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.