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Оптимизация клинических результатов реабилитации пациентов с некариозными поражениями зубов, проявляющимися в виде патологической стираемости

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Аннотация

Введение. Патрологическая стираемость зубов – это результат ряда факторов, включая неправильный прикус, аномалии зубного ряда, дисфункцию жевательных мышц и использование неадекватных гигиенических средств. Это состояние может привести не только к потере эстетической привлекательности, но и к функциональным нарушениям, болевым ощущениям и повышенной чувствительности зубов. Восстановление здоровья полости рта у таких пациентов требует комплексного подхода, включающего диагностику, профилактику и терапевтические мероприятия..

Цель исследования. Изучить клинические результаты при реабилитации пациентов с некариозными поражениями зубов в форме патологической стираемости

Материалы и методы исследования: Исследование проводилось на базе стоматологической клиники Самаркандского государственного медицинского университета в период с 2023 по 2025 гг. В исследование включены 90 пациентов в возрасте от 25 до 65 лет (средний возраст 43,7±8,3 года) с различной степенью патологической стираемости зубов. Критериями включения являлись: наличие генерализованной патологической стираемости зубов I, II или III степени по классификации Бушана; отсутствие выраженных дефектов зубных рядов (потеря не более 4 зубов); отсутствие тяжелой соматической патологии.

Результаты. Современные методы реабилитации позволяют значительно улучшить клинические результаты лечения пациентов с некариозными поражениями зубов. Процесс реабилитации должен основываться на персонализированном подходе. Это включает в себя использование современных материалов для восстановления зубов, коррекцию прикуса и применение методов физиотерапии, что в итоге способствует улучшению состояния зубов и десен.

Выводы:Патологическая стираемость зубов является распространенной проблемой, требующей комплексного подхода к диагностике и лечению, чтобы предотвратить дальнейшие осложнения.

Ключевые слова: патологическая стираемость зубов, стоматологическая реабилитация, окклюзионные нарушения, снижение высоты прикуса, функциональная перегрузка, мышечно-суставная дисфункция, комплексное лечение

OPTIMIZATION OF CLINICAL OUTCOMES IN THE REHABILITATION OF PATIENTS WITH NON-CARIES DENTAL LESIONS MANIFESTING AS PATHOLOGICAL ABRASION

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Abstract

Introduction. Pathological abrasion of teeth results from a number of factors, including misaligned bites, dental arch anomalies, dysfunction of the masticatory muscles, and inadequate hygiene practices. This condition can lead not only to a loss of aesthetic appeal but also to functional impairments, pain, and increased tooth sensitivity. Restoring oral health in such patients requires a comprehensive approach, including diagnosis, prevention, and therapeutic interventions.

Aim of the Study. To study clinical outcomes in the rehabilitation of patients with non-caries dental lesions in the form of pathological abrasion.

Materials and Methods. The study was conducted at the dental clinic of Samarkand State Medical University from 2023 to 2025. The research included 90 patients aged 25 to 65 years (mean age 43.7±8.3 years) with varying degrees of pathological abrasion of teeth. Inclusion criteria were as follows: the presence of generalized pathological abrasion of teeth of grade I, II, or III according to Bushan's classification; absence of pronounced defects in the dental arch (loss of no more than 4 teeth); and absence of severe somatic pathology.

Results. Modern rehabilitation methods significantly improve clinical outcomes in the treatment of patients with non-caries dental lesions. The rehabilitation process should be based on a personalized approach. This includes the use of modern materials for tooth restoration, correction of the bite, and application of physiotherapeutic methods, which ultimately contributes to the improvement of the condition of teeth and gums.

Conclusions. Pathological abrasion of teeth is a common problem that requires a comprehensive approach to diagnosis and treatment to prevent further complications.

Keywords: pathological tooth abrasion, dental rehabilitation, occlusal disorders, height loss of bite, functional overload, muscle-joint dysfunction, integrated treatment.

Tishlarning patologik yeyilishida namoyon bo'ladigan kariozsiz tishi bo'lgan bemorlarni reabilitatsiya qilishning klinik natijalarini optimallashtirish.

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Annotatsiya

Kirish. Tishlarning patologik yemirilishi bir qator omillar natijasida kelib chiqadi, jumladan noto‘g‘ri tishlov, tish qatori anomaliyalari, chaynov mushaklari disfunksiyasi va noto‘g‘ri gigiyenik vositalardan foydalanish. Bu holat nafaqat tashqi ko‘rinishning yomonlashishiga, balki funksional

buzilishlarga, og‘riq va tishlarning sezuvchanligining ortishiga ham olib kelishi mumkin. Bunday bemorlarda og‘iz bo‘shlig‘i salomatligini tiklash diagnostika, profilaktika va davolash tadbirlarini o‘z ichiga olgan kompleks yondashuvni talab etadi.

Tadqiqot maqsadi. Patologik yemirilish ko‘rinishidagi tishlarning nokarioz zararlanishlari bo‘lgan bemorlarni reabilitatsiya qilishning klinik natijalarini o‘rganish

Tadqiqot materiallari va usullari: Tadqiqot 2023-2025-yillar davomida Samarqand davlat tibbiyot universiteti stomatologiya klinikasida o‘tkazildi. Tadqiqotga 25 yoshdan 65 yoshgacha bo‘lgan (o‘rtacha yoshi 43,7±8,3) turli darajadagi tishlarning patologik yemirilishi mavjud 90 nafar bemor kiritildi. Kiritish mezonlari quyidagilardan iborat edi: Bushan tasnifi bo‘yicha I, II yoki III darajali umumlashgan patologik tish yemirilishining mavjudligi; tish qatorlarida sezilarli nuqsonlarning yo‘qligi (4 tadan ko‘p bo‘lmagan tishlarning yo‘qolishi); og‘ir somatik kasalliklarning yo‘qligi.

Natijalar. Zamonaviy reabilitatsiya usullari tishlarning nokarioz zararlanishlari bo‘lgan bemorlarni davolashning klinik natijalarini sezilarli darajada yaxshilash imkonini beradi. Reabilitatsiya jarayoni shaxsga yo‘naltirilgan yondashuvga asoslanishi lozim. Bu tishlarni tiklash uchun zamonaviy materiallardan foydalanish, tishlovni tuzatish va fizioterapiya usullarini qo‘llashni o‘z ichiga oladi, bu esa pirovardida tish va milklarning holatini yaxshilashga yordam beradi.

Xulosalar: Tishlarning patologik yemirilishi keng tarqalgan muammo bo‘lib, keyingi asoratlarning oldini olish uchun diagnostika va davolashga kompleks yondashuvni talab qiladi.

Kalit so‘zlar: tishlarning patologik yemirilishi, stomatologik reabilitatsiya, okklyuzion buzilishlar, tishlov balandligining pasayishi, funksional zo‘riqish, mushak-bo‘g‘im disfunksiyasi, kompleks davolash.

Introduction. Pathological tooth abrasion (PTA) represents one of the pressing issues in modern dentistry, affecting between 11.8% and 42.6% of the adult population according to various sources. With age, the prevalence of this condition increases, reaching 62-75% among individuals over 50 years old. Despite extensive research dedicated to various aspects of diagnosing and treating pathological abrasion, questions regarding the comprehensive rehabilitation of patients remain insufficiently explored. Most studies focus on orthopedic methods to restore lost dental tissues, while the tasks of long-term rehabilitation and prevention of disease progression, especially from the perspective of evidence-based medicine, are addressed only fragmentarily.

Numerous studies indicate that patients with pathological tooth abrasion often face a high risk of functional disorders, including dysfunction of the temporomandibular joint (TMJ), chewing function issues, increased tooth sensitivity, and aesthetic defects, significantly impacting their quality of life and social adaptation. Research shows that up to 75% of individuals with generalized forms of PTA require comprehensive rehabilitation using a multidisciplinary approach.

Currently, there is no unified standard for the rehabilitation of patients with pathological tooth abrasion, nor are there standardized protocols that account for the individual characteristics of clinical forms, the severity of the process, the patients' age, and the presence of comorbidities. The long-term outcomes of various rehabilitation programs and their impact on the functional state of the stomatognathic system and quality of life are also inadequately studied. Therefore, developing scientifically grounded approaches to the comprehensive rehabilitation of patients with pathological tooth abrasion represents an important task in contemporary dental practice.

Aim of the Study: To investigate the clinical outcomes of rehabilitation in patients with non-caries tooth lesions manifesting as pathological abrasion.

Materials and Methods: The study was conducted at the dental clinic of Samarkand State Medical University from 2023 to 2025. It included 90 patients aged 25 to 65 years (mean age 43.7±8.3 years) with varying degrees of pathological tooth abrasion. Inclusion criteria were as follows: generalized pathological tooth abrasion of grades I, II, or III according to Bushan's classification; absence of significant defects in dental arches (loss of no more than 4 teeth); absence of severe somatic diseases. Patients were divided into three groups based on the selected comprehensive rehabilitation program:

- **Group 1** (n=30) — standard treatment protocol, including orthopedic restoration (direct and indirect restorations) without prior preparation and subsequent supportive treatment;
- **Group 2** (n=30) — expanded treatment protocol, which includes, in addition to orthopedic restoration, preliminary occlusal therapy using a splint and biomechanical analysis of occlusion;
- **Group 3** (n=30) — comprehensive multidisciplinary rehabilitation program, which includes preliminary occlusal therapy, orthopedic restoration, normalization of masticatory muscle function using physiotherapeutic methods, psychological correction of bruxism (if necessary), regular monitoring, and supportive therapy.

The groups were comparable in terms of age, gender, degree of pathological abrasion, and clinical forms. All patients underwent clinical, radiological, and functional examinations. The effectiveness of rehabilitation was assessed at the short-term period (up to 6 months), mid-term period (12 months), and long-term period (24-36 months).

To evaluate the functional state of the stomatognathic system, the following methods were used:

- electromyography of masticatory muscles;
- axiography of TMJ;
- computer analysis of occlusion (T-Scan);
- assessment of tooth sensitivity using a visual-analog scale (VAS);
- evaluation of chewing efficiency using the Rubin method.

The Oral Health Impact Profile (OHIP-14) questionnaire was used to assess quality of life. Statistical analysis of the data was performed using SPSS Statistics 25.0, applying descriptive statistics, Student's t-test, χ^2 test, and correlation analysis. Differences were considered statistically significant at $p<0.05$.

Results of the Study

Analysis of the results showed that the application of various rehabilitation programs significantly influences the restoration of the stomatognathic system's function and the quality of life of patients in both short-term and long-term perspectives. In the short term (up to 6 months), successful adaptation to the restored occlusal height was observed in 68.3% of patients in Group 1, 86.7% in Group 2, and 96.7% in Group 3 ($p<0.05$ when comparing Groups 1 and 3). The incidence of complications (muscle hyperactivity, discomfort in the TMJ area) was 33.3% in Group 1, 16.7% in Group 2, and 6.7% in Group 3 ($p<0.01$ when comparing Groups 1 and 3).

The evaluation of the functional condition of the stomatognathic system in the mid-term period (12 months) indicated that normalization of bioelectrical activity of masticatory muscles recorded via electromyography was noted in 46.7% of patients in Group 1, 70.0% in Group 2, and 90.0% in Group 3 ($p<0.01$ when comparing Groups 1 and 3). Chewing efficiency according to the Rubin method was 72.3±5.6% for Group 1, 83.4±4.8% for Group 2, and 92.1±3.7% for Group 3 ($p<0.05$ for all intergroup comparisons).

In the long term (24-36 months), the preservation of orthopedic constructions without the need for replacement was 63.3% in Group 1, 80.0% in Group 2, and 93.3% in Group 3 ($p<0.01$ when

comparing Groups 1 and 3). Signs of progressive pathological abrasion were observed in 36.7% of patients in Group 1, 20.0% in Group 2, and 6.7% in Group 3 ($p<0.01$ when comparing Groups 1 and 3).

The evaluation of quality of life using the OHIP-14 questionnaire 36 months after the start of treatment demonstrated statistically significant differences between groups. The lowest OHIP-14 index, indicating a higher quality of life, was recorded for patients in Group 3 (14.3±2.1 points) compared to patients in Group 2 (23.7±3.2 points) and Group 1 (32.4±4.5 points) ($p<0.01$ for all intergroup comparisons).

Correlation analysis revealed a strong positive relationship between the normalization of masticatory muscle function and the quality of life of patients ($r=0.81$, $p<0.01$). It was also established that the following factors had the most significant influence on the effectiveness of the rehabilitation:

1. Conducting preliminary occlusal therapy using splints prior to orthopedic restoration;
2. A multidisciplinary approach involving a dental orthopedist, therapist, gnathologist, physiotherapist, and psychologist;
3. Individualization of the rehabilitation program considering the degree and form of pathological tooth abrasion, the patient's age, and comorbid conditions;
4. The use of modern methods of biomechanical analysis of occlusion;
5. Regular dynamic monitoring and timely correction of orthopedic constructions.

Conclusion. The findings of this study underscore the importance of a comprehensive, individualized, and multidisciplinary approach to the rehabilitation of patients with pathological tooth abrasion. Standard orthopedic methods alone are insufficient to ensure stable long-term outcomes. The incorporation of preliminary occlusal therapy, functional diagnostics, physiotherapeutic correction, and psychological support significantly enhances treatment effectiveness. Patients undergoing full multidisciplinary rehabilitation demonstrated superior functional recovery, reduced complication rates, higher preservation of orthopedic constructions, and improved quality of life over the long term. These results highlight the necessity of developing standardized rehabilitation protocols based on evidence-based practices that account for the severity of abrasion, patient age, and associated comorbidities. A scientifically grounded and integrative strategy is essential for ensuring the stability of outcomes and the functional integrity of the stomatognathic system.

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