

## Role and Importance of Dental Service in the Treatment of Maxilla Tumors

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### Abstract

Surgical treatment of these patients is very important - after post-operative treatment, complicated prosthesis using dental implants. Which is the goal of our article.

**Keywords:** *Combination Therapy; Dental Implants; Prosthesis; Prosthesis Using Oncological Diseases; Maxillary Cancer; Primary and Secondary Maxillary*

### Introduction

Malignant tumors of the maxilla make up 2 - 4% of all oncologic diseases and are equally common in men and in women. Although this pathology mainly occurs in patients aged 40 years and over, it also may be encountered in children and young people [1,4,5].

Most frequently the tumorous process develops from the maxillary sinus epithelium. In the second and third place are ethmoid labyrinth tumors followed by those originating from the tissues of the nasal cavity [1-3].

Significant etiological factors of maxillary malignant tumors can be chronic inflammation of the maxillary sinuses, trauma of these structures etc. Depending on the onset of the disease, primary and secondary maxillary and mandibular malignant tumors have been classified. Primary tumors originate in the bony tissue, while secondary malignancies involve tumors that develop from the ethmoid sinus of the maxilla, soft and hard palate and the mucous membrane of the alveolar process.

Maxillary cancer is characterized by a diverse symptom complex - dull, persistent pain, difficult nasal breathing or purulent bloody nasal discharge, lacrimation, exophthalmos and swelling of facial soft tissues. In maxillary cancers, not all of these symptoms manifest themselves simultaneously, which can be explained by their complicated topographic and anatomical features [2,3].

42 patients diagnosed maxillary malignant tumor underwent treatment in Konstantine Mardaleishvili Medical Center (Oncology Scientific-Research Center of Georgia) within the period of 2014 - 2019. Of them 29 (69.8%) were men, 13 (30.2%) - women. 7 (18.8%) patients aged 40, 33 (78.9%) patients over the age of 40, 2 (4.7%) cases under 20. Malignant tumor of the right half of the maxilla was revealed in 19 (4.5%), left half of the maxilla- 15 (3,9%) patients. Malignant tumor of the maxillary central incisors area (bilaterally) was found in 8 (1.9%) patients. The duration of disease for 6 months was observed in 16 (36.2%) patients, for one and a half year and over - in 26 (62.8%) patients. 4 patients associated their illness with cystic neoplasm, 6 (18.8%) patients had a history of chronic rhinosinusitis with recurrent acute exacerbation, 3 (8.1%) patients associated their illness with a tooth extraction, 7 (19.4%) -with the use of completely disposable dental prosthesis, the rest of the patients could not indicate the cause.

Diagnosis making in maxillary cancer is rather difficult. Diagnostic errors due to the numerous symptomocomplexes and complex topographic and anatomical features of the disease are not rare.



Figure 1

The presented pictures (Figure 1) show the historical source of the origin and development of maxillary cancer, however in modern medicine cases of diagnostic errors are not so rare [1].



Figure 2 and 3: A patient treated for vasomotor rhinitis for 3 years.

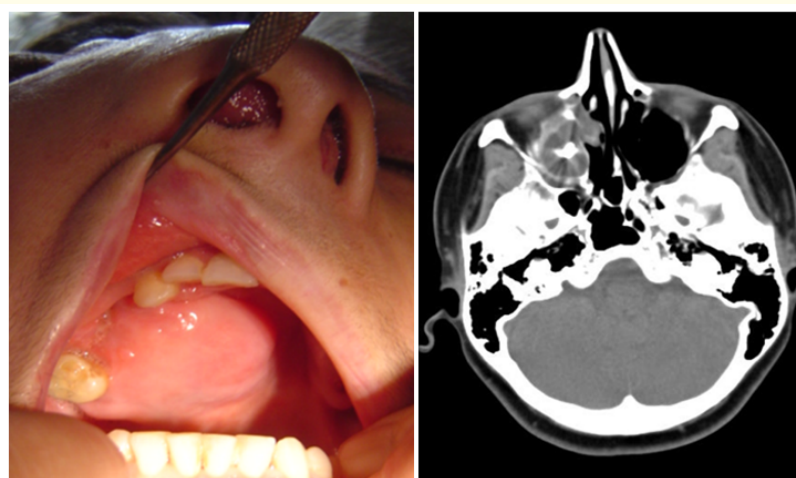
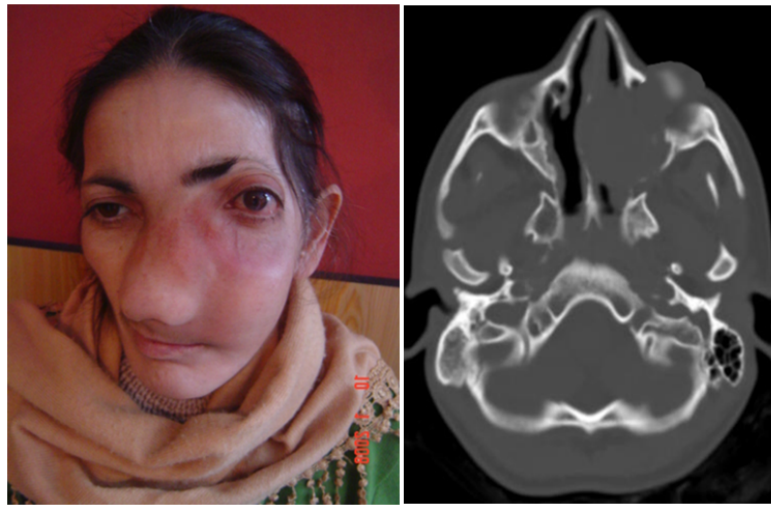


Figure 4 and 5: A patient treated for chronic parodontitis 2 years.



**Figure 6 and 7:** A patient who received a 3-year ophthalmologic treatment, the lacrimal duct bougienage [1].

Therefore, if a malignant tumor is suspected, it is necessary to conduct a consistent clinical and morphological study, starting with a visual examination of the patient’s face with a proper assessment of the condition of nasolabial wrinkle and the nasal breathing on the affected side.

33 (89%) of the patients admitted to the Center received fibroscopic examination, 9 (11%) underwent fibroscopy with targeted biopsy. In 21 (48.1%) cases squamous cell carcinoma was identified. The material for cytological examination was collected not only endoscopically, but also with the help of puncture, trepanation, and also through the analysis of flush water during the irrigation of the cavity (3%) [1,2].

A morphological study of the surgical material of all patients was carried out. Squamous cell carcinoma was detected in 21 (48.1%) patients, osteogenic sarcoma -5 (12.1%), cylindroma -14 (33.1%), tumors of various origins -2 (4.8%). Radioisotopic examination was carried out on 4 (9.8%) patients.

Computed Tomography provides an accurate imaging of cartilaginous, muscular, fatty, and other tissues, enabling to determine the tumor growth tendency and the degree of bony structures destruction. This method also makes it possible to clarify the boundaries of the tumorous tissue, as well as interdependence of the tumor with soft and bony structures. 42 (100%) patients received computed tomography and magnetic resonance examination. Based on the examination results tumor spread to the orbital area was observed in 7 (14.6%), pterygopalatine fossa - 4 (9.2%), infratemporal and temporal fossa - 2 (5%), hard and soft palate - 24 (5.9%), lacrimal duct - 5 (14.8%) cases. In all the cases tumor spread to the alveolar process was observed.



**Figure 8**



**Figure 9**

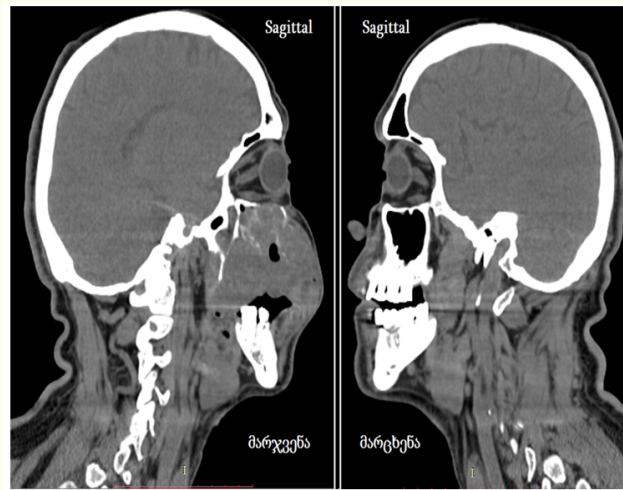


Figure 10

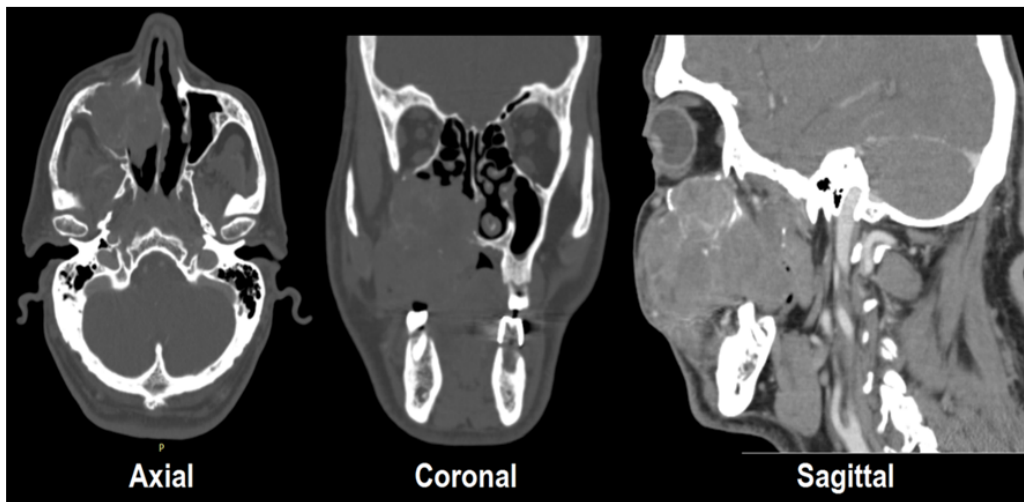


Figure 11

This based on the TNM Classification we revealed and established the following: Stage 1 - 9 (21.4%), Stage 2 - 15 (37.7%), Stage 3 - 12 (28%), Stage 4 - 6 (15%).

For the detection of regional metastases the patients received ultrasound examination of cervical lymph nodes; hematogenic metastases were identified using computed tomography of the lungs.

Based on the above, regional metastases were revealed in 10 (23.7%) cases, hematogenic metastases - 2 (5%), in 30 (72%) cases no regional metastases were observed.

According to the clinical and Computed Tomography findings as well as the results of cytological study, an individual method of treatment was scheduled for each patient.

Consequently, combined treatment method was planned for 38 (90%) patients, radiation therapy as a monotherapy method for 4 (9.8%) patients; recurrence after radiation therapy was revealed in 4 (9.8%), postoperative recurrence - in 6 (11.8%) patients.

Surgical treatment: Resection of the right half of the maxilla - 28 (69.7%) cases, Resection of the left half of the maxilla -14 (30.3%) cases.

Resection of the maxilla, orbitotomy - 7 (14.6%) cases, Resection of the maxilla, exenteration - 3 (6.7%) cases, Resection of both halves of the maxilla - 2 (5%) cases, Resection of the maxilla, lymphadenectomy -17 (45.1%).

With malignant tumor of the maxilla, the dental treatment involves pre- and post- operative care. The pre-operative care, apart from producing a separating plate, includes a compulsory sanitation of the oral cavity because the preservation of each tooth is directly proportional to the option of post- operative rehabilitation strategy. It is very important to evaluate the condition of every tooth, perform a conservative therapy, remove different metallic crowns and make a separating plate.

Before surgical treatment, all patients received orthopedic treatment using a separating plate for partitioning the oral cavity from the operated defect. The patient's oral cavity before and after surgery with and without the plate (Figure 12-15).



Figure 12

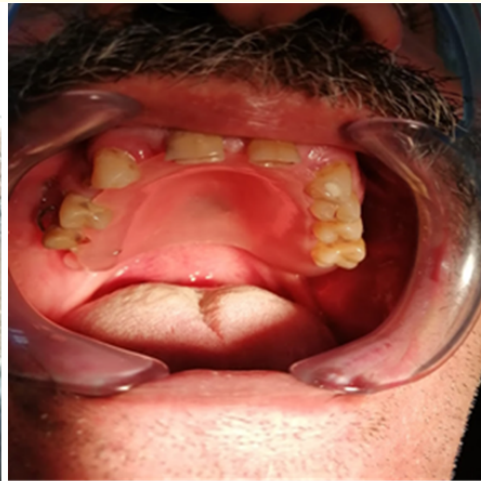


Figure 13



Figure 14



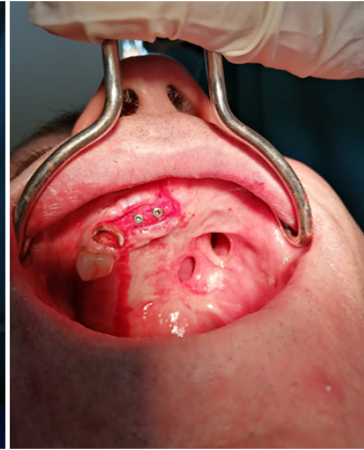
Figure 15

All the patients who underwent unilateral resection of the maxilla must receive a complex orthopedic plastic surgery after 6 months, which may consist in fully disposable dental prosthetics (when a patient has at least one tooth left in the healthy part of the maxilla, however prosthetics may involve post- operative modelling of the defect or complex orthopedic plastic surgery including dental implant placing. The latter may be used in the case of a toothless maxilla. 6 months after the surgical treatment, which is followed by the complex prosthetic surgery.

The next slide shows the dental implant fixation for the complex prosthetic surgery after the resection of the left half of the maxilla.



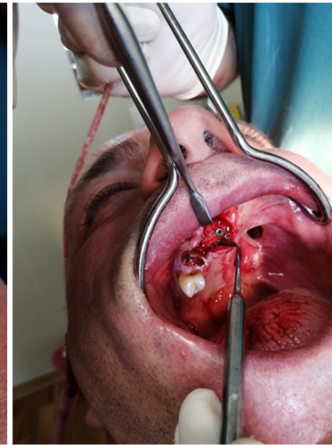
**Figure 16**



**Figure 17**



**Figure 18**



**Figure 19**

For dental implantation, 3 implants of the 3 SGS company were selected with a size of 3.2 × 10 (two), 4.2 × 11.5 (one). Slide 18 and 19 depicts the process of dental implant fixation.

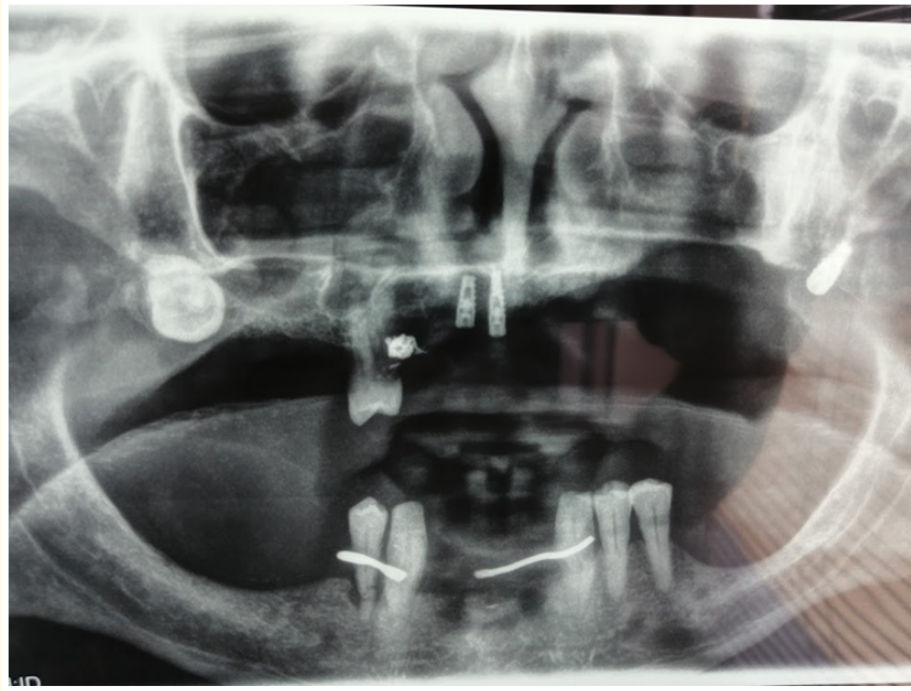


Figure 20

Slide 20 shows the control orthopantomogram of the three SGS implants after 4 months. Due to the special SBTC, calcium phosphate coating of SGS implants osteointegration was excellent despite the patient's condition. For orthopedic reconstruction was used Crowns of fixed metal ceramics on dental implants.



Figure 21

As it is seen on the orthopantomogram, there is a retained wisdom tooth in the left half of the maxilla which was used as a fixation point by joint surgical and orthopedic treatment.

Slide 21 shows the final result of the orthopedic reconstruction.

### Summary

This, in the process of malignant tumor treatment the role of dental care service consists in the pre-operative sanitation of the oral cavity, evaluation of the condition of every single tooth, performing a conservative therapy, preparing a separating plate, fitting and handing over the prosthesis to the patient which would enable to separate the upper respiratory tract from the operated sites during the severe period of the resulting defect formation, protect the postoperative defect from the irritation by the food stuck in its edges, restore the normal processes of swallowing, speaking and eating. The dental care service is responsible for preparing the patient for complex prosthetic procedures. Based on the analysis of the 3D computed tomography findings, an optimal prosthesis specimen should be selected taking into account the diameter and length as well as the viability of the given jaw bone. After the cessation of the dental implant osseointegration process an optimal design of complex prosthetic reconstruction should be worked out, which must involve the modelling of the post-operative defect along with dental implantation to provide the restoration of the dental row and occlusion as well as normal functioning of the dentoalveolar system.

### Bibliography

1. Mardaleishvili K and Baramidze T. "Malignant Tumors of the Face and Jaws" (2008).
2. Paches Al. "Tumors of the Head and Neck" (2002).
3. Eugene NM. "Cancer of the Head and Neck" (2003).
4. Otolaryngology and Facial plastic surgery.
5. American Dental Association.

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