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COMBINED TREATMENT FOR EARLY-STAGE SKIN CANCER OF THE HEAD AND NECK AREA

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Abstract:

This article presents the results of a study of 140 patients with skin cancer of the scalp of the neck. According to the clinical data obtained, heating the malignant tumor cells immediately before the radiation exposure activates the cancer cells, which in turn enhances their damage during the subsequent irradiation, increasing the effectiveness of treatment. The authors recommend the use of the developed tactical approaches to the treatment of skin cancer patients in the head and neck region using a combined method will allow to achieve optimal immediate, long-term, aesthetic and functional results, which will ensure the full rehabilitation of patients after treatment.

Keywords: Near-focus X-ray therapy, skin cancer, hyperthermia.

INTRODUCTION:

Skin cancer is one of the most common skin cancers, which is registered almost everywhere, although the incidence may differ significantly in different regions. Currently, oncologists note an upward trend in skin cancer with an average annual increase of 4.4%. According to WHO, over 2 million cases of various types of malignant skin neoplasms are diagnosed in the world each year. In recent years, there has been a steady growth in the incidence of malignant neoplasms of the skin, which is associated with increased insolation, adverse environmental conditions in cities, increased frequency of endocrine, immune disorders and other factors (Kubanov A.A. et al., 2018; Maslyakov V.V. et al., 2017) According to the International Agency for Research on Cancer, the global incidence of malignant tumors is projected to increase from 10 million per year at present to 15 million by 2021.

In Uzbekistan, skin cancer ranks second among malignant neoplasms. Of all the morphological forms of malignant epithelial skin tumours, the most common are basal cell cancer (BCC) and squamous cell skin cancer (SCC), which together account for more than 95 per cent of all neoplasms. In 70-90% of cases, skin cancer occurs in the face and scalp, which has a complex anatomical structure (A.P. Polyakov et al., 2017; Drucker A. et al., 2017; Neal D.E. et al., 2018).

The leading method of treatment of patients with skin cancer is surgical removal of the tumor with one-stage reconstruction of the defect. However, this approach is not always optimal and does not lead to satisfactory results when the tumor is localized on the face, and therefore, in recent years, the possibilities of other treatments are being studied (Vinokurova A.S. et al., 2017; Fantini B.C. et al., 2018).

Thus, given the high prevalence of skin neoplasms, imperfect methods of diagnosis and treatment, further research on these issues is advisable.

OBJECTIVE OF THE STUDY:

To improve the treatment of patients with skin cancer of the head and neck region

RESEARCH METHODS AND METHODOLOGY:

In the department of head and neck tumors of "Tashkent regional branch of the Republican Specialized Scientific-Practical Medical Center of Oncology and Radiology oncology" 140 patients with skin cancer of the head and neck region were examined and treated from 2018 to 2019. Of these, 66 were male (47.2%) and 74 were female (52.8%), ranging in age from 18 to 90. In all cases, the diagnosis was confirmed by morphological examination of the tumor, basal cell cancer (BC) was diagnosed in 53 (37.8%) patients, 70 (50%) patients were admitted

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with squamous cell cancer (SCC) and 17 (12.2%) patients diagnosed with skin melanoma (MC).

All patients on the outpatient stage were provided with medical history, clinical examination, evaluation of the tumor extent according to examination and instrumental examination with definition of the degree of involving adjacent organs, anatomical head structures into tumor process. If necessary, consultations with specialized specialists were carried out. Clear borders of the tumor were observed in 49 (35%) patients, in the remaining cases infiltrative growth with indistinct borders was observed. In 64 (45.7%) patients the tumor was located within the skin and subcutaneous fat, in 76 (54.3%) patients the tumor spread to various tissues below.

Surgical removal of skin cancer of the head and neck region with one-stage reconstruction of the defect was performed in 70 (50%) patients, and the combined method (BRT + surgical excision) was performed in 70 (50%) patients as well.

Comparative characterization of treatments for scalp and neck cancer. In the main group, all patients underwent local hyperthermia followed by BFRT in the first phase. One month after radiotherapy the efficacy of the therapy was checked and surgical intervention was carried out afterwards. In the control group, only surgical excision was performed.

Combination treatment for scalp and neck cancer was applied by us in a selectively selected group. We had 70 patients with skin cancer under our study from 2018 to 2019, who received BFRT+hyperthermia in the first phase and surgical excision of the residual tumor in the second phase.

According to clinical data, heating of malignant tumor cells immediately before radiotherapy activates cancer cells, which in turn increases their damage during subsequent irradiation, increasing the efficacy of the treatment. The procedure of local heating of tissues was performed 10-15 minutes before irradiation by the apparatus "FEN" and, as a rule, the heating temperature was brought to 40-45 degrees. Under the developed heating modes there was no tissue edema, which ensured the possibility of repeated tissue heating before each session of irradiation and control the degree of tumor regression in the course of treatment. There were also observed changes in metabolic processes, disruption of cell membrane permeability, destruction of protein molecules and lipoprotein complexes, osmotic disorders, decreased production of antioxidants and a number of other effects occurring after local tissue heating. The result is a change in tumour cell metabolism and increased efficacy of radiation exposure.

Patients were then sent to the X-ray Diagnostic Department of the THRPCM, where they underwent BFRT. The clinical forms, location of the tumour and age of the patients were taken into account when choosing the dose. The irradiation was performed on the RUM-7 apparatus which operated at a voltage of 50 kV, current strength of 5 to 10 mA, filtration of radiation through 2.5 mm aluminum and the distance "source of radiation-skin" (RIK) - 7.5 cm.

The following table shows a comparative characterization of the immediate (preoperative) results of treatment in the main group.

Diagnosis	**Progression**	**Stabilisation**	Regression (%)					Total
			< 25	**25**	**50**	**75**	**100**	
RBD	-	-	2	10	13	23	2	**50 (71,4%)**
PKR	-	5	1	3	4	6	-	**19 (27,1%)**
MC	-	1	-	-	-	-	-	**1 (1,4 %)**
Total	**-**	**6 (8,6%)**	**3 (4,3 %)**	**13 (18,6%)**	**17 (24,3%)**	**29 (41,4%)**	**2 (2,9%)**	**70 (100%)**

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Thus, no tumour growth was observed after BFRT+hyperthermia. In 6 (8.6%) patients diagnosed with squamous cell carcinoma and skin melanoma, tumor growth stabilized. In 2 patients with basal cell cancer a 100% complete and permanent cure was achieved by performing BFRT with prior local hyperthermia. In a majority of 41.4% of cases the tumor regressed to 75% of its original size.

The second stage was followed by excision of the residual tumor within healthy tissue, with a distance of 1-1.5 cm from the clinically identifiable tumor margin, taking into account possible "subclinical" spread. Excision was performed in a single block and the specimen was evaluated histologically to confirm the final diagnosis.

In the control group, surgical removal of skin cancer without the use of HRT+hyperthermia was performed in 70 patients, including 3 patients with basal cell cancer, 51 patients with squamous cell skin cancer and 16 patients with skin melanoma. Dissection was carried out within healthy tissues, 1-1.5 cm from the clinically determined border of the neoplasm, taking into account the zone of a possible "subclinical" spread, which is typical for locally advanced skin cancer. The tumour was removed in a single block with the surrounding tissues.

After the neoplasm was removed, one-stage reconstruction with the restoration of the tissues' forms and functions was carried out in different ways depending on the prevalence and localization of the defect. One-stage performance of reconstructive operations allowed to achieve the best functional results of treatment, to provide the fastest rehabilitation of patients.

At the follow-up of patients after surgical excision repeated recurrences of skin cancer occurred in 9 (12,9%) out of 70 patients. Metastases in regional lymph nodes of the neck occurred in 7 (10%) of 70 patients, including 2 (2.9%) patients with basal cell skin cancer and 5 (7.1%) patients with squamous cell skin cancer. The findings indicate the need for special monitoring of regional metastasis areas in skin cancer due to the high incidence of squamous cell skin cancer metastasis and the occurrence of basal cell skin cancer metastases.

RESULTS OF THE STUDY AND DISCUSSION:

When comparing the results of combined (in 70 patients) and surgical (in 70 patients) treatments the following was found. After application of BFRT with prior local hyperthermia (treatment group) of skin cancer, recurrence of the disease occurred in 4 of 70 patients (5,7%). And after surgical removal (control group) of a tumor recurred in 9 patients out of 70, that was 12,9%. The recurrent tumor was surgically removed in all cases and did not lead to complications. There were no deaths from disease progression after both methods of treatment.

The findings demonstrate the importance of proper treatment tactics for skin cancer patients. At inadequate treatment, unreasonable application of different treatments increases the probability of recurrence of the disease and worsens its prognosis. Therefore, surgical removal of the tumor with prior BFR+hyperthermia and one-stage reconstruction of the defect after excision of the tumor should be performed in practical healthcare institutions for skin cancers of the head and neck.

CONCLUSIONS:

Thus, clinical application of the developed tactical approaches to the treatment of patients with head and neck skin cancer using the combined method permitted to achieve optimal immediate, long-term, aesthetic and functional results, which provided patients with a complete rehabilitation after treatment. Analysis of the clinical material allowed us to identify prognostic factors and forms of neoplasms that require special approaches to treatment.

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