STUDY OF THE ORAL LESIONS CAUSED BY THE MINCOWSCHI-CHAUFFARD HEMOLYTIC ANEMIA

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Abstract

Hematological disease causes a wide variety of oral signs, some being common (stomatitis), whilst others are more difficult to perceive by the patient.

Such signs may be manifested long before the general symptomatology is obvious, the dentist being obliged to perform paraclinical investigations for establishing a correct diagnosis.

The paper approaches a domain of special practical importance, with applications which point to the importance of the dentist.

Some oral and dental signs and symptoms are common to all hemolytic anemias (6).

When hemolysis is sufficiently high, having been already installed, anemia occurs, manifested first by pallor, easier to be observed in the nail bed and in palpebral conjunctivitis. Pallor of the oral mucous membrane is especially obvious at the level of the soft palate, tongue and sublingual tissues, becoming more and more visible as the anemia develops.

Blood diseases are manifested by lesions of the buccal mucous membrane, especially in its fixed portion. Characteristic to hematological diseases is the absence of any inflammatory reaction around the ulcerous lesions.

Out of all manifestations observed in the oral cavity of the patients affected by hemopathies, the prevailing symptomatology was gingivorrhagia, sometimes manifested in quite alarming forms. Halitosis accompanies almost all forms of the disease, both in the presence and absence of ulcerations (8, 9).

The investigations were preformed on a group of 5 patients affected by the Mincowschi-Chaufard hemolytic anemia.

All cases under analysis display advanced anemia.

The most frequently affected is the periodontium, followed by the buccal mucous membrane and by periapical inflammations(10, 11).

Neither oral surgery nor periodontal procedures are recommended to patients diagnosed with severe anemias, as abnormal bleeding and a vicious, belated cicatrization of the lesions is possible.

INTRODUCTION

The scientific progress recorded, along time, in all domains, as well as the investigations devoted to the relation between the oral-dental manifestations and the evolution of some general diseases demonstrated that the numerous mechanisms for the regulation and integration of each organ or tissue make the human body a morpho-functional unit.

This observation permits the conclusion that the oral-dental lesions should not be considered as separate symptoms, the local and the general factor being closely interdependent on one another.

Blood diseases cause polymorphic oral signs, sometimes quite common – such as the stomatitis – other times being quite difficult to interpret.

Such signs may be manifested long before the general symptomatology is evident, the dentist being obliged to perform paraclinical investigations for establishing a correct diagnosis.

OBJECTIVES OF THE STUDY

• To highlight the importance of tracing some hematological diseases by a careful examination of the oral cavity;
• The role of the physician, in addition to the dentist, in the prevention and treatment of the complications manifested in the evolution of such hematological diseases;
• The need for early and adequate treatment;
• Early diagnosis, which may save the life of the patient, even if the oral manifestations
of the hematological diseases occur or not as general clinical phenomena.

The present paper approaches a domain of special practical importance, with specific applicative effects in increasing the role of the dentist.

The oral medium and the factors contributing to maintaining the health condition of the oral mucous membrane

In the oral cavity, equilibrium occurs between the defence mechanism and the buccal flora – known as the biological equilibirum of the oral medium.

The elements of the oral cavity are represented by the oral mucous membrane, tongue and uvula – bathed by the oral fluid.

Any imbalance produced in the organism may have repercussions on the oral mucous membrane, as well, sometimes announcing internal diseases. Usually, this epithelium is impermeable to microbes and proteins.

The oral immunity developed during the whole lifetime, as well as the lymphoid apparatus made up the Waldeyer ring overflows secretion products in the lymphatic trunks and also in the regional ganglions, thus actively contributing to the defense of the oral mucous membrane, and enriching this biological defense barrier of the organism.

Another important element of the oral medium is represented by saliva which, by its functions, contributes to the health condition of the oral mucous membrane. Saliva is produced by the submaxillary and sublingual parotid gland (95%), the rest coming from the small, accessory glands disseminated in the labial, palatine and lingual regions of the mucous membrane.

Besides its local role, the gingival fluid plays, through the substances it contains, a special part in the oral medium, as follows: the proteins, such as IgG, IgA, IgM, coming from the plasma and the plasmatic cells of the gingiva, have an immunological role, the albumins inhibit certain enzymatic activities, urea contributes to the installation of an alkaline pH (7.5-8.5), the prostaglandins, considered as local hormones, play a special part in platelet aggregation (primary hemostasis and trombosis). Any disorder of platelet PG may provoke hemorrhagic or thrombotic accidents.

In the oral cavity there is a rich flora, represented by Gram (+) and (-) bacilli, cocci, or aerobic or anaerobic bacilli. The biological disequilibrium of such flora causes pathogenic microbial activity (1).

Under the action of certain general or local factors, this biological equilibrium of the oral medium may be affected, the oral mucous membrane becoming vulnerable to the aggression of the saprophyte microbial flora present at this level, which may be highly virulent under certain conditions (2).

Blood diseases are manifested by lesions of the oral mucous membrane, produced mainly in its fixed portion. The characteristic of such diseases is the absence of any inflammatory reaction around the ulcerous lesions. In such wounds, the main role is played by the defense reaction of the organism, the reticulo-hystocitary system (3, 4).

For better understanding the leukocyte diseases, certain aspects of the normal function should be evaluated. The leukocytes originate either in the marrow or in the lymphoid tissue: the granulocytes and monocytes derive from the same cell, coming also from the marrow, while the lymphocytes originate from the lymphatic ganglions. The three types of granulocytes are: the neutrophyls, the eusinophyls and the basophyls. The neutrophyls represent the first defence barrier against the bacterial invasion of the mucous membrane, membranes and skin. The infection risk is higher if the number of neutrophyls is insufficient. The function of the neutrophyls is favourized by the presence of immunoglobulines and complement, which supports the neutrophyls attack to the surface of microorganisms.

For the time being, the function of the other granulocytes, eosinophils and basophils is not fully elucidated. The eosinophils migrate in the tissues and act as “mast” cells in alergical reactions. The monocytes are immature cells in the
circulatory flow, using it as a rapid transport system.

Once having reached the tissue, they become mature as macrophages, acting as active phagocytes in the immunological system. The lymphocytes are primary cells involved in immunity. Both lymphocytes B and T are present in the peripheral blood.

**Hemolytical anemias** occur as a result of the excessive destruction of the erythrocytes, as a result of some intracorpuscular effects of theirs (frequently of hereditary origin), or by the existence of some extracorpuscular factors(5).

The marrow has the capacity of increasing the erythrocyte production 6-7 times, significant hemolyses possibly occurring prior to anemia installation. In a similar way, a low amount of hemolysis may occur, without producing icterus, as the normal ability of the liver of excreting high amounts of bilirubin is well-known.

Hemoglobinopathies, such as thalassemia and other disorders, are caused by defects in the globinic area of the hemoglobin molecule. Such defects make the erythrocytes containing abnormal hemoglobin more susceptible to hemolysis.

The common laboratory diagnosis for all hemolytic anemias involves decrease of hemoglobin, increase of reticulocytes (young red cells released in the circulation as a result of the medular production of additional red cells for compensating excessive destruction) and an increased amount of bilirubin in the serum, especially the indirect one.

Some oral and dental signs and symptoms are common to all hemolytic anemias (6).

When hemolysis is sufficient and had occurred, there results anemia, palidness, easier to be observed in the nail bed and papulebral conjunctivitis. The palidness of the oral mucous membrane is especially obvious at the level of the soft palate, tongue and sublingual tissue, being more and more visible as anemia advances. Unlike the anemias produced through bleeding or deficiency of factors, the hemolytic anemias cause yellowing, as a result of the hyperbilirubineny which accompanies the destruction of erythrocytes. This is most visible in the sclera, the skin, the soft palate and the tissue of the lingual floor becoming, too, icterical, as the amount of seric bilirubin increases. Some hyperplasy of the erythroid elements of the marrow becomes active, in an attempt of compensating the anemia (7).

Such hyperplasy explains the characteristic aspect of the dental radiographic images. (3, 6).

**MATERIALS AND METHOD**

The significant progress registered in medicine brought about modifications and improvements in the therapy of sanguine diseases, as well, thus simplifying the symptomatic picture of the hemopathies and the changes produced at the level of the oral-maxillo-facial territory. That is why, it is sometimes difficult to state whether one lesion or another, present in the oral cavity of the persons affected by hemopathies, is the result of the general disorders caused by such a disease or it is the result of the administered treatment.

Out of all manifestations occurring in the oral cavity of patients with hemopathies, the prevailing symptomatology was gingivorrage, sometimes with alarming aspects. Fetid halene accompanies almost all forms of such a disease, either in the presence or absence of ulcerations (8, 9).

The investigations were performed on a group of 5 patients suffering from Mincowschi-Chaufard hemolytic anemia.

All cases evidence advanced anemia.

The disease presents with pallor, sweating and fatigue.

The general examination demonstrates tiredness and sweating, as well as pale teguments and mucous membranes. On palpation, there is latero-cervical adenopathy, and liver situated is found more than 3 cm under the costal margin.

The extra-oral examination shows the pallor of the facial teguments and bilateral latero-cervical micro-adenopathy, and neconfluent bleeding, irregularly-shaped ulcerations of the external labial mucous membrane.

The fixed and mobile mucous membrane is totally pale in colour.
CONCLUSIONS

The usual dental hygiene assumes a stable hematological condition, by regular examinations performed by the general practitioner as to the planning of the dental procedures, if considering the transitory periods of lecopeny and thrombocytopeny caused by the chemo-therapeutical agents employed.

Most frequently affected is the periodontium, followed by the oral mucous membrane and the periapical inflammations (10, 11).

No oral surgical procedures are to be performed in patients affected by severe anemias, if considering the risk of abnormal bleeding and vicious, delayed cicatrization of the lesions.

The dentist has the obligation of performing serial examinations for the elimination of any possible source of infection, prior to any chemo-therapeutical treatment, even if, in some situations, platelet perfusions, intravenous combinations of antibiotics and perfusions may be necessary for the initiation of a dental treatment.

The oral health condition should be preserved as long as possible, if considering the permanent risk of a dental infection’s turning into an aplastic crisis.

Such situations demonstrate, once again, the importance of the internist and stomatologist in tracing the hematological diseases, in preventing any possible complications and in recommending treatments according to the modifications produced at the level of the oral cavity.

References