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SURGICAL TREATMENT OF OSTEOMYELITIS AND OSTEOARTHRITIS OF BONES AND JOINTS OF THE FOOT IN PATIENTS WITH SDS

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Annotation: Diabetes mellitus (DM) affects more than 5% of the world population. The third disease in the structure of causes of death is DM [I.I. Dedov, T.L. Kuraeva, V.A. Peterkova, V.V. Potemkin, E.G. Starostina, N.E. Yuldashova, N.E. Suleimanova, Z.H. Lapasova, N.N. Yormukhamedova, Finucane MM, Danaei G, Ezzati M, Ahmad O, Singh GM, Danaei G, Farzadfar F, Stevens GA, Woodward M, Wormser DK, Jeon CY, Murray MB, Lipsky B., Berendt A., Deery H.G.,Currently, there are more than 350000 thousand officially registered patients in Uzbekistan. Various foot problems occur in every second patient with diabetes, the number of lower limb amputations in patients with diabetes in the Republic of Uzbekistan is 20-30 times higher than the number of amputations in patients without diabetes. Lethality, in case of amputation at the level of the shin, is 5-20%, at the level of the thigh 10-40% of operated patients [Askarov T.A., Hamdamov B.Z., Akhmedov R.M., Safoev B.B., Jalilova Z.O., Dovlatov S.S., Teshayev SH.J.]. Diabetic foot syndrome (DFS) is diagnosed in 8-10% of diabetic patients [DedovI.I., Udovichenko O.V., Grekova N.M., Galstyan G.R., Shestakova M.V., Vikulova O.K.,]. In 20-25% of cases in patients with SDS there are various purulent-necrotic lesions [Golbraik VA, Sitarkov SV, Bensman., Hall P.A., Levison D.A., Woods A.L., Kellock D.B., Watkins J.A., Barnes D.M., Gillett C.E., Camplejohn R., Dover R., Khamraeva F. M., Nazarova S. K., Fayzieva M. F.]. Purulent-necrotic manifestations of SDS are the most frequent cause of amputation and mortality of patients in this category of patients [Grekova N.M., Bordunovsky V.N., Ignatovich I.N., Bensman S.V., Burleva E.P., Aszmann O.C., Boulton AJ.M.,].

Key words: diabetes mellitus, osteomyelitis, osteoarthropathy, amputation.

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Аннотация: Сахарным диабетом (СД) страдает более 5% населения земного шара. Третьим заболеванием в структуре причин смертности является сахарный диабет [И.И. Дедов, Т.Л. Кураева, В.А. Петеркова, В.В. Потемкин, Е.Г. Старостина, Н.Е. Юлдашова, Н.Е. Сулейманова, З.Х. Лапасова, Н.Н. Йормухамедова, Финукан М.М., Данаи Г., Эззати М., Ахмад О., Сингх Г.М., Данаи Г., Фарзадфар Ф., Стивенс Г.А., Вудворд М., Вормсер Д.К., Джон СИ, Мюррей М.Б., Липски Б., Берендт А., Дири Х.Г., в настоящее время в Узбекистане насчитывается более 350000 тысяч официально зарегистрированных пациентов. Различные проблемы с ногами возникают у каждого второго пациента с сахарным диабетом, количество ампутаций нижних конечностей у пациентов с сахарным диабетом в Республике Узбекистан в 20-30 раз превышает

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количество ампутаций у пациентов без сахарного диабета. Летальность при ампутации на уровне голени составляет 5-20%, на уровне бедра - 10-40% оперированных пациентов [Аскаров Т.А., Хамдамов Б.З., Ахмедов Р.М., Сафоев Б.Б., Джалилова З.О., Довлатов С.С., Тешаев Ш.Дж.]. Синдром диабетической стопы (СДС) диагностируется у 8-10% больных сахарным диабетом [Дедови.И., Удовиченко О.В., Грекова Н.М., Галстян Г.Р., Шестакова М.В., Викулова О.К.,]. В 20-25% случаев у пациентов с СДС наблюдаются различные гнойно-некротические поражения [Голбрайк В.А., Ситарков С.В., Бенсман В.А., Холл П.А., Левисон Д.А., Вудс А.Л., Келлок Д.Б., Уоткинс Дж.А., Барнс Д.М., Джиллетт С.Э., Кэмпллджон Р., Довер Р., Хамраева Ф. М., Назарова С. К., Файзиева М. Ф.]. Гнойно-некротические проявления СДС являются наиболее частой причиной ампутаций и летальности пациентов у этой категории больных [Грекова Н.М., Бордуновский В.Н., Игнатович И.Н., Бенсман С.В., Бурлева Е.П., Асманн О.С., Боултон А.Дж.М.,].

Ключевые слова: сахарный диабет, остеомиелит, остеоартропатия, ампутация.

Xulosa: Qandli diabet (qd) dunyo aholisining 5% dan ko'prog'iga ta'sir qiladi. O'lim sabablari tarkibidagi uchinchi kasallik Diabetes mellitus [I. I. Dedov, T. L. Kurayeva, V. A. Peterkova, V. V. Potemkin, E. G. Starostina, N. E. Yuldashova, N. E. Sulaymonova, Z. X. Lapasova, N. N. Yormuhamedova, Finukan M. M., Danai G., Ezzati M., Ahmad O., Singx G. M., Danai G., Farzadfar F., Stivens G. A., Vudvord M., Vormser D. K., jon si, Myurrey M. B., Lipski B., Berendt A., Diri H. G., hozirgi vaqtda O'zbekistonda 350 mingdan ortiq rasmiy ro'yxatdan o'tgan bemorlar mavjud. Qandli diabet bilan og'rigan har ikkinchi bemorda turli xil oyoq muammolari yuzaga keladi, O'zbekiston Respublikasida qandli diabet bilan og'rigan bemorlarda pastki muchalarning amputatsiyalari soni qandli diabetsiz bemorlarda amputatsiyalar sonidan 20-30 baravar ko'p. Pastki oyoq darajasida amputatsiya paytida o'lim darajasi 5-20%, kestirib, operatsiya qilingan bemorlarning 10-40% ni tashkil qiladi [Askarov T. A., Hamdamov B. Z., Ahmedov R. M., Safoev B. B., Jalilova Z. O., Dovlatov S. S., Teshayev sh.j.]. Diabetik tovon sindromi (DTS) qandli diabet bilan og'rigan bemorlarning 8-10 foizida aniqlanadi [Dedovi.I., Udovichenko O. V., Grekova N. M., Galstyan G. R., Shestakova M. V., Vikulova O. K.,]. 20-25% hollarda DTS bilan og'rigan bemorlarda turli xil yiringli-nekrotik lezyonlar kuzatiladi [Golbrayk V. A., Sitarkov S. V., Bensman V. A., Xoll P. A., Levison D. A., Vuds A. L., Kellok D. B., Uotkins J.A., Barns D. M., Gillett S. E., Kempljon R., Dover R., Hamrayeva F. M., Nazarova S. K., Fayziyeva M. F.]. DTS ning yiringli-nekrotik namoyon bo'lishi ushbu toifadagi bemorlarda pastki muchalar amputatsiyasi, o'limining eng keng tarqalgan sababidir [Grekova N. M., Bordunovskiy V. N., Ignatovich I. N., Bensman S. V., Burleva E. P., asmann O. S., Boulton A. J.M.,].

Kalit so'zlar: qandli diabet, osteomiyelit, osteoartropatiya, amputatsiya.

Introduction:

Diabetes mellitus in the XXI century is one of the most complex diseases, often leading to disability and death of patients. The most severe, difficult to treat, is diabetic foot syndrome, and some of the most complex are osteomyelitis and osteoarthritis of bones and joints of the foot, the course of this disease, in some cases can lead to amputations at various levels.

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Objective of the study:

To analyze the results of immediate and early results of surgical treatment of patients with lesions of distal and proximal ocelli of the foot, in complications of infection associated with diabetic foot syndrome .Patients with neuropathic and neuroischemic forms of SDS, with clinical and radiological data of lesions of bones and joints of the feet, patients with foot ischemia proven by USDG were excluded from the study by us.

Materials and Methods:

We analyzed patients with SDS complicated by osteomyelitis or osteoarthritis in distal and proximal lesions of the bones of the feet, treated as inpatients, in a specialized department of purulent surgery, for three years. The control group included 306 patients. The group of patients with distal lesions included -168 patients, with proximal lesions - 138.

Patient groups

Lesion level	Distal bone lesions in the feet	Proximal lesions of the bones of the feet
Average age of the patient	52,2 ±12,4	54,2 ±14,4
Seniority of SD	1 to 48 years	4 to 33 years old
SD I	30 patients	6 patients
SD II	138 patients	132 patients

Analysis of diabetes mellitus in groups

Diabetes mellitus	Distal bone lesions in the feet	Proximal lesions of the bones of the feet
Insulin	126	114
Without insulin.	42	24
Compensation	60	54
Subcompensation	90	66
Decompensation	18	18

Cause of osteomyelitis and osteoarthritis of the feet in distal and proximal lesions

Etiology	Distal bone lesions in the feet	Proximal lesions of the bones of the feet
Unknown	6	6
Ulcer	78	42
Trauma	84	90

Frequency of bone and joint lesions in groups

Disease	Distal bone lesions in the feet	Proximal lesions of the bones of the feet
Osteomyelitis	102	96

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Osteoarthritis	66	42

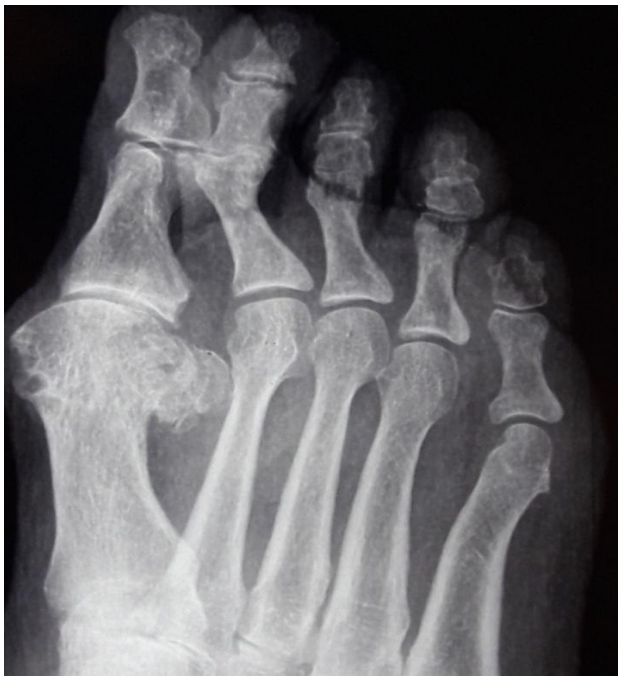
Laboratory tests in patient groups

Laboratory values	Distal bone lesions in the feet	Proximal lesions of the bones of the feet
COE average	32,5 ±19,4	30,3 ±17,6
Leukocytosis, less than 4x or grea10^9ter than 12x10^9	54	12
P/N shift greater than 10	0	0
Hb less than 100 g/L	24	42

Initial or repeat hospitalization after 3-4 months

Hospitalization	Distal bone lesions in the feet	Proximal lesions of the bones of the feet
Primary	102	84
Repeat	66	54

Distal lesion, primary hospitalization



In our case, the I metatarsophalangeal joint was affected secondary to an extensive ulcer, and disarticulation of the joint was performed.

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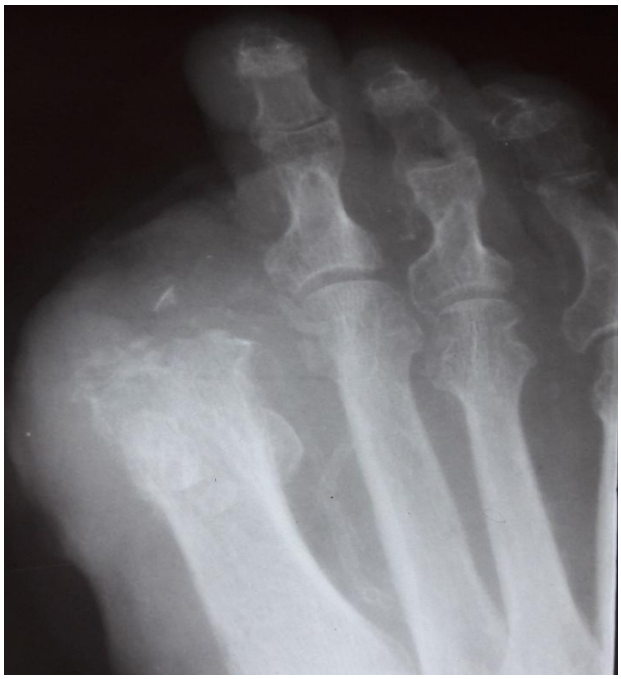
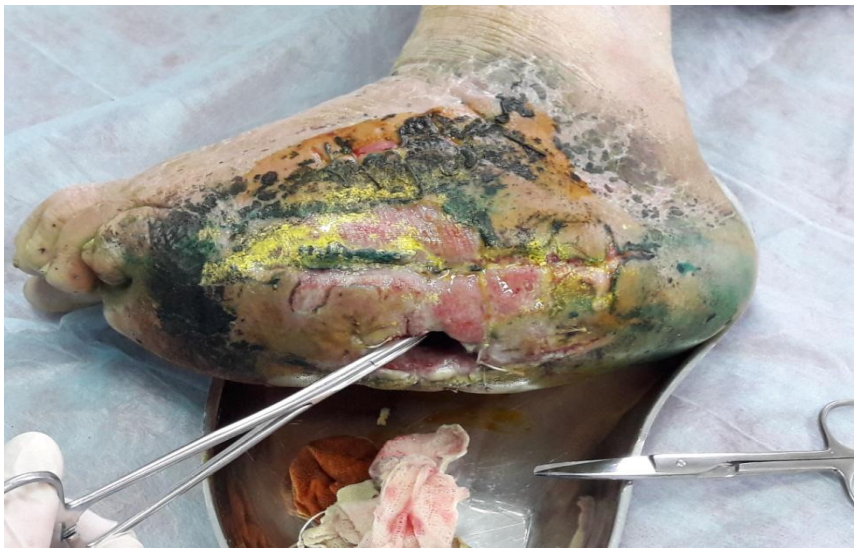


Hospitalization after 3 months: complication from the primary surgery - osteomyelitis of the 1st metatarsal bone and deep ulcer.

Proximal lesion and re-hospitalization



Primary, phlegmon drainage only.

Radiologically: bone-joint lesion, no surgical treatment was performed, only immobilization

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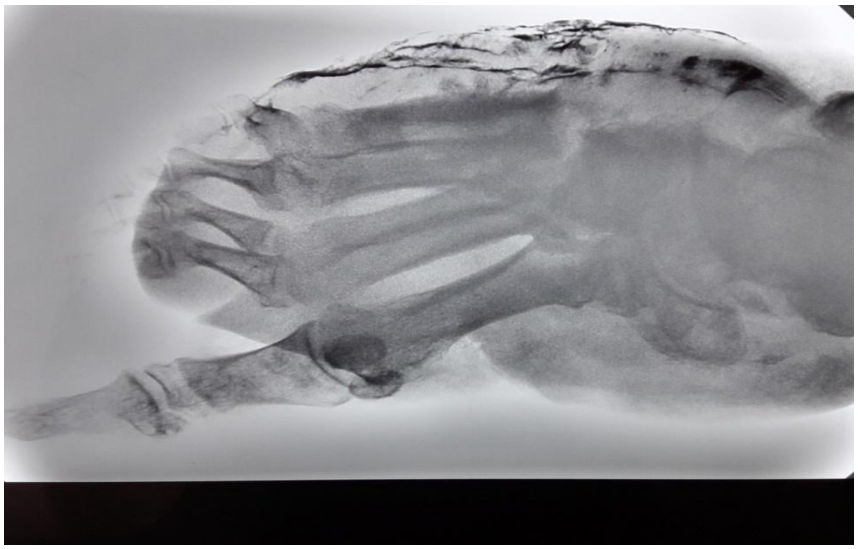

Результаты лечения через 3-4 месяца после операции

Group	Distal bone lesions in the feet	Proximal lesions of the bones of the feet
Relapse	6	12
The presence of a wound	42	18
Healing	90	78

Results and discussion:

According to the results of the study, we believe that in distal forms of osteomyelitis and osteoarthritis, surgical treatment is indicated: joint or bone resection with soft tissue necrectomy, in case of phlegmon or abscesses, excision of ulcers, wounds: is indicated from functional access in non-porous parts of the foot, removal of infected tendons throughout combined with mechanical wound treatment combined with ultrasonic low-frequency cavitation followed by primary plasty, full-thickness skin flap on a wide stalk or suturing of the wound. In rehabilitation after surgery for resection of metatarsal bones, orthopedic shoes with unloading of the forefoot of the full epithelialization, in the case of joint resection, primary immobilization plaster cast until wound healing, followed, if indicated, the use of a bandage "Total contact cast" + unloading crutches.

In proximal lesions, osteonecrectomy or resection of infected, altered bone withexcision of wounds, ulcers or fistulas, in case of paraosseal or paraarticular phlegmons, access was performed on the back and lateral surface. Wound treatment was performed mechanically and by ultrasonic cavitation to remove sequestered bone fragments and pathologic tissues, cavities were actively drained with contrapertures with suturing or skin flap plasty. In the postoperative period, immobilization with a plaster cast and limb unloading with crutches, followed by "Total contact cast" when osteonecrectomy or resection of joint surfaces, defect repair and immobilization until complete consolidation.

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Conclusion:

To date, there is no consensus, algorithms in the diagnosis and treatment of osteomyelitis and osteoarthritis of the bones of the foot as a complication of diabetes mellitus. In the distal form of the lesion, radical surgical treatment is more indicated; in the case of proximal lesions, active drainage of the wound cavity, osteonecrectomy, bone resection with primary skin plasty with full-layer soft tissue flaps are shown. With radical treatment of distal forms and staged treatment of proximal forms of lesions, the limb bearing capacity can be preserved. In the postoperative period and during rehabilitation, immobilization of the limb with the use of various fixation and immobilization bandages and unloading of the limb with the use of crutches is indicated.

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