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IMMEDIATE RESULTS OF SURGICAL TREATMENT OF STAGE III FACIAL SKIN CANCER: A CLINICAL CASE

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ABSTRACT

Relevance: *Most cases of skin cancer are widespread on continents with predominantly fair-skinned populations and high levels of ultraviolet radiation exposure, such as Australia and New Zealand. In Kazakhstan, as well as throughout the world, there is an increasing trend in the incidence of skin cancer. In 2023, 4,481 new cases of this disease were registered, of which 85% were basal cell carcinoma. Kazakh Institute of Oncology and Radiology (Almaty, Kazakhstan) utilizes various methods, including surgical excision, which remains the main treatment method, as well as radiation therapy, electrochemotherapy, and cryotherapy.*

The study aimed to *describe a case of surgical treatment of a patient under local anesthesia with stage III basal cell skin cancer of the zygomatic region on the left, accompanied by clinical bleeding and pain.*

Methods: *The article describes a case of surgical treatment of skin cancer under local infiltration anesthesia.*

Results: *The postoperative period proceeded without complications. The cosmetic result was assessed as satisfactory. The patient did not experience difficulties with facial movements, and no sensory disturbances were observed. The patient was discharged home with recommendations to consult a radiologist considering the tumor histotype to decide on the possibility of a postoperative course of radiation therapy.*

Conclusion: *The presented case demonstrates the possibility of performing surgery for stage II-III skin cancer with complete closure of the defect under local anesthesia. This may be an alternative to general anesthesia in patients with concomitant diseases and a high risk of complications. The method can be used in the absence of tumor invasion into the bone to avoid the difficulties associated with general anesthesia.*

Keywords: *Squamous cell carcinoma, clinical case, surgical treatment.*

Introduction: Most skin cancers are prevalent on continents with predominantly white populations and high levels of exposure to ultraviolet radiation, such as Australia and New Zealand. At the same time, mortality rates from the disease remain high on continents with fewer light-skinned people. One of the reasons for the higher mortality rates in such regions as Asia is the lack of awareness of the population about the prevention of skin cancer and the importance of early diagnostics of the disease [1].

There is a trend towards an increase in the incidence of skin cancer in the world and Kazakhstan, with 3998 new cases of this disease reported in 2022. Of them, 85% were basal cell carcinoma [2]. In 2023, the number of cases increased to 4,481. Its frequency is related to exposure to ultraviolet radiation. BCC is often asymptomatic until such signs as tumor enlargement, bleeding, or growth into underlying tissues occur. Despite the rarity of metastasis, the disease can cause significant local destruction.

A comprehensive approach to diagnostics includes medical history, visual examination, and dermatoscopy with cytological or histological examination. In terms of treatment, the Kazakh Institute of Oncology and Radiology JSC (KazIOR, Almaty, Kazakhstan) uses various methods, including surgical excision, which remains the main treatment, as well as radiation therapy, electrochemotherapy, and cryotherapy. These methods can be used depending on the disease stage, the tumor location, and the patient's condition.

The study aimed to describe a case of surgical treatment of a patient under local anesthesia with stage III basal cell skin cancer of the zygomatic region on the left, accompanied by clinical bleeding and pain.

Methods: The article describes a case of surgical treatment of skin cancer under local infiltration anesthesia. The patient has provided a signed informed consent form to the manipulations and the use of his/her treatment results for scientific research, educational, scientific, and advertising purposes.

Clinical case:

Patient's information: Patient S., male, 79 years old. In 2022, this patient developed a tumor-like formation on the skin of the zygomatic region on the left. After an injury in 2024, he notes a gradual increase in dynamics. He went to the oncology center in Taldykorgan, where a smear was made from his skin tumor of the zygomatic region on the left. Cytological study No. 4354/4 as of 05.08.2022: squamous cell carcinoma. The patient did not visit a doctor or receive any treatment. Due to increased pain and bleeding during contact in August 2024, he went to the KazIOR clinic. Considering the disease history and status localis, the patient was recommended surgery at the KazIOR Center for Bone and Soft Tissue Tumors.

On 26.09.2024, this patient was discussed at a meeting of the KazIOR multidisciplinary group (MDG). The Concilium recommended surgical treatment in the amount of excision of

the skin tumor of the zygomatic region on the left under general anesthesia.

Clinical data: The patient was hospitalized on 30.09.2024 in the Center for Bone and Soft Tissue Tumors with a clinical diagnosis of "Malignant tumor of the skin in the zygomatic region on the left, stage III (T3N0M0)".

Complaints upon admission: a tumor-like formation on the skin of the zygomatic region on the left, bleeding on contact, painful.

General condition: satisfactory. Under the Karnofsky scale – 80%. ECOG – 1. BP: 120/80 mmHg, Pulse: 78/min. Temperature 36.6°C. Consciousness was clear, adequacy was preserved. Breathing was vesicular; the respiratory rate was 16/min, with no wheezing. Heart sounds were muffled; the rhythm was correct. The tongue was moist. The abdomen was soft, symmetrical, not swollen, painless. There were no peritoneal symptoms. Urination was independent. Peristalsis was active. Defecation was independent.

Locally: a 5.0x4.0 cm exophytic formation on the skin of the zygomatic region on the left protruding 1.5 cm above the skin level, covered with a black crust with ulceration in the center, covered with fibrinous plaque, bleeding on contact, immobile, with pronounced tenderness during palpation (see Figure 1).

Figure 1 – A 5.0x4.0 cm skin tumor, bulging by 1.5 cm, at the admission of patient S.

Laboratory data

Blood ELISA for viral hepatitis B as of 12.09.2024 was negative.

Blood ELISA for viral hepatitis C as of 12.09.2024 was negative.

HIV results as of 12.09.2024 were negative.

RW results as of 24.09.2024 were negative. Complete Blood Count as of 24.09.2024: WBC – $8.81x10^9$/l, RBC – $5.26x10^{12}$/l, HGB – 156 g/L, PLT – $242x10^9$/l.

Blood biochemistry as of 24.09.2024: ALT– 14.17ME/l, AST – 17.57 ME/l, GLUC – 4.36 mmol/L, creatinine – 124.75 mmol/L, urea – 5.84 mol/L, total protein – 74.20g/L, total bilirubin – 24.0 mol/L.

Clinical Urine Analysis as of 05.09.2024: color – straw yellow, transparency – transparent, relative density – 1,017, leukocytes – 0 in the field of view, pH reaction – 5.

Coagulogram as of 24.09.2024: PTT – 16.8 sec., INR – 1.53, PTI – 68% sec, APTT – 49.50 sec., fibrinogen – 4.17 g/L.

Elevated INR and PTI values were most likely associated with concomitant pathology of the cardiovascular system.

Instrumental studies:

Computed tomography of the chest as of 24.09.2024 Impression: CT picture of interstitial fibrosis in both lungs, probably of a post-inflammatory nature. Adenopathy of the mediastinal lymph nodes. Effusion in the pleural cavities. Pulmonary emphysema. Solid nodules in the right lung. Cardiomegaly.

ECG as of 16.09.2024 Findings: Atrial fibrillation, heart rate – 115 beats per minute. Complete block of the right bundle branch. Ventricular extrasystole. Left ventricular hypertrophy.

Echocardiography as of 03.09.2024 Findings: Ejection fraction of the left ventricular 30 %, dilation of the right atrium, left atrium, and right ventricular. Dilation of the ascending portion of the aorta. Hypertrophy of the interventricular septum and left ventricular posterior wall. The aortic valve and mitral valve flaps were hardened with calcifications. Diffuse hypokinesis of the left ventricular walls. The contractile function of the left ventricular was reduced. Tricuspid regurgitation 3+ mitral insufficiency 3+ pulmonary regurgitation + aortic regurgitation 1.5+. Pulmonary hypertension of the 1st degree.

Fiberoptic gastroduodenoscopy as of 19.09.2024: Chronic gastroduodenitis. Remission.

Doppler ultrasonography of lower extremity veins as of 23.09.2024: Varicose veins of the short saphenous vein basin on both sides. No thrombosis was found.

Consultation:

On 16.09.2024, a cardiologist at the Cardiology Center of the Research Institute of Cardiology and Internal Medicine (Almaty, Kazakhstan) consulted the patient and diagnosed a Coronary heart disease, exertional angina FCII. Ischemic cardiomyopathy. Atrial fibrillation, permanent form. EHRA II, Grade 2 HAS-BLED, Grade 4 CHA2DS2-Vas. SP (???) of ICD implantation as of 05.2023: Arterial hypertension stage 3, risk 4. Dyscirculatory encephalopathy. Chronic heart failure (with preserved ejection fraction– 59%) FC III, according to NYHA. Surgical treatment was possible against the background of therapy.

The patient was discussed with the Head of the Resuscitation and Intensive Care Unit on 01.10.2024 for preoperative purposes. It was established, taking into account the clinical and laboratory data, the patient's somatic state and decompensation of concomitant pathology, and the physical status according to ASA IV, that the patient had an extremely high risk of developing life-threatening complications in the intraoperative period. Anesthesia support was possible only for vital indications absent during the examination. In this regard, it was recommended to consider alternative methods to treat the underlying disease.

On 01.10.2024, the patient was re-evaluated by the MDG at the KazIOR Center for Bone and Soft Tissue Tumors. It was found that the history of the disease, the location and size of the tumor, the presence of pain and bleeding, and the cytological conclusion that the anesthetic risk exceeds the surgical risk were taken into account. It was decided that surgical treatment under local anesthesia should be performed in this regard.

Treatment: Scheduled surgical treatment was conducted on 02.10.2024 in the volume of: Excision of a skin tumor of the zygomatic region on the left side. Plastic surgery of the defect with a skin-fat flap from the parotid region and the lateral surface of the neck on the left. Drainage.

Intraoperatively: Excision of the skin tumor of the zygomatic region on the left with resection of the periosteum was performed after premedication with Trimeperidine, a negative intradermal test for Novocain 0.5%, 0.1 mL, and 4-fold treatment of the surgical field with iodine-povidone, under local infiltration anesthesia with a solution of Novocain 0.5%, 40.0 mL, 1.0 cm away from the tumor edges. It resulted in a 7.0 x 6.5 cm deep defect with bone denudation. The bone was not affected. The wound was treated with 3% hydrogen peroxide and a furacilinum solution (Figure 2).

Given the defect's size and the absence of the periosteum, closure of the defect with a free skin flap was impossible due to the risk of non-engraftment of the flap. Therefore, it was decided to close the defect with a rotational skin-fat flap from the parotid region and the lateral surface of the neck on the left. Then, a skin-fat flap was cut out and separated under local anesthesia with a solution of 0.5% Novocain, 70 mL, and moved to the defect of the zygomatic region on the left. Blood loss was about 10.0 mL. Hemostasis of the wound was performed. Nodal sutures were applied to the wound in layers, leaving a drainage tube through a counteropening. The wound was treated with iodine and alcohol, followed by aseptic dressings (Figure 3).

The operation lasted for 80 minutes, and it was without complications.

Results:

Postoperative test results:

Biochemical blood test as of 03.10.2024: ALT – 10.67 U/L, AST – 23.54 U/L, bilirubin (total) – 36.03 μmol/L, glucose (blood sugar) – 4.43 mmol/L, creatinine – 77.83 mmol/L, urea – 5.16 mmol/L.

Clinical Urine Analysis as of 03.10.2024: amount – 50 mL, ketones – negative, color – straw yellow, transparency – cloudy, specific gravity – 1.015 AU/mL, pH level ≥9 AU/mL, nitrites – positive in the field of vision, leukocytes – 1+ C g/d, calcium (total) in urine ≤1 mmol/L, microalbumin – 150 mg/L, creatinine – 8.80 mmol/L, albumin/creatinine ratio – 3.4-33.9.

Coagulogram as of 03.10.2024: PTT – 18.6 sec., PTI – 61%, INR – 1.71, TPO – 1.63, TT – 12.7 sec., APTT – 36.00 sec., ethanol test (in blood plasma by manual method) – negative.

Complete Blood Count as of 03.10.2024: hematocrit (HCT) – 0.436 L/L, hemoglobin (HGB) – 150 g/L, leukocytes (WBC) – 9.99 10^3/μL, platelets (PLT) – 235.6 10^3/μL, erythrocytes (RBC) – 5.00 10^6/μL.

Histological report as of 17.10.2024: squamous cell keratinizing skin cancer, 5 cm in the largest dimension, with invasion to the hypodermis.

The INR and PTI values remain slightly elevated.

The postoperative period proceeded without complications, the patient's state was satisfactory, and the pain syndrome was relieved. Antibiotic therapy was conducted 2 times a day for 5 days. Dressings were made daily; the sutures were consistent, and the wound healed with primary tension. The drainage tube was removed on the 7th day.

Cosmetic result: There was moderate swelling of the lower eyelid on the left during the first days after the operation. It went away on its own within a week. The cosmetic result was assessed as satisfactory.

Figure 2 – View of patient S. after excision of a skin tumor: defect of the zygomatic region on the left

Figure 3 – Postoperative view of the wound in patient S.

Functional results: The patient did not experience facial movement difficulties; no sensory disturbances were observed.

The patient was discharged with recommendations: given the histotype of the tumor, it is required to consult a radiologist to decide on the possibility of a postoperative course of radiation therapy (Figure 4).

Figure 4 – The state of the wound in patient S. on the 7th day after surgery, at the time of discharge

Discussion: Surgical treatment of skin cancer at stages II-IV usually requires the use of general anesthesia because the surgeries at these stages can be more complex and extensive. Various plastic surgery methods are required to close surgical defects and restore functionality and aesthetics. However, the patient had contraindications to general anesthesia from the cardiovascular system, and they made its use unsafe in this clinical case. Therefore, it was decided to operate under local infiltration anesthesia.

The surgery involved closing the defect using a rotational skin-fat flap taken from the parotid region and the lateral surface of the neck on the left. Although this method is usually performed under general anesthesia, we have successfully performed the intervention under local anesthesia. Rotational skin-fat flap is a widely used technique in oncological practice, providing high functional and aesthetic results.

Conclusion: Surgical treatment of stage III skin cancer under local anesthesia in a patient with severe concomitant diseases made it possible to radically remove the tumor, relieving pain and bleeding, especially in situations when radiation therapy is impossible. Using a rotational skin-fat flap ensured complete defect closure with a good cosmetic result. This case demonstrates that local anesthesia can be a safe and effective alternative to general anesthesia, especially in patients with contraindications, and can serve as a guide for oncologists when choosing treatment methods in clinical practice.

This case demonstrates the possibility of performing operations for stage II-III skin cancer with complete closure of the defect under local anesthesia. It can be an alternative to general anesthesia in patients with comorbidities and a high risk of complications. The method can be used without tumor growth into the bone, avoiding the difficulties associated with general anesthesia.

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АҢДАТПА

БЕТ ТЕРІСІНІҢ ҚАТЕРЛІ ІСІГІНІҢ III САТЫСЫН ХИРУРГИЯЛЫҚ ЕМДЕУДІҢ ШҰҒЫЛ НӘТИЖЕЛЕРІ: КЛИНИКАЛЫҚ ЖАҒДАЙ

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Аннотация: *Тері қатерлі ісігінің көпшілігі Австралия мен Жаңа Зеландия сияқты популяциясы ақшыл терісі басым және ультракүлгін сәулеленудің жоғары деңгейі бар континенттерде кең таралған. Бүкіл әлемде сияқты Қазақстанда да тері ісігімен сырқаттанушылықтың өсу үрдісі байқалады. 2023 жылы бұл аурудың 4 481 жаңа жағдайы тіркелді, оның 85% базальды жасушалық карцинома Қазақ онкология және радиология ғылыми-зерттеу институты (Алматы, Қазақстан) әртүрлі әдістерді қолданады, оның ішінде негізгі емдеу әдісі болып қала береді, сонымен қатар сәулелік терапия, электрохимиотерапия және криотерапия.*

Зерттеудің мақсаты *– клиникалық қан кетумен және ауырсынумен жүретін сол жақтағы зигоматикалық аймақтың базальды жасушалы тері обыры III сатысы бар науқасты жергілікті анестезиямен хирургиялық емдеу жағдайының сипаттамасы.*

Әдістері: *Мақалада тері ісігін жергілікті инфильтрациялық анестезиямен хирургиялық емдеу жағдайы сипатталған.*

Нәтижелері: *Операциядан кейінгі кезең асқынусыз өтті. Косметикалық нәтиже қанағаттанарлық деп бағаланды. Науқаста бет қимылдары қиындаған жоқ, сенсорлық бұзылыстар байқалған жоқ. Пациент ұсыныстармен үйге шығарылды: ісіктің гистотипін ескере отырып, сәулелік терапияның операциядан кейінгі курсын жүргізу мүмкіндігін шешу үшін радиологпен кеңесу қажет.*

Қорытынды: *Бұл жағдай жергілікті анестезиямен ақауды толық жабу арқылы II-III сатыдағы тері ісігіне операциялар жасау мүмкіндігін көрсетеді. Бұл қатар жүретін аурулары бар және асқыну қаупі жоғары науқастарда жалпы анестезияға балама болуы мүмкін. Бұл әдіс жалпы анестезияға байланысты қиындықтарды болдырмайтын сүйекке ісік инвазиясы болмаған кезде қолданылуы мүмкін.*

Түйінді сөздер: *Скамозды жасушалық карцинома, клиникалық жағдай, хирургиялық емдеу.*

АННОТАЦИЯ

НЕПОСРЕДСТВЕННЫЕ РЕЗУЛЬТАТЫ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ РАКА КОЖИ ЛИЦА III СТАДИИ ЗАБОЛЕВАНИЯ: КЛИНИЧЕСКИЙ СЛУЧАЙ

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Актуальность: *Большинство случаев рака кожи широко распространены на континентах, где преобладает светлокожее население и наблюдаются высокие уровни воздействия ультрафиолетового излучения, например, в Австралии и Новой Зеландии. В Казахстане, как и во всем мире, наблюдается тенденция к росту заболеваемости раком кожи. В 2023 году было зарегистрировано 4481 новых случаев этого заболевания, из которых 85% составила базальноклеточная карцинома в АО «Казахский научно-исследовательский институт онкологии и радиологии» (Алматы, Казахстан) применяются разные методы, включая хирургическое иссечение, которое остаётся основным способом лечения, а также лучевую терапию, электрохимиотерапию и криотерапию.*

Цель исследования *– описание случая хирургического лечения пациента под местной анестезией с базальноклеточным раком кожи скуловой области слева III стадией, сопровождающейся клиникой кровотечения и болевым синдромом.*

Методы: *В статье описан случай хирургического лечения рака кожи под местной инфильтрационной анестезией.*

Результаты: *Послеоперационный период протекал без осложнений. Косметический результат оценён как удовлетворительный. Пациент не испытывал трудностей с движением лица, нарушения чувствительности не наблюдались. Пациент выписан домой с рекомендациями: учитывая гистотип опухоли необходимо консультации радиолога для решения вопроса о возможности проведения послеоперационного курса лучевой терапии.*

Заключение: *Данный случай демонстрирует возможность выполнения операций при раке кожи II-III стадии с полным закрытием дефекта под местной анестезией. Это может стать альтернативой общей анестезии у пациентов с сопутствующими заболеваниями и высоким риском осложнений. Метод может быть применён при отсутствии прорастания опухоли в кость, что позволяет избежать сложностей, связанных с общей анестезией.*

Ключевые слова: *плоскоклеточная карцинома, клинический случай, хирургическое лечение.*

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