

within the local inflammatory nidus. The given phenomenon is considered as redistribution and activation of immunocytes with local inflammatory nidus in the body. In the opinion of Steinman R. (1999), at tissues' damage and local action of pathogens the regenerative processes are attended by a frank infiltration by lymphocytes, plasma cells, polinuclears, and singular eosinophiles. The author showed that with a pathological focus available, in case of need to release the regeneration process, the activation of lymphopoiesis and migration of lymphocytes from the immunopoesis central organs, which passed the antigen independent differentiation, into the regenerating epithelial plate. The immune cells' migration into the epithelial barrier and through it onto its surface plays an important role in immune and inflammatory processes.

The epithelial barrier's protective function in many ways is defined by the local immunity state, the interaction of the cells of the immune system of the epithelial plates' adjacent collagen structures, and also the number, spectrototype, potency of immunocytes, level of released by them cytokines and other cellular modulators.

#### References:

1. Paltsev M.A. Cytokines and their role in cell-to-cell cooperation // Arch. of pathology. - 1996. - V.58, №6.-pp.3-6.
2. Yarilin A.A. Scheduled cell death and its place in immune processes // Immunology. - 1996. - №6 - pp.10-23.
3. Yarilin A.A. Cytokines' system of its functioning in health and disease // Immunology - 1997.-№5.-pp.7-13.
4. Yarilin A.A. Contact immune interactions at immune response // Immunology - 1999.-№1.- pp.17-24.
5. Bacon K., Oppenheim J. Chemokines in disease models and pathogenesis//Cytokine Growth factor Rev.-1998.-V.9, N1.-pp.167-173.
6. Callard R., Gearing A., Fan T. The cytokine.- London, 1994.- p. 265.
7. Ohtsuka Y., Lee J., Stamm D et al. MIP-2 secreted by epithelial cells increases neutrophil and lymphocytes recruitment in mouse intestine.// Gut.-2001.-V.49, N4.-pp. 526-543.
8. Roncucci L., Pons de Leon M. The influence of age on colonic epithelial cell proliferation. //Cancer.-1988.-V.62, N11.-pp. 2373-2377.
9. Steinman R., Swanson J. The endocytic activity dendritic cells.// J. E[p. med. -1999.-V.182.-pp.283-288.
10. Tsuboushi S. Kinetics analysis of epithelium cells migration in mouse descending colon// Am. J. Anat.-1981.- V.161, N2.-pp.239-246.

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### UPPER RIDGE DEFECT AUTOOSTEOPLASTY IN CHILDREN WITH CONGENITAL CLEFT LIP AND PALATE

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It is acknowledged that in treatment of this pathology a complex approach is necessary: stage repair, orthodontia, logopedia and a complex of rehabilitation actions aimed at the child's adaptation in the society [1].

In the nosogenesis of facial middle zone deflections in patients with congenital cleft lip and palate (CCLP) an important place is taken by: the congenital deflection of upper jaw bone, alveolar bone region upper jaw bone segment and bulb-shaped nasal opening diastasis conditioned in the ontogenesis and progressing in the postnatal period, lip-buccal and guttural ring myodynamic balance failure, disproportion of facial bone in bone sutures [2, 3].

Osteoplasty of the alveolar bone allows repairing these defects partially.

In the question of choice of time of carrying out osteoplastic operations surgeons have no agreement of opinion [4, 7]. We consider incontestable that for full dentition of canine teeth and their introduction to occlusion osteoplasty should be carried out in the period of transitional dentition. But practice testifies that after palatoplasty the upper jaw bone arctation influenced by the draft of cicatrized palatal flaps redoubles and the orthodontic care becomes more complicated. For bimaxillary protrusion autoosteoplasty in is advisable to be carried out in the closing stages of orthodontic care in the period of permanent dentition, and in the period of transitional dentition – to provide so-called promoting "swaying" of the upper jaw fragments in the transversal plane.

It is in our belief that the stability of well-timed orthodontic care results depends on the surgical interference algorithm, autoosteoplasty among them.

The purpose: of the present research is a comparative study of remote results of CCLP children alveolar bone autoosteoplasty carried out in the period of transitional and permanent dentition.

Methods: In the period from 2003 to 2006 surgical interferences on upper ridge bridgework in 29 children with congenital cleft lip and palate had been carried out. There were 12 patients of them in the period of transitional dentition, 17 – in the period of permanent one. All the patients were under orthodontic care. The problems of orthodontic preparation to autoosteoplasty – regular size and shape repair of dentalveolar arch for the purpose of the upper ridge de-

fect real size determination and optimal occlusion contacts achievement.

Autoosteoplasty problems:

1 – to remove the alveolar bone imperfection and by this to stabilize the maxillary bone fragments alignment reached by the pre-surgical orthodontical preparation;

2 – to provide osteal support of the teeth located on the edge of the defect, that is absolutely important for the oncoming bridgework;

3 – to provide conditions for the oncoming rhinocheiloplasty in the region of bulb-shaped nasal opening defect, to create osteal support of the nose wing base, to eliminate the depression of the upper lip [6];

4 – to enlarge the maxillary bone apical basis for the protraction of the frontal denture on indications.

We have tried to analyse the autoosteoplasty results in CCLP patients taking into account:

1 – the alveolar bone defect degree (on the classification of Davydov B.N.) before and after the pre-surgical orthodontic preparation;

2 – the reparative-regenerative process degree after the autoosteoplasty on the classification of Bergland O. and co-authors, 1986;

3 – the method of pre-surgical orthodontic preparation (using dismountable and fixed orthodontic constructions);

4 – the age of a patient (early or late autoosteoplasty);

5 – the stability of orthodontic care results.

The surgical interference was carried out in all patients on the same method. A transplant bed separating the nasal cavity from the oral one in the oral cavity in the defect region was formed, after which the defect was filled with atomized bone got from the frank bone ridge. A part of the transplant was disposed over the whole surface of the frontal alveolar bone part for the purpose of the apical basis restoration, and also in the region of the nose wing base. The wound was sewn on account of local tissues mobilization. At large defects for the transplant closure a trapezoidal flap from the upper lip was used. Since 2005 the method of osteoplasty using thrombocytes rich plasma (TRP) has been introduced.

Besides the clinical estimation in the pre-surgical period and in the dynamics there were carried out:

- 1) the computerized axial tomography (CAT);
- 2) the ortopantomography;
- 3) the dental roentgenography;
- 4) the ultrasound investigation (USI).

Results: In patients with the follow-up periods up to 18 months the substrate in the CAT represented an intersection up to 3 mm thick. The substrate tissue density, on the densitometry data, is close to the bone

tissue density (from 280 to 450 EH). For the comparison, normally this characteristic makes 550-800 EH depending on the bone layer (cortical plate, fungoid part). In 2 years the substrate looked as bone tissue with distinctly defined cortex and marrow space with the density from 450 to 640 EH. In all the case the substrate was disposed in the bulb-shaped opening region at the level of the upper third and alveolar bone middle connecting its segments with each other.

In one patient the transplant represented bony prominences along the edges of the segments without bounds between them.

At the US-investigation in all the patients in the region of the maxillary bone segments' diastasis the cortical plate continuity was observed. The diastasis width according to the USI and CAT data in the pre-surgical period fitted together.

In all the patients the upper lip had regular contours without natural for this anomaly flattening on the non-union side and without the nose wing base depression. At the ambilateral non-unions the intermaxillary bone was motionless. At the reparative rhinoplasty carrying out in the region of bulb-shaped opening intraoperatively an osteal regenerate was defined in 14 patients.

The data got allow considering necessary the alveolar bone bridgework for its continuity restoration, creating conditions for homogeneous maxillary bone development and soft tissues support, that makes the correction surgeries carrying out easier. In the period of permanent and transitional dentition the regenerate formation has no differential peculiarities. That is why an early carrying out of the surgical interference creates favorable conditions for the maxillary bone development and correct dentition and the introduction of permanent teeth, canines first of all, to occlusion. The main criterion for the interference carrying out is the orthodontic readiness of the patient. The full height alveolar bone bridgework problem remains open.

#### References:

1. Medvedovskaya N.M. Rehabilitation of children with congenital cleft lip and palate // *Medicine World/Mir Mediciny* – 2001 - № 1-2. - pp. 22-24.
2. Davydov B.I. Anomalies and deformations of facial skull in patients with cleft lip and palate. Tver: Publishing House of TSMA 1999.
3. Davydov B.I. Operative therapy of congenital face malformations. Tver: Publishing House of TSMA 2000.
4. Roginsky V.V., Bezrukov V.M., Ippolitov V.P. Congenital malformations of craniofacial region and neck: Guidance on maxillofacial surgery. Under the reduction of Bezrukov V.M. and Robustova T.G. M.: *Medicine* 2000.
5. Shulzhenko V.I., Gushchina S.S., Verapatveljan A.F., Starikov A.V., Godban Yu.I., Gulenko O.V. Using computerized axial tomography in diagnostics of maxillofacial pathology in children. Management organization, economy and accounting in dentistry (collection of scientific works) Moscow-Krasnodar 2005 – p. 464.

6. Novosyolov R.D., Nose deformation mechanism at prosoposis and its clinical value. Moscow, 1972.

7. Abstracts 2<sup>nd</sup> World Cleft Congress of the International Cleft Lip and Palate Foundation. – Munich, 2002. – p. 268.

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### Shot reports

#### SMOOTH MYOCYTES IN THE THORACIC DUCT VALVES

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Condition of the problem. The opinion, that valves are not contain the myocytes in their cusps and are moving passively by the gradient of vacillating lymph flow is prevail in the literature [2]. Isolated messages testify to inverse. Y. Kajawa [1] have found that longitudinal muscular bundles jut out deep to the central plate of the thoracic duct valves. Used the histological and electron microscopic method of investigation, H. Ohemke [3] have described the smooth myocytes in the valvar cusps of human foot lymphatic vessels. Smooth myocytes form accumulations in the base of a lymphatic valve – its muscle which become thin in the cusp [4].

Take into consideration a key role of valves in the organization of lymph outflow from organs, it was decided to fulfil the investigation with the aim to identify the smooth myocytes in cusps of the thoracic duct valves.

Material and methods. The work was carried out on both sexes human cadavers of 17-40 years old, who have died from casual reasons without pathology of cardiovascular system (30) and both sexes white rats of 5-12 months old (30). Thoracic duct was allocated without a preliminary injection, it is longitudinal dissected and choosed cusps of its valves. Material was fixed in 10% solution of neutral formalin, stained in paraffin with following production of serial longitudinal and transverse sections of 5-10 mkm in thickness. Sections were stained by picrofuxine, azane, orseinum. For specific identification of smooth myocytes in human thoracic duct the material was processed by Human Alpha Muscle Actin (monoclonal antibodies RTU-SMA, Novocastra Laboratories), contained the antibodies to  $\alpha$ -actine of vascular smooth myocytes, and diaminobenzidine, then poststained by hematoxilin. Smooth myocytes in thoracic duct valves were discovered by histochemical method (staining by benzydinum on myoglobinperoxidase with poststaining by hematoxilin-Fe and without it) and with electron microscope.



**Figure 1.** Thoracic duct of a man, longitudinal section: 1 – longitudinal muscular bundle in intima; 2 – radial muscular bundle enters into cusp of a valve. Picrofuxine. x 400.



**Figure 2.** Cusp of a human thoracic duct valve, longitudinal section: 1, 2 – longitudinal & transverse orientated smooth myocytes. Immunohistochemical method. x 600.

Results. The heterogenous construction of valves is discovered on the histological sections. Their parietal surface is covered by thickened endothelium, nuclei of its cells are orientated oblique-transverse,

situated frequently; on the axial surface – infrequently, longitudinal, by the direction of lymph flow. The plate of loose connective tissue of different thickness is situated between two thin layers of endothelium. Fold-