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ANALYSIS OF THE RESULTS OF DENTAL IMPLANTATION AGAINST THE BACKGROUND OF SOMATIC PATHOLOGY (USING THE EXAMPLE OF DIABETES MELLITUS)

long-term treatment results. The follow-up groups consisted of patients with DM (n=13), with HD (n=11), with GIT (n=12) and persons who have retained their health (n=24).

Results: the number of missing teeth in patients with somatic pathology was 1.7 times higher than in the control group. The production of single crowns on dental implants was carried out with the same frequency in patients with DM and HD, exceeding the rates of individuals with GIT, but significantly less often than in the control group. A similar pattern was observed in the orthopedic treatment with dental implant bridging prostheses, which were used 3 times less frequently in DM patients than in HD individuals, 2 times less frequently than in GIT patients, and 1.8 times less frequently in controls ($p < 0.01$). Bone grafting was performed in patients with DM in 46.2% of cases, with HD – 36.4%, with GIT – 33.3%, compared to 41.7% in the group of individuals without somatic pathology ($p < 0.01$). Complications were observed in half of the DM patients 46.2%, which is 2.3 times higher than the comparator group 20.0%.

Conclusion: performing bone grafting on patients young and middle-aged with aggravated somatic status were accompanied by early complications, late – occurred only in patients with DM (15.4%) and HD (9.1%). The period of osseointegration in patients with somatic pathology increases to 5-6 months compared to the indicators of the control group – 4.3 ± 0.3 months ($p < 0.001$). All subjects had a favorable outcome of dental implantation at long-term follow-up.

Keywords: diabetes mellitus, hypertension, gastrointestinal diseases, dental implantation.

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Introduction. The current stage of development of dental implantology allows for full-fledged dental rehabilitation even in difficult clinical situations. In some general somatic pathologies, it is not always possible to achieve a successful result of implantological treatment [1].

Numerous studies have substantiated

the safety of dental implantation in patients with diabetes mellitus (DM). The main points of preparation for it are monitoring blood sugar levels, interacting with the attending physician – endocrinologist and maintaining a high level of oral hygiene [2,15]. It is believed that with good compensation for diabetes, dental status is not much different from the status of patients who have maintained health, and the cause of damage to the oral mucosa and jaw bone tissue is not DM, but its complications from the kidneys and cardiovascular system [3,4].

However, most foreign and domestic researchers believe that DM contributes to the development of bone tissue pathology of the alveolar bone with more deep destructive processes, especially in the decompensated form of DM [10,12].

In patients with poorly controlled glycemia, the results of implantation are affected by a decrease in the regenerative abilities of jaw bone tissue, pronounced inflammatory processes, and a decrease in the effectiveness of wound healing [8,16]. Often, implantation is not even considered in the treatment of diabetic patients due to increased risks of rejection, with the subsequent development of peri-implants [5,17], the possibility of developing which increases with an in-

crease in glycosylated hemoglobin values of 7% or more [9]. Some authors considered DM an absolute contraindication to implantation 7-8 years ago [10,13].

Difficulties when working with diabetics arise due to manifestations of osteopenic syndrome, as a consequence of developed metabolic disorders [11]. If the osseointegration process – survival rate of a dental implant is disrupted, researchers recommend conical implants to patients with DM as more stable [6], simultaneous implantation to reduce rehabilitation time and prevent tissue loss [2,7].

In recent years, the dental implant method has led many scientists to apply this treatment in patients with DM. Wagner J., Spille JH, Wiltfang J., Naujokat H. (2022), when implanted against the background of DM2, received positive results in 92.7% of cases [15]. The use of modern orthopedic treatment methods has an impact on quality of life and dietary adherence, which is necessary for patients with diabetes to compensate for the disease [8].

Purpose: evaluate the effectiveness of dental implantation in patients with somatic pathology.

Material and research methods. A population prospective study was conducted in private dental clinics in Izhevsk

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from 2023-2025. Using the random sampling method, 25 women and 35 men aged 28 to 61 years were examined from patients who sought dental implantation. Depending on the presence of chronic disease, groups were formed. The first of 13 patients with a verified diagnosis of type 1 and type 2 diabetes mellitus, a glycemic level of 7 to 15 mmol/l (mean 8.7 ± 0.6 mmol/l) aged 39.9 ± 3.5 years. The second of 11 hypertensive patients (HD) whose mean age was 47.5 ± 2.0 years. The third consisted of 12 patients with gastrointestinal pathology (GIT) aged 42.8 ± 3.5 years. Control group formed from 24 patients who remained healthy, middle-aged – 36.8 ± 2.0 years. The gender composition in the formed groups was balanced.

All respondents underwent a traditional clinical examination, assessment of bone density according to the classification of Lekholm and Zarb (1985), and two-stage intraosseous implantation. The degree of osseointegration was monitored by X-ray examination methods at each stage of treatment. Bone grafting was performed according to the indications. When measuring the torque, as an indicator of implant retention, 20 to 45 N/cm was considered the norm. All participants received informed voluntary consent to conduct the study. Dynamic follow-up was performed for 6 months with regular monthly check-ups.

Statistical analysis of the obtained data was carried out using a software package «IBM SPSS Statistics 23». The nature of the distribution was checked using the Kolmogorov-Smirnov and Shapiro-Wilk criteria. Analysis of quantitative indicators according to Student-Bonferroni. The statistical significance of relative indicators was assessed using criterion χ^2 . Correlation analysis by Pearson's method. Differences were assumed to be statistically significant at $p < 0.05$.

Results and discussion. When analyzing the age of patients in private clinics who sought prosthetics using dental implants, it was revealed that the majority of them were young people 58.3% (32.9 ± 1.2 years) and middle-aged patients 40.0% (51.1 ± 0.9 years). It was found that in 60.0% of cases, patients with aggravated somatic status – every 4-6 patients came, most often these were patients with HD and gastrointestinal pathology, less often they came with DM. Only every 2-3 patients had no chronic diseases ($\chi^2 = 12.296$, $p < 0.01$).

Quantitative analysis in observation groups showed that the average number of missing teeth in patients with chronic diseases exceeded 1.7 times the indica-

Table 1						
Indicators of bone density in patients with somatic pathology						
№P/p	Surveillance teams	Bone density (number of patients in %)				p
		First type	Second type	Third type	Fourth type	
1	DM (n=13)	-	16.7	58.3	25	$P_{1-4} < 0.01$
2	HD (n=11)	-	33.3	66.7	-	$P_{2-4} < 0.01$
3	GIT (n=12)	11.1	88.9	-	-	$P_{3-4} < 0.01$
4	Control (n=24)	27.3	54.5	9.1	9.1	

Table 2				
Frequency of use of materials for bone grafting in patients with somatic pathology				
№p/p	Surveillance teams	Autobone shavings	Xenoplastic material	Total
1	DM (n=13)	2 (15.4)	4 (30.8)	6 (46.2)
2	HD (n=11)	-	4 (36.4)	4 (36.4)
3	GIT (n=12)	2 (16.6)	2 (16.7)	4 (33.3)
4	Control (n=24)	6 (25.0)	4 (16.7)	10 (41.7)

Note: Statistical significance of differences $P_{1-4} < 0.01$; $P_{2-4} < 0.01$; $P_{3-4} < 0.05$.

Table 3			
Показатели частоты использования костной пластики на верхней и нижней челюсти у пациентов с соматической патологией			
№p/p	Surveillance teams	Maxilla	Lower jaw
1	SD (n=13)	4 (30.8)	2 (15.4)
2	GB (n=11)	3 (27.3)	1 (9.1)
3	GIT (n=12)	3 (25.0)	1 (8.3)
4	Control (n=24)	6 (25.0)	4 (16.7)

Note: Statistical significance of differences $P_{1-4} < 0.01$; $P_{2-4} < 0.05$; $P_{3-4} < 0.05$.

tors of persons who retained health – 3.2 ± 1.3 ($p < 0.001$). A high positive correlation was found between age and number of missing teeth ($r = 0.594$, $p < 0.01$). When determining the severity of bone tissue atrophy, the indicators of patients with somatic pathology exceeded 1.5 times the indicators of the control group – 3.0 mm ($p < 0.001$).

In determining bone density in DM patients, the most frequent type of bone was D3, when a thin layer of cortical plate surrounds the less dense cancellous bone. D4 bone tissue type (thin layer of cortical plate surrounding low density cancellous bone) was determined in 25.0% of DM patients, which was 2.8 times higher than the control group (Table 1). D2 thick layer bone tissue type the cortical plate surrounding the dense cancellous bone was 3.3 times less common than in the comparison group. D1 type, when almost all

jaw bone consists of cortical bone in DM patients was not diagnosed, occurring in 27.3% in the control group.

The majority of patients with HD – 66.7% had D3 bone tissue type, exceeding 7 times the indicators of the group with equal. The remaining patients with HD were diagnosed with – D2 bone tissue type, in the absence of patients with D1 and D4 bone tissue type. Patients with GIT were most often diagnosed with bone tissue type D2 – 88.9%, 8 times less often the first type in the absence of patients with D3 and D4. Thus, considering that with high bone density the necessary implant stability is more easily achieved, patients with HD and GIT were more prosperous than with DM.

Bone grafting, aimed at strengthening the volume of bone tissue when the own volume is insufficient to fix the implant, was most often used in the treat-

ment of patients with DM (46.2%), using xenoplastic material, 2 times more often than autobone shavings (Table 2.). When treating HD patients in 36.4% of cases, using xenoplastic material alone. In GIT, a third of patients underwent bone grafting using autobone shavings, without the use of xenoplastic material. Patients without somatic pathology 41.7% were 3 times more likely to use xenoplastic material than autobone shavings.

Bone grafting in the upper jaw was performed in patients with somatic pathology (83.1%) 2.5 times more often than in the control group (Table 3.). Mainly with DM than somatic patients of other groups.

In the comparative analysis, it was found that bone grafting in the lower jaw was used in patients with somatic pathology (32.8%) 2 times more often than in patients who remained healthy. In patients with diabetes, it was performed 1.6 times more often than in patients with HD and 1.9 times more often than with GIT.

With the optimal choice of implant length, the lowest values of 10.5 ± 0.9 mm were recorded in patients with DM, the highest 11.9 ± 0.6 in individuals with HD, did not differ significantly in the group of patients with GIT and in the control of 10.8 ± 0.5 mm and 10.7 ± 0.2 mm, respectively ($p < 0.001$).

Early postoperative complications (swelling and hyperemia of soft tissues) were observed with approximately the same frequency in the groups of subjects with somatic pathology: in 30.8% with DM, in 45.5% with HD, in 33.3% with gastrointestinal diseases and in 50.0% in the group without concomitant somatic pathology ($\chi^2 = 21.976$; $p < 0.01$). Relative to late complications (long-term healing of the postoperative wound due to impaired regeneration processes), they were observed most often in patients with DM – 15.4% and in HD – 9.1%. In the absence of patients with GIT and in the control group ($\chi^2 = 12.687$; $p < 0.01$). Treatment of complications was carried out according to standard postoperative antibiotic therapy regimens.

The time frame for achieving secondary stability – fusion of the implant with bone was 5.8 ± 0.5 months in patients with diabetes, with HD – 4.7 ± 0.4 months, with gastrointestinal pathology – 5.2 ± 0.5 months, in the control group 4.3 ± 0.3 months ($p < 0.001$), which fell within the regulatory limits from 3 to 6 months [14]. A high positive association was defined between secondary stability and load ($r = 0.616$) significant at 0.01. In patients with DM, the insertion torque scores were 25.7 ± 2.2 N/cm and did not differ from the controls – 25.7 ± 1.2 N/cm ($p < 0.01$). Mi-

nor differences observed from indicators of patients with HD – 25.0 ± 2.6 N/cm ($p < 0.05$). Patients with GIT presented the lowest values of torque – 24.4 ± 3.3 N/cm. The indicators of all observation groups were within normal limits.

According to Pearson's correlation analysis, the relationship between installation torque and osseointegration time was $r = 0.858$ and was characterized as very high, positive with a significance of 0.01. The correlation of torque and load was $r = 0.497$, as the mean positive relationship, significant at 0.01. Immediate loading with the placement of a temporary crown on the implant was carried out immediately after its insertion into the bone in 7.7% of DM, 33.3% of RVCT and 37.5% of the control group. Patients with HD were not given such a load. For the rest of those examined, the load was delayed, after 6.2-6.5 months.

In the orthopedic treatment, 29 single crowns were made on dental implants to 12 patients with DM, 25 crowns to 9 patients with RVCT, 30 crowns to 9 patients with HD and 42 crowns to 24 patients in the control group ($p < 0.001$).

Bridge prostheses were fabricated significantly less frequently for patients with diabetes mellitus (DM) (7.7%) compared to those with hypertension (HD) (27.2%) and gastrointestinal (GI) tract disorders (8.3%), but more often than for somatically healthy individuals (4.2%; $\chi^2 = 11.438$, $p < 0.01$). One implant-supported removable prosthesis was placed on the upper jaw of a DM patient and two 4 implant-supported removable prostheses on the upper and lower jaws of one control patient ($\chi^2 = 11.528$; $p < 0.01$). No complications were observed with dynamic follow-up for 6 months, and a positive treatment outcome was recorded in all respondents.

Conclusion. When going to private dental clinics for dental implantation, every 4–6 young and middle-aged patients with somatic pathology, for whom single crowns were most often made. It is important to note that the rate of bone grafting among patients with diabetes mellitus (46.2%) was higher than in those with hypertension (36.4%), gastrointestinal disorders (33.3%), and the control group (41.7%). Early postoperative complications were observed in all respondents, late only in patients with DM and HD. The period of osseointegration in patients with somatic pathology increased to 5-6 months. All subjects had a favorable outcome of dental implantation at long-term follow-up.

The authors declare no conflict of interest in the submitted article.

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ACUTE THROMBOSIS OF HEMORRHOIDS: CONSERVATIVE VERSUS SURGICAL TREATMENT

Purpose of the study: to conduct a comparative analysis of the effectiveness of conservative and surgical treatment of acute thrombosis of hemorrhoids. Material and methods: a single-center prospective analysis of the treatment results of 203 patients with acute hemorrhoidal thrombosis was performed: 125 (61.6%) patients who received conservative treatment and 78 (38.4%) operated patients. The conservative treatment program contained recommendations on nutrition, formation of a bowel movement regime, use of thermal baths, and taking systemic and topical medications. Patients of the second group underwent surgical intervention in the amount of thrombectomy or excision of a thrombosed hemorrhoid node under local infiltration anesthesia. Results of the study: patients who received conservative therapy and patients who underwent surgery were comparable in gender, age, and stage of acute hemorrhoidal thrombosis. Statistically significant differences were found between the patients of the two groups in pain assessment on the 1st and 7th days of treatment ($p=0.043$ and $p=0.037$, respectively) and the duration of temporary disability ($p=0.032$). Conclusion: surgical intervention in hemorrhoids complicated by acute thrombosis of hemorrhoids is a method of choice with many advantages. The key ones are to reduce pain on the 1st day after treatment to 3 points on the visual-analog scale (VAS), on the 7th day – to 1 point according to VAS. Compared with the group of patients receiving conservative therapy, after surgical treatment of acute hemorrhoidal thrombosis, a lower incidence of disease recurrence was noted. During the study period, a recurrent course was observed in 1 (2.0%) patient after surgery versus 5 (10.2%) cases in the conservative treatment group. Surgical treatment provides faster labor rehabilitation and reduces the period of temporary disability to 6.3 ± 0.3 days.

Keywords: acute hemorrhoidal thrombosis, surgical treatment of acute hemorrhoidal thrombosis, conservative treatment of acute hemorrhoidal thrombosis

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Introduction. Acute thrombosis of hemorrhoids (ATH) is one of the most painful pathologies of "minor" proctology. The main factor contributing to the development of ATH is venous congestion. Microtraumas of the endothelium of venous vessels contribute to the activation of hemostasis and thrombus formation, which leads to tissue edema and necrosis [3,8]. The choice of the optimal treatment method is based on the analysis of the patient's complaints, medical history

and the results of the clinical examination [4, 10].

There are two main treatment methods: conservative and surgical. Conservative treatment is recommended for ATH without pronounced symptoms of the disease, the patient's refusal of surgery, as well as in patients with severe concomitant diseases. At the same time, a number of authors claim that conservative treatment is the optimal choice for most patients with ATH [12, 16]. In turn, surgical treatment is recommended in cases of pronounced symptoms of the disease, with ATH with necrosis and with the ineffectiveness of conservative treatment methods. Surgical treatment, in comparison with the conservative method, ensures the fastest recovery and reduces the risk of relapse of the disease. In this regard, in patients with frequent recurrences of ATGU, surgical intervention can be considered as a method of preventing thrombosis [2, 6]. Most researchers emphasize the importance of

an individual approach to treatment. The choice between conservative and surgical treatment is based on the severity and course of the disease, taking into account the patient's preferences [15]. A combined tactic is also possible: the use of conservative treatment to relieve the symptoms of ATH in preparation for subsequent surgical intervention [17].

The choice of optimal treatment tactics for patients with ATH is a subject of debate, and studies assessing the advantages and disadvantages of conservative and surgical treatment are still relevant.

The aim of the study: comparative analysis of the effectiveness of conservative and surgical treatment of acute thrombosis of hemorrhoids.

Materials and methods: a retrospective single-centre cohort study was conducted, which included 203 patients treated for ATH at the regional proctology center of the Surgut regional clinical hospital in the period 2020–2024. 125 (61.5%) patients received conservative treatment,

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