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EVALUATION OF THE EFFECTIVENESS OF THE USE OF AEROSOL "HEXORAL" AND DENTAL ADHESIVE PASTE "SOLCOSERYL" IN CHILDREN WITH CONGENITAL CLEFT LIP OF THE PALATE AFTER URANOPLASTY

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Abstract
Congenital cleft lip and palate (CCLP) is one of the most common malformations and accounts for 1.6-3.6% of all congenital malformations [2,4].
Of the many aspects of the CCLP problem, the clinic of the defect has been studied in the most detail, and therefore numerous highly effective methods for surgical elimination of the defect have been proposed. At the same time, the frequency of unsatisfactory outcomes of the operation, accompanied by suture divergence, remains high [4,5].

Keywords: congenital cleft lip and palate, cytological examination, infected wound, suture dehiscence, uranoplasty.

Relevance

According to the literature, the divergence of the seams after uranoplasty is observed in 16-52%. Many authors associate the formation of postoperative defects with errors in the surgical technique and the costs of surgical treatment [3,5,6,7].
Among the causes of complications, the leading one is suppuration of the wound, leading to partial or complete divergence of the sutures. Cicatricial wound healing after surgery causes palatopharyngeal insufficiency and other disorders. The ultimate goal of uranoplasty is not only the elimination of anatomical disorders, but also the creation of a functionally complete palate [1-3].
In our clinic, for many years, the operation of uranoplasty with narrowing of the palatopharyngeal ring according to Frolova and Frolova-Makhkamov has been successfully performed. The effectiveness of uranoplasty also largely depends on the functional and metabolic activity of the tissues of the oral cavity. However, the morphological features of the soft tissues of the hard palate after uranoplasty and in the dynamics of wound healing have not been fully studied.

A congenital cleft palate is treated, as a rule, with a surgical method. Despite the fact that many methods of surgical treatment of cleft palate are known today, the results are often not satisfactory for maxillofacial surgeons. The leading cause of complications is wound suppuration, leading to partial or complete divergence of sutures [8]. Cicatricial wound healing after surgery causes palatopharyngeal insufficiency and other disorders [9]. The ultimate goal of the uranoplasty operation is not only the elimination of anatomical disorders, but also the creation of a functionally complete palate.

The wound process is an example of the relationship of cellular elements that act in a limited area, but are not directly related to each other. The wound process is cyclical, i.e., in its development, it naturally goes through several stages or phases, successively replacing each other.

Purpose of the Study

Cytological substantiation of the use of the drug "Hexsoral aerosol" and "Dental adhesive paste Solcoseryl" in children with congenital cleft lip and palate after uranoplasty.

Material and Methods

The studies were carried out in 50 children with congenital cleft lip and palate, who were hospitalized in the department of pediatric maxillofacial surgery of the clinic of the Tashkent State Dental Institute for the period 2020-2022. To study the processes of regeneration, a cytological study of smears from the lateral sections of the palate wounds was carried out, the material obtained by scraping with a swab was transferred to a coverslip, fixed and stained with one of the polychrome method according to Romanovsky-Giemsa.

In order to study the effectiveness of treatment, all patients were divided into 2 groups depending on the method of treatment. The first group (control) included 21 children: 11 of them had an isolated cleft, 10 had a through one, and 4 had a 2-sided cleft. After the completion of uranoplasty, an iodoform-gauze swab was applied to the bare surface of the hard palate in all children and covered with a protective plate made earlier. On the 3rd day, the protective plate was removed, the iodoform tampon was removed from the surface of the mucoperiosteal flap. The oral cavity and the wound were irrigated daily with Furacilin antiseptic solutions.

The second group (main) included 29 children with congenital cleft lip and palate, 18 of them with isolated clefts and 11 with through clefts. After uronoplasty against the background of traditional therapy in all children daily, the wound surface was

lubricated with Solcoseryl dental adhesive paste 3 times a day. In addition, Hexoral aerosol was injected daily from the oral cavity and nasal cavity, 1 dose 2-3 times a day. Local signs in all children were pronounced from the first to the third day after uranoplasty, and the difference between the main groups was not clear.

Results and Discussion

In the study of the first group, it was found that on day 6 there were a lot of bacteria (mainly cocci), accumulations of rejected epithelium and leukocytes, the bulk of which were segmented neutrophils. Also, among the cellular elements, macrophages, lymphocytes, fibroblasts prevailed (Fig. 1).

On day 9, it was found that the content of desquamated epithelial cells was significantly reduced, while they were still surrounded by leukocytes, mainly segmented neutrophils, with pronounced degeneration processes (Fig. 2).

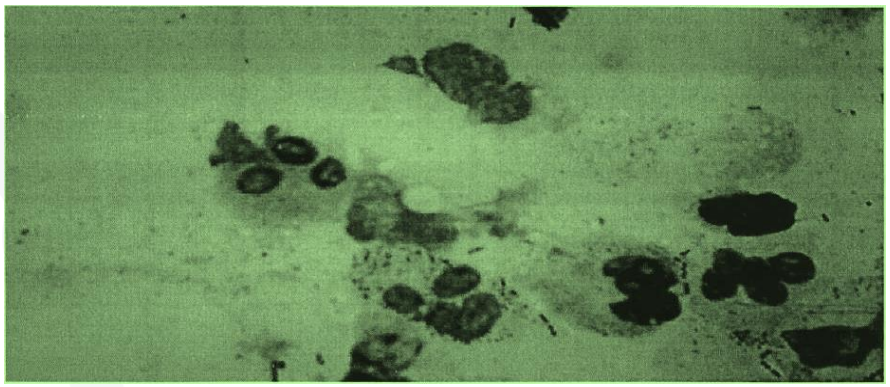

Fig.1. 6 days after the operation. Traditional method of care. Macrophages, neutrophils, lymphocytes. Infestation with bacteria. Coloring: Romanovsky-Giemsa. Magnification 10*100*.

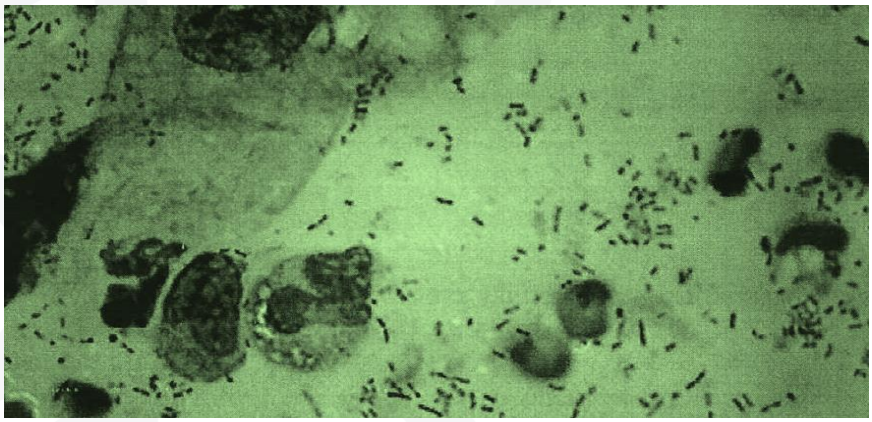

Fig.2. 9 days after surgery. Traditional method of care. Desquamated epithelial cells surrounded by neutrophils. Inoculation with microbial flora. Coloring: Romanovsky-Giemsa. Magnification 10*100*.

A large number of lymphocytes were noted, which had a medium and small typical structure (Fig. 3). There was no change in the content of medium and large lymphocytes, as well as plasma cells.

The proportion of macrophages increased, some of which acquired a cellular structure in the form of giant foreign bodies. The cytological picture is characterized by degeneration of the desquamated epithelium, from which only shadows have survived, wound detritus surrounded by neutrophilic leukocytes (Fig. 4).

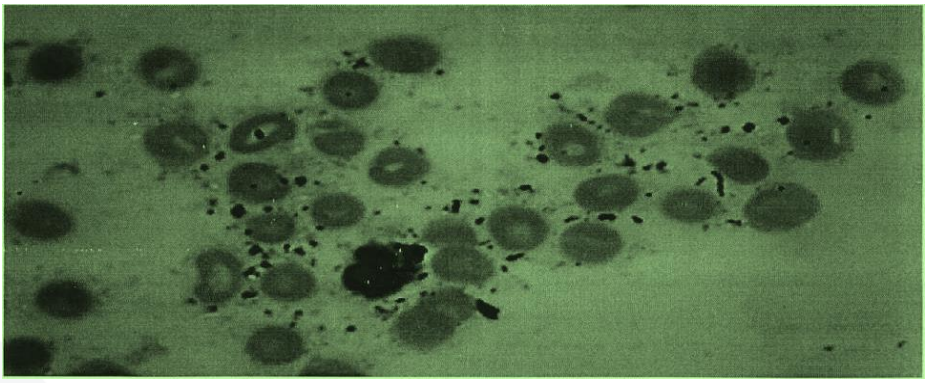

Fig.3. 9 days after surgery. Traditional method of care.
A large number of lymphocytes. Inoculation with microbial flora.
Coloring: Romanovsky-Giemsa. Magnification 10*100*.

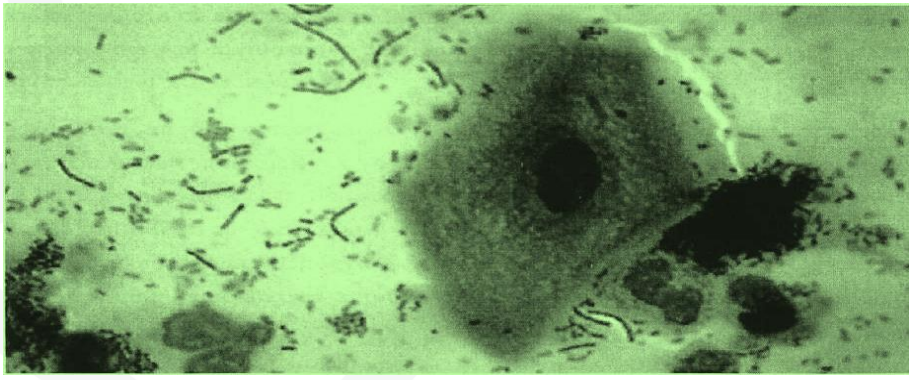

Fig.4. 9 days after surgery. Traditional method of care. Desquamated epithelial cells.
Inoculation with microbial flora.
Coloring: Romanovsky-Giemsa. Magnification. 10*100.

The leading place in the development of postoperative complications is given to hypoxia, since in this case the destruction of intracellular structures begins to prevail over compensatory-adaptive processes, as a result of which the cells die, and their death has a morphofunctional expression. The destruction of membranes in this case

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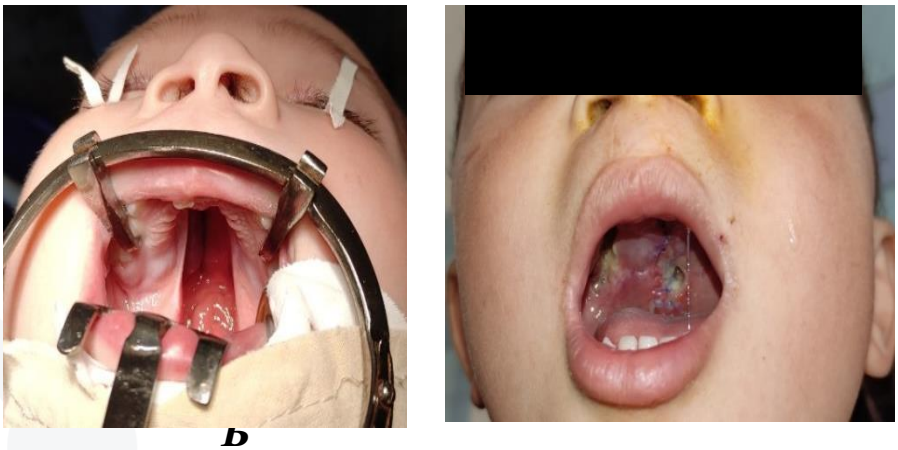
is also due to a decrease in the formation of lipids and proteins under conditions of energy deficiency, an increase in free radical oxidation of lipids in cell membranes. With traditional treatment, in 7 (33%) of 21 children, the wound became infected, and inflammation developed in the area of the soft palate (along line A) and uvula. As a result of treatment, on the 4th-5th day, the sutures were in an unsatisfactory condition (Fig. 5). In 2 children, by the 8-9th day of treatment, a partial divergence of the sutures was observed. In 5 children, the postoperative wound healed by secondary healing, which led to palatopharyngeal insufficiency.



A - before uranoplasty; B - after uranoplasty.

Fig.5. Patient O.M., 4 years old. Case history No. 676/512. Diagnosis: Unilateral congenital cleft palate. Condition after unilateral cheiloplasty.

When studying the materials of the second group, the following was established: on the 6th day after the operation, moderately active neutrophils were detected, often multibranched macrophages with well-vacuolized cytoplasm were detected. There are almost no infiltrating cells. Only single mast cells were detected in a state of degranulation (Fig. 6). The content of neutrophils decreases, the increase in phagocytic and extracellular flora is clearly manifested, the content of dead cells decreases. It should be noted that there was an almost complete cleansing of the wound, an increase in the processes of neutrophil degeneration, and a significant decrease in microbial contamination was also noted. The number of monocytes decreased.

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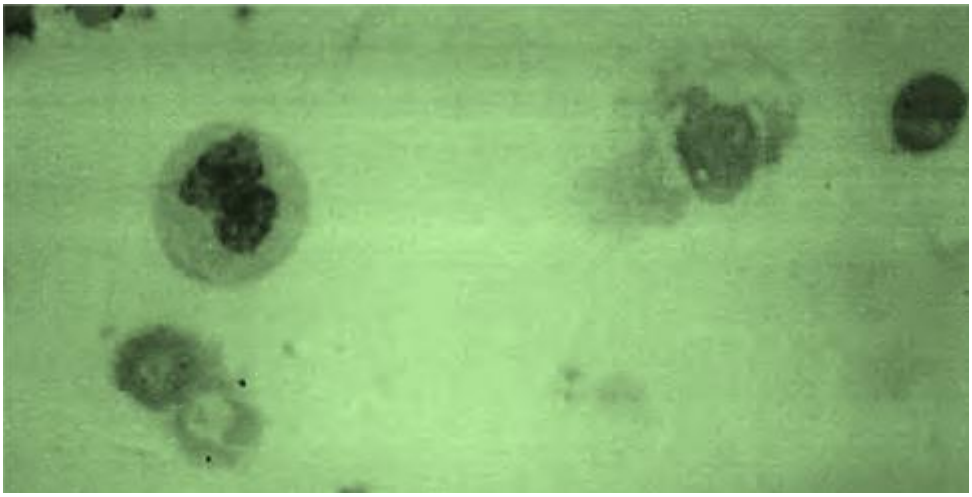

Fig. 6. Day 6 after the operation. The use of Hexoral in combination with Solcoseryl. Single mast cells in a state of degranulation.
Coloring: Romanovsky-Giemsa. Magnification. 10*100.

Literature data indicate that neutrophils significantly affect the activity of mononuclear phagocytes. As a result of their absorption of decay products, the antimicrobial function of macrophages is activated. Along with this, neutrophils affect lymphocytes, increasing RNA synthesis in them, and take part in the interaction between T- and B-lymphocytes. As a result, in the process of wound healing, there is a close interaction between macrophages, neutrophils and monocytes.

The effect is already on the 6th day. There is a significant decrease in the contamination of microbial flora, a very fast and powerful mobilization of protective reactions from monocytes and macrophages, which leads to an earlier and more effective cleansing of the wound from tissue decay products. On the 9th day, a significant number of epithelial cells and mitotic figures are noted. Day 9 is characterized by the appearance of fibroblasts and collagen fibers with "tongues" of the regenerating epithelium.

This period is characterized by the active formation of granulation tissue. Young and differentiated epithelial cells were detected; this period can be considered the stage of the fibroblast stage. In a small amount, mitotically dividing cells are detected. A significant number of new epithelial cells are found, which indicates an increase in the process of epithelialization. The preparations also contained a large number of fibroblasts and destroyed neutrophils. No bacterial flora was observed. Occasionally, mast cells, eosinophils, plasma cells were determined (Fig. 7.).

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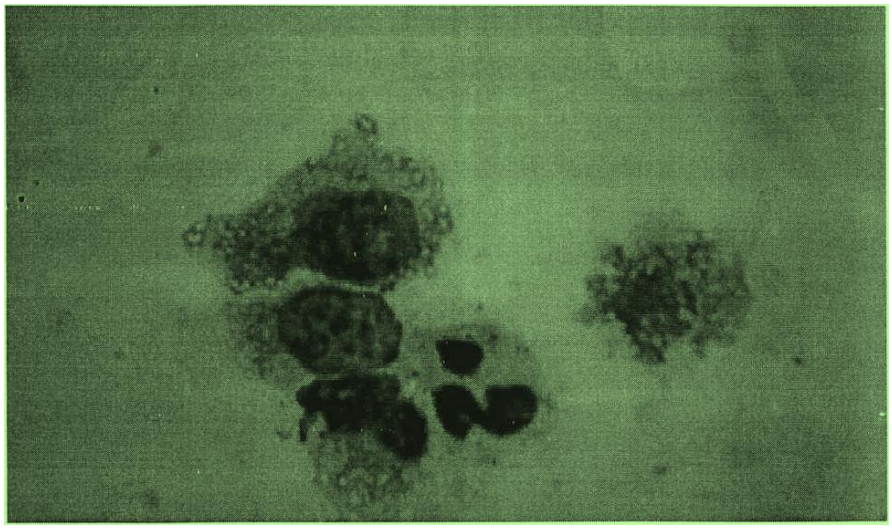

Fig.7. 9 days after surgery. The use of Geksoral in combination with Solcoseryl. Coloring: Romanovsky-Giemsa. Magnification. 10*100.

Thus, a comparative study of the cytology of the mucous membrane of the hard palate after surgery showed that the postoperative period in children who applied the Hexoral aerosol topically and the Solcoseryl dental adhesive paste proceeded more favorably. The effect is already on the 6th day. There is a significant decrease in the contamination of microbial flora than in the first group. On the 9th day in the second group there is a significant number of epithelial cells and mitotic figures, which indicates the epithelialization of the wound. With this method of treatment in all children (n=29), the postoperative wound closed by primary intention, which indicates the beneficial effect of the combined use of the Hexoral aerosol and Solcoseryl dental adhesive paste after surgery (Fig. 8).

A) before surgery *B) 3 days after surgery operation* *C) 3 months after*

Fig.8. Patient A.Kh, 5 years old. Case history No. 173/98. Diagnosis: Unilateral congenital cleft palate.

Conclusion

The use of Hexoral aerosol preparations and Solcoseryl dental adhesive paste in children with CCLP in the postoperative period contributes to: reducing the contamination of microbial flora than in the first control group; improving the regeneration of the wound surface starting from the 6th day; on the 9th day, the appearance of epithelial cells and mitotic figures is noted, which indicates the epithelialization of the wound; closure of the postoperative wound by primary intention.

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