

COMPARATIVE EVALUATION OF THE ANATOMICAL AND FUNCTIONAL STATE OF THE SOFT PALATE AND UVULA AFTER PLASTY OF A CONGENITAL CLEFT PALATE

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Abstract: The analysis of our studies showed that after the plastic surgery of the palate, despite the primary healing of the wound, the soft palate and the formed uvula had a different form. The author has grouped and presented them.

The analysis of the long-term results of palatoplasty surgery performed in children aged 6-12 months shows that not all methods of surgery allow to form a soft palate and its uvula in form close to normal.

After plastic surgery of the palate by the contraction of the palate-pharyngeal ring using tissues of lateral wall of the pharynx in most cases uvula loses its form and location. Our method of palatoplasty allows restoring the form of the soft palate and uvula.

Keywords: cleft palate, uvula, soft palate, palatoplasty.

Introduction: The soft palate performs a number of functions which are necessary for the human body: separates the oropharynx from the nasopharynx, directs the food flow and liquids into the esophagus, regulates the air flow during breathing and the formation of speech sounds. The uvula is a continuation of the soft palate in the form of a process freely hanging over the radix of the tongue. The basis of the uvula is made up of smooth muscles covered with a mucous membrane [1,4,5].

In the system of complex rehabilitation of children with congenital cleft palate one of the main tasks facing the surgeon is to eliminate the cleft with the restoration of anatomical and functional state of the soft palate, including the uvula. As our observations have shown, the used methods of palatoplasty do not always allow to restore the form of the soft palate and particularly of the uvula [8]. Long-term results of examination of children after the plastic surgery of the palate showed that a number of children have no uvula or it is short, deformed, incorrectly positioned [2, 6].

The purpose of the work: To study the anatomical and functional state of the soft palate and uvula depending on the method of palatoplasty.

Materials and methods: To achieve intended aim, we examined 64 children from 3 to 15 years old, who were carried out velo- or uranoplasty of congenital cleft palate at the age of 8 months to 3 years in the clinic of children's maxillofacial surgery of TSDI. All children after discharge from the hospital were on the dispensary account. The anatomical and functional state of the uvula after its plastic surgery was assessed in all the examined patients according to the following criteria: the symmetry of the uvula, the location of the uvula, its mobility and participation in palatopharyngeal closure.

Depending on the method of operation, all examined patients were divided into 3 groups. The first group consisted of 23 (35,9%) of the children, who were held palatoplasty with narrowing of

the pharyngeal ring by the method by Frolova L.E.. The technique of the plastic surgery of the cleft by Frolova L.E. included that the incisions going along the edges of the cleft on both sides continue under the bases of the uvulas and move to the lateral walls of the pharynx, forming the oral and nasal mucous-muscular layers. These mucous-muscle layers are then stitched together in the middle line, and the uvulas are dissected by vertical cuts from the top to the base, moving to the cut line, forming a single entity with the oral mucosal-muscle layer, and stitched together.

The second group consisted of children who underwent plastic surgery of the palate by our technique – cross-section of the soft palate, with longitudinal suturing of the wound – 25 (39,0%) children were examined. Surgical technique in the palate by the method of transection of the soft palate with the longitudinal stitching of the wound consists of that we took the mucous edges of the defect at the level of connection of muscle with fascia by surgical forceps and transversely dissected the soft palate in the whole of its thickness (8-12 mm) fragments. Then, a strip of the mucous membrane is cut along the edges of the soft palate cleft from the bottom edge of the transverse incision to the tip of the uvula on both sides. The muscles of the soft palate on each side are not dissected, they are bluntly exfoliated from the bone wall of the pharynx. The mucous-muscle layers are then stitched together in the middle line with the wound edges separated for 180°.

III group consisted of 18 (28,1%) children who underwent plastic surgery by method of Bardach J. The technique of operation on the palate with narrowing of the pharyngeal ring according to the method by Bardach J. [7] was in that the slits running along the edges of the cleft from both sides and extend to the tip of the uvulas, thus forming the oral and nasal mucous and muscular layers. These mucous-muscle layers are then stitched layer wise along the middle line.

Research results: out of 64 operated children, 13 (20.3%) had a non-symmetrical formation of the uvula of the soft palate, 3 (4.6%) had a partial divergence of the wound with a subsequent shift of the uvula aside, and 1 (1.5%) had a need for repeated surgical intervention to eliminate this complication.








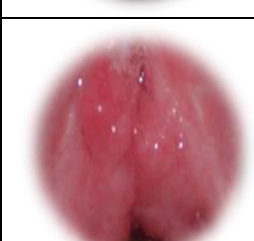



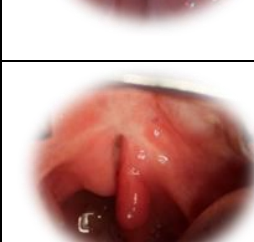
The analysis of our studies showed that after the plastic surgery of the palate, despite the primary healing of the wound, the soft palate and the formed uvula had a different form. We grouped them and presented them on Fig.1.



Based on the proposed criteria, the table of figures shows that in the group I, after the method of palatoplasty by Frolova L.E. out of 23, 3 (13.0%) had asymmetrically restored uvula – one side is larger than the other, 2 (8.6%) children after the operation the uvula is higher on one side than the other, 2 (8.6%) patient's uvula is not in its place in the soft palate – closer to the line "A". In 1 (4.3%) child after surgery, the uvula is located to the left relative to the median suture.

In group II, after palatoplasty with a cross section of the soft palate and longitudinal suturing of the wound only 1 (out of 25) child's uvula was formed larger than usual. All the other kids the length and shape of the soft palate and uvula were close to normal.

In the group III after surgery on the palate using the method by Bardach J. out of 18 children, 2 (11,1%) children have the uvula tilted to the lumen of the nasopharynx, 1 (5,5%) as the uvula located to the left relative to the median suture, and one (5,5%) of the operated children has a completely missing oval.

Figure 1. Criteria for anatomical restoration of the soft palate and uvula after palate plastic surgery

1.			the restored soft palate and uvula are close to normal in both length and shape
2.			the soft palate and uvula are restored, but do not have symmetry
3.			one side of the uvula is higher or lower relative to the other
4.			the uvula is located on the soft palate closer to the "A" line or further from it
5.			the uvula tilted into the lumen of the nasopharynx
6.			the uvula is located to the right or to the left relatively to the median seam

7.			the uvula is completely absent; the soft palate is short, there is no closure of the palate-pharyngeal ring
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