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Research Article

GALVANISM IN THE DEVELOPMENT OF PRECANCEROUS DISEASES OF THE ORAL MUCOSA

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Khaydar Kamilov
Tashkent State Dental Institute, Uzbekistan

Karima Musaeva
Tashkent State Dental Institute, Uzbekistan

Diloro Kakhkharova
Tashkent State Dental Institute, Uzbekistan

Aliya Kadirbayeva
Tashkent State Dental Institute, Uzbekistan

ABSTRACT

According to various authors, the proportion of precancerous diseases ranges from 18.2 to 19.8% among diseases of the oral mucosa. Galvanosis, in the absence of proper treatment measures, leads to the development of many diseases of the oral mucosa, including precancerous ones. 150 patients with signs of galvanosis who applied to the department of therapeutic dentistry of the TGSI were examined. Dispersed luminous particles using the Abdullahodzhaeva-Krahmalev method were identified during galvanosis of the oral cavity.

KEYWORDS

Precancerous diseases of the oral cavity, galvanosis, cytology, diagnostics.

INTRODUCTION

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Galvanosis is a pathological condition characterized by the effect of galvanic currents on the oral mucosa. The pathogenetic basis of galvanosis is the corrosion of dissimilar metal materials of dentures, caused by electrochemical processes occurring in the oral cavity [1-2].

One of the effective diagnostic tests is the removal of structures made of dissimilar metals [3]. After excluding structures made from dissimilar alloys, patients, as a rule, note a decrease or even disappearance of unpleasant sensations [4-5]. However, there are cases when a patient complains when there are dentures made of one alloy in the oral cavity (Grechishnikov N.S., 2017).

In this study, galvanism is a factor contributing to the development of precancerous diseases of the oral cavity [9], which is quite common in recent years, which in turn indicates the need to control the technical part of orthopedic rehabilitation.

The object of the study is to substantiate an integrated approach to the diagnosis of patients with precancerous diseases of the oral mucosa against the background of galvanosis.

Material and research methods. We examined 150 patients with signs of galvanosis who applied to the Department of Therapeutic Dentistry of the TGSI in the period from 2019 to 2023. To fulfill the objectives of the study, the patients who applied were examined clinically, using potentiometry, autofluorescence stomatoscopy, and also cytologically using the Papanicolaou and Abdullahodzhaeva-Krahmalev methods. Autofluorescent stomatoscopy was carried out in the department of hospital therapeutic dentistry. Cytological research methods were carried out on the basis of the Republican Pathological Anatomical Center.

We considered the different range of complaints noted in patients with precancerous diseases of the oral mucosa, due to the diversity of lesions, from the perspective of the patient. For example, soreness of the oral mucosa was recorded as the most common symptom, observed in 92% of patients, and many associated the feeling of pain with a burning sensation in the mouth, noted in 37% of cases. In addition, roughness of the oral mucosa, a feeling of tightness of the mucous membrane and a feeling of dryness of the oral mucosa were noted. 18% reported a feeling of awkwardness or unpleasant sensation during functional activities of the oral cavity. 9% of patients had no complaints.

Potentiometry confirmed the presence of microcurrents in the oral cavity in all subjects.

All 150 study patients were examined for the presence of pathological fluorescence of the mucous membranes. Thus, in all subjects, an increased or decreased intensity of luminescence was recorded during autofluorescent stomatoscopy. When the beam of the device was aimed at the mucous membrane in the affected area, a difference in fluorescence was noted in the form of a clear focus of hyperkeratosis

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highlighting with a brighter glow. In case of erosive lesions, on the contrary, a dimming of the glow was recorded, highlighting the lesion against the background of a brighter healthy mucous membrane. Thus, in patients with LP, there was a decrease in oral mucosa fluorescence in 85% of cases. In patients with veruccous leukoplakia, increased fluorescence in the form of a bright white glow was observed in 14%. In 1 patient, a heterogeneous glow with the presence of dark spots, almost black, was noted - complete quenching of fluorescence against the background of a brown or red glow of the surrounding mucosa, confirmed by subsequent morphological analysis as oral cancer.

Analysis of research data using the Abdullahodzhaeva-Krahmalev method showed positive results when conducting screenings in order to identify the initial stages of the development of malignancy. Dispersed luminous particles were found in smears of patients with galvanosis even in the absence of clinical signs. During inflammation, alterative signs of epithelial structures gave a picture of single DSPs, which gives us the opportunity to talk about the possible development of cellular atypia in the future. Thus, we can judge the effectiveness of screening studies to identify precancerous diseases.

Using a metallographic inverted microscope and a digital camera, the image was placed on a computer, which later helped to compare the picture of the clinical and cytological examination.

Thus, the following data were obtained. In 1 patient, intraepithelial DSPs were found in large quantities.

An interesting fact was that in 65% of the studied patients, in the complete absence of cytological changes, intercellular DSCs were registered; this feature suggests that chronic diseases caused by galvanism are in fact considered precancerous for good reason, due to the gradual destruction of cellular structures, and the following a stage of tissue restructuring may be dysplasia as a stage of cellular atypia. Thus, we can talk about the potential risk of malignancy in the absence of necessary treatment.

Conclusions. Dispersed luminous particles using the Abdullahodzhaeva-Krahmalev method were identified in galvanosis of the oral cavity, and in most cases they are multiple intercellular, which indicates the risk of developing malignant tumors of the oral cavity. Using the Abdullahodzhaeva-Krahmalev method, a system for adequately assessing the diagnosis of precancerous diseases against the background of galvanosis has been improved.

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