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Changes in the Oral Mucosa in Leukemia

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Annotation: Leukemids - a general name for focal and diffuse lesions of the skin, subcutaneous tissue, mucous membranes of the genitals and oral cavity, occurring in areas of malignant proliferation of cells of the blood-forming organs and reticular tissue. They are extramedullary foci of hematopoiesis, developing in the dermis when leukemia enters the terminal stage. Lesions manifest themselves in the form of erythema, erythroderma, raised papules, vesicles or bullae of light pink or dark red color, covered with smooth shiny skin, less often with crusts. In the presence of a comprehensive clinical picture of leukemia, the diagnosis of leukemia does not present any difficulties. Radiation and PUVA therapy are used for treatment.

Keywords: Causes, Pathogenesis, Leukemia symptoms, Complications, Diagnostics, Leukemia treatment, Prognosis and prevention.

Introduction: In the scientific literature, several synonyms are used to designate leukemids: specific hemoderma, hematoderma, hematodermatosis, reticulosis, reticulohemoblastosis. Skin manifestations are detected in 3-50% of patients, depending on the type of leukemia. In monocytic leukemia, damage to the dermis and hypodermis is observed in every second patient, and in chronic lymphocytic leukemia - in every fourth. Leukemia is diagnosed more often in men. In patients of both sexes over 50 years of age, the likelihood of developing extramedullary hematopoietic foci is higher than in younger patients. In children and, rarely, in adults, skin infiltrates appear at the beginning of the disease and constitute one of the "debut masks" of acute leukemia.

Research methods and materials: The development of blood cancer is based on the malignant

transformation of hematopoietic cells of the bone marrow. Their active division leads to the formation of a clone of cancer cells, which in a short time crowd out normal elements from the bone marrow and begin to metastasize. Metastasis of blasts and granulocytes to the dermis causes leukemides. The appearance of metastatic foci in the lungs, heart, intestines, and brain leads to infiltration and dysfunction of these organs. For some forms of leukemia, for example, for primary ulcers, the causative factors of their occurrence have been identified: previous trauma, irritation of the skin with chemicals, rubbing parts of clothing. However, most forms of rashes appear on unchanged skin.

Cancer cells penetrate the dermis and subcutaneous tissue through the bloodstream and lymph flow. Having established themselves in the tissues, the cells of the metastatic center begin to actively divide, forming one or more elements of large infiltrates, rashes. Each of the foci of proliferation of a clone of leukemic cells forms one element. The growth rate of the elements is largely determined by the type of cancer cells and the rate of development of the underlying disease. As a rule, skin infiltrates are formed by blasts, which are characteristic of this type of myeloleukemia and have lost their tissue specificity. Formations consisting of mature granulocytes are less common: promyelocytes and myelocytes with segmented nuclei. Mature cell leukemias grow relatively slowly until they transform into blast cells.

Clusters of eruptions in the dermis actively spread, forming new foci on the surface of the body and in internal organs. In parallel with the spread of eruptions, a process of circulatory disorders in the tissues occurs. This is facilitated by thrombocytopenia and coagulopathy, which are characteristic of blood diseases. As a result of thrombocytopenia, subcutaneous hemorrhages, petechiae, and ecchymoses appear. Coagulopathy is the cause of blood clots that block blood flow in vessels of various calibers. As a result of local circulatory disorders, leaf-shaped crusts form on the surface of the papules, and foci of leukemic infiltration ulcerate.

Results: The rash appears suddenly against the background of a previous disease. In one patient, the rash may consist of elements of different sizes and types. New elements appear within a few days. During this time, as a rule, there is a deterioration in the general condition, signs of intoxication. In cases where leukemias appear at the beginning of the disease, the patient's health

may remain satisfactory for a long time.

Skin growths do not cause any unpleasant sensations. Infiltrates on the mucous membranes are very painful with their necrotic decay, the pain can become unbearable; The shade of the skin over the neoplasms can vary from light green and light pink to bluish-burgundy in blastic leukemias. Mature cell formations are covered with unchanged skin of normal color. The surface of leukemia is smooth and hairless.

Often in leukemia, small papules and plaques are found. The elements rise slightly above the surface of the skin, they are clearly visible in lateral light, have a rounded shape and are located symmetrically in different parts of the body. Consistency - from soft, pasty to dense. The addition of a hemorrhagic component is characterized by the formation of bubbles with loose lids. For a long time, the elements remain unchanged or gradually increase in size. Their spontaneous regression is possible.

The nodes can be single or multiple, isolated or joined. They often penetrate deep into the hypodermis. Their size varies from millet grain to walnut. The shape is hemispherical or truncated. The consistency is dense in chronic myelogenous leukemia and acute leukemia, it becomes woody. The color is bright, dark red, less often burgundy. On the surface of the formations, clogged sebaceous gland ducts look like whitish grains or inclusions. Individual nodes are eroded and undergo purulent-necrotic decay. The ulcers formed at the site of the nodes are resistant to local treatment.

Discussion: Localized leukemia infiltration, primary ulcers and specific erythroderma are a rare variant of hemodermatosis. Infiltrates are formed mainly on the trunk and scalp, covered with longitudinal folds and deep grooves. The usual localization of primary ulcers in myeloleukemia is the lower extremities, inguinal region and gums. Their diameter is 6-7 cm, the edges are uneven and in places are broken. The bottom is smooth, shiny, bright red, covered with blood crusts, purulent-necrotic plaques and, less often, granulations. Specific erythroderma in leukemia does not differ in its clinical picture from nonspecific.

Skin lesions in patients with leukemia occur against the background of reduced immunity. In this regard, the likelihood of bacterial, fungal or viral infection increases many times, which worsens the general condition of the patient, complicates treatment and worsens the prognosis for remission and survival of the underlying disease. Acutely painful leukemic infiltration of the oral cavity disrupts the process of chewing and eating. Weight loss can reach 10 kg per month, which quickly

leads to exhaustion of the patient. The spread of the purulent-necrotic process to the jaw bone increases the mobility of the teeth, leading to their loosening and falling out.

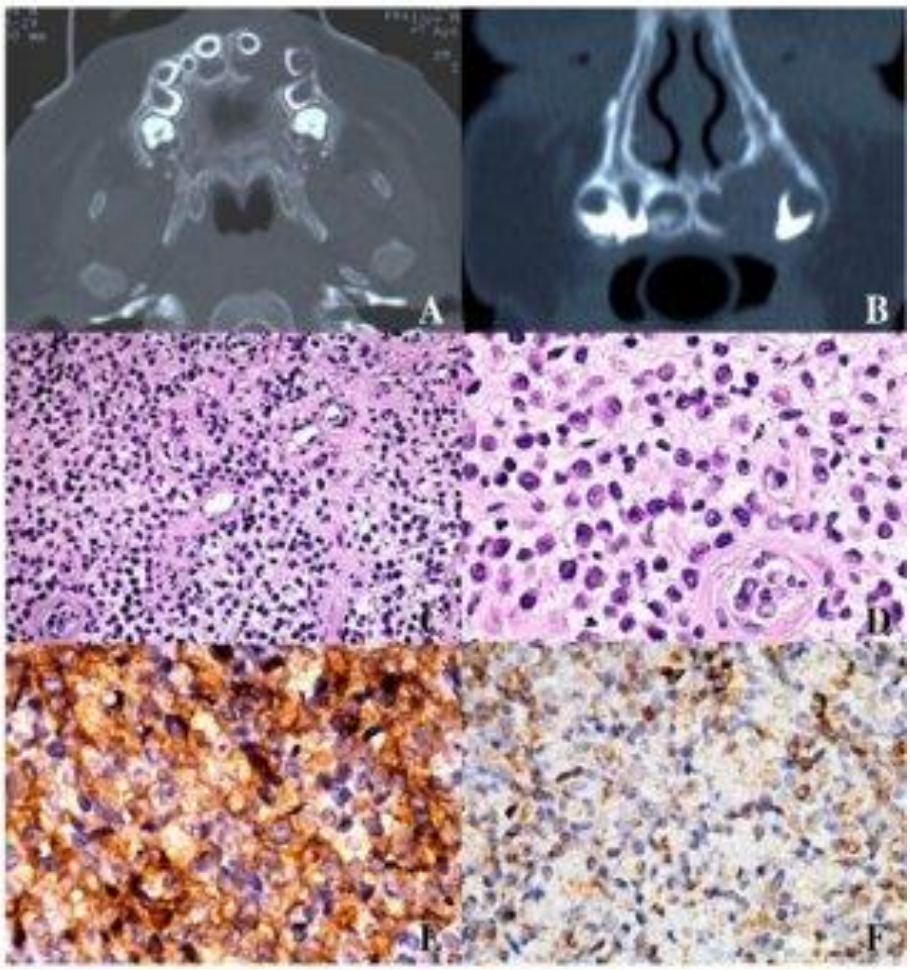
Diagnostics

The algorithms for conducting diagnostic procedures differ significantly in patients who initially consult a doctor about a skin disease and in patients who have already been diagnosed with myeloleukemia. In the first case, the examination is carried out by a dermatologist, in the second by a hematologist or oncologist. If the mucous membranes are affected, the patient may be referred to a dentist. Primary diagnosis of leukemia is difficult. This is due to the large number of forms of skin rashes characteristic of hemodermia, the similarity of almost every form with other dermatological diseases, and in some cases the sensitivity and specificity of diagnostic tests. The correct diagnosis can be made using the following methods:

A careful history is taken. This includes identifying symptoms that are typical of the onset of leukemia, factors that increase the likelihood of developing cancer, co-morbid conditions such as syphilis, HIV infection, leprosy, and other important information. A detailed questioning of the patient allows for informed and correct interpretation of diagnostic procedures and tests.

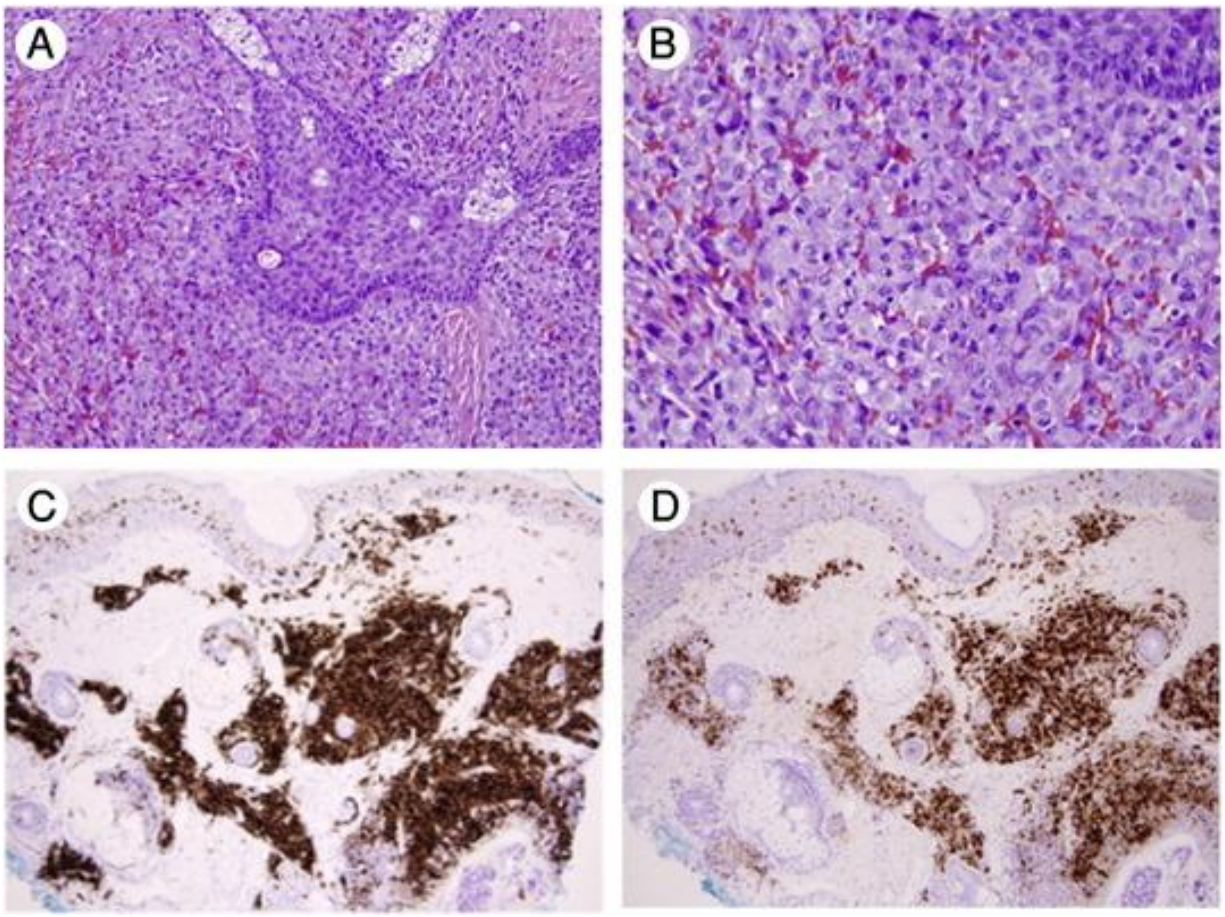
Blood tests. A complete blood count (CBC) may be ordered to look for abnormalities that may rule out or rule out myeloid leukemia, and serological tests for syphilis and HIV. Blood tests for Mycobacterium leprae and other infections may be ordered if necessary.

Histological examination. Tissue samples are taken from the largest leukemias with minimal inflammatory changes in the elements themselves and the surrounding skin. In punctures of leukemia, clusters of blasts are detected, rarely granulocytes at various stages of maturity. The method allows you to make a diagnosis in 50% of cases, since the changes detected under the microscope are not always specific.



Molecular genetic studies. The polymerase chain reaction (PCR) method allows you to record the clonal rearrangement of T-cell receptors of lymphocytes and to identify the fact of monoclonal proliferation in lesions in the early stages of the disease. The probability of false positive results is 5%: monoclonal rearrangements are detected in a number of benign dermatoses, inflammatory processes, and systemic diseases of the connective tissue.

Immunohistochemical study. The method is based on the use of fluorescent dyes, enzymes, or labeled electron-dense particles to identify specific types of tumor cells. The antibodies selectively bind to the blasts, making them visible under a microscope.



In dermatology, leukemias in patients without a history of cancer are differentiated primarily from benign processes such as diffuse neurodermatitis, lymphoplasia or primary reticulosis, mycosis fungoides, and sarcoidosis. In second place are infectious diseases with characteristic skin manifestations: lenticular papular syphilis, lepromatous type of leprosy. In patients with myeloid leukemia, leukemia should be differentiated from skin infections and complications of chemotherapy. This is a viral and bacterial rash, a side effect of drugs, and other dermatological pathologies that develop simultaneously with leukemia.

Leukemia treatment

Therapeutic intervention for hemoderma is aimed at treating the underlying disease. Bringing myeloleukemia into stable remission leads to a gradual regression of skin manifestations. If the manifestations of hemodermatosis persist as a result of chemotherapy, local treatment of the lesions is prescribed. For this, the following are used:

Radiation therapy. Cancer cells, unlike other cells in the body, are more sensitive to any harmful effects. Radiation therapy is the preferred method for treating large, single lesions. The power of X-ray radiation is selected in such a way that it affects the entire depth of the leukemic lesions. The number of procedures is determined individually, taking into account previous treatment, the patient's condition and the rate of regression of the formations.

PUVA therapy. The method involves exposing skin lesions to long-wave ultraviolet radiation, preceded by the injection or local application of drugs that increase the photosensitivity of tissues. PUVA therapy is used to treat multiple elements or large areas of infiltrative foci.

Conclusion: The prognosis is determined by the underlying disease. The use of modern treatment methods helps to increase the life expectancy of patients with leukemia. However, this increases the likelihood of developing serious complications of the disease, such as damage to the central nervous system. Leukemias that appear in the early stages of leukemia development, with timely consultation with a doctor and correct diagnosis, allow for a rapid diagnosis and the start of treatment as soon as possible. The development of hemodermatosis in diagnosed blood cancer indicates the transition of myeloleukemia to the final stage, which is an unfavorable prognostic sign.

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