

USEING THE CYTOLOGIC METHOD FOR CURING DISEASES OF THE ORAL CAVITY MUCOUS MEMBRANE AFTER PROSTHETICS

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ABSTRACT

The research is devoted to studying the role of hygiene violations of an oral cavity and unsatisfactory denture care in formation of pathological process in the impression area. In total 178 patients with the diagnosis "tooth alignment stomatitis" who are constantly using removable dentures are examined. By means of a cytological method it is established that at clinical symptoms of tooth alignment stomatitis in cytoqram of prints the Increase in dystrophic changes in flat epithelium cells was noted, layers of half-ruined lymphoid elements are noted, the number of microxyphil and mononuclear neutrophils under review sharply Magnifications to 60-70. It is established that the cytological method allows assessing the hygienic condition of an oral cavity in the impression area rather precisely that has important diagnostic value for defining tactics of holding treatment-and-prophylactic actions in case of tooth alignments stomatitis.

Keywords: prosthetic stomatitis, oral cavity hygiene, cytological method.

INTRODUCTION

Tooth alignment stomatitis belongs to the group of the most often found inflammatory character pathologies of a mucous membrane of the oral cavity caused by presence denture. The great value in the tooth alignment stomatitis (STA) developing plays the patient health state, an oral cavity hygiene level, dentures care rules observance (D).Course character of STA pathological process for the patients using removable artificial limbs can be sharp or chronic (remission, aggravation), a form of clinical manifestations can change from erosive-and-ulcer to ulcer-and-necrotic and hyper plastic [2,7]. The main reasons for STA development are caused more by local factors, proceeding directly from a removable artificial limb basis of and material of which it is made. These are the mechanical, thermal, toxic-allergic irritants of an oral cavity mucous membrane showing the influence against the background of a microbiocenosis violations and immunological resistance of mouth which in total define the pathogenetic mechanism of this pathology development [1,3,5]. In many respects reaction of a mucous membrane to a removable denture depends on individual properties of an impression area [11]. A number of researchers note that the most important role in formation of pathological process in the impression area belongs to the hygiene violations of an oral cavity and bad denture care [9,10]. The main clinical manifestations of STA are the catarrhal inflammation, erosion or ulcerations, decubitus and, as a result, the progressing disorders of haemo circulation and trophic violations in a mucous membrane of an impression area and

adjacent sites of an oral cavity [3, 11]. At the biochemical level in tissues of an oral cavity strengthening of free radical oxidation of lipids [2,6], change of enzymes activity in oral liquid [3] is observed. The chronic inflammation and destructive changes in tissues of an impression area make an adverse effect on all organism in general [4,8], the low oral cavity hygiene level leads to activation of pathogenic microflora in the oral cavity and strengthening of its pathological impact on severity and course of inflammatory process in the tissues of an impression area [7,11]. This tissues ethiopathological complex leads to serious violations of adaption process to removable dentures, their unsatisfactory fixing and stabilization and, as a rule, full patient refusal to wear the removable artificial limb. Search of new ways in prophylactics and treatment of the STA increasing the oral cavity hygiene level and promoting the fastest adaptation of the patient impression area to a removable artificial limb, certainly, is a timely and necessary scientific research. All above defines expediency and relevance of the research aimed at finding and developing new ways of assessing the hygiene level in an impression area at tooth alignment stomatitis for prevention and treatment of this disease. Research objective: assessment of hygiene level efficiency in an impression area at tooth alignment stomatitis with use of cytological method.

Research Data and Methods

178 patients constantly using removable dentures with the diagnosis "tooth alignment stomatitis"

participated in the research. Depending on the oral cavity hygiene level all patients were divided into 4 groups - 1 control and 3 main. The control group was made by patients, using orthopedic designs from 1 to 3 months; 1, 2 and 3 group - patients using orthopedic designs up to 1 year, from 1 to 3 years and over 3 years respectively. At primary clinical inspection, after the patient poll, having collected the anamnesis, objective inspection of soft and solid tissues of the oral cavity (OC) and the impression area (IA), a radiological research, an intake of clinical material (prints from a gum in the area of PL) was carried out. Calculation of cellular elements was carried out under a microscope at Magnification h1000 (immersion), by means of eyepieces h100 and a lens h10. Intake of cytological material carried out by means of a target wedge-shaped fragment of an elastic band eraser with a size in a narrow part no more than 1 mm. Targets were stored in Petri's cups, filled-in by 50% solution of ethyl alcohol. Before making prints the target was dried up a stream from the air gun, then easy pressing to the explored site took away cytological material and transferred it in the form of prints to the fat-free subject glass. On subject glass the following information was placed: first name, middle initial, last name of the patient; tooth formula; a marking on the quadrants marked according to area of the material intake. At material capture one part of a target was put to a surface of an impression area, and another to an artificial limb surface. It was recommended to patients to brush teeth no less than in 3-4 hours prior to the appointed research. Prints took from a lingual surface from area of mucous membrane close to an artificial limb. Glass was dried up on air, fixed and dyed by Romanovsky-Gimza's technique. For assessment of an oral cavity hygiene condition the cytological indicator of hygiene [1] modified by us for assessing existence and quantitative characteristic of a dental plaque in cytogram at a microscopic research of prints from an impression area was used. Existence of a dental plaque and microorganisms in one area was regarded as 1 point, absence - 0 points. The index was defined as private from division of score into quantity of surveyed. Values of the cytological indicator of hygiene of an impression area (CIHIA) from 0 to 1 - confirmed good hygiene, from 1 to 2 - satisfactory and over 2 - unsatisfactory. Calculation of cellular elements was carried out at Magnification h1000, immersion. The cytological research of prints from an impression area and dentures was conducted in 1, 2 and 3 months. At each stage a cytological indicator of hygiene of an impression area was defined. Definition of patients' level of hygiene was carried out by means of the simplified index of a dental plaque Approximal Plaque-Index (API) (D.E.Lange, H.C.Plagmann et al, 1977) and an index of dental plaque (DP) by across Tureski (S.Turesky, 1970). The statistical importance of the

received results (p) was calculated with use of Student (t) criterion and the interpretation on the basis of the standard table of critical values of Student coefficient. We applied a rank correlation method of Spearman to determination force and direction of correlation communication. Distinctions between groups at p were considered reliable <0,05. Processing the obtained data was carried out on the Pentium 4 personal computer with the software of Microsoft.

Research results

Reference values of CIHIA in control group made $2,56 \pm 0,07$ that corresponded to an indicator of unsatisfactory hygiene of an oral cavity. Reference values of CIHIA in 1 group (the term of functioning of orthopedic designs up to 12 months) indicated satisfactory hygiene of an oral cavity, value made $1,88 \pm 0,04$ points, unsatisfactory hygiene of an oral cavity in the 2nd group (the term of functioning of orthopedic designs 1-3 years) and the 3rd group (the term of functioning of orthopedic designs over 3-5 years), made, on average, $2,36 \pm 0,04$ and $3,05 \pm 0,04$ points respectively. Criteria of an oral cavity hygiene level on CIHIA values coincided with criteria of hygiene level on values of hygienic indexes. During the cytological research calculation of microcyphil neutrophils was made. At primary research in control group the average of leukocytes under review was $17,27 \pm 2,78$, in 1 group the average of leukocytes was in the range from $2,8 \pm 0,14$ to $4,13 \pm 0,29$, in the 2nd group from $11,33 \pm 1,14$ to $12,80 \pm 1,12$, in the 3rd group - from $30,83 \pm 4,84$ to $34,43 \pm 2,3$. Strong positive correlation ($r=1,33$) was observed between indicators of hygienic indexes and quantity of leukocytes in all studied groups meaning the quantity of leukocytes is accurately interconnected with a hygienic condition of PL and all oral cavity. The analysis of a cytological research revealed that normal cells on main cytogram prints with PL are: basal cells, flat epithelium cells of multilayered covers of a flat nonkeratinous epithelium, flat epithelium cells of deep layers of an epithelium of an oral cavity mucous membrane, nucleated cells of an epithelium cover, a scale (the keratinous cells deprived of nucleus). Also normal are small amounts of microcyphil neutrophils and monocytes. At good hygiene of an oral cavity and OC from 0 to 5 microcyphil neutrophils under review, single lymphocytes, insignificant quantity of the mixed flora are noted. At satisfactory hygiene of an oral cavity in cytogram of prints presence of a dental plaque and microbic contaminated cytoplasm of epithelium cells, in the form of the smallest basophils particles is noted. The quantity of microcyphil neutrophils and monocytes Magnifications (fig. 1). In cytogram from 5 to 15 microcyphil neutrophils under review are noted.

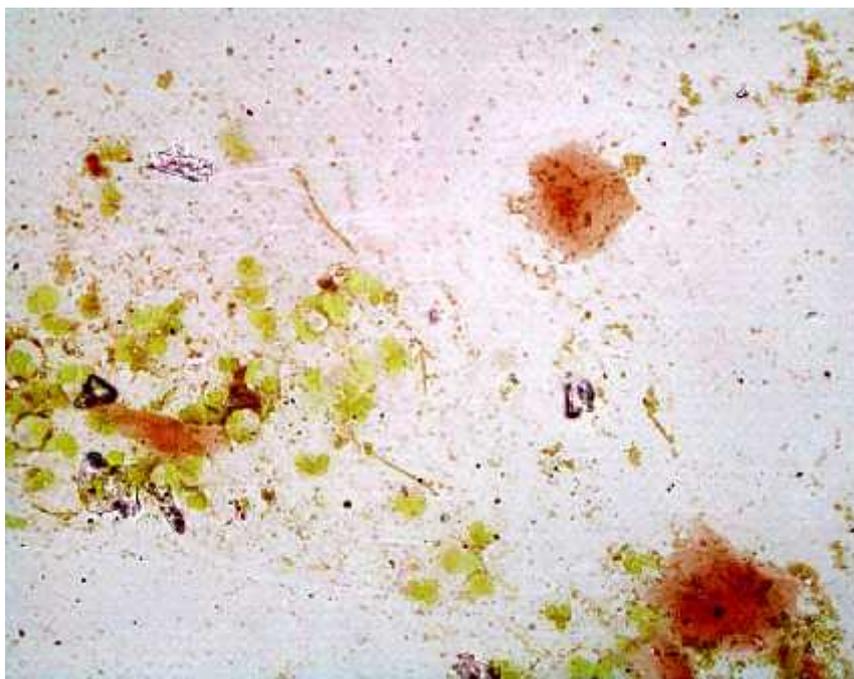


Fig. 1. Cytogram . An impression area without clinical signs of inflammation. A layer cell of a multilayered flat nonkeratinous epithelium, the nonkeratinous cells, insignificant quantity of microxyphil neutrophils. Coloring according to Romanovsky-Gimz. Immersion. Magnification h400.

At unsatisfactory hygiene of an oral cavity in cytogram of prints phage cells (microxyphil neutrophils or monocytes) appear (fig. 2). In a large number *Candida* fungi elements, tubers of radiant fungi of Actinomycetales appear - form a mycelium - the threadlike intertwining cells, *Leptotrichia buccalis*

- straight lines or slightly curved gram-negative bacilli, obligate non-sporeforming anaerobe bacterias, *Entamoeba gingivalis* (fig. 3, 4). In cytogram contain from 15 to 40 microxyphil neutrophils.

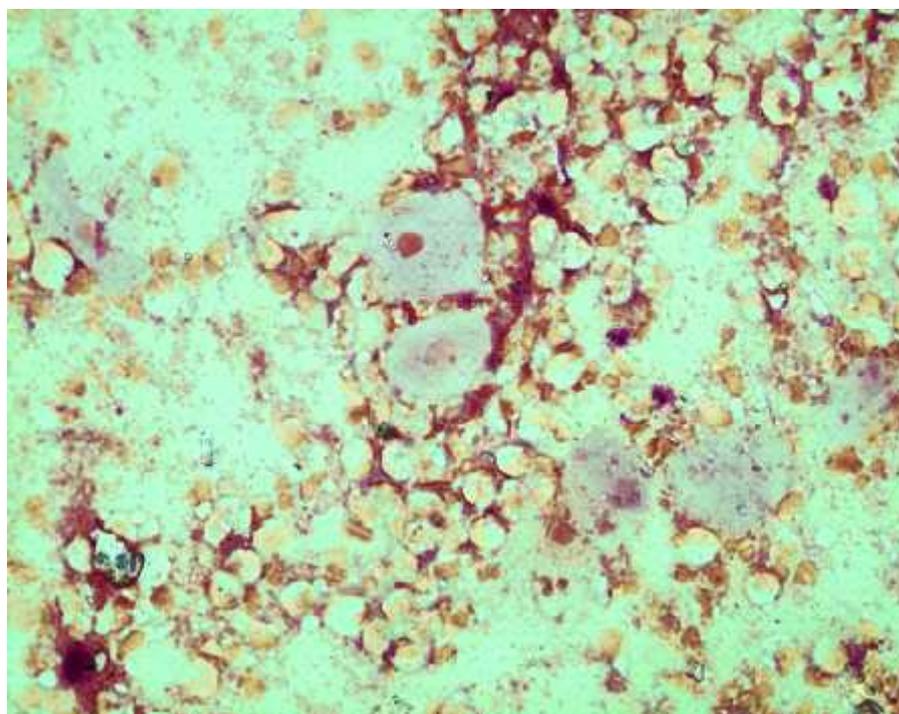


Fig. 2. Cytogram. An impression area with clinical signs of inflammation. Incomplete phagocytosis, with a large number of microxyphil neutrophils. Coloring according to Romanovsky-Gimz. Immersion. Magnification h400



Fig. 3. Cytogram. An impression area with clinical signs of inflammation. Tubers of radiant fungi of Actinomycetales. Coloring according to Romanovsky-Gimz. Immersion. Magnification h400

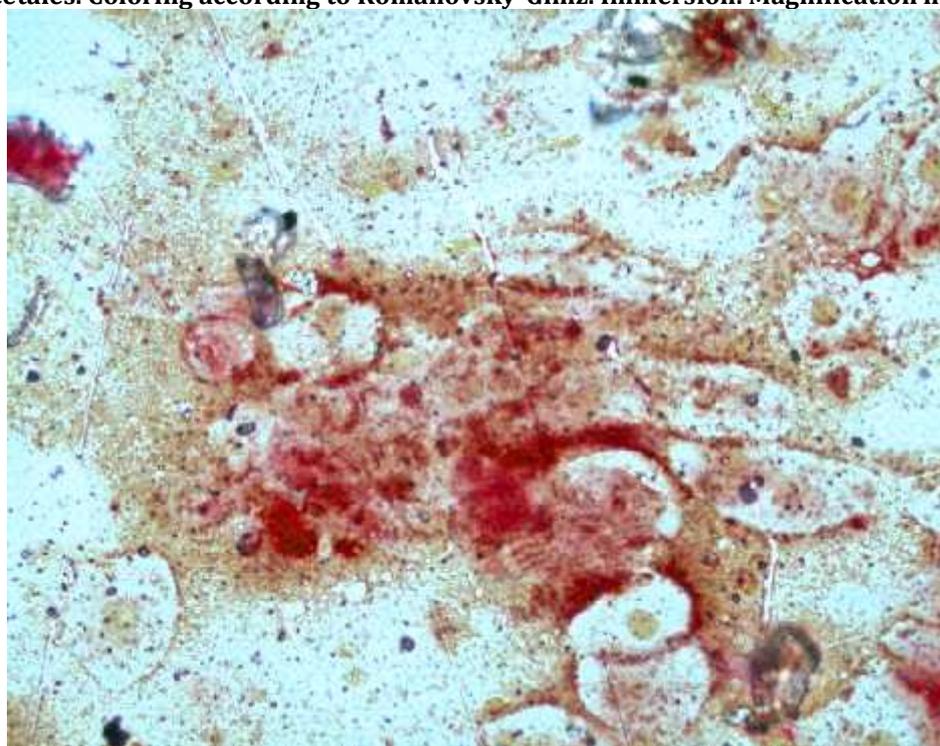


Fig. 4. Cytogram. An impression area with clinical signs of inflammation. Entamoeba gingivalis, contaminated cytoplasm of an epithelial cell microorganisms. Coloring according to Romanovsky-Gimz. Immersion. Magnification h400.

At clinical symptoms of tooth alignment stomatitis in cytogram in prints increase in dystrophic changes of flat epithelium cells, layers of half-ruined lymphoid elements (fig. 5, 6) was noted. Sharply the number of microxyphil neutrophils increases to 60 - 70 under

review, mononuclear (fig. 7). Existence in cytogram of flat epithelium cells, contaminated microorganisms, is a sign of bad hygiene of an oral cavity and indicates high risk of development of inflammatory processes in an impression area

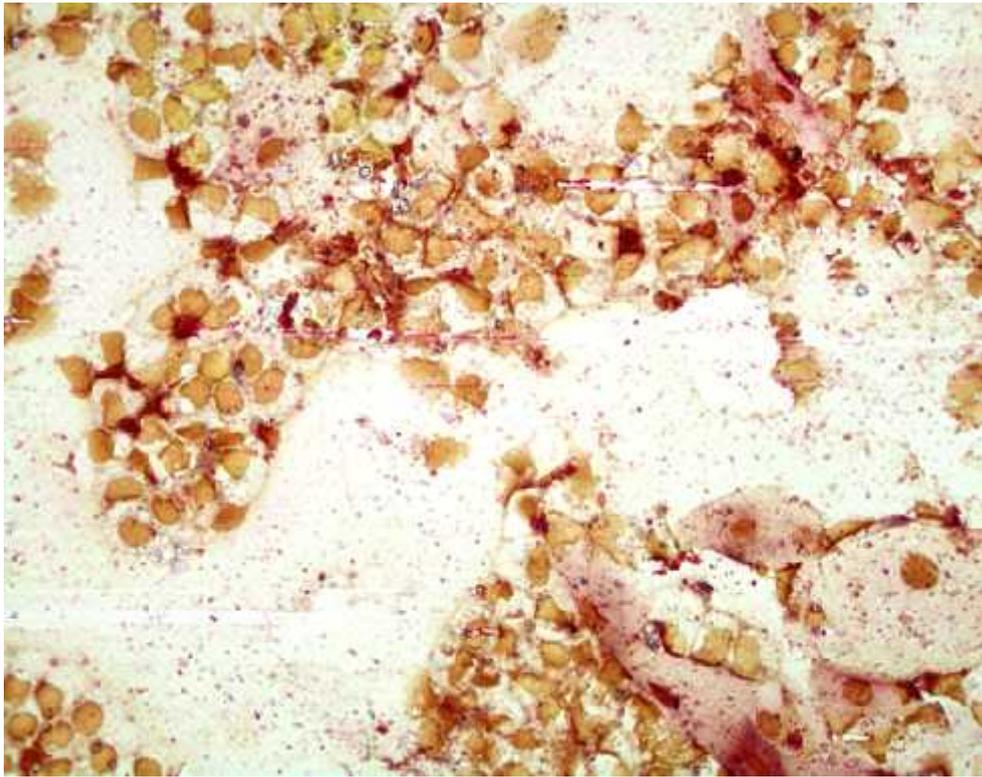


Fig. 5. Cytogram. An impression area with clinical symptoms of stomatitis (erosive and ulcer damages of a mucous membrane). Epithelial cell, layer of half-ruined lymphoid elements. Coloring according to Romanovsky-Gimz. Immersion. Magnification h400.

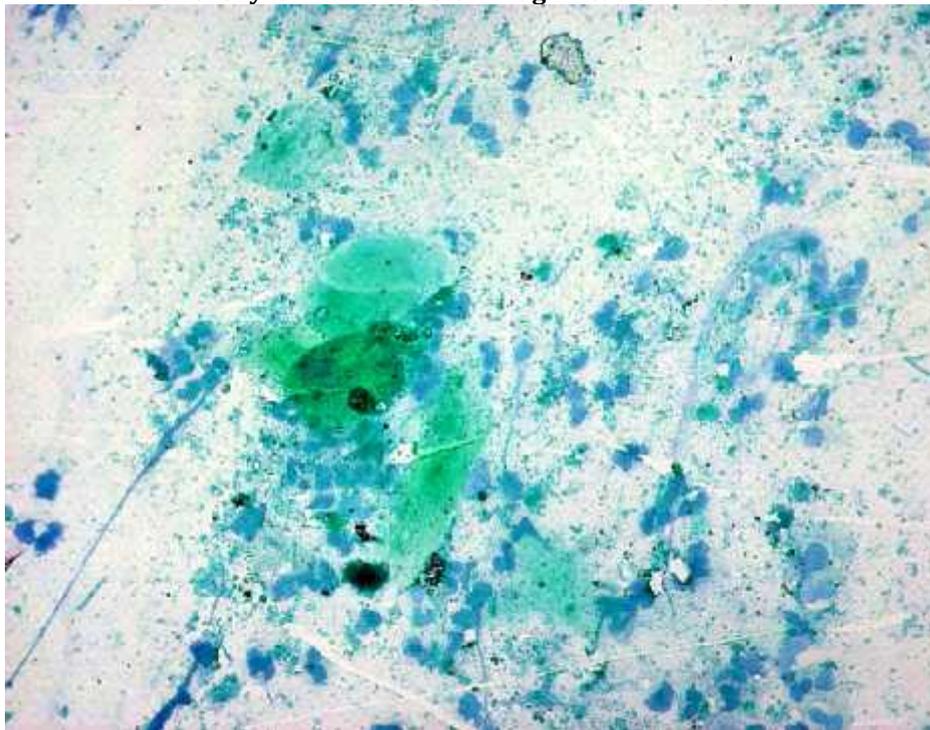


Fig. 6. Cytogram. An impression area with clinical symptoms of stomatitis (erosive and ulcer damages of a mucous membrane). Dystrophic changes of flat epithelium cells, tubers of radiant fungi of Actinomycetales. Coloring according to Romanovsky-Gimz. Immersion. Magnification h400.

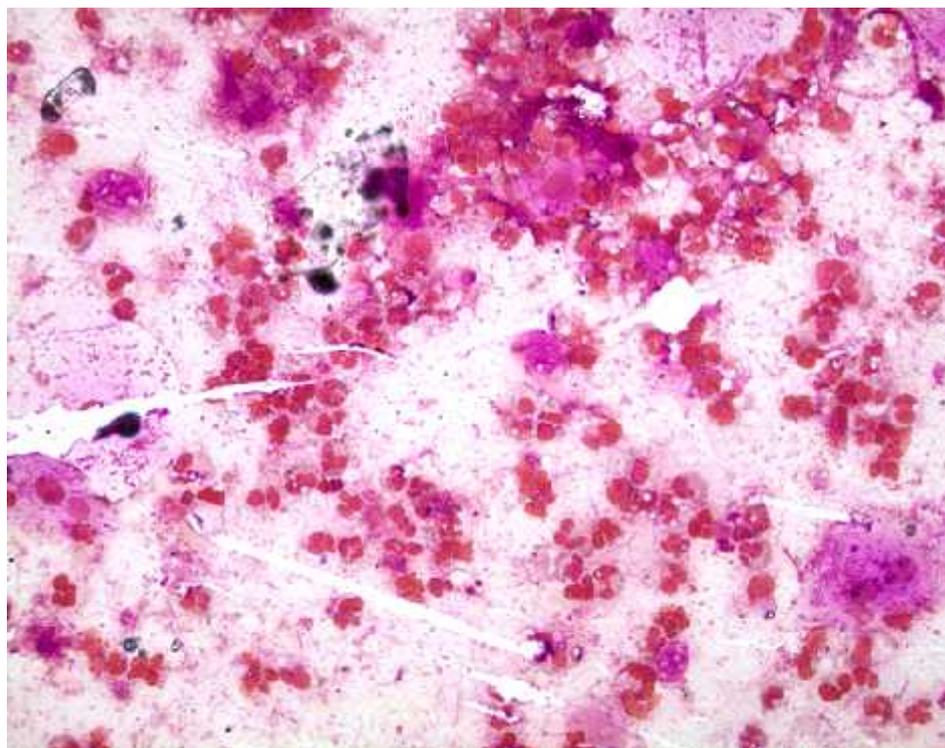


Fig. 7. Cytogram. An impression area with clinical symptoms of stomatitis (erosive and ulcer damages of a mucous membrane). In visibility range - mononuclears, entamoeba gingivalis, microoxyphil neutrophils, Candida fungi elements. Coloring according to Romanovsky-Gimz. Immersion. Magnification h400.

Conclusion

The analysis of cytogram prints showed that between expressiveness of inflammatory process in an impression area and increase in number of microoxyphil neutrophils, mononuclear, a contaminated cells accurate communication is available to microorganisms, taking existence in cytological medicines of a dental plaque, bacterial congestions in prints show: increase in number of the specified cells reflects extent of inflammatory process in the area of the IA. Thus, the cytological method allows to estimate rather precisely a hygienic condition of an oral cavity in the impression area, in this regard the structure of cellular elements of an impression area has important diagnostic value for defining tactics of holding treatment-and-prophylactic actions in case of tooth alignments stomatitis.

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