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ORTHOPEDIC REHABILITATION OF PATIENTS EMPLOYED IN THE CHEMICAL INDUSTRY

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ABSTRACT: Occupational factors of the chemical industry have a significant impact on the condition of hard dental tissues, periodontal structures, oral mucosa, and the dentofacial system as a whole. Long-term exposure to chemical agents contributes to accelerated tooth wear, increased prevalence of partial tooth loss, and functional disturbances requiring orthopedic treatment. Modern prosthodontic rehabilitation is aimed not only at restoring masticatory efficiency but also at improving quality of life and preventing further pathological changes in the oral cavity. The present article discusses the role of occupational hazards in the development of dental defects among chemical industry workers and highlights contemporary approaches to orthopedic rehabilitation.

Keywords: orthopedic dentistry, prosthodontics, chemical industry, occupational hazards, tooth loss, fixed prostheses, removable dentures, dental rehabilitation.

ANNOTATSIYA: Kimyo sanoati korxonalarida uchraydigan zararli ishlab chiqarish omillari tishlarning qattiq to‘qimalari, parodont va og‘iz bo‘shlig‘i a’zolari holatiga salbiy ta’sir ko‘rsatadi. Uzoq muddatli kasbiy ta’sir natijasida tishlarning patologik yeyilishi, qisman tish yo‘qotilishi va chaynash tizimining funksional buzilishlari rivojlanishi mumkin. Zamonaviy ortopedik stomatologiya nafaqat chaynash samaradorligini tiklash, balki bemorlarning hayot sifatini yaxshilashga ham qaratilgan. Maqolada kimyo sanoati ishchilarida uchraydigan stomatologik nuqsonlar va ularni ortopedik davolashning zamonaviy usullari yoritilgan.

Kalit so‘zlar: ortopedik stomatologiya, protezlash, kimyo sanoati, kasbiy omillar, tish yo‘qotilishi, stomatologik reabilitatsiya.

АННОТАЦИЯ: Вредные производственные факторы химической промышленности оказывают существенное влияние на состояние твердых тканей зубов, пародонта и зубочелюстной системы. Длительное воздействие химических веществ способствует развитию патологической стираемости зубов, частичной потери зубов и функциональных нарушений, требующих ортопедического лечения. Современная ортопедическая стоматология направлена на восстановление жевательной эффективности, эстетики и

качества жизни пациентов. В статье рассмотрены особенности стоматологической патологии у работников химической промышленности и современные подходы к их ортопедической реабилитации.

Ключевые слова: ортопедическая стоматология, протезирование, химическая промышленность, профессиональные вредности, дефекты зубных рядов, стоматологическая реабилитация.

Introduction

The preservation of oral health among industrial workers remains an important challenge of modern dentistry. Workers employed in chemical enterprises are continuously exposed to various harmful substances, including acids, alkalis, organic solvents, and industrial aerosols. These agents negatively influence the oral cavity and may accelerate pathological processes affecting teeth and periodontal tissues.

Long-term occupational exposure often results in increased tooth wear, enamel demineralization, cervical defects, and premature tooth loss. Such conditions adversely affect mastication, speech, facial aesthetics, and psychosocial well-being. Consequently, many workers require orthopedic dental treatment aimed at restoring
lost oral functions.

The relevance of orthopedic rehabilitation has increased significantly due to the growing prevalence of partial edentulism among working-age populations. Early prosthodontic intervention contributes to functional recovery and prevention of secondary deformities of the dentition.

The Impact of Chemical Occupational Factors on the Dentofacial System

Chemical agents may directly affect dental hard tissues through demineralization processes. Acidic environments contribute to erosion and increased susceptibility to pathological wear. In addition, chronic exposure to toxic substances may impair salivary gland function, reducing the protective capacity of oral fluid.

The progression of these pathological changes often leads to:
Increased tooth sensitivity;
Loss of enamel structure;
Occlusal disturbances;
Defects of dental arches;
Reduction of masticatory efficiency;
Development of temporomandibular joint dysfunction.

These conditions frequently require comprehensive prosthodontic management.

Modern Methods of Orthopedic Rehabilitation

Contemporary orthopedic dentistry offers a wide range of treatment options for patients with partial or complete tooth loss.

Fixed prosthetic constructions remain one of the most commonly used rehabilitation methods. Metal-ceramic and all-ceramic restorations provide satisfactory functional and esthetic outcomes. Such restorations contribute to the restoration of occlusal relationships and masticatory function.

Removable prostheses continue to play an important role in patients with extensive tooth loss when fixed treatment is contraindicated. Advances in dental materials have significantly improved the comfort and durability of removable appliances.

Implant-supported prosthetic rehabilitation has become a preferred treatment modality in many clinical situations. Dental implants allow restoration of missing teeth without preparation of adjacent structures and provide long-term functional stability.

Functional and Social Significance of Prosthodontic Treatment

Loss of teeth negatively affects both physical and psychological health. Difficulties in chewing may contribute to digestive disturbances and nutritional deficiencies. Aesthetic defects may reduce self-confidence and social activity.

Orthopedic treatment facilitates:
Restoration of chewing efficiency;
Improvement of speech function;
Enhancement of facial aesthetics;
Prevention of dentition deformities;
Improvement of quality of life.

Comprehensive rehabilitation therefore represents an essential component of occupational healthcare programs.

Prevention of Orthopedic Pathology

Preventive measures should focus on reducing occupational risks and maintaining oral health.

Key preventive strategies include:
Regular dental examinations;
Professional oral hygiene procedures;
Early treatment of caries and periodontal diseases;
Monitoring of pathological tooth wear;
Timely prosthodontic rehabilitation;
Occupational health education.

Implementation of preventive programs can significantly reduce the need for extensive orthopedic treatment.

Conclusion

Occupational hazards associated with chemical industry enterprises contribute to the development of various dental disorders requiring orthopedic intervention. Timely prosthodontic rehabilitation restores oral function, improves aesthetics, and enhances quality of life. The integration of preventive and orthopedic measures into occupational healthcare systems is essential for preserving the oral health of industrial workers.

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