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## PROSTHETIC TREATMENT WITH FACIAL PROSTHESIS IN PATIENT IN TERMINAL STAGE OF CANCER DISEASE

Ivan Gerdzhikov

Department of Prosthetic dentistry, Faculty of Dental Medicine, Medical University of Sofia  
ivan\_ger1971@abv.bg

**Abstract: Introduction:** Consequences after oncological operations of the upper jaw are varying degrees of eating, swallowing and breathing disorders, from which the patient suffers biologically. Speaking is also affected in varying degrees, which makes the patient socially inferior as well. The degree of damage depends on the location of the defect, its range, the combination with defects in teeth rows, the communication between the oral and nasal cavity. Apart from this, the appearance of the person's face is affected to some extent, which is the characteristic sign of personality. As a result of the surgical removal of tumors asymmetrical deformation is obtained due to the lack of rigid bone base for soft tissue, due to scarring of postoperative field and due to the influence of the muscles and muscle fibers.

**Aim:** The aim of the clinical case described, is to follow up the prosthetic treatment options of combined maxillofacial defects in terminal stage patients with cancer disease, and the role of the prosthetic construction for improving life quality.

**Materials and methods:** A prosthetic rehabilitation of 72-years-old female patient is described, due to the oncological disease of the maxilla. A combined maxillofacial defect occurred, which involved the lip and the left cheek. A facial prosthesis-obturator was fabricated in the upper jaw and a complete denture was fabricated in the lower jaw. The preliminary impressions of the both jaws were taken with irreversible hydrocolloid impression material and the finals- with custom trays, made by light-cured acrylic resin, and additive silicone. The occlusal height and centric relation were fixed and the dentures were finished by the classical method from heat-cured acrylic resin with low quantity of residual monomer. The borders of the obturator were relined with soft silicone material for direct rebasing.

**Results:** The prosthetic construction provided successful defect hermetization, which helped for restoration of patient's speaking and feeding. The applied prosthetic treatment method allowed significant life quality improvement, despite the fact it did not recover the aesthetic outlook.

**Conclusion:** The application of prosthetic treatment methods in patients with cancer in maxillofacial area allows successful restoration of damaged functions.

**Keywords:** facial prosthesis, maxillary resection, obturator, post resection denture.

### 1. INTRODUCTION

Surgical treatment of maxillary cancer leads to defects of the soft and hard tissue, which are different by size, localization and type. They violate the aesthetic outlook of the patients (1,2,3). The lack of hard bone foundation, important for the soft tissue, and the scarification of the postoperative field are in the base of patient's changed look. All these change face contours and by the muscles action cause asymmetrical facial deformation (4). The application of immediate prosthetic treatment methods, which provide hard base for the face contours' restoration, are suggested for overcoming these problems (5,6). Patient's perception, for occurred aesthetic changes, depends on the defect's size and localization (7). Commonly, they are connected with serious mentally disorders, which Gerasimenko (8) defines as an "anxiety-depressive disorder". Its expressiveness is determined by the ability of practicing the profession, social contacts and family communication. Increasing the symptoms leads to reduction and restriction of the social contacts and family communication (9). Depprich et al. (2) establish 52 % social contacts reduction, such as in 38% of the cases the reason is changed outlook. Many authors (3, 4, 10, 11) are unanimous, that successful prosthetic treatment stimulates social activity. In confirmation of that fact are the investigations of Henderson et Ord (12), who established equal frequency of suicides and suicidal intentions in patients with cancer diseases in maxilla-facial area and other localizations. According to other authors (13, 14, 15), the outlook restorations is the main aim of the prosthetic treatment after maxillary resection. Specific methods and constructions, which combined obturator and facial prosthesis are applied for this purpose. The problems, which occur are correlated with providing retention, stabilization and the necessary aesthetic appearance (16, 17, 18). That is why Adisman (19) suggests, that patient should not be misleded, about the possibilities of restoration of the facial outlook after treatment. The post operative defect of the maxilla may be extended to some facial areas- nose, cheek, eye, due to the stage of the cancer (7, 20). Such as defect's variations present in the literature as separated casuistic cases, which were solved for themselves (15, 21).

## 2. AIM

The aim of the clinical case described, is to follow up the possibilities of prosthetic treatment of combined maxillofacial defects in cancer patients in terminal stage of the disease and the role of the prosthetic construction for improvement of the life quality.

## 3. MATERIALS AND METHODS

A prosthetic rehabilitation of 72-years-old female patient is described, due to the oncological disease of the maxilla. A combined maxillofacial defect occurred, which involved the lip and the left cheek. A maxillary defect, which involves the midline and the border of the soft palate, was established during the intraoral examination. Only a part from the alveolar bone in left and tooth 25 were preserved. The extraoral examination revealed a wide facial defect, which involved the upper lip, the nasal septum and the frontal area of the left cheek (fig.1).



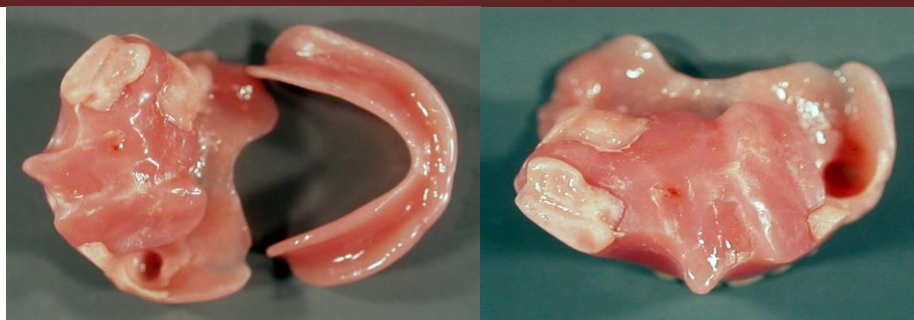
**Fig.1.Extraoral patient's view– profile (a), frontal (b)**

The treatment plan included the fabrication of a facial obturator in the upper jaw and a complete denture in lower jaw. Tooth 25 was prepared in the first clinical stage and a one step impression with standard metal tray and additive silicone material was taken. A metal crown from CoCr alloy was fabricated in the dental laboratory and fixed in patient's mouth with glass-ionomer cement. Preliminary impressions from both jaws were taken with irreversible hydrocolloid material and individual trays were made from light-cured acrylic resin. Functional impressions with additive silicone were taken in the next clinical stage and the gypsum master models were made. The occlusal height and centric relation were fixed, according to the classical technique. After successful trial denture appointment, the dentures were finished from heat-cured acrylic with low quantity of residual monomer (fig.2).



**Fig.2. Finished acrylic resin dentures**

Dentures were adjusted and articulated in patient's mouth in the final clinical stage. The denture's borders of the upper jaw were additionally designed with silicone material for direct relining for soft tissue trauma prevention. (fig.3, 4)



**Fig.3. Finished dentures**

The applied prosthetic treatment method with combined facial denture-obturator provided successful defect hermetization, which helped for speaking and feeding restoration (fig.4a). The usage of the only one preserved tooth and the numerous defect retention areas secured the retention of the upper denture. Main role played the choice of appropriate materials and the impression technique. Damage of soft tissues during function was prevented by using silicone relining material, which provided additional hermetization.

The received results confirmed the statement of some authors (13, 14, 15), that prosthetic treatment of maxillofacial defects needs the application of specific methods and constructions, which combines obturator and facial denture. We also establish that the main problems in these treatment methods are providing the retention and stability of the dentures. Restoring patients' appearance and aesthetic is a fundamental problem, which still remains (16, 17, 18). The statement of Adisman (19), that patient should not be misled about the aesthetic restoration opportunities, was confirmed. Despite of that, the treatment provides a restoration of the damages functions and improvement of patient's life quality.



**Fig.4. Dentures, adjusted in mouth (a); Restored occlusion closure (b)**

### CONCLUSIONS

The application of prosthetic treatment methods in patient with maxillofacial cancer disease provides successful restoration of the functional disorders. These methods assume significant improvement of life quality, even though the aesthetic is not improved. Their application is appropriate in patients in terminal stage of the disease, which are contraindicated for plastic surgery.

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