World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-43, February 2025
ISSN: 2749-3644

TREATMENT OF PURULENT-NECROTIC COMPLICATIONS OF SOFT TISSUES IN DIABETES MELLITUS

Abdullaev S.A.
Department of General Surgery
Samarkand State Medical University

Article history:

Received: October 30th 2024
Accepted: November 28th 2024

Abstract:

One of the common complications of diabetes mellitus (DM) is damage to the blood vessels of the human body, leading to the development of diabetic foot. Literature data and daily practical observation show an increase in the incidence of diabetic foot (30-70%), which increases the urgency of treating this disease. The article contains data on the results of surgical treatment of 151 patients with diabetes mellitus complicated by diabetic foot and purulent-necrotic soft tissue inflammations. Our work presents the basic principles of treatment of purulent-necrotic complications of diabetes mellitus. The effectiveness of topical application of Acerbin solution and two-stage surgical tactics in the complex surgical treatment of purulent-necrotic complications of diabetes mellitus has been proven.

Keywords: diabetes mellitus, purulent-necrotic complications, Acerbin.

INTRODUCTION. One of the common complications of diabetes mellitus (DM) is damage to the blood vessels of the human body. High blood sugar levels lead to narrowing of the vascular lumen. A decrease in the caliber of blood vessels is one of the main reasons for a decrease in blood flow, most often to the tissues of the lower extremities.

Diabetic foot is one of the most serious complications of diabetes mellitus. The cause of the development of diabetic foot is damage to the vessels and nerves of the extremities.

In recent years, literature data and daily practical observation have shown an increase in the incidence of diabetic foot due to smoking, and an annual increase in the number of obese and hypertensive patients.

A mechanical factor plays an important role in the formation of diabetic foot ulcers (high pressure on the feet when walking, friction on shoes, various blunt injuries). Due to neuropathy, foot deformity develops during walking, leading to increased pressure at a certain point of the foot. When walking for a long time, an ulcer develops under the influence of a mechanical factor, which is easily infected.

THE AIM OF THE STUDY is to improve comprehensive, local and surgical treatment using new technologies.

MATERIALS AND METHODS OF THE STUDY: 151 patients with diabetes mellitus complicated by diabetic foot and purulent-necrotic soft tissue inflammations were observed in the purulent-septic department of the Samarkand City Medical Association. Among the examined patients, 87 were male and 64 were female. The age of patients with diabetes ranged from 30-78 years. The majority of them were people aged 30 to 60 years. The duration of the diabetic history of the examined patients ranged from 8 to 22 years. Concomitant cardiovascular diseases were detected in 76% of patients, renal diseases in 54%, liver diseases and pathologies of the gallbladder and biliary tract in 51% of patients.

Type I diabetes mellitus (DM) was detected in 12 (7.9%), and type II diabetes was detected in 139 (92.1%) patients. Severe form of this disease was registered in 48% of patients, moderate - in 41% and mild - in 11% of patients.

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-43, February 2025
ISSN: 2749-3644

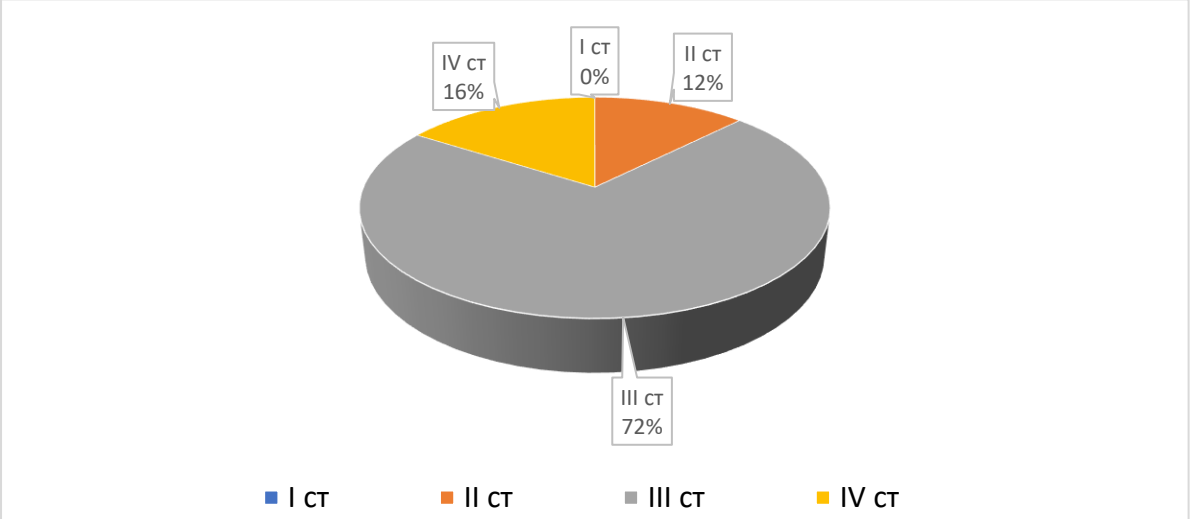

Diagram 1. Distribution of patients depending on the severity of tissue damage in diabetic foot syndrome according to Wagner F.M (1981) classification.

In surgical treatment, we used the Wagner F.M (1981) classification, used to assess the severity of tissue damage in diabetic foot syndrome. According to this classification, among the observed patients, grade II injuries were found in 19 (12.5%), grade III in 108 (71.5%) and grade IV in 24 (16%) patients. Wet necrosis of finger tissue was detected in 101 (66.9%) patients, dry necrosis – in 50 (33.1%). Ischemic ulcer of the calcaneal region occurred in 37 (24.5%) patients.

Ischemic blisters in the foot area were detected in 40 (26.5%) patients, gangrene of one toe was detected in 38 (25.1%) patients, two fingers in 24 (15.9%), three fingers in 27 (17.9%) and all fingers in 22 (14.6%).

During the hospital stay, the patients underwent blood and urine tests, biochemical blood and urine sugar tests, ECG, chest X-ray and chest X-ray, ultrasound, limb Dopplerography, foot bone X-ray, computed tomography and angiography of the lower extremities.

Results and discussion of materials: Our observations showed that the clinical manifestation of diseases developed depending on the degree of damage to soft tissues by purulent-necrotic complications. With neuropathy, muscle atrophy develops, followed by deformities of the fingers. Due to the development of deformity of the toes, calluses and, gradually, trophic ulcers appear. With the development of ischemia, purulent-necrotic phlegmons appear in the tissues of the foot.

Figure 1. The patient. Type II diabetes mellitus. Post-injection abscess.

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-43, February 2025
ISSN: 2749-3644

Figure 2. Opening of the abscess

Figure 3 Contents of the abscess.

Purulent-necrotic phlegmons in diabetic foot syndrome often lead to sepsis, which significantly complicates treatment. This condition in diabetes mellitus is based not only on disorders of carbohydrate metabolism, but also on disorders of protein and fat metabolism. Profound changes contribute to impaired liver, kidney, cardiovascular, and nervous system function.

Purulent infection negatively affects the metabolism, while acidosis develops, the protective function of the body weakens, and the infection spreads throughout

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-43, February 2025
ISSN: 2749-3644

the body. In this condition, we often observed the development of purulent-necrotic fasciitis in patients.
In the treatment of purulent-necrotic complications of diabetic foot syndrome, our tactics were based on the following basic principles: dynamic monitoring of blood sugar and its correction, antibiotic therapy and control of its action, treatment of concomitant diseases, accurate determination of the form of diabetic foot and its severity, the use of local treatment.

Our primary goal was to remove the foot from the state of critical ischemia, in addition, we paid special attention to traditional treatment, that is, immunocorrection and infusion-tranfusion therapy. In the surgical treatment of diabetic foot, according to modern requirements, early diagnosis and extensive autopsy of the phlegmon are necessary. After the evacuation of pus, a thorough revision should be performed, if necessary, fasciotomy and necrectomy. It is worth noting that even at the stage of infiltration, diabetic foot phlegmons need to be opened with wide skin incisions and fasciotomy performed, which significantly reduces pressure on soft tissues, preventing their ischemia.

The main objective of surgical treatment of purulent-necrotic complications of diabetic foot is to preserve the limb from high proximal amputations. That is why in recent years we have introduced two-stage surgical treatment into practice.
At the first stage, relaxing long incisions, wound revision, fasciotomy and necrectomy were performed depending on the size of purulent-necrotic phlegmon. The wound was carefully sanitized and adequately drained. In recent years, we have started using Acerbin solution, which has a keratolytic, antiseptic, analgesic and wound healing accelerating effect. At the second stage, according to the indications, a radical operation was performed - a staged necrectomy from three to eight times.
In the inter-stage period, we managed to stabilize the general condition of the patients and bring the affected limbs out of critical ischemia.
Of 151 patients, 37 (24.5%) had Sharpe amputation of the foot, exarticulation of one finger in 23 (15.2%), two fingers in 24 (15.9%), three fingers in 27 (17.9%), all toes in 22 (14.6%) patients. Amputation at the hip level was performed in 4 (2.6%) patients, amputation at the shin level – in 4 (2.6%). In addition to objective data, we used the results of Dopplerography and angiography to determine the level of limb amputation.

Using the above-mentioned surgical treatment tactics, we achieved a reduction in the number of proximal operations from 20% to 7.5%.

CONCLUSION: We believe that topical application of Acerbin solution and two-stage surgical tactics is the optimal way for complex surgical treatment of purulent-necrotic complications and diabetic foot in diabetes mellitus.

LITERATURE:

1. Bubnova N.A., Shlyapnikov S.A. Skin and subcutaneous tissue infections, surgical hand infections. (Ed. Ergokhina I.A., Gelfandya B.R., Shlepnikova S.A. St. Petersburg: 2004. pp. 379-409
2. Koreiba K.A. Modern drugs of complex action as an alternative to staged necrectomy in purulent-septic surgery. Atserbin. Collection of materials about the drug. Moscow:2018. S-28-33.
3. Svetukhin A.M., Amiraslanov Yu.A. Purulent surgery: the current state of the problem. (In the book "50 lectures on surgery" ed. Savelyeva V.S. M-2004. from 752)
4. Surgical infections of the skin and soft tissues. Russian national guidelines. Recommended by V.S.Savelyev, 2009- 92c
5. Shlyapnikov S.A. Surgical soft tissue infections - an old problem in a new world. Infections in surgery. 2003 -14-21 C.
6. Wagner F.W. A classification and program for diabetic, neuropatic and dysvascular foot problems. In the American Academy of orthopedic surgeon instructional course lectures. St.Louis: Mosby Vear Book. 1997: 143-165.