



MODERN APPROACHES TO RESTORING MAXILLOFACIAL DEFECTS AFTER CANCER SURGERY

Kayumov Gayratsher Olimovich

Center for the Development of Professional Qualifications of Medical
Workers under the Ministry of Health of the Republic of Uzbekistan.
Fergana Regional Dental Hospital.

qayumovgayratsher@gmail.com, <https://orcid.org/0009-0001-8094-2924>

<https://doi.org/10.5281/zenodo.17983443>

ARTICLE INFO

Received: 16th December 2025

Accepted: 17th December 2025

Online: 18th December 2025

KEYWORDS

maxillofacial region, oncology, dentistry, oral mucosa (ORM), psychology, occlusion, digital technology

ABSTRACT

The results of analyzes of retrospective and prospective data of patients and their medical records with diagnoses of malignant tumors (TM) of the maxillofacial area (MFA) the vast majority of patients, 24.4%, are aged 31-40 years; according to the location and structure of the neoplasm, 36.8% - in cases of the right maxilla side; - 35.2% left maxillary unit; - 8.9% - cells of the ethmoid labyrinth; 10% - Right and left maxillary unit; - 5.6% of cases - lower jaw and - 3.6% of cases of nasal skin. According to the results, in order to restore defects of the maxillofacial area after surgical operations of oncological patients (OB), prostheses manufactured by digital technology (DT), individual titanium and combined - acrylic with monomer-free material "Vertex termosens" are noted to be effective.

Relevance.

The results of analyzes of retrospective and prospective data of patients and their medical records with diagnoses of malignant tumors (TM) of the maxillofacial area (MFA) the vast majority of patients, 24.4%, are aged 31-40 years; according to the location and structure of the neoplasm, 36.8% - in cases of the right maxilla side; - 35.2% left maxillary unit; - 8.9% - cells of the ethmoid labyrinth; 10% - Right and left maxillary unit; - 5.6% of cases - lower jaw and - 3.6% of cases of nasal skin. According to the results, in order to restore defects of the maxillofacial area after surgical operations of oncological patients (OB), prostheses manufactured by digital technology (DT), individual titanium and combined - acrylic with monomer-free material "Vertex termosens" are noted to be effective.

The purpose of the study.

Determine the need for orthopedic prosthetics after radical maxillofacial surgery, assess their clinical characteristics and methods for manufacturing individually manufactured prostheses.

Material and methods.

The research is based on retrospective and prospective data obtained as a result of observation of patients and their medical records with diagnoses of maxillofacial lesions at the dispensary "D" department "Head and Neck". X-ray, clinical, dental, and sociological studies were carried out; based on observation, 33 CP with various defects and deformations

of the maxillofacial area were selected and prosthetics were performed to restore the anatomical and functional shape of the maxillofacial area using individual titanium and combined prostheses manufactured using digital technology - acrylic with the material "Vertex termosens", which further assessed the effectiveness of prosthetic methods and materials.

Results.

It was established that patients with various defects and deformations of the maxillofacial area who were undergoing treatment and rehabilitation showed that the planning of reconstructive operations was carried out without the use of special software. In order to restore the maxillofacial area, 105 individually manufactured implants using digital technology for manufacturing managed to reduce the duration of surgical intervention and achieve high efficiency. It has also been established that the decisive point in virtual planning of reconstructive operations in patients with maxillofacial area is compliance with the principle of "reverse planning"; also, the high efficiency of planning reconstructive operations on DT using titanium and combined - acrylic and soft pads "Vertex termosens" has been proven.

Conclusion.

Thus, it has been established that CP of the maxillofacial area, satisfied with the results of prosthetics, have registered a reliably good standard of living with new prostheses, which, modified using the method of manufacturing prostheses using DT (3D printing, CAD/CAM technique), solves the problem of developing a set of therapeutic and diagnostic measures using functional research methods to improve the quality of manufactured prostheses in orthopedic dentistry.

References:

1. Даминова Ш, Казакова Н. Стоматологический статус у пациентов с воспалительными заболеваниями суставов. Дни молодых учёных. 2020 May 1(1):93-4.
2. Джумаев ЗФ, Гаффоров СА, Каюмов ГО, Джамбилов РС. Состояние полости рта и уровни биомаркеров ротовой жидкости ортопедические протезирование больных после онкологических операций челюстно-лицевой области. Sciences of Europe. 2024(149):14-9.
3. Казакова НН. Изучение влияния зубных паст на микробиоту ротовой полости. Актуальные вопросы фармакологии: от разработки лекарств до их рационального применения» Бухара. 2020:36-8.
4. Axmadovich S. Improving dental treatment and preventive methods aimed at improving the condition of periodontal tissues and oral mucosa in patients with AIDS. African journal of biomedical research. 2024:3083-91.
5. DN Xen, ZF Djumayev, RS Jambilov, SA Gafforov. Justification of the effectiveness of various methods of manufacturing dentures and improving the quality of treatment of patients with removable dentures using digital technologies. African Journal of Biomedical Research, 2024, 27, 2671-2679.
6. Kazakova NN, Sobirov AA. Changes in saliva in children with comorbidities. Journal For Innovative Development in Pharmaceutical and Technical Science (JIDPTS). 2021 Mar;4(3):2.

- 7.Mirjonovich AO, Axmadovich SA, Amrulloevich GS, Shermamatovna AG, Sunnatulloyevna GS. Comprehensive approach to diagnosis and prosthetic dental treatment of patients with mental disorders. TPM–Testing, Psychometrics, Methodology in Applied Psychology. 2025 Sep 25;32(3):206-15.
- 8.Po’latova R.S., Gafforov S.A., Idiyev O.E, Kazakova N.N., Fazilbekova G.A. An approach to enhancing oral health and dental arch restoration in patients with acquired immunodeficiency syndrome (AIDS). TPM–Testing, Psychometrics, Methodology in Applied Psychology. 2025 Jun 15;32(2-June):1026-35.
- 9.Sunnatulloyevna S. Grounding And Solutions of Ecological Sustainability, Stomatology, And Human Health Problems in Scientific-Practical-Experiments. Journal of Ecohumanism. 2024;3(4):886-97.
- 10.Zukhriddin D, Sunnatullo G, Nurmukhamet R, Raykhon P, Ravshanbek J, Kalamkas R, Alijon S, Sevara G. Justification for the physiological isolation of the torus based on the pain sensitivity of the oral mucosa. InBIO Web of Conferences 2025 (Vol. 152, p. 01008). EDP Sciences.