

ESTIMATION OF ORAL STATUS IN PATIENTS WITH OROPHARYNGEAL AREA CANCER

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Abstract

Summary. Objectives. In the general structure of oncological morbidity, malignant tumors of head and neck represent 20%. The aim of this study was to investigate the oral status of patients with malignant tumors in the oropharyngeal area. **Methods:** Clinical observations were carried out at the National Cancer Institute (Kiev) in 2012 to 2013. The study involved 120 patients with head and neck cancer, with ages between 21 and 82 years. Clinical examination of the dental area included an interview and objective examination of patient by the Green-Vermillion hygiene, PMA, DMF indices. **Results:** A very high prevalence of: dental caries - 93.3%, generalized periodontitis - 39.2%, and gingivitis - 8.3% was observed. The hygienic level was very low - GI index 1.96 ± 0.16 . **Conclusions:** All patients with oropharyngeal area cancer had an unsatisfactory oral status: tooth caries, roots, inflammation of the mucosa and periodontium, metal crowns, abundant dental calculus, etc.

INTRODUCTION

In the general structure of oncological morbidity, malignant tumors of head and neck represent 20%. [1]. The distinctive features of tumors present in the oral cavity and oropharynx area are: rapid growth rate, early lymphatic and hematogenous metastasis, resistance to various types of treatment and high mortality (60-70%) [2]. Despite the visual accessibility of tumors in the oral cavity and oropharynx, more than 2/3 of the patients show extensive tumor processes by the time of diagnosis, and 50% of them have metastases in the regional lymph nodes [3]. A radical treatment of these patients is limited, and even in resectable cases, as surgery can save but 60% of patients from tumor recurrence, and only 18% - from distant metastases [4]. The objective to increase the duration and quality of life of these patients necessitates different methods of treatment.

Most researchers consider that the most radical treatment of oropharyngeal cancer is surgical intervention [5]. However, any radical treatment has serious limitations, associated with the anatomical and physiological peculiarities of malignant neoplasms of this area. Even small-size tumors require difficult, traumatic and extended operations. Therefore, in recent decades, one of the leading methods of treatment in oropharyngeal cancer has been radiation therapy [6].

The specific features of the oral status of patients with oropharyngeal cancer are not fully investigated, a situation largely responsible for the frequency and severity of complications of the specific treatments of malignancies.

Based on these considerations, the aim of this study was to investigate the oral status of patients with malignant tumors of the oropharyngeal area.

MATERIALS AND METHOD

Clinical observations were carried out at the National Cancer Institute (Kiev), between 2012 and 2013. The study involved 120 patients with head and neck cancer, with ages between 21-82 years.

The diagnosis of cancer was established by clinical and laboratory data. The prevalence of malignant tumors was denoted by symbol TNM of the International Union Against Cancer, fourth edition, 1989.

Clinical dental examination included an interview and an objective consultation of the patient. The nature of the professional activity, the presence of harmful habits, allergic reactions, concomitant and transferred diseases, the presence of inherited diseases were established. Before

Table 1. Estimation of patients' hygienic skills and of oral cavity's condition prior to the cancer treatment

	Brushing teeth once a day	Brushing teeth 2 times a day	No teeth brushing	Patients with caries	Patients without caries
Number of patients	74	41	2	37	83
%	64.2	34.2	1.6	30.8	69.2

starting the exam, the mobile dentures were removed.

Examination of the oral cavity complied with a clear sequence: first of all, patient's lips were examined, then the state of commissures, buccal mucosa and buccal (upper and lower) sulci, the state of the alveolar and marginal gingiva, tongue, hard and soft palate were also analyzed. All changes observed in the maxillofacial region, such as an unusual color (white or red), the presence of various pathological elements, other lesions of the facial area and neck were noted. Tissue consistency, the presence and nature of the pain syndrome were revealed through bimanual palpation. The elements of lesions (erosive, keratosis) were measured, and their area was calculated.

For estimating the state of oral cavity hygiene, the Green-Vermillion (OHI-S) index was used [7]. The presence and intensity of gums inflammation were evaluated with the PMA index [8]. Dental caries lesions were calculated by the DMF index. All patients were found as needing dental care of various type.

RESULTS AND DISCUSSION

The results of the examination revealed a different localization of lesions: cancer of the mucous membrane on the mouth floor - in 42 patients (35%), tongue cancer - in 39 (32.5%), oropharynx cancer - in 30 (25%), and maxilla cancer - in 9 (7.5%) patients. Characteristically, cancer occurs in men almost 5 times more than in women (82.5% and 17.5%, respectively). 74.2% of the patients were of working and socially active age.

Examination was mainly aimed at identifying the local carcinogenic factors, such as smoking, alcohol beverages drinking, mechanical, chemical and physical injuries. In our research, 74 of

the patients were smokers (61.7%); in 14% of them, tumor development was associated with dental procedures: chronic injury caused by removable dentures, poor-quality bridge prostheses, atypical tooth extractions. Information on pre-cancerous diseases (leukoplakia, hyperkeratosis, difficult recovering ulcers) was available for only 5% of the patients, which reflects the level of dental care and health literacy of the population.

The same situation was evidenced by the data on the state of patients' oral cavity and on their hygienic skills (table 1). 69.2% of the patients had caries lesions and therefore, were not prepared for radiotherapy. The presence of inflammatory processes in the oral cavity, tooth decay, roots and metallic restorations and dentures influenced negatively the extent of radial radiomucosities of the mucous membrane and reduced patients' tolerance to radiotherapy.

Metal prostheses in the oral cavity and amalgam restorations contribute to the secondary ionization of the oral tissues. In our research, 5% of the patients had metal-ceramic bridges and single crowns, 33.3% of patients had metal (combined solder and cast included) bridges and single crowns, 32.5% of them had removable dentures and 29.2% - had no prosthesis (this percent values include patients who did not need dentures, as well as those needing dentures but, for some reason, they did not have, or did not use it, or the cases in which the prostheses had been removed by the dentist). These data show the virtual absence of dental preparation of patients for treatments of malignant neoplasms and confirm the structure and prevalence of their basic dental diseases. The prevalence of dental caries is very high - 93.3%, the highest percentage of teeth affected by caries - 39.9%, the percentage of filled teeth - 35.7%, and that of extracted teeth - 24.7%. Generalized periodontitis was revealed in 39.2% of them, and gingivitis

- in 8.3%, a sign that patients with cancer in oropharyngeal areas have an unsatisfactory oral status and demand compulsory dental preparation prior to the cancer treatment.

One of the main causes of the diseases identified in teeth and periodontium was the unsatisfactory oral hygiene of these patients. Thus, before the treatment, index GI was 1.96 ± 0.16 ($p < 0.05$), the need for periodontal care being expressed by the CPITN index, recording values of 1.24 ± 0.17 ($p < 0.05$). The results indicate the need for patient education on oral hygiene.

CONCLUSIONS

All patients with cancer in the oropharyngeal area have an unsatisfactory oral status: tooth caries, roots, inflammation of the mucosa and periodontium, metal crowns, abundant dental calculus, etc. This aggravates the severity of radiation radiomucosities of the oral mucosa and reduces patient's tolerance to antitumor treatments. Therefore, prior to the initiation of the basic treatment, the oral cavity lesions should be healed; also, training on the necessary individual oral hygiene appears as an important stage in preventing possible complications induced by cancer treatment.

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