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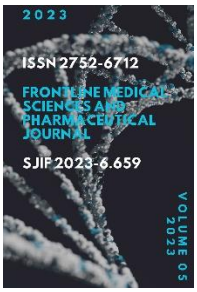

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Research Article

DEVELOPMENT OF THE PATHOLOGICAL PROCESS IN THE NASAL CAVITY AND PARANASAL SINUSES IN LEUKEMIA

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ABSTRACT

Currently, the authors in the native and foreign literature state an increase in the incidence of leukemia, especially among the urban population. This may be due to the general deterioration of the environmental situation in large cities: the impact of adverse environmental factors (radiation, carcinogenic substances), the aging of the population due to the improvement of the quality of medical care. The frequency of acute leukemia averages 3-5 per 100,000 population, while 75% of cases of the disease are diagnosed in adults and 25% in children.

KEYWORDS

Purulent-inflammatory pathologies, hemorrhagic syndrome, leukemia.

INTRODUCTION

In many diseases of internal organs, purulent-inflammatory pathologies of (Laryngootorinology) ENT organs have an erased clinic, which is often perceived as features of the course of the underlying pathology. In the literature of recent years, isolated reports have

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appeared about the peculiarities of the course of pathologies of ENT organs in disorders of the blood system (4). The development of purulent-inflammatory diseases of ENT organs in leukemia is apparently facilitated by a violation of immune systems, the predominance of catabolic processes, a decrease in the overall resistance of the body, the aggressiveness of therapy (4). At the same time, the development of purulent-inflammatory diseases of the ENT organs in oncohematological patients can have a negative impact on clinical and laboratory blood parameters, worsen the condition and course of the underlying pathology, lead to the progression of signs of hemorrhagic syndrome, to the restriction or cancellation of the use of polychemotherapy. However, in-depth studies of the course of pathologies of ENT organs in leukemia have not been conducted, which determined the purpose of this study.

The purpose of the study: to experimentally and clinically substantiate the risk of developing pathologies of ENT organs in leukemia.

MATERIAL AND METHODS

The studies were carried out in 2 directions: in experimental leukemia and in patients with leukemia. The experiments were carried out on 57 white mongrel male rats with an initial weight of 170-220 g, in which a model of leukemia was reproduced by daily subcutaneous administration of 40% benzene solution 0.01 ml /100 g of body weight for 8 months (2). The total mortality was 40%. The development of leukemia was controlled by changing the hemo- and myelograms of animals. Animals with signs of leukemia were slaughtered under raush anesthesia in compliance with the rules designated by the European Convention for the Protection of Vertebrates (Strasbourg, 1986), by decapitation. Histological sections after dewaxing were stained with hematoxylin-eosin to detect general morphological changes in the paranasal cavities, mucopolysaccharides were detected by the CHIC reaction method (CHIC reaction: PAS-reaction, Schiff-iodic acid reaction), elastic fibers were determined by Weigert.

A total of 276 patients with acute and chronic leukemias who are undergoing outpatient and inpatient treatment at the clinic of the Research Institute of Hematology and Blood Transfusion of the Ministry of Health of the Republic of Uzbekistan were examined, of which 164 (59.4%) had pathologies of the nose and paranasal

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sinuses. Out of 164 patients, pathology of the paranasal sinuses was detected in 63 (38.4%) patients. All patients of the studied groups underwent a comprehensive examination to obtain the most complete picture of the nature of the main oncohematological disease, the presence of associated and concomitant pathology of ENT organs and concomitant somatic diseases. In order to clarify the diagnosis of all patients, a total of 276 patients with acute and chronic leukemia who are on outpatient and inpatient treatment at the clinic of the Research Institute of Hematology and Blood Transfusion of the Ministry of Health of the Republic of Uzbekistan were examined, of which 164 (59.4%) revealed pathology of the nose and paranasal sinuses. Out of 164 patients, pathology of the paranasal sinuses was detected in 63 (38.4%) patients. All patients of the studied groups underwent a comprehensive examination to obtain the most complete picture of the nature of the main oncohematological disease, the presence of associated and concomitant pathology of ENT organs and concomitant somatic diseases. In order to clarify the diagnosis, all patients underwent immunomorphocytochemical examination of bone marrow preparations obtained by aspiration biopsy.

Examination of bone marrow preparations obtained by aspiration biopsy.

During the examination of patients, the presence of complaints from the ENT organs was clarified, anamnesis was collected according to the generally accepted scheme, the prescription of the underlying disease and the peculiarities of its course were established, taking into account the available medical documentation. ENT organs were examined according to the generally accepted procedure, including anterior and posterior rhinoscopy (using endoscopic optics according to indications), oropharyngoscopy, indirect laryngoscopy, otoscopy. An X-ray examination of the paranasal sinuses was performed in the presence of indications. The endoscopic examination was performed using a "Storz" device with an optical angle of 30 °, which allows to examine the nasal passages and nasopharynx, to clarify the presence and nature of the discharge, to visualize the source of hemorrhage when it is located in the posterior parts of the nasal cavity, to identify macroscopic changes in the nasal mucosa, the presence of altered vessels.

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Results and their discussion. Studies have shown that in rats with leukemia, the mucous membrane of the maxillary sinus is significantly thickened due mainly to the presence of diffuse leukemic infiltration. The integumentary epithelium is thickened, sinuous due to compression by its underlying leukemic infiltration. There are no cilia on the surface of the integumentary epithelium, the multi-row cylindrical epithelium is metaplasized in places into a multilayer epithelium, the nuclei of epithelial cells are located at different levels, hyperchromic. The basement membrane is uneven, tortuous, thickened in some areas, undefined in others. The own plate and submucosal layer do not differ due to diffuse leukemic infiltration. Leukemic infiltrates are mainly concentrated around the vessels, sometimes reaching the integumentary epithelium, forming convex areas towards the lumen of the cavity and with atrophy of the integumentary epithelium. Such diffuse leukemic infiltration is accompanied by the development of secondary changes in the form of hemorrhage, destruction and necrosis of tissue elements.

In other paranasal cavities, the above-described changes are less pronounced and are limited to the lesion of only the own plate and the integumentary epithelium. In the sphenoid sinus, there is a thickening of the integumentary epithelium due to the proliferation of cambial enterocytes and metaplasia into the multilayer epithelium. The basement membrane and its own plate are diffusely infiltrated by leukemic cells. In the submucosal layer, vascular fullness, interstitial edema is noted.

In the latticed sinuses, the pathomorphological process in the form of leukemic infiltration is more pronounced and manifested by diffuse leukemic infiltration of the basement membrane and its own plate with focal penetration into the submucosal layer. In the deep parts of the submucosal layer, pronounced interstitial edema, disorganization of fibrous structures and vascular walls with the appearance of foci of diapedesis hemorrhage are revealed. Bone plates of uneven thickness and stainability due to focal resorption of compact bone tissue and the development of pronounced edema with rejection of the periosteum.

Thus, the results of morphological examination of the tissue elements of the nasal cavity wall and paranasal sinuses showed that dyscirculatory, dystrophic, disorganizing, destructive, inflammatory processes develop in experimental

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leukemia. The characteristic changes for leukemia were manifested by leukemic infiltration, especially in the maxillary sinus.

Their comparison with the clinical picture of the nasal mucosa and paranasal sinuses showed the development of purulent-inflammatory processes in the paranasal sinuses. For acute purulent-inflammatory processes, purulent overlays on the surface of the mucous membrane, hemorrhages, hemorrhages, intense round-cell infiltration are typical. They were mainly associated with a sharp change in the immunological properties of the body, disorders of homeostasis, detoxification system, central and peripheral hemodynamics, causing the development of hypoxia, as well as the widespread use of polychemotherapy. Isolated lesions of one sinus were detected in 6 (9.5%), polysinusitis - in 36 (57.1%), hemisinusitis – in 7 (11.1%) and pansinusitis – in 14 (22.2%) of the examined patients. At the same time, there was often a combination of nosebleeds with chronic atrophic rhinitis. Chronic sinusitis occurred in the form of purulent inflammation, inert, poorly treatable, often accompanied by nosebleeds. During microbiological examination, there was a predominance of seeding of several microorganisms, often anaerobes. It should be said that if with chronic leukemia purulent-inflammatory diseases proceeded with an erased clinical picture, then with acute, especially during the induction of remission, purulent-inflammatory diseases of the nose and paranasal sinuses proceeded with pronounced symptoms of the purulent process, as well as manifestations of endogenous intoxication of the body. Therefore, in the treatment of acute and chronic inflammatory diseases of the ENT organs, we mainly carried out antibiotic therapy using cephalosporin-type drugs, immunostimulating and general strengthening therapy of local action.

The results obtained by us echo the experimental ones, which show the predominance of leukemic infiltration with the development of purulent-necrotic processes, especially in the maxillary sinus. Based on the data obtained, it can be said that leukemic infiltration plays an important role in the development of purulent-inflammatory processes in the paranasal sinuses. Developing dyscirculatory, dystrophic, disorganizing and destructive changes against the background of a decrease in the immune system cause the risk of hemorrhage (3) and necrosis (1).

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Thus, based on the comparison of experimental and clinical data, it can be concluded:

1. In experimental leukemia, an increase in the permeability of the vascular wall was found due to alterative damage and metastasis of leukemic cells, leading to the development of secondary changes in the form of protein dystrophy of the integumentary epithelium, mucoid, fibrinoid swelling and fibrinoid necrosis in all fibrous structures of the connective tissue of the paranasal sinuses.

2. The incidence of paranasal sinus pathologies in patients with leukemia is 38.6%. They are characterized mainly by purulent-inflammatory, as well as nosebleeds of varying intensity.

3. In the treatment of purulent-inflammatory diseases of the paranasal sinuses in patients with leukemia, it is necessary to carry out gentle antibiotic therapy, the appointment of immunostimulators, for the treatment of nosebleeds – the combined use of a local drug "Tachocomb" and an elastic tampon.

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