of thoracic trachea with the formation of false way into mediastinum. Mediastinitis. Tracheostomy. Chronic tracheobronchitis». The stage of withdrawal of the thyreotrial complex was carried out according to the developed protocol. Perfusion of the organ was made with a solution of «Custodiol». The recipient stage of transplantation consisted of a resection of a cicatricial trachea. The upper border of resection was at the level of the first intercropping interval, the lower one — along the upper right edge of the last cartilaginous half-ring, the resection of the tracheobronchial angle was performed along the left wall. Further, caudal and cranial tracheotraal anastomoses were performed between the donor complex and the trachea of the recipient. To restore blood circulation an anastomosis of the left and right lower thyroid arteries with a brachiocephalic trunk of the recipient was performed in the type of «end-to-side». The bloodstream was restored by an anastomosis of the lower thyroid vein of the donor with the left brachiocephalic vein of the recipient. In the postoperative period were prevented infectious complications and rejection. When analyzing the structure of the tracheal part of the graft, the preservation of the mucosa and the cartilaginous carcass was revealed in the near and distant periods after the operation, while maintaining a satisfactory lumen of the respiratory tract. At present, after 12 years the recipient is alive, breathing is satisfactory. In the late period, the development of malacia trachea was diagnosed. This required the stenting of the trachea, which the patient carries well. Thus was made a preclinical study devoted to the solution of tracheal transplantation. The implementation of the proposed technique of thyrotrheic transplantation in a clinic with a good long-term result and a follow-up period of 12 years showed the validity of the method in the treatment of patients with extensive tracheal lesion with the impossibility of alternative treatment. Disadvantage should be considered the need for immunosuppressive therapy.

PECULIARITIES OF 1D: 3D AND 2D: 4D FINGER INDICES IN DEPENDENCE ON GENDER AND TYPE OF THE CONSTITUTION

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Key words: *hand, finger indices, constitution, gender, handscaner*

Background. The study of morphology and functions of the hand is realized in everyday practice in various medical spheres.

Aim. The purpose of our research is to determine finger indexes of the hand 1D:3D and 2D:4D in adolescent people considering typological aspects, sexual dimorphism and bilateral asymmetry. 1D:3D and 2D:4D finger ratios of a hand are widely used for research in the field of predisposition of the individual to certain somatic diseases. 299 young people were surveyed in total with the calculation of the Pignet index, using a flatbed scanner and the author's program HandScaner.

Results and Discussion. As part of the study, it was identified that the finger indices of 1D: 3D in young men is significantly greater than that of girls in the hypersthenic group by 2% ($p<0.05$). Finger index of 1D: 3D is more by 1% in young men in the normosthenic group, in the asthenic group, the finger index of 1D: 3D is more in girls by 1% ($p>0.05$). When studying the index 2D: 4D, there were no statistically significant differences between the left and right hands in young men and women ($p>0.05$), as well as the relationship with the type of body build.

Conclusions. Despite this, many foreign authors note the presence of this connection in males and females in other age groups. In addition, according to foreign authors, this index, as well as in our study, is more in girls in comparison with young men.

CONDITION OF THE MUSCULAR SYSTEM IN PATIENTS WITH DENTOALVEOLAR PATHOLOGIES

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Key words: *dentofacial anomaly, neurogenic titania, pericranial musculature*

Aim. Substantiation of the need for preliminary evaluation of the tone of chewing, mimic and pericranial muscles in orthodontic patients with clinical manifestations of the phenomenon of increased neuromuscular excitability or neurogenic titania.

Material and Methods. In the clinic of orthodontics were examined 30 patients (18–36 years) without a somatic pathology: with the pathology of the dentoalveolar system (n=18) and without it (n=12). The tone of the masseter, temporal, SCM, m. obricularis oris was determined with the help of myotonometry. For all patient clinical examination was carried out, including assessment of occlusion, articulation, opening of the mouth and position of the tongue, swallowing test, the shape of the hard palate. To assess the increased neuromuscular excitability,

the severity/presence of the Chvostek sign and the Nathan-Weisman symptom, as well as the presence of carpal and pedal spasms were evaluated.

Results and Discussion. In all patients (n=18) with the pathology of the dentoalveolar system, a Chvostek 2–4 degree symptom was identified, 10 of them in the background of 3–4 degrees of the symptom of Chvostek revealed the Nathan-Weissman symptom, pedal spasms, infantile type of swallowing, Gothic sky. In patients without pathology, only 3 had a first-degree Chvostek sign on the background of autonomic lability

Conclusions. The presence of patients with GAD and the phenomenon of increased neuromuscular excitability may indicate the presence of neurogenic titania within the framework of autonomic dysfunction.

ANIMAL MODEL OF UPPER-AIRWAY INJURY AND STENOSIS TREATMENT

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Key words: *tracheobronchial epithelial injury, stenosis, animal model, tissue-engineering graft*

Background & Aim. In this research we developed a pig model of mucosal layer injury and subsequent stenosis in trachea and bronchi and a new method of fixing of a tissue-engineering graft inside the trachea to cover the injury and improve a tracheal mucosa reparation.

Material and Methods. Domestic pigs weighing about 35 kg were used as an experimental model. Animal underwent 2 bronchoscope-assisted operations. First step was creating a full-thickness mucosal and perichondrium injury using biopsy forceps and electrocoagulation with subsequent development of benign post-traumatic stricture of the bronchus. The second operation performed after 60 days included creation of new full-thickness mucosal defect involving stenosis and covering it with porous collagen-based scaffold fixed by nitinol stent. All operations were carried out using intravenous anesthesia, at the first-step operation an artificial ventilation was required.

Results and Discussion. We developed a new and the least traumatic model of tracheobronchial epithelial injury and stenosis. We also offer a new approach for treatment of mucosal injury of upper airways, covering it with tissue-engineering scaffold fixed by stent. The requirements for scaffold and stent are formulated in this report.

Conclusions. The described experimental model allows to simulate the damage of the upper airways of any extent, and to influence the regenerative process in different ways. Regarding offered treatment of airway injury, there is essential to choose the size and other characteristics of stent and scaffold individually. Tracheal stent that would fit all requirements discussed in report is still to be invented.

THE GLYMPHATIC SYSTEM OF THE BRAIN: ESSENCE AND CONTEMPORARY IMPLICATION OF NEWLY DISCOVERED TREASURE

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Key words: *glymphatic system (GS), brain interstitial fluid (ISF) drainage, immune privilege of the CNS, aquaporin-4 channels, manual lymphatic mapping*

The Glymphatic System (GS) is a novel concept of intrinsic brain drainage implying continuous convective flow or diffusion of interstitial fluid (ISF) through peri- or/and paravascular pathway. Until 2012 this anatomical and physiological phenomenon had been unfathomable due to the GS lacks proper vessels for ISF efflux from brain parenchyma — ISF passes inside or next to the walls of cerebral arteries and veins. Modern advances in biorheology have revealed a key role of astrocytic aquaporin-4 channels in ISF filtration. As this pathway is too narrow for immune cells, the GS can be considered as a major factor in the immune privilege of the CNS. The discovery of this novel system contributing brain homeostasis gives some insight into pathogenesis of various neurodegenerative disorders and propels new therapeutic approaches in their treatment. Likewise, some scientists believe the GS disorders are central to progression of normal pressure hydrocephalus. One of the most efficient methods to eliminate neurotoxic metabolites as well as reduce intracranial pressure implies usage of manual lymphatic mapping. Overall, thorough glymphatic drainage is crucial for maintaining optimal neuronal microenvironment thus providing proper brain functioning.