

## **APPLICATIONS OF ANTIBACTERIAL PHOTODYNAMIC THERAPY BY TREATMENT OF PATIENTS WITH NOSOCOMIAL SINUSITIS**

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КЛЮЧЕВЫЕ СЛОВА: ANTIBACTERIAL PHOTODYNAMIC THERAPY, NOSOCOMIAL SINUSITIS

### **АННОТАЦИЯ:**

Nosocomial infection (NI) is the most important medical and public problem. The main forms of NI are nosocomial pneumonia (NP), nosocomial sinusitis (NS), wound infection, urinary infection. NS is essential because it's pathogenetically associated with NP. The risk group is patients in resuscitation departments with mechanical ventilations. Prevalence of NS among such patients accounts for 100%. The most common reasons for NI are Gram-negative bacteria such as *K.pneumoniae* and *P.aeruginosae*. Antibiotic resistance is a quality of all nosocomial bacteria so treatment for NI demands of using broad spectrum antibiotics. Currently level of antibiotic resistance is growing that leads to growth of fatal cases. The treatment for NS includes adequate antibacterial therapy and topical treatment. The topical treatment for NS concentrates on nose sanitization and drainage of sinuses. We have developed a new method of topical treatment for NI that is based on antibacterial photodynamic therapy (PDT). The method consists in direct photodynamic influence on bacteria on mucous tunic of sinuses. We have used methylene blue (0,7 microgramm/ml) as photosensitizer and laser as light source (wave length 660 nm, power 0,6 W). Duration of illumination is six minutes. Concentration of photosensitizer, parameters and duration of illumination had beforehand defined in vitro. We have used our method by 30 patients with NS. Due to using PDT we have reduced treatment duration of NS and number of invasive procedures. Quick sinus sanitization has a positive impact on general patient's condition. So PDT is method that will be able to improve treatment for NS.

## **NASOPHARYNGEAL LIPOMA (CASE REPORT)**

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КЛЮЧЕВЫЕ СЛОВА: NASOPHARYNGEAL LIPOMA

### **АННОТАЦИЯ:**

The lipoma represents most frequent case of the soft tissue benign tumour, but it is rarely located within Nasopharynx. Histologically it is made of the mature fat tissue cells encapsulated with the thin fibrous capsule. So far

there have been described five cases of the lipoma localized within Nasopharynx in professional literature. In this document we present 24 years old female patient, with impaired hearing in her left ear. Audiometry indicates at conductive impairment of hearing on the left side, type B Tympanometry on the left ear. She has difficulties during last 3 years. There has been performed nasal endoscopy, CT scan of the epipharynx, biopsy of the alteration on lateral left wall of epipharynx. Pathohistological diagnose of lipome. Tumour has been surgically removed as a whole, pathohistological certification of Nasopharyngeal lipoma. With this case report there will be performed review of so far presented cases within the literature.

## **EFFICACY OF THE MODIFIED RHINOSURGICAL AID IN THE FIELD OF THE QUALITY OF MEDICAL CARE**

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КЛЮЧЕВЫЕ СЛОВА: ASSESSMENT OF THE QUALITY OF LIFE OF PATIENTS, LATEX TISSUE GLUE, PREVENTION OF NASAL BLEEDING, EARLY POSTOPERATIVE PERIOD

### **АННОТАЦИЯ:**

Supervision and control of the quality of medical care is one of the global aims of the state health care service. The key aspect of the quality of medical care is the quality of life of patients. The modified rhinosurgical technique was developed in the Department of Otolaryngology (Military Medical Academy). This technique is intended to promote rehabilitation of the nasal functions after the rhinosurgery without tamponade of the nasal cavity but with preventing nasal bleedings. The study involved 38 patients with the confirmed deviation of the nasal septum. First group included 23 patients, who received postoperative tamponade of the nasal cavity to prevent nasal bleedings. Second group included 15 patients, who received the modified rhinosurgical technique (using latex tissue glue). The quality of patients' life was assessed with the SF-36 and "Quality of life of rhinologic patient" questionnaires, which are sensitive for the physical, psychological and emotional spheres. The quality of life was higher in the second group of patients. These data correlate with the results of instrumental studies (nasal cavity endoscopy, anterior active rhinomanometry, mucociliary transport and olfactory function evaluation). The results of the study show, that modified rhinosurgical technique is more effective in nasal pathology treatment, decreases the duration of hospitalization and positively promotes emotional sphere of the patients.

## **COMBINED SINO-ORBITAL RUBBER BULLET INJURIES: CASE REPORTS**

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КЛЮЧЕВЫЕ СЛОВА: FACIAL INJURY, WEAPON INJURIES

АННОТАЦИЯ:

Rubber bullets are one of the so called "less-lethal weapon". Although it was designed only for self-defense and to prevent the aggression, the serious injuries are caused by this weapon, especially when using on a short distance. Direct hit in the orbit usually leads to severe damage of the orbital content, walls and surrounding structure. Five cases of facial injury are reported. In four of them rubber bullet caused different fractures of the orbit, ethmoid cells and maxillary sinus walls with damaging of the eyeglobe and lossing of the vision. In two cases bullet was removed under endoscopic control from maxillary sinus, in one – from nasal cavity, and in the last case – from sphenoid sinus. In one case the metallic bullet from the pneumatic gun was found in soft tissues of the nose. Complicated combined bullet injuries demand from the surgeon the unusual operational technique and involvement the specialists of related disciplines, such as ophthalmology and neurosurgery. And because the frequency of less-lethal weapon injuries increases the control over the use of this weapon should be more tighten.

#### **APPLICATION OF HIGH-ENERGY LASER IN OUTPATIENT SURGERY OF NASAL CAVITY**

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КЛЮЧЕВЫЕ СЛОВА: HIGH-ENERGY LASER, OUTPATIENT SURGERY OF NASAL CAVITY

АННОТАЦИЯ:

Modern development and socialization of the society dictates a need in the development and implementation in to practical public health modern, functional, minimally invasive methods of treatment of nasal cavity diseases which can be carried out at the high professional level with good clinical outcome.

#### ***THE CONDITION OF MUCOUS MEMBRANES OF NOSE AND PARANASAL SINUSES IN PATIENTS WITH CHRONIC KIDNEY DISEASE - AN EXPERIMENTAL MODEL***

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КЛЮЧЕВЫЕ СЛОВА: MUCOUS MEMBRANES OF NOSE AND PARANASAL SINUSES, CHRONIC KIDNEY DISEASE

АННОТАЦИЯ:

In recent years there has been a significant increase in inflammatory diseases of nasal and paranasal sinuses, both in absolute terms and, their share in the structure of common morbidity of ENT diseases. However, the urgency of the problem is determined not only by its economic value, but also to a greater degree of their social importance. Chronic Rhinosinusitis is one of the most common and frequently recurrent disease of nasal and paranasal sinuses, the nature and mechanism of which has not been known yet. The most common causes of chronic inflammation in paranasal sinuses are: infection, allergy, local mucous membrane damage, as well as local anatomical reasons (S.Z.Piskunov, 1986; M.R.Bogomilsky, T.I.Garaschenko, 1995). It is of interest to study the combined pathology of nasal and paranasal sinuses with kidney pathology, especially, chronic glomerulonephritis. Chronic glomerulonephritis is one of the main problems of update nephrology. In the available literature we have not met the data on studying combined pathology of kidneys and chronic diseases of nasal and paranasal sinuses.

#### **A NEW METHOD OF PLASTICS OF NASAL SEPTUM PERFORATION**

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КЛЮЧЕВЫЕ СЛОВА: NASAL SEPTUM PERFORATION PLASTICS

АННОТАЦИЯ:

Nasal septum perforation (NSP) is a difficult pathology for surgeons. The main reason of this disease is precedent nasal septum surgery. Among other reasons we can mention manipulations on the locus Kisselbachii, nasal septum hematomas and abscesses, Wegener's granulomatosis, cocaine use etc. Also perforations can be spontaneous.

#### **ENDOSCOPIC ANATOMY OF THE SPHENO-PALATINE ARTERY REGION: SURGICAL ASPECTS**

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КЛЮЧЕВЫЕ СЛОВА: ENDOSCOPIC ANATOMY, SPHENOPALATINE ARTERY, POSTERIOR EPISTAXIS

АННОТАЦИЯ:

The article is dedicated to sphenopalatine artery anatomic variability. Possible variants of sphenopalatine foramen localization, ethmoidal crest of perpendicular plate of palatal bone position, amount and localization of sphenopalatine artery branches are studied during endoscopic dissection of lateral nasal wall on 30 cadaveric specimen. Results of this study allow to improve the selective endonasal sphenopalatine artery cauterization technique in posterior epistaxis treatment.

## **DENTAL CAUSES OF THE MAXILLARY SINUS INFLAMMATION**

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АННОТАЦИЯ:

According to Central Scientific Institute of Health Organization 1, 5 million Russians are afflicted with sinusitis each year. Most physicians are good at ruling out routine causative factors but most often overlook dental infections as a primary source, because in some situations, there is a direct association between a toothache and a sinus infection.

## **COMPARATIVE ANALYSIS OF NASOPHARYNGEAL MICROBIOTA BY CHEMICAL MARKER DETECTION METHOD AND BACTERIOLOGICAL INVESTIGATION**

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КЛЮЧЕВЫЕ СЛОВА: NASOPHARYNGEAL MICROBIOTA, CHEMICAL MARKER DETECTION

## АННОТАЦИЯ:

The rapidly increasing number of chronic diseases of upper respiratory tracts and their unsuccessful treatment is possibly caused by one sided approach to therapy that ignores the presence of microbial associations and their immunologic resistance. The best technique for biofilm research is confocal microscopy that allows researchers study both microorganisms and the structure of biofilm. However, confocal microscopy is nowadays not available for clinical use. PCR, the other popular technique for studying microorganisms in different biological environments, requires preliminary screening tests. So there is an obvious need for a reliable express method of infection source diagnostics. Such method is gas chromatography with mass-spectrometry of microbial markers.

## MODIFIED SPHERICAL CURETTE FOR MAXILLA SINUS MYCETOMA ABLATION

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## АННОТАЦИЯ:

The aim of the study: to devise the new surgical instrument to enhance the separation of health tissues and decrease the amount of executing manipulations during maxilla sinus mycetoma ablation. Materials and methods: Total 65 patients with maxilla sinus mycetoma were examined at the ENT department of municipal Hospital N1 in Astana since 2004 to 2009. To compare the efficacy of our proposed innovational treatment method, patients were randomly divided into study (n=42) and control (n=23) group. Modified instrument - spherical curette - was used in first group for fungous body and mycetoma precipitation ablation. Standard surgery therapy method were used in control group. Results: Among total sample size concomitant fungous lesion of ethmoidal sinus cells was present in 20 patients (30.7±5.7%) and frontal sinus lesion in 4 patients (6.1±2.9%). It was possible to decrease in 9 times the incidence of the most frequent complications in such kind of surgical intervention due to probable fungous infection dissemination decrease and formation of fistula to maxilla molar and premolar alveolus from 21,7±8,6% to 2,4±2,3% (P<0,05). And besides, by substantial operation relief the blood loss volume statistically significant reduced from 91,2±2,3 to 61,0±1,9 ml, this means in 1,5 times (P<0,001). The using of this tool has allowed to avoid such probable complications ethmoidal labyrinth sells, inferior and medial orbital wall, sphenoid sinus perforation. Besides, the using of modified curret has allowed us to reduce operation duration in 1,3 times (P<0,001), analgetic requirement in 1,97 times(P<0,001) and f number of replacable sling bandages in 2,4 times (P<0,001). If activization of the patient, using traditional curret, happened in 24 hours after operation (P<0,001), that, after using the modified curret it was possible to activate the patient already in 6,2±0,1 hour after operation (P<0,001). A duration of postoperative headache reduced and nasal breath restored faster. Our conducted researches allowed to conclude that genyantrum mycetoma revealing at computer tomography and NMRT, or it's casual defection as an intraoperative finding during functional endoscopic rhinosurgery with a formation diameter more than 10 mm, dictates the nessecity to transit the mycetoma operative removal into the open access with the spherical curret using, to prevent the fungi spore maintenance and complication subsequent.

## **TOPICAL DIAGNOSIS ALGORITHM ROLE OF CEREBROSPINAL FLUID FISTULA IN THE CHOICE OF SURGICAL TREATMENT OF NASAL CEREBROSPINAL FLUID**

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КЛЮЧЕВЫЕ СЛОВА: NASAL LIQUORRHEA, CEREBROSPINAL FLUID FISTULA, TRANSNASAL SURGERY

АННОТАЦИЯ:

A new diagnostic and surgical method of CSF fistula rhino-plastic has been developed and applied in practice. The method is based on retaining the walls of the ethmoid bone of the sphenoid sinus, which is shown with the localization of CSF fistula in the middle of the posterior ethmoidal labyrinth cells and the walls of the sphenoid sinus.

## **BENEFITS AND COMPLICATIONS OF JET VENTILATIONS FOR ENDOSCOPIC SURGERY OF THE LARYNX**

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КЛЮЧЕВЫЕ СЛОВА:JET VENTILATIONS, ENDOSCOPIC SURGERY OF LARYNX

АННОТАЦИЯ:

Traditional volume mechanical ventilation with intubation tubes of small diameter has a number of disadvantages and limitations associated with the complexity of the surgery. Some of those limitations are the insufficient review operative field, the surgeon manipulating constraints, the threat of increasing intrathoracic pressure, violation of carbon dioxide elimination and the need for tubes made of special noncombustible materials. In cases of 1-2 degree laryngeal stenosis, orotraheal intubation may fail, even with small specially designed tubes for endolaryngeal interventions and will be necessary to use other methods of respiratory support.

## NEW APPROACH OF VOICE REHABILITATION IN CHILDREN WITH UNILATERAL VOCAL FOLD PARESIS

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КЛЮЧЕВЫЕ СЛОВА: VOICE REHABILITATION, VOCAL FOLD PARESIS

АННОТАЦИЯ:

The goal was to study the possibility and efficiency of neuromuscular electro-phonatoric stimulation (NMEPS) of larynx in children with UVFP. Material: 9 children with UVFP aged 6-16 years old had been observed. The etiological factors of UVFP were virus infection (5) and the cardiac surgery (2). In two cases UVFP was idiopathic. Methods: Patients were undergone by NMEPS of larynx using vocaSTIM. NMEPS is combination of electrostimulation and optimal functional voice exercises. Before and after 10-days of treatment all patients were examined by videolaryngoscopy, perceptual voice evaluation with GRBAS scale, acoustic analysis of voice with measurement of the maximum phonation time (MPT), Jitter, fundamental frequency (F0), Dysphonia Severity Index (DSI), recording of speaking and singing voice profiling. Quality life analysis was performed according Voice Handicap Index (VHI). Results: 4 patients demonstrated the restoration of vocal fold mobility. The voice became clear, acoustic parameters improved to age-specific norms. In 5 cases we observed significant improvement of life quality according VHI, positive dynamic of subjective quality of voice and acoustic voice parameters. MPT improved more than three times: 2,6 -10,5 sec. Jitter reduced to normal. DSI grown from negative (-6) to positive (+2,1). Sound pressure level increased by 31,2 dB. We did not observe any complications after NMEPS. Conclusion: NMEPS of larynx is easy method and it doesn't give side effects. NMEPS gives opportunity to optimize the rehabilitation of voice in children with UVFP.

## COMPARATIVE ESTIMATION OF THE USING PRP AND HAEMOSTATIC RETICULUM AFTER TONSILLECTOMY

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КЛЮЧЕВЫЕ СЛОВА: PRP, HAEMOSTATIC RETICULUM, TONSILLECTOMY

АННОТАЦИЯ:

Background: Tonsillectomy is the commonest surgical procedure performed by most ENT surgeons. There are number of materials that used for the acceleration of the regeneration of the postoperative wound (PRP, haemostatic reticulum, etc). Platelet-rich plasma can potentially enhance healing by the delivery of various growth factors and



cytokines from the  $\alpha$ -granules contained in platelets. Methods: We have operated 30 patients (10 of them after tonsillectomy were used PRP, 10 of them were used haemostatic reticulum of oxidized cellulose and 10 patients – control group – PRP or haemostatic reticulum was not used). Age ranged from 18 to 35 years. PRP was prepared from venous blood of the patient after intake of cubital vein using a centrifugation. We took 20 ml of blood immediately before surgery and placed in a special tubes 10 ml. We centrifuged blood 14 minutes at a speed of 2400 rpm. All erythrocytes and leukocytes from the whole blood were deleted. Immediately prior to use it, we with a help of sterile tweezers took a received clot from test-tube, which we puted in postoperative wound after tonsillectomy. Results: Edema of the tissues after using PRP was less then after using hemostatic reticulum or in control group of patients. Postoperative period decreased in comparison with the used hemostatic reticulum or control group, witch proved by histological and bacteriological researches. Conclusions: PRP, that was used after tonsillectomy stimulates the regeneration of tissue in the postoperative period and reduces rehabilitation. PRP used locally after tonsillectomy (there were no risk of contracting infectious diseases or of any allergic reactions) and is a less invasive procedure.

## **SCAR-PARALYTIC LARYNGEAL STENOSIS**

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### **АННОТАЦИЯ:**

Posterior glottic stenosis (PGS) is defined as a narrowing or fixation of the larynx. PGS is a complication of prolonged intubation, caused by scarring of the mucosa of the interarytenoid area, arytenoids and cricoarytenoid joints. Also, the cause of stenosis can be burns, larynx surgery, including endoscopic intervention. Indirect laryngoscopy and transnasal fiberscopy may reveal a mobility disorder of the vocal folds, but differential diagnosis of scar stenosis and the paralysis of the larynx is not always possible. Often during the initial examination, the immobility of the vocal folds may be misdiagnosed with paralytic stenosis. Moreover, in patients with lesions of the central nervous system who had undergone prolonged intubation, a combined pathology may occur.

## **EFFECT OF CHRONIC TONSILLITIS ON THE THYROID PATHOLOGY**

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КЛЮЧЕВЫЕ СЛОВА: CHRONIC TONSILLITIS, THYROID PATHOLOGY

АННОТАЦИЯ:

Considerable experience in studying and treating chronic tonsillitis has accumulated to date. However, the incidence of this pathology is not reduced. As shown by epidemiological studies, the prevalence of chronic tonsillitis varies from 5 to 37% in the adult population and from 15 to 63% in children (Palchun, 2009). Number of local and common diseases associated with chronic tonsillitis increases. While the otorhinolaryngological (ENT) examination is required in patients with rheumatism and renal diseases, the focus of chronic infection in patient with thyroid pathology often goes unnoticed.

## **LARYNX STATE IN PATIENTS WITH CHRONIC POLYPOUS RHINOSINUSITIS**

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О журнале "Folia Otorhinolaryngologiae et Pathologiae Respiratoriae"

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КЛЮЧЕВЫЕ СЛОВА: LARYNX STATE, CHRONIC POLYPOUS RHINOSINUSITIS

АННОТАЦИЯ:

Introduction: According to different data, nose diseases can have a significant impact on the larynx state. However vocal apparatus disorders associated with chronic polypousrhinosinusitis (CPRS) are still poorly investigated. Materials and methods: There was introduced a pilot study of 21 patients with different stages of CPRS (5 having obturating polyps). Before preplanned surgery all the patients underwent examination including an endoscopic nose surveying and a larynx function assessment, namely videolaryngostroboscopy, Voice handicap index questionnaire and acoustic voice analysis with the Ling Waves Voice Program.10 patients were reexamined 6 months after the surgery. The research is in progress. Results: Even the primary step of the study revealed the existence of some functional or organic larynx diseases which are accompanying CPRS in the great majority of cases. So, only three of 21 patients demonstrated normal larynx picture on the videolaryngostroboscopic examination preoperatively. Eight of the other 18 patients demonstrated functional vocal disorders and 10 patients demonstrated organic disorders, more precisely pachydermia, hyperplastic laryngitis and larynx mycosis, sometimes with an increased amount of mucus in the larynx. We analyzed correlations between the videolaryngostroboscopic picture and disease duration, CPRS type and stage. Our data demonstrate that CPRS patients suffer an increased load on the larynx and are predisposed to form different functional and organic disorders of the vocal apparatus. We revealed that surgical treatment of the nasal polyposis with a following rational pharmacologic therapy can decrease the load on the vocal apparatus and lead to the larynx state improvement.

## **SINGLE-STAGE LARYNGOTRACHEOPLASTY**

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КЛЮЧЕВЫЕ СЛОВА: LARYNGOTRACHEAL STENOSIS, SINGLE-STAGE LARYNGOTRACHEOPLASTY

АННОТАЦИЯ:

Objective: Subglottic stenosis (SGS) is still a relevant problem of present-day otorhinolaryngology. SGS is a condition that can be either congenital or acquired. Laryngotracheoplasty (LTP) is now accepted as the standard cure for diagnosed pediatric laryngotracheal stenosis. Methods: This survey retrospectively reviewed the charts of 13 patients having undergone treatment for SGS by means of the Single-Stage Laryngotracheoplasty (SSLTP) at the ENT department of Saint-Petersburg State Pediatric Medical Academy. SSLTP involves a mid-line incision made anteriorly in the cricoid and upper trachea with nasotracheal intubation which is performed by inserting an endotracheal tube with maximum size for the given child's age. Then the resected cartilaginous part of right fifth rib is carved into the spindle-shaped form, interposed and fixed between the cut edges of the cricoid cartilage and tracheal rings with perichondrial layer facing the airway lumen. Results: Thirteen SSLTPs with cartilage grafting were performed. The age of the children (4 girls and 9 boys) having undergone SSLTP ranged from 2 months to 4 years (mean 1,7; SD 1,4). The mean Cotton-Meyer grade for the SSLTP group was 2,23; 7 out of 13 patients had been having tracheostomies. The extubation rate following SSLTP was 92,30% (12 out of 13). Conclusion: Single-stage laryngotracheoplasty is a highly successful method for treatment subglottic stenosis in young children. The above technique makes a marked increase in the airflow through the larynx and upper trachea and is effective and reliable for the surgical management of SGS in children.

## **FUNDAMENTAL AND APPLIED ASPECTS OF ASSOCIATIVE SYMBIOSIS OF THE TOP RESPIRATORY WAYS OF THE PERSON**

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АННОТАЦИЯ:

Tonsillar pathology it is all-medical problem. The aim of this scientific work associative symbiosis of a mucous membrane of the top respiratory ways, its changes at chronic tonsillitis, to offer microbiological criteria of diagnostics and treatment of inflammatory diseases of the top respiratory ways was described. The study included 50 healthy men and 50 patients having chronic tonsillitis. The microflora of tonsillar mucous membrane was represented by 8 genera of facultative anaerobic microorganisms. Among the microorganisms isolated from the patients, cultures simultaneously having two or more pathogenicity markers occurred twice as often as among the representatives of the microbiocenosis obtained from the healthy subjects. The microflora of the tonsillar mucosa of the chronic tonsillitis patients was characterized by resistance to penicillins, macrolides and aminoglycosides, but was

simultaneously sensitive to lincosamides and glycopeptides. In the analysis of mutual influence of symbionts of microbes isolated from healthy men no changes in the expression of these pathogen and persistence factors have been detected in the overwhelming majority of cases (77,3 - 87,5%). Interinfluence in pairs "pathogen-indigen" and "indigen-indigen", isolated from patients with chronic tonsillitis were accompanied by an increase of anti-lysozyme (14,7%), hemolytic (28,0%) and lecithovitellase (50,7%) activities. The developed methods of studying of updating of pathogen factors and antibiotic resistances in the course of interbacterial interactions can be used in experimental and clinical practice for studying of formation of associative symbiosis at the biotopes, selection of the antibacterial preparations directed on an elimination of a pathogen at simultaneous preservation of normal microflora.

## 10 YEARS OF PARTIAL DEAFNESS TREATMENT

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### АННОТАЦИЯ:

During last years of previous surgery in Our center we started to provide surgeries with possibility of hearing preservation. After some year it developed to Partial Deafness Treatment (PDT) which cover disorders. Partial deafness (PD) is a condition in which hearing loss occurs in at least 1 frequency critical to speech understanding. Current options for partial deafness treatment (PDT) rely on preoperative hearing preservation, which, along with the use of different means of acoustic and electric stimulation, enable extending the indications for various assistive hearing devices. Possible solutions include acoustic methods only, the use of hearing aids or middle ear implants, electric complementation, and a combination of electric and acoustic stimulation. From over 1160 patients with PDT indication we selected 95 patients with different types of middle ear implants - were treatment was by using middle ear implants like Vibrant Soundbrige, BAHA, DACS. Other classified in PDCI (Partial Deafness Cochlear Implantation) was treated with selected types of electrodes and the optimal "round window" approach to the inner ear. The first patients were implanted by Medel Standard electrode with 20 mm insertion. Nowadays it could be used other Medel electrodes like FlexEAS, FlexSOFT, M, Flex28 and Cochlear CI422/SRA. In study we also present recent trends. The extension of PDT indications created an opportunity for patients with different hearing impairments who obtained no benefit from a hearing aid and did not qualify for standard cochlear implant application. The authors' observations are based on the findings that preservation of preoperative hearing had been achieved in 97.1% of adult patients (the longest 9 years' observation) and in 100% of children (the longest 7 years' observation). Those results send the important message that PDT is feasible and effective. From second hand we put attention more for speech understanding in quiet (average improvement from 30% to 83%) and noise (average improvement from 5% to 62%) which are now the most important. Middle Ear Implants results are based as well as above on pure tonal audiometry and speech understanding in noise and in quiet. To allow comparison of PDT results from different studies, the authors developed the PDT classification system, which permits the comparison of postoperative results, including the degree of hearing preservation and, more importantly, the patient's understanding of speech after treatment.

## DIAGNOSIS AND SURGICAL TREATMENT OF HEARING LOSS IN PATIENTS WITH VAN DER HOEVE'S SYNDROME

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### АННОТАЦИЯ:

**Aims.** To define diagnostic criteria and optimum surgical treatment of hearing loss in patients with VDHS. **Methods.** 3 patients (2 male, 1 female) were treated from 2008. Age range 21 - 25 years. On pure tone audiometry one patient had bilateral mixed hearing loss with an average air-bone gap 30 dB for the speech frequencies (0,5,1 and 2 kHz), 2 others had bilateral conductive hearing loss with an average air-bone gap 30-40 dB. Tympanometry showed Ad curve type. On temporal bone CT data (2 cases) bilateral symmetrical diffuse resorption of vast areas of the otic capsule were identified along with normal ossicular chain. Stapedial cruras' fractures were found in 2 cases during surgical revision; thick, fixed footplate was found in 1 case. We performed incudoplatinopexy with 3 mm length autocartilage prosthesis in 2 cases with stapedial cruras's fractures and total stapedioplasty by putting 3,5 mm length stape's autocartilage prosthesis upon autovien in 1 case of footplate fixation. **Results.** The patients' examinations on 14 th day after surgery showed the full closure of air-bone gap in 2 cases who were underwent incudoplatinopexy and the air-bone gap 10 dB in total stapedioplasty (after 1 month it was totally closed). **Conclusions.** The surgical technique choice is defined due to the ossicular chain condition and footplate fixation degree. The use of autocartilage stape's prosthesis is preferred due to its original features.

## SURGICAL MANAGEMENT OF PATIENTS WITH MENIERE'S DISEASE

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### АННОТАЦИЯ:

According to the international literature data 0.1% of the European population suffers from Meniere's disease. For patients failing drug therapy surgical management is indicated. Surgical procedures can be divided into hearing preserving and hearing destructive ones. In this study we carried out post-hoc analysis of 25 patients with Meniere's disease who underwent four types of surgical interventions: chordaplexectomy, transmastoid labyrinthectomy,

stapedectomy and endolymphatic sac drainage. We assessed the effectiveness of these surgeries basing on the evolution of patients' subjective sensation in postoperative period (vestibular disorders attacks frequency, autonomic disturbances intensity, hearing loss and tinnitus severity) and with the use of objective diagnostic techniques (pure tone audiometry and electrooculography). In comparison with other surgical interventions endolymphatic sac drainage and stenting turned out to be the most effective surgical tactic. This procedure not only alleviated or arrested vestibular disorders attacks in 67% cases but also it prevented hearing loss advance in all patients. To improve surgical technique of endolymphatic sac drainage and stenting and to minimize risks of complications we studied topographic anatomy of the relevant area on 20 cadaver temporal bones. Anterior margin of sigmoid sinus, posterior and lateral semicircular canals served as anatomic landmarks for endolymphatic sac localization. Detailed study of these anatomic structures syntopy enabled to work out convenient and attenuated approach to the endolymphatic sac.

## **ABR REGISTRATION IN THE PATIENTS WITH ACOUSTIC NEUROMA**

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КЛЮЧЕВЫЕ СЛОВА: ABR REGISTRATION, ACOUSTIC NEUROMA

### **АННОТАЦИЯ:**

The goal: evaluatoin of ABR in the patients with acoustic neuroma (AN) what depending on the tumor location in the internal auditory canal (IAC). Materials and methods: We observed 63 patients with acoustic neuroma of different stages. Age of patients ranged from 21-73 years, women 37 men 26. There were 16 persons on the I stage of AN, the patients with II stage were 18, the patients with III stage of AN were 15, there were 14 persons on the IV stage of AN. Amount of patients with localized tumors in the fundus of the IAC was 23, there were 40 patients with clear fundus of the IAC. Results: Data obtained from the registration ABR 49 persons and 14 had failed to register the ABR due to profound hearing loss. 2 patients revealed no change in the ABR recording. Signs of retrocochlearn pathology identified from 47 (74.6%) persons with AN. The reliability was 96.8% of ipsilateral ABR in the presence of AN. In I stage 5 patients on MRI tumor was localized at the fundus of the IAC, including 3 patients (60%) failed to register ABR. There were 9 persons with II stage who had the fundus full of AN in 6 (66.6%) patients were not registered with ABR. AN was identified at the fundus of the IAC from 3 persons with III stage, 1( 33.3%) of them ABR weren't registered. In IV stage 6 patients on MRI tumor was localized at the fundus of the IAC, including 4 patients (66.6%) failed to register ABR. Conclusions: 1. When AN is in the fundus of the IAC patients have severe hearing loss more often therefore the ABR couldn't be registered. 2. The relation between the stage of acoustic neuroma and the data obtained of ABR wasn't found. 3. The diagnostic information of ipsilateral ABR registration for retrocochlearn pathology was 96,8%.

## **OPTIMIZATION OF NEWBORN HEARING SCREENING IN BELARUS**

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КЛЮЧЕВЫЕ СЛОВА: NEWBORN HEARING SCREENING, CONGENITAL HAERING LOSS

АННОТАЦИЯ:

Congenital hearing loss is present in 1 to 4 per 1000 newborns, and the cause is genetic in 60% of cases. Mutation 35delG, are the most common known genetic cause of prelingual deafness. The aim of the study was: 1) to analyze 35delG mutation`s rate in the large group of hearing impaired children; 2) to optimize the diagnostic of sensorineural hearing loss (SNHL) in children. 392 hearing impaired children (aged several months to 17) were included in this study. Assessment of severity and pattern of hearing loss by pure tone audiometry, tympanometry, auditory brainstem response and distortions products evoked otoacoustic emissions were performed. All patients were have carried out a screening for 35delG. A comparative analysis of age of diagnosis, degree of hearing loss in three groups of children: 35delG heterozygous, 35delG homozygous and without this mutation were performed. Among all hearing impaired children 45% are homozygous and 15% are heterozygous for 35delG GJB2. A positive family story is present in 45% of cases with 35delG homozygous children, while for group without this mutation the deafness of relatives is only 15%. Mean age of diagnosis in group of genetic SNHL was 18 month, whereas time interval between referred age by parents and age of diagnosis was 6 month. On comparison of 35delG homozygous with 35delG absent patients, the prevalence of severe-to-profound hearing loss was significantly ( $p$  value=0,022) higher in the group of genetic SNHL. Our study reveals that deletion 35delG is the main genetic cause of SNHL in Belarus (in 60% of the patients). The molecular analysis for 35delG mutation should be performed in cases of difficulties at diagnosis of SNHL (more than 2 months) and positive family story.

## **NEIROMONITORING APPLICATION IN FACIAL NERVE SURGERY**

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## АННОТАЦИЯ:

**Objective:** To describe the basis of necessity of using neiromonitoring during temporal bone surgery **Study design:** Controlled retrospective consecutive case series. **Methods:** The special device were using during the manipulation near and on the facial nerve (NIM 3.0; Medtronic, USA). 5 patient underwent surgical treatment: 2 women with facial nerve neurinoma, 2 men and 1 women with facial nerve injury. **Results:** Neiromonitoring was used during the temporal bone surgery, exactly for recognition of facial nerve among tumor tissue in case of facial nerve neurinoma, when we needed to be sure, that all tumor tissue completely deleted and to save as much of intact nerve fibers as we can. And in case of facial nerve injury, that in our cases was caused because of previous surgery injury in 1 case, and severe neuro-cranial injury in 2 cases. During surgery was very easily to identify neural tissue, be the special electrode. When touching tissue near the facial nerve you can hear a special signal. The goal of this device is that you can vary sensitivity of the electrode and identify facial nerve from 3.0 to 0.5 mm near it. **Conclusions:** Neuromonitoring during manipulations on temporal bone is the best way to avoid damaging of facial nerve. It can be used during everyday surgery, but the best results can be achieved in patients with facial nerve neurinoma and in cases when we perform neural decompression, because risk of additional trauma minimizes.

## ***THE USE OF THE GAP DETECTION TEST TO ASSESS TEMPORAL RESOLUTION OF HUMAN AUDITORY SYSTEM***

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## АННОТАЦИЯ:

**Introduction.** The gap detection test was suggested to assess temporal resolution – one of the human auditory system's basic functions, which provides information to the nervous system in the perception of speech. This test has such advantages as simplicity of execution, ability to be used in child's practice, its independence from patient's linguistic knowledge and lack of training effect, which allow to use it as an initial step of assessment of central auditory pathway functional ability. **Purpose.** To assess the sensitivity and specificity of the gap detection test in comparison with speech tests being used while investigating central hearing mechanism. **Materials and methods.** 16 young (18-25 years old) and 12 old listeners (64-74 years old) with normal hearing sensitivity were examined. The gap detection test (Robert W. Keith, Copyright © 2000 by NCS Pearson, Inc.), dichotic digital test, monotic speech perception test were performed after ENT examination, tonal threshold audiometry and impedancemetry. **Results.** Older listeners performed significantly worse results of the gap detection test for tonal stimuli ( $p \leq 0,03$ ) and of the dichotic digital test ( $p = 0,02$ ) than younger listeners. Gap detection thresholds obtained from older listeners were from 15.8 msec to 24.1 mses for different stimuli while those obtained from younger listeners were from 5.1 to 7.7 msec. Dichotic digits results of older listeners were  $74,6 \pm 8,8\%$ , of younger ones –  $89,4 \pm 6,0\%$ . High positive correlation between monotic speech perception and dichotic digits results was revealed, the correlation between the gap detection test and the dichotic digital test within each of the groups was absent. **Conclusion.** The higher sensitivity but lower specificity of the gap detection test for the detection of dysfunction in the central auditory pathways were revealed in comparison with speech perception tests.



## **FUNCTIONAL RESULTS OF STAPEDOPLASTY**

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АННОТАЦИЯ:

The objective of the study was to evaluate the functional results of stapedoplasty depending on the form of otosclerotic process and assess the dynamics of hearing change within the first year after the surgery. A retrospective analysis of the outcomes of 185 operations in 165 patients with the tympanic and mixed form of otosclerosis was conducted. The patients had operations in the Ear Microsurgery and Otoneurosurgery department at the Institute of Otolaryngology named after Professor O. S. Kolomyichenko of Academy of Medical Sciences of Ukraine (Kiev) from 2008 till 2010. All surgeries were carried out by one surgeon; it allows to rule out the personal attitude of the doctor to one or another kind of surgery and its functional results.

## **ANATOMICAL STUDY OF THE INFRALABYRINTHINE APPROACHS**

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АННОТАЦИЯ:

This anatomical study was designed to evaluate the infralabyrinthine approaches (ILAs) for safe access to the jugular foramen (JF) and petrous apex (PA). An anatomical study using 23 fresh cadaveric temporal bones was designed to evaluate the feasibility of ILAs to reach the JF and PA by retrofacial approach (RFA) without exclusion of external ear canal and by transcanal approach (TCA). Both ILAs are safe for middle and inner ear. Following the dissection, the pertinent measurements were taken and recorded. Four borders including the facial nerve (FN), otic capsule (OC), posterior fossa dura (PFD) and jugular bulb (JB) outline exposure window created with the RFA. The mean FN to JB (FN-JB) distance was 8,2mm and the mean distance between OC and JB (OC-JB) was 5,7mm. Three borders including OC, JB and internal carotid artery (ICA) outline the access by TCA. The mean distance between OC and ICA (OC-ICA) was 13,25mm. The ILAs affords adequate exposure of the JF and PA without rerouting of the FN and with possible reservation of hearing and vestibular function.

## **EFFECT OF NO-THERAPY ON GRAFT HEALING AFTER TYMPANOPLASTY**

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КЛЮЧЕВЫЕ СЛОВА: NO-THERAPY, TYMPANOPLASTY

### **АННОТАЦИЯ:**

One of the complications of tympanoplasty is a graft failure and appearance of reperforation. The reason of failure is the trophic and vascular disturbances of the microcirculation in the area of operation. Previous studies indicated that gaseous NO flow acts beneficially on the wound healing. The present study was conducted to evaluate the influence of NO on the graft healing. We used NO-containing gas flow that was generated by a "Plason" plasma generator. During the first 12 days after the operation the postauricular area was blown with NO-containing gas flow. The ear packing and folia were removed on the 12th postoperative day. After that the tympanomeatal flap was blown with NO-containing gas flow. The stimulative effect on the eardrum microcirculation was observed after blowing the skin of postauricular area with NO containing gas flow. The level of the blood microcirculation was registreted with the laser Doppler flowmetry. The results of the graft healing were compared with the help of imprint cytology. 50 patients, who underwent tympanoplasty were included and divided into two groups – NO therapy group and screening group. Imprint smears were made from the tympanomeatal flap on the 1st, 3d, 5th days after the ear packing removal (12th, 14th, 15th postoperative days). After NO-therapy the estimation of regenerative process was observed, regarding to the results of cytological examination. During the otomicroscopical examination of the patients of NO-group the tympanomeatal flap was less swallowed. The inflammation was less marked. The vascularisation was much better.

## **ANATOMICAL VARIANTS OF ROUND WINDOW IN TERMS OF VIBROPLASTIC AND COCHLEAR IMPLANTATION**

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### **АННОТАЦИЯ:**

Nowadays, with the development of otosurgery, cochlear and middle ear implantation (Vibant Soundbridge) it is possible to rehabilitate patients with severe hearing loss. Besides the rising number of surgeries the range of

indications is getting wider as well. Techniques of active electrode insertion and Floating Mass Transducer installation at the round window are being worked out and improved. This work is dedicated to the round window measuring (diameter, area, depth, subiculum and bony overhang size) with regard to vibroplasty and cochlear implantation. Measurements were made both on cadaver material at the bone laboratory and in patients with the use of computer and magnetic resonance tomography in preoperative period and intraoperatively. Received anatomic data contributes to the safe Floating Mass Transducer installation preserving round window membrane integrity as well as to cochlear implant active electrode insertion. Correct and attenuated electrode array implantation enables to minimize the injuries of the spiral organ cells. The variation between the measurements was not significant, so it is possible to forecast surgical approach to the round window on the preoperational stage basing on computer and magnetic resonance tomogrammes study.

## **REHABILITATION OF PATIENTS WITH OTOSCLEROSIS**

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АННОТАЦИЯ:

Objective: To evaluate the postoperative hearing results of three types of stapes prosthesis: teflon prosthesis, K-Piston (produced by Kurz Company) and Schuknecht prosthesis (produced by Karl Storz Company) implanted in patients with otosclerosis. Study design: A retrospective analysis of preoperative and postoperative data of tone audiometry. Patients: 107 patients (111 ears), mean age 42 years (range 19 – 70 years), with otosclerosis. The study included 33 patients (35 ears) who had a teflon prosthesis fitted, 56 patients (58 ears) with a K-piston and 18 patients with a Schuknecht prosthesis. The patients were assigned degrees of hearing loss, which was determined prior to surgery. Intervention: Primary stapedotomy. Main outcome measure: We found a mean value of air conduction in the frequencies 0.5, 1, 2, and 4 kHz achieved after stapedotomy. Results: Application of all types of investigated stapes prostheses allows to achieve hearing improvement on speech frequencies. Conclusion: The most reduction of air-bone gap at speech frequencies is possible to reach in patients with the second and third degree of hearing loss. The greatest result at high frequencies is after implantation of K-piston.

## **FUNCTIONAL MULTISPIRAL COMPUTED TOMOGRAPHIC IMAGING OF STAPES PROSTHESIS**

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**АННОТАЦИЯ:**

Functional multispiral computed tomography (fMSCT) is new method allowing to assess the dynamic characteristics of mobile structures of middle ear. The study was carried out in a dynamic mode with a program of bone reconstruction with the step of 0.5 mm in axial projection followed by multiplanar and 3 dimension reconstructions. Simultaneously tympanic membrane was affected by sound at the 1000 Hz frequency and 20 dB intensity over the threshold. Thirty patients (34 ears), of them 21 females and 9 males, with otosclerosis after stapedoplasty were examined by means of fMSCT, the average age being 43 years. Period after stapedoplasty ranged from 10 days to 11 years. We measured the amplitude of stapes movement, its maximal insertion into vestibulum and position to wall of niche of oval window, movement of incus and condition of prosthesis loop. Also we correlated audiologic and fMSCT data. Our method allows to objectively assess the stapes prosthesis function, helps to find out the reasons for an unsuccessful surgery and to establish indication for revision. According to the fMSCT data, the smaller air-bone gap correlates with higher amplitude of the stapes prosthesis movement ( $p < 0,05$ ), and there was no significant correlation between the depth of stapes prosthesis intrusion into vestibulum and the level of sensorineural hearing loss after the operation ( $p > 0,05$ ). 5 patients underwent a revision surgery. Intra-operative findings confirmed fMSCT data in all cases.

**CHRONIC OTITIS MEDIA WITH PERFORATION AND TYMPANOSCLEROSIS, TYMPANOPLASTY IN CASE OF LIMITED STAPES MOBILITY**

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**АННОТАЦИЯ:**

In case of chronic otitis media with perforation and tympanosclerosis surgeon try to solve two problems: close perforation and restore the ossicular chain. At the same time in case of tympanosclerosis the total or partial fixation of the ossicular chain can be presented. The main problem-stapes fixation, essentially partial fixation which is difficult to detect. The patient's main expectation is hearing improvement. Utilization of rather expensive partial prostheses in case of partial fixation of stapes will not bring the satisfied result. The attempts to mobilize the stapes in case of perforation can lead to complications. We suggest in case of limited stapes mobility to achieve some temporary hearing improvement by possessing grommet on the stapes head (Tubingen Kurz grommet, length 1,6 мм). Quite wide grommet flange well fitted under the tympanic membrane or its transplant and can contact with bony wall without risk of bony fixation. If grommet diameter is too big, we can cover the stapes head with perichondrium for better fixation and allowed to avoid of extended pressure on the stapes crura. While tympanic membrane healing, grommet can be the partial prosthesis with limited functional result. In 8 cases with limited stapes mobility we got the improvement in high frequencies. That gave the patients, sensation of hearing improvement while they wait for ossiculoplasty with certified partial prosthesis or stapedoplasty.

## THE RECONSTRUCTION OF NEOTYMPANIC CAVITY'S WALLS

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КЛЮЧЕВЫЕ СЛОВА: ATTIC, CARTILAGINOUS PLATE, CHRONIC PURULENT OTITIS MEDIA, BONE CHIPS

АННОТАЦИЯ:

In the article it is said about application of the developed method of reconstruction of neotympanic cavity's walls with used cartilaginous plate with notches and bone chips. The data of the received results are provided in the postoperative period.

## RETRACTION POCKETS MANAGEMENT IN PATIENTS WITH CHRONIC OTITIS MEDIA

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КЛЮЧЕВЫЕ СЛОВА: RETRACTION POCKETS MANAGEMENT, CHRONIC OTITIS MEDIA

АННОТАЦИЯ:

Objective: Most common cause of retraction pocket (RP) is chronic secretory otitis caused by eustachian tube disfunction. Weakness of the collagen fiber layer of the tympanic membrane lamina propria is a prerequisite for the formation of a retraction pocket and cholesteatoma. Materials and methods: After analyzing of 31 case of middle ear dysfunction after CT we divide patients in 3 groups. First group (9 patients) with mobile-controlled retraction pockets. Second (10 patients) with fixed-controlled retraction pockets. Third (11 patients) with fixed-uncontrolled retraction pockets with precholesteatoma formation. Treatment: On stage 1 most patients get surgical treatment to increase eustachian tube function (septoplasty, laser vasotomy, adenotomy). CT was performed to evaluate the changes in middle ear. On stage 2 (local treatment) RP mechanical cleaning by aspirator. In cases with fixed RP surgical procedures were performed to remove RP, tympanoplasty with additional enhancement of tympanic membrane. Conclusion: Retraction pockets with fixation should be treated surgically to prevent a cholesteatoma formation and to get more stable functional and morphological results.

## **ANALYSIS OF HEARING DISORDERS IN RATS WITH HYPERTHYROIDEMIA**

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АННОТАЦИЯ:

Issue: Hormonal disorders change the activity of the different systems and its individual structures, such as inner ear. It's important to study the influence of hyperthyroidemia on the inner ear function. Aim: To investigate the inner ear function in rats with hyperthyroidemia. Materials and methods: We modeled hyperthyroidemia by introducing animals L-thyroxine ("Berlin - Chemi AG", Germany). We used L-thyroxine dose - 10 mkg / day. In intact animals thyroxine content was  $4,860 \pm 0,24$  mkg/dl and respectively in animals with hyperthyroid emia -  $24,50 \pm 3,16$  mkg/dl. We performed by using otoacoustic emission registration (DPOAE). Rats were divided in two groups. The first group - intact animals (13 rats), the second group - rats with hyperthyroidemia (17 rats). Results: The first registration of DPOAE was performed in both groups before the beginning the experiment. The response of DPOAE in both groups recorded at a frequency 2000-8000 Hz. In second time, at the 7th day of hyperthyroidemia, there were no responses of DPOAE in 41,2 % of second group rats. After that we registered DPOAE third time, at the 14th day of hyperthyroidemia, there were no responses of DPOAE in 76,5 % of second group. Conclusion: Absence of DPOAE after hyperthyroidemia in rats of the second group shows toxic affect on the inner ear function in the rats.

## **RESPIRATORY FUNCTION EVALUATION IN TRACHEOSTOMIZED PATIENTS WITH LARYNGEAL AND UPPER TRACHEA STENOSES**

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АННОТАЦИЯ:

Evaluation of upper airways sufficiency and readiness for decannulation is one of the difficult otorhinolaryngological problems, that usually depends on clinical experience of ENT-specialist, who must be responsible for planning of surgical treatment or further decannulation consequences. In our study we have examined respiratory function of 13 patients with tracheostoma, who was cured in our clinic with cicatricial stenosis of the larynx and trachea of different

etiology: postoperative stenoses of larynx (after various types of resections) - 3, postintubative stenoses of larynx and trachea above the level of tracheostomy - 4, cicatricial stenoses of the infraglottic part of larynx and trachea due to juvenile papillomatosis - 1, patients with paralytic and cicatricial-paralytic stenoses of the larynx - 5. All patients undergo standart clinical and otorhinolaryngological examination. Besides, they passed transnasal fibrolaryngoscopy with endo-picture recording, CT in the preoperative period, the registration of the weight and height of patients, also body mass index was calculated. With the help of rhinomanometer we produce the measuring of the flow and pressure in the upper respiratory tract, software calculation of the respiratory tract resistance values. The novelty of the method consists in using of the high-resolution front active rhinomanometry, specially modified us to assess the flow and pressure in the trachea and larynx in tracheostomized patients. Assessment of respiratory function was held in pre- and postoperative period and at the stage of surveillance of the patients after decannulation, including the out-patient stage. Thus, we obtained the dynamics of the resistance of the respiratory tract in 5 patients. The observation period was in different cases, from 2 weeks up to six months after surgery. Searching for an optimal indicator of larynx and upper trachea airway resistance at the different types of stenoses requires further research. Investigation results compared with clinical findings may help in developing of objective criteria for upper airways patency estimation. The method is relatively simple and easily reproducible, does not require special training for patients and allows us to objectify the functional viability of the larynx and upper parts of the trachea in trachostomized patients that can be used in the assessment of surgical treatment results and for deacannulation planning.

## **LASER-INDUCED INTERSTITIAL THERMOTHERAPY IN SURGICAL TREATMENT OF BENIGN NASOPHARYNX LESIONS**

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КЛЮЧЕВЫЕ СЛОВА: LASER-INDUCED INTERSTITIAL THERMOTHERAPY, BENIGN NASOPHARYNX LESIONS

АННОТАЦИЯ:

Laser-induced interstitial thermotherapy (LITT) is based on local exposure of high temperature which destructs pathological masses, without damaging the surrounding normal tissues. Traditional methods of benign tumors removal in the nasopharynx are often accompanied by severe nasal bleedings, which can be stopped by posterior tamponade, and postoperative scar formation involving pharyngeal ostium acoustical tubes. Use of laser fiber in contact regimen and endovideoscopic equipment allows to remove benign tumors in the nasopharynx delicately. Nowadays we have a wide experience of surgical treatment in such condition as papillomatosis, angiofibromas, adenoids and nasopharynx cysts.

## **PHOTODIAGNOSIS AND PDT IN PALLIATIVE TREATMENT OF PHARYNGEAL CANCER**

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АННОТАЦИЯ:

Photodynamic therapy (PDT) is a relatively new treatment modality, which is based on the interaction of light and photosensitive drug with production of highly active oxygen species and free radicals. PDT is known to have the following advantages in cancer treatment: low morbidity, high selectivity and good functional results. Also it doesn't seem to induce resistance for subsequent cycles of PDT. These features together determine the potential of PDT as an adjunctive treatment for head and neck cancer.

#### **CLINICAL AND EXPERIMENTAL STUDY OF CARTILAGINOUS PLATES IN TYMPANOPLASTY**

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АННОТАЦИЯ:

In order to develop optimal acoustic properties of the neotimpan membrane we conducted an experiment and studied the amplitude-frequency characteristics of cartilaginous plates, used for tympanoplasty, with electroacoustic method.