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Acute Leukemia

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Annotation: This study demonstrates that bleeding gums are often the first clinical sign of acute leukemia, occurring with the slightest contact with the oral mucosa. Necrosis spreads rapidly, and soon an ulcer with a dirty, gray, foul-smelling plaque forms around the tooth. Necrosis is often detected in the tonsils, retromolar region, and other areas of the oral cavity. A characteristic feature of the necrotic process in acute leukemia is its tendency to spread to adjacent areas of the mucosa. Treatment of acute leukemia is performed in a specialized hematology department.

Keywords: sharp, dirty, gray, tooth, mouth, necrosis, leukemia, clinical picture, mucous membrane, process, hematological, membrane, tissue, differentiate, trauma.

This disease is characterized by an increase in the number of blast cells in the bone marrow, spleen, lymph nodes, and other organs and tissues. Depending on the morphological, cytochemical, and immunophenotypic characteristics of the blast cells, the following types of acute leukemia are distinguished: myeloblastic and lymphoblastic [-4].

General symptoms (general weakness, malaise, fatigue, pale skin) play an important role in the diagnosis of acute leukemia. Body temperature may be high with wide fluctuations, but can also be subfebrile. Blast cells may be present in the blood, and platelet and red blood cell (hemoglobin) counts are often low.

Oral symptoms are crucial in recognizing acute leukemia. Oral mucosal lesions are observed in most patients with acute leukemia. Due to a sharp decline in the body's immune system, these

patients sometimes develop candidiasis, a herpes infection ***of the oral cavity*** .

On examination, pallor, puffiness, easy fragility, and bleeding of the oral mucosa are noted, as well as hemorrhages on the gums, cheeks (especially along the line where the teeth meet), palate, and tongue. Hematomas and hemorrhages may be observed on both the mucous membrane and the facial skin.

Bleeding gums are often the first clinical sign of acute leukemia. The gums become loose, bleed, and ulcerate. Bleeding occurs with the slightest contact with the oral mucosa, and sometimes spontaneously. Bleeding may occur not only from the gums, but also from the tongue, cheeks along the occlusion of the teeth, and other areas of the oral mucosa.

Extensive hemorrhages and hematomas of the oral mucosa are sometimes detected. Clinical manifestations of hemorrhagic syndrome can vary: from small punctate hemorrhages on the oral mucosa and skin to extensive hematomas and profuse bleeding. Hemorrhagic syndrome is detected in more than half of patients with acute leukemia and is based on severe thrombocytopenia, which develops as a result of the suppression of normal hematopoiesis due to leukemic infiltration of the bone marrow. Disturbances in secondary hemostasis (coagulopathy) may also be the cause. Hemorrhagic syndrome in acute leukemia should be differentiated from hypovitaminosis C and traumatic injuries (especially on the buccal mucosa along the occlusion line). The final diagnosis is established based on the clinical picture of the disease, a complete blood count, and bone marrow aspirate examination.

Figure 1. – Acute leukemia

Ulcerative necrotic gingivitis with gingival hyperplasia and bleeding. *Gingival hyperplasia* is also a common symptom of acute leukemia, especially in severe cases, and is considered an unfavorable prognostic sign. Gingival hyperplasia and infiltration by leukemic cells can be so severe that the crowns of the teeth are almost completely covered by a loose, bleeding, and sometimes ulcerated gingival ridge, interfering with the patient's ability to eat and speak.

Characteristically, in a significant proportion of cases, already at the very onset of the disease, hyperplasia is more pronounced on the inner (palatal or lingual) surface than on the buccal surface. This clinical symptom sometimes helps differentiate gingival hyperplasia in acute leukemia from common hypertrophic gingivitis. According to histological data, gingival hyperplasia is caused by infiltration of the connective tissue layer of the mucosa by myeloid cells, leading to impaired trophism, subsequent tissue necrosis, and ulceration.

Ulcerative necrotic lesions of the oral mucosa often develop in acute leukemia. Characteristically, the apex of the gingival papilla is subject to necrosis. The gingiva around the necrotic area is bluish, while the entire mucosa is pale and anemic (Figure 2).

Figure 2. – Ulcerative necrotic gingivitis

Necrosis spreads rapidly, and soon an ulcer with a dirty, gray, foul-smelling plaque forms around the tooth. Necrosis is often found in the tonsils, retromolar area, and other areas of the oral cavity. A characteristic feature of the necrotic process in acute leukemia is its tendency to spread to adjacent areas of the mucosa [5-16].

This can result in extensive ulcers with irregular borders, covered with a gray necrotic plaque. Reactive changes around the ulcer are absent or mild. In the presence of necrotic changes ***in the oral cavity,*** patients complain of severe pain when eating, difficulty swallowing, a foul, putrid odor from the mouth, general weakness, dizziness, and headache. Hypersalivation may be observed early in the development of ulcerative necrotic changes , but later the amount of saliva decreases, which is associated with degenerative processes in the salivary glands.

The causes of necrotic processes in the oral mucosa in acute leukemia remain unclear. It is believed that necrosis may occur as a result of the breakdown of leukemic infiltrates, in areas of extensive hemorrhage, as well as due to neurotrophic tissue disorders and a compromised immune system. An important factor in the development of necrosis is the action of external factors, especially microorganisms. The formation of infiltrates in the gums results in severe deformation of the gingival margin.

This condition is often diagnosed as hypertrophic gingivitis. Leukemic infiltrates can ulcerate, often leading to bleeding. The mucosal manifestations of acute leukemia should be differentiated from hypertrophic gingivitis of other etiologies, Vincent's ulcerative necrotic stomatitis , vitamin C deficiency , and heavy metal intoxication.

The results of blood and bone marrow tests are decisive in the diagnosis of leukemia.

The above manifestations can be observed in patients with acute leukemia and during treatment after courses of specific chemotherapy due to its cytotoxic effect on all blood cells and mucous membranes.

The dentist's task is to demonstrate oncological alertness based on clinical symptoms ***in the oral cavity.***

treatment is performed in a specialized hematology department. Local treatment is administered in consultation with a hematologist based on current blood test results.

Maintaining personal oral hygiene is very important.

Treatment, tooth extraction, and tartar removal are performed in a hospital setting with a hematologist. If ulcerative-necrotic lesions of the oral mucosa are present, the mucosa is anesthetized and treated with antiseptic solutions (hydrogen peroxide, chlorhexidine, methylene blue solution, miramistin, President oral spray). Exclusive, President mouthwash profi, etc.), proteolytic enzymes and agents stimulating epithelialization (rosehip oil, sea buckthorn, propolis preparations, oil solution of vitamins A, E, etc.). If bacterial, fungal or herpetic lesions of the oral mucosa are detected, generally accepted antibacterial (in each specific case should be prescribed taking into account the composition of the pathogenic microflora), antifungal or antiviral therapy

is carried out. One of the methods of correcting the microflora of the oral cavity should be the use of eubiotics (acylact, bifiform, bifidumbacterin, lactobacterin), probiotics (bactisubtil, biosporin, enterol), prebiotics (bactisubtil, biosporin, enterol), prebiotics (normase, hilak forte, etc.) in complex treatment.

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