММУ, кабинет №305.

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