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Complications Arising in the Oral Cavity after Polychemotherapy in Patients with Hemablastosis

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Abstract
Background: Today, it is believed that cancer does not appear immediately, but "is the last link in a long chain of changes that precede it, which can be to be called precancerous or precancerous." This postulate formulates the first law of malignant oncology: every cancer has its precancer, but not every precancer turns into cancer. Precancerous conditions, the presence of which is now generally recognized, are divided into obligate and facultative (Beck, 1933).

Keywords:

Introduction

The former develop in 80-85% of cases, the latter in 15-20%. Despite a significant variety of precancerous lesions of the skin and mucosa, they are expressed by some common morphological features. These are parakeratosis, hyperkeratosis and other dyskeratotic phenomena. Using this feature of precancers (and even more so cancerous tumors), it is possible to detect them at a more or less early date, using appropriate diagnostic methods. Methods for diagnosing precancers and malignant tumors: stomatoscopy, cytological examination (by puncture, imprint scraping, washing) and histological (urgent and planned biopsy). A feature of urgent biopsy is the minimum period between biopsy and radical surgery. In order to diagnose malignant tumors of the face, oral cavity and jawbones, methods are used, which can be divided into general, specific and special. Common methods. During the general examination of the patient, special attention is paid to complaints, anamnesis of vitae and morbi, occupational hazards and bad habits are revealed. Private methods. When going to the dentist, it is necessary to carry out an examination, which consists of an external examination of the patient and an examination of the oral cavity. During the external examination, attention is paid to the general appearance of the patient, the presence of swelling, asymmetry, formations on the red border of the lips. The examination of the oral cavity begins at the vestibule of the mouth with the jaws closed and the lips relaxed, raising the

upper and lowering the lower or pulling the cheek back with a dental mirror. First of all, the red border of the lips and the corners of the mouth are examined. Pay attention to the color, the presence of scales, crusts. Then, with the help of a mirror, the mucous membrane of the cheeks is examined. Attention should be paid to infiltrates, ulcerations, fistulas, areas of leuko- and dyskeratosis, keratoacanthosis, color, moisture, etc. Examination of the gum mucosa is also performed with the help of a speculum, both from the buccal and lingual sides. Normally, it is pale pink, tightly covering the neck of the tooth. Next, the tongue, mucous membrane of the floor of the oral cavity, hard and soft palate are examined. If keratinization areas are detected, which is defined by a grayish-white area, their density, size, adhesion to the underlying tissues, and the level of elevation of the focus above the surrounding tissues are determined. If any changes are detected on the mucous membrane (ulcer, erosion, hyperkeratosis, etc.), it is necessary to exclude or confirm the possibility of a traumatic factor, which is necessary to make a correct diagnosis. Palpatory examination of organs, face and oral cavity compares the color and turgor of tissues of symmetrical organs and tissues on the diseased and unaffected sides. Attention is paid to the detection of possible deformation of organs and the associated asymmetry of the face. When examining the oral cavity, it is advisable to use special devices for sufficient illumination, such as a frontal reflector, a binocular magnifying glass, etc. This is necessary during a thorough examination of the oral mucosa, including the tongue, the floor of the oral cavity, the oral surface of the cheeks, the mouths of the excretory ducts of the large salivary glands, the mucous membrane of the hard and soft palate, the vestibule of the oral cavity, and the alveolar processes of the jaws. Palpation should be performed painlessly, without causing tension of the muscles concerned, as it can mask the true boundaries of the tumor. It is very important to determine the size of the infiltrate around the ulceration, the density and painlessness or painlessness of the neoplasm, its displacement in relation to the surrounding tissues, the severity of tissue bleeding in the area of the tumor focus. In addition, it is necessary to pay attention to the configuration of the ulcer, the condition of the tissues of its bottom and edges, the presence of a marginal infiltration shaft, the nature of the discharge, etc. Very valuable diagnostic signs are the mobility of the teeth in one or the other jaw, which is not associated with periodontal disease and other diseases of the dentoalveolar tissues, which are characterized by the predominance of atrophy and inflammation, the presence of fistulas in the edentulous areas of the alveolar processes. When examining a patient with a suspected tumor of the lower jaw, the presence of a pathological fracture should be excluded, in addition to the deformation of its body or branch. If a neoplasm of the maxillary bone is suspected, attention is paid to the presence or absence of facial asymmetry due to its deformation, the presence or absence of deformation of the alveolar process and the hard palate or tissues in the area of the inferior orbital margin, changes in the shape and size of the eye fissure on the affected side. On the diseased and healthy sides, the severity of nasal breathing is checked. Examination of regional lymph nodes. The condition of the organs and tissues of the neck, especially the regional lymph nodes, is evaluated. When affected by metastases, these nodes are more or less enlarged, more or less mobile, which is taken into account when determining the stage of the disease. The appearance of regional cancer metastases in the upper and middle thirds of the lateral surface of the neck, as well as in the submandibular region on the side of the primary tumor, is most often noted in cancer of the tongue, floor of the oral cavity, lateral parts of the lower

jaw, and cancer of the upper jaw. One of the most frequently affected regional lymph nodes is the p. jugulodigasticus, located on the border of the upper and middle thirds of the lateral surface of the neck. This nodule is adjacent to the walls of the common carotid artery and the internal jugular vein. In addition, metastases can affect the nodes of the lower third of the lateral surface of the neck, the supraclavicular region. The entire neck area from the mastoid process to the clavicle should be palpated, especially along the anterior and posterior margins of the sternocleidomastoid muscle, submandibular and submaxillary regions. It should be remembered that metastasis to the lymph nodes of the opposite side is possible, especially in cancer of the organs and tissues of the oral cavity. During palpation, the patient's head should be tilted to the side to be examined with the help of a hand placed on his head. At the same time, it is possible to achieve

Relaxation of the neck muscles of the corresponding side. Tilting the head anteriorly and posteriorly also contributes to the contraction or relaxation of different muscle groups, which also improves the conditions for palpation and the detection of nodules suspected of being affected by metastases.

Clinical manifestations of mucositis in different parts of the gastrointestinal tract are very diverse, this is primarily due to the specific structure and function of the mucous membranes Changes in the composition and activity of normal microflora play a significant role in the etiopathogenesis of mucositis. In recent years, there has been an increase in oncohematological pathology around the world, thanks to modern treatment methods such as polychemotherapy (PCT), radiation therapy and hematopoietic stem cell transplantation The life expectancy of patients with leukemia has increased markedly, but the use of such drugs in high concentrations is accompanied by toxic effects. The most common complications of antitumor therapy are oral mucositis. Secondary infection played a key role in this regimen and was a determining factor in the pathogenesis of mucositis, in determining tactics and treatment and prognosis. At present, the secondary role of infection in the development of mucositis has been proven, and the anti-infective focus of mucositis vector treatment is no longer considered to be the main one.

Thus, it is the cessation of the corresponding signals for growth and differentiation from endotheliocytes that causes the thinning of the epithelial layer and the appearance of mucosal ulcers.

Another equally important discovery was the identification of the role of such cytokines as interleukin-6 (IL-6), interleukin-1□(IL-1b), tumor necrosis factor (TNF) in the development of dystrophic changes in the epithelial covering, the content of which increases before morphological changes in the epithelium appear.

Mucositis presents with enlarged (swollen) gingiva and bleeding, erythema, petechiae, mucosal ulceration, and oral pain, and may predispose to septicemia in patients with neutropenia, which seriously complicates the prognosis of the underlying disease. Also, the development of lesions of the oral mucous membranes can occur due to primary immunodeficiencies.

Clinical manifestations of mucositis in different parts of the gastrointestinal tract are very diverse, which is associated with the specific structure and function of the mucous membranes.

At present, one of the most urgent problems of modern medicine is malignant neoplasms, the leading place among which is occupied by hemablastosis. Research in the field of oncohematology is one of the most pressing and important problems of our time.

Acute leukemia is a group of life-threatening malignant blood neoplasms, which is based on the formation of a clone of malignant (blast) cells that have a common progenitor cell.

Despite the progress made in the treatment of hematological malignancies, which primarily increased the life expectancy of patients with acute leukemia, unresolved issues remain. The use of modern protocols for the treatment of hematological malignancies often leads to severe infectious complications. The most common infectious complications of hematological malignancies are febrile neutropenia, mucositis, and pneumonia.

Most of the treatment protocols for hematological malignancies are programmatic polychemotherapy, radiation therapy and Hematopoietic stem cell transplantation (HSCT), that can lead to serious clinical complications (Figure 2). Malignant cells are targeted cytostatics, but the therapy predominantly affects cells with a high mitotic activity, including the epithelium of the oral cavity and other parts of the gastrointestinal tract (GI).

A scheme of mucositis pathogenesis consisting of five consecutive phases was proposed in 2004 by S.T. Sonis:

- Initiation.
- Signal Generation
- Signal Transmission
- Ulceration.
- Healing.

The first phase of initiation is the initial damage to cells by chemotherapy and radiotherapy by direct DNA damage, or indirectly through reactive oxygen species. This leads to a series of activation of enzymes and transcription factors, which ultimately leads to the activation of genes encoding inflammatory cytokines, such as TNF-α, IL-1β, and IL-6, which target the submucosal base and basal epithelium, resulting in tissue damage (Figure 3). The resulting inflammation and tissue damage leads to ulceration and subsequent bacterial colonization, which contributes to a vicious cycle of cytokine-mediated inflammatory lesion. The final phase of healing involves signaling through the extracellular matrix, which leads to epithelial proliferation and epithealization, restoring the mucosal barrier. One of the most common infectious complications of hematological malignancies after high doses of chemotherapy is candidiasis, a very common fungal infection of the oral cavity. In oral tissues, candidiasis may appear as pseudomembranous white plaques, erythematous areas, chronic atrophic white plaques, angular cheilitis .

Conclusion

In recent years, there has been an increase in oncohematological pathology all over the world. Research in the field of oncohematology is one of the most urgent and important problems of modern medicine. To date, thanks to the introduction of modern treatment methods, such as polychemotherapy, the life expectancy of patients with leukemia has significantly increased, but the use of such drugs in high concentrations is accompanied by toxic effects.

Thus, oral mucositis is one of the most commonly reported complications of antitumor therapy and directly affects the completion of treatment and affects the patient's quality of life. The side effects of cytostatics on the oral mucosa not only cause excruciating pain, but also pave the way

for a life-threatening infection. Anti-leukemia drugs, which are cytotoxic to the oral mucosa, disrupt the synthesis of DNA, RNA, and/or protein. **Conclusion**. It is necessary to conduct studies of pathogenic factors that cause mucositis, the development of which occurs against the background of polychemo- and radiation therapy of oncohematological patients at the molecular genetic level.

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