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ENT DEPARTMENT OF SAINT PETERSBURG I.P.PAVLOV STATE MEDICAL UNIVERSITY 110TH ANNIVERSARY

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Professor and Chairman ENT Department
I.P. Pavlov Medical University
Saint Petersburg
Russia

This year our Department celebrates 110th anniversary of its foundation. According to the historical scale 110 years is not a long period of time, but as for ENT specialty it is almost the whole life.

The main concept of this short article is to emphasize the most important points of the history of ENT Department of I.P.Pavlov State Medical University.

With deepest gratitude to my teachers and Professors who left as a legacy the description of the previous chronicle of our Clinic I have based this article upon their data.

First of all it should be noted that the history of our Department starts from the first years of existence of the University itself. That is why the consideration of the events cannot be described without taking into the account the development story of I.P.Pavlov Medical University.

Pic.1. Arch. Theophanes Prokopovich

Now the age of University is 113 years old. However that is only the educational age. Medical history of the place where our University is situated goes back to the dates of Saint Petersburg foundation. After the year of 1703 Peter the Great ordered to create "a chemist's garden" on the coasts of Bolshaya Nevka and Korpi rivers. The title of Korpi river means in Finnish "deuce-fir-wood". Now it calls "Karpovka" river (border between the territory of I.P.Pavlov Medical University and Saint Petersburg Botanical gardens). Area which lies opposite to "chemist's garden" Peter the Great presented to Commandant of Saint Petersburg R.V.Bruce. After his death the estate was passed to the Head of the Russian Synod - Archbishop Theophanes Prokopovich (Pic.1) who built a church and an asylum for poor, needy, handicapped and ill people. Archbishop Theophanes Prokopivich died in 1735 and his charity becomes Hospital for poor people for male and female patients with capacity of 250 beds. New founded Hospital was named as "Peter and Paul Hospital".

Pic.2. V.K.v.Anrep

Many years ago later "Women's Medical Institute" was opened on its base.

Ladies were not admitted to be educated at the medical faculties of the University. There was no any Medical University in the world for Ladies education especially for training ladies as the physicians.

After numerous unsuccessful attempts to train gentlemen and ladies together at the medical faculties, in January 1895 the Ministry of People's Education worked out the Regulation on Women's Medical Institute which was approved by His Majesty Tsar Nikolai the Second in June 1895. This event was a real break-through that

changed the basis of civil community structure and enable ladies to have equal rights and possibilities which was involved not only in Russia.

At the same time Vassily Konstantinovoch von Anrep (Pic.2) a prominent pharmacologist was appointed as a Director of the Institute.

The ceremonious opening of the Women's Medical Institute took place in September 14, 1897. V.K.Anrep was a world-wide famous scientist, who worked out the basic experimental and clinical researches in the field of local anaesthesia. He also published his results in ENT in the main scientific journals of Europe and North America. These papers became classic and essential ones.

The figures of the year of the foundation of our University are one of the most significant points of its Emblem (Pic.3). The motto written beyond the date "Medicina ARS Nobilissia" means that "Medicine is the main art". Hygienc's head which is in the center of the Emblem near the Asclepius staff on the left and Prometheous torn on the right symbolize medical educational and scientific traditions in all activities. СПбГМУ is the abbreviation of Saint Petersburg I.P.Pavlov State Medical University. Laurel wreath below is the traditional Antique symbol of glory.

Pic. 3. Emblem of University

Prof. V.K. Anrep was a Director of Women's Medical Institute only during 2 years. But the main mission of his directorship was successfully realized. Institute was founded.

It became possible due to his personal excellence and his high-ranking social and official position. He was a noble man, famous scientist and politician.

Pic.4. B.V. Verkhovsky on his graduation from Military Academy

Only 3 years passed after the ceremonious opening of the Institute then Professor **Boris Vladimirovich Verhovski** was invited to be a founder and a Chairman the ENT Department. B.V. Verhovski was born in Moscow in 1863, in the family of the railway engineer. On leaving a Gymnasium he entered physical and mathematical faculty of Saint Petersburg University. 3 years later he was transferred to study at the first course of the Medico Military Academy (Pic.4). He was awarded a grant by Professor Bush when he was a student of the last course. On graduating from the Medico Military Academy B.V.Verhovski entered the therapeutic Clinic of Professor Sergyei Petrovich Botkin for postgraduate education. He started to learn the pathology of ear, nose, throat and larynx under the supervision of Professors A.F.Proussak, D.I.Koshlakov and N.P.Simanovski (Pic.5). During 2 years since 1894 B.V.Verhovski was educated in leading Clinics of Europe such as Killian's in Frieburg, Betzold's in Munich, Troutman's in Berlin, etc. Later in 1900 he became a founder and a first Chairman of ENT Department of Medico Military Academy.

Pic.5. Prof. N.P.Simanovski

Pic.6. Rector B.V.Verkhovsky

First years of existence of the Clinic were not easy. Wards for 24 patients, operating room as well as examination and dressing rooms were opened in typhus barrack. There were no special rooms for scientific research, education and for outpatient practice. Nevertheless, personal activities of Professor Verhovski and his staff made it possible to develop effectively ENT Department those days

and in the future. Prof. Verhovski had the huge organizing abilities which were noticed by his colleagues from Medico Military Academy and as a result he was elected as a Director of the Institute (Pic.6).

The period of directorship of Prof. B.V.Verhovski coincided with a difficult period of history such as the First World War, Revolution and Civil War. The main task was to eliminate the deficit of medical specialists in the acting army. Many female students took the field as volunteers, medical assistants and nurses. During the directorship of Prof. B.V.Verhovksi the Institute lost its status of a solely women's one. But it was absolutely necessary for Institute survival during the first years of young Soviet system. All the actions related to the saving of the Institute belonged to Prof. B.V.Verhovski himself.

Pic.7. Monument to Prof. B.V.Verhovsky

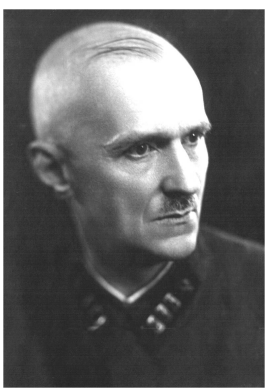
In 2000, the year of 100th anniversary of ENT Department the monument to Prof. B.V.Verhovskii was ceremoniously opened at the entrance of our Clinic (Pic.7).

Pic.8.Prof. L.E.Komendantov

Leonid Efimovich Komendantov (Pic.8) became the second Chairman of ENT Department of First Leningrad Medical Institute as it was named that time. L.E.Komendantov was born on 8th of February, 1883 in Central Russia on the banks of Volga River in teacher's family. In 1900 he entered the Military Medical Academy and in 1907 graduated from it with honour. For many years he worked as Associated Professor in Clinic of Professor M.K.Tsitovich in Saratov (Pic.9). Prof. M.K.Tsitovich before his leadership in ENT Department in Saratov Institute worked as Associated Professor in the Clinic headed by Prof. N.P.Simanovski. So, it proves that Professors B.V.Verhovski, L.E.Komendantov as well as their follower Prof. W.F.Undrits were the pupils of the main Russian ENT cradle - Otorhinolaryngological Department of Medico Military Academy which was founded by Prof. N.P.Simanovski.

Pic.9.Prof. M.K.Tsitovich

During 10 years of the leadership of Prof. L.E.Komendantov in ENT Clinic of First Leningrad Medical Institute from 1930 year up to 1939 there was received a lot of new space situated on 3 flours of the building. Number of beds reached up to 60. New operating room, dressing room, three laboratories, X-ray room and photo laboratory were opened in Clinic.



Pic.10.Prof. V.F.Undrits

Wilhelm Fomich Undrits (Pic.10) was born in 8th of September, 1891in teacher's family in Germany. His family spoke German, all his school education was in German. Russian was his second language. He also studied English from his childhood. This point of his biography was important and significant for his future incorporation into international ENT Society. After graduating from Medico Military Academy and 4 years practice as a military surgeon on the battle fields of World War I, Wilhelm Fomich Undrits made an excellent carrier having gone upstairs from a resident to Professor in Clinic of Professor V.I.Voiachek.

In 1940 he became a Chairman of ENT Department of First Leningrad Medical Institute. Unfortunately the Second World War destroyed all dreams about the development of ENT specialty. During

first years of his directorship Wilhelm Fomich applied all his activities for survival Clinic and its staff. The experience of military surgeon received in the fights in Russian army was very helpful to him. And as a medical officer Wilhelm Fomich became the Main Otorhinolaryngologist of Leningrad front. In comparison with the year before the Second World War type of ENT pathology seriously changed. "Epidemic" of military trauma started. Well-educated in military medicine Wilhelm Fomich successfully organized effective treatment of patients not only in his Clinic. With the beginning of Blockade a huge number of hypotrophic and dystrophic patients became patients of the Clinic. The situation with food supply of Leningrad was terrible and of course the adequate nutrition of patients was difficult. Wilhelm Fomich and his colleagues also suffered from starvation as all the citizens, nevertheless they did everything they could to save the patients. When Blockade and War finished Professor W.F.Undrits thoroughly analyzed his clinical observations and unique experience which was carefully collected by him as a real scientist during these difficult years.

Prof. W.F.Undrits was an excellent, unforgettable surgeon, brilliant scientist who created his personal school of otorhinolaryngology. In spite of the time of Iron Curtain and Cold War Wilhelm Fomich was one of the small numbers of Soviet medical specialists who were admitted to present their achievements to International ENT Society at European and World Congresses. W.F.Undrits died in 1963.

At present days every medical student in Russia knows "Undrits directoscope"- a special tool for hypopharyngo and laryngoscopy as well as otoscopical symptom of cholesteatoma - "Undrits symptom"

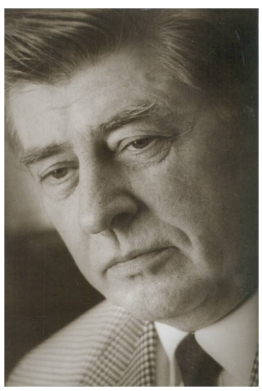
Pic.11. Prof. D.A.Pigulevscki

Afterwards since 1963 until 1974 the head of our Department became the follower of Prof. W.F.Undrits Professor **Dmitry Alexandrovich Pigulevscki** (Pic.11). He was born in 1899 in Belorussia in the city of Minsk, in bishop's family. In 1926 after graduating from Leningrad Medical Institute Dmitri Alexandrovich started his ENT practice in different Leningrad and its suburban hospitals. He began his carrier in our Department as an assistant-professor in 1942. Scientific interests of D.A.Pigulevskii were initiated in many points by his teacher Prof. W.F.Undrits under the influence of military period of the specialty. So, the subject of his scientific research was "Importance of sympathic nervous system in patients with laryngeal trauma". After 1945 in collaboration with Prof. W.F.Undrits he summarized the experience of ENT Clinics of Leningrad front during the Second World War. The obtained results were presented as the monographs "Traumas and gunshot Injuries" and «Atlas of gunshot injures of ENT Organs».

Marius Stefanovich Plouzhnikov (Pic.12) was a pupil of Prof.W.F.Undrits

Professor Marius Plouzhnikov was born in Saint Petersburg in the family of Doctors.

Graduated from I.P.Pavlov Medical University in Saint Petersburg in 1962 and since that time he served medicine and patients during all his life. He was Professor and Chief of ENT Department of I.P. Pavlov Medical University for 32 years. In 2008 he was elected Doctor Honoris Causa of the University for his enormous contribution for education of medical students, postgraduates, as well as for development of otorhinolaryngology and medicine at all.



Pic.12. Prof. M.S.Plouzhnikov

He was the Actual Member of Russian Academy of Natural Sciences, of Laser's Academy, of Medico-Technical Academy. He was the Honoured Member of Polish Academy of Science and

Corresponding Member of Deutsche Gesellschaft für Hals-Nasen-Ohren-Heilkunde, Kopf- und Hals-Chirurgie. Also he was elected Honoured Member of Belgian ENT Society. He was Chairman of ENT Scientific Society of USSR.

Since 1991 – the President of International Academy of Otorhinolaryngology-Head and Neck Surgery.

He was a talented teacher. More than 100 pupils worked all over the world. He was a Chief for 60 doctors who made their Ph.D dissertations under his supervision, he was the author of 450 scientific papers and 11 books written for doctors and medical students.

Prof. Plouzhnikov founded his own school in specialty. He worked out many special problems in medicine, new types of surgery. He was the pioneer of application of contact laser surgery, laser interstitial thermotherapy (LITT) in otorhinolaryngology. He was an excellent surgeon. He allotted much time to theoretical problems in medicine. He worked out the "auron" theory of hearing. He studied the influence of laser beam upon the processes in different tissues of human being.

He was Chief Editor of "Folia Otorhinolaryngologiae et Pathologiae Respiratotriae" for 13 years.

He was the founder of the International Conferences for Young Otorhinolaryngologists. He organized these Conferences for youngsters 24 times.

He was a talented writer. He published 3 books of stories in Russian and English Languages. He wrote very nice poems in English and Russian. He knew the literature, art, history perfectly. He was a brilliant speaker with good sense of humour.

Due to his perfect English he was a "bridge", which connected Western and Eastern specialists.

And finally I would like to write some words about the modern history of ENT Department of I.P.Pavlov Medical University. Nowadays all the colleagues of our Department united by clinical, educational and scientific traditions are making a huge job. All these traditions are carefully preserved and supported. As to our opinion there are no insignificant points in our beloved otorhinolaryngology. We are all the pupils and the followers of Professor Marius Plouzhnikov (Pic.13).

Pic.13.

Less than one year ago we performed the memorial plaque opening ceremony dedicated to the memory of Professor Marius Plouzhnikov (Pic.14). A lot of his friends and colleagues came to this ceremony to say good words about our teacher, to remember him and to support us. Scientific and educational conference was held on the next day after the memorial meeting.

ТОРЖЕСТВЕННОЕ ОТКРЫТИЕ МЕМОРИАЛЬНОЙ ДОСКИ

16-17 сентября в нашем университете проходили мемориальные мероприятия, посвященные памяти заведующего кафедрой оториноларингологии с клиникой профессора Мариуса Стефановича Плужникова.

16 сентября состоялось торжественное открытие мемориальной доски, установленной на здании, где находится кафедра, и где много лет работал Мариус Стефанович. На церемонию открытия съехались его близкие друзья и коллеги из разных стран, а также отоларингологи нашего города. Торжественный митинг открыл Президент университета проф. Н.А.Яицкий. Он рассказал о жизненном пути Мариуса Стефановича. Затем слово было предоставлено гостям. Первым выступил Почетный доктор нашего университета, Генеральный секретарь Международной Академии Оториноларингологии-Хирургии Головы и Шеи профессор Берт Шмельцер (Антверпен). Также выступили профессора Г. А. Таварткиладзе (Москва), Г. З. Пискунов (Москва), А. Д .Ноздрачев (СПб), Д.И.Заболотный (Киев), Г. А. Фейгин (Бишкек), Я. А. Накатис (СПб), С. В. Рязанцев(СПб), М. И. Говорун (СПб), Э. А. Цветков (СПб), Ю. С. Астахов (СПб). На церемонии выступила Председатель Правления Всемирного клуба петербуржцев В. Т. Орлова. В своем выступлении заведующий кафедрой оториноларингологии с клиникой профессор С. А. Карпищенко отметил, что сотрудники кафедры и клиники оториноларингологии помнят, чтут Мариуса Стефановича и продолжают его традиции. За год, прошедший без Мариуса Стефановича, кафедра продолжила свое развитие, появились новые перспективы. Он публично поблагодарил всех сотрудников кафедры и клиники оториноларингологии за самоотверженный и добросовестный труд.

Затем участники мероприятия на автобусах отправились в Комарово на кладбище. А во второй половине дня в Церкви Державной Иконы Божьей матери была проведена панихида, а затем состоялся вечер памяти М. С. Плужникова. Вечер начался с концерта, данного профессором - отоларингологом В. Ананяном (скрипка) и пианисткой М. Геворкян. Профессор В. Ананян специально прилетел из США, чтобы почтить память своего друга и сыграть любимые произведения Мариуса Стефановича. До позднего вечера присутствующие вспоминали Мариуса Стефановича, свои встречи с ним, смотрели старые фотографии.

17 сентября в аудитории № 7 состоялась научная конференция, посвященная памяти профессора М. С. Плужникова. На конференции присутствовали сотрудники университета, оториноларингологи практически из всех медицинских учреждений города, гости из различных городов России, Белоруссии, Украины, Киргизии.

Конференцию открыл Ректор университета профессор М. Д. Дидур. Он вручил диплом Почетного доктора СПбГМУ им. акад. И.П.Павлова профессору Э. Штейнбаху (Тюбинген, Германия) за выдающийся вклад в постдипломное образование отоларингологов Санкт-Петербурга и России.

Затем участникам конференции были представлены доклады, сделанные выдающимися специалистами - оториноларингологами Тюбингена, Антверпена, Санкт-Петербурга, Москвы, Бишкека.

Большой, информативный доклад, посвященный личному опыту лечения холестеатом, был представлен профессором Э. Штейнбахом. Профессор Б. Шмельцер подготовил лекцию о ринохирургии, ее сложностях и противопоказаниях. Профессор Г. А. Таварткиладзе сделал обзорный доклад по современным подходам раннего обнаружения и реабилитации нарушения слуха. Профессор Г. А. Фейгин поделился своим уникальным многолетним опытом по органосохраняющей и реконструктивной хирургии гортани. Профессор Г.З. Пискунов представил исторический экскурс в историю российской ринологии, осветил проблемы ринологического общества России. Он рассказал о большом вкладе, который внес профессор М.С.Плужников в создание этого общества в 90-е годы прошлого столетия. Уникальный материал по современной концепции врожденного иммунитета и ее преломлению в морфо-функциональной организации MALT системы верхних дыхательных путей представила профессор В. П. Быкова. Профессор Э. А. Цветков посвятил свою лекцию современному состоянию проблемы папилломатоза гортани. Доклад профессора Ю. С. Астахова осветил некоторые офтальмологические и оториноларингологические аспекты дакриоцисториностомии.

В заключение можно отметить, что конференция внесла большой вклад в образование молодых врачей и уже состоявшихся специалистов. Коллектив кафедры и клиники оториноларингологии благодарит всех участников мемориальных мероприятий и конференции, посвященных памяти профессора Мариуса Стефановича Плужникова.

Сотрудники кафедры оториноларингологии с клиникой

Pic.14.

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2. **История оториноларингологии в России (до 1917 года) и первыекафедры оториноларингологии. М.С.Плужниковю "Folia Otorhinolaryngologiae et Pathologiae Respiratotriae", Vol. 7, № 1-2, P.61-70.**

COCHLEAR IMPLANTATION IN PATIENT WITH MONDINI MALFORMATION

Oleg Borysenko, Ilona Sribnyak
Otolaryngology Institute (Kiev, Ukraine)

Introduction

20 % of children with sensorineural hearing loss have had associated radiological anomalies of the temporal bone. These anomalies are associated with wide range of hearing acuity, different levels of progression of hearing loss and presence or absence of related non-otological manifestations. Surgery may complicated by presence of unusual facial nerve (FN) anatomy or cerebrospinal/perilymph leak (CSF) or both. Cochlear anomaly initially precluded implantation because of surgical concerns about cochleostomy technique, electrode placement, it's stability within malformed cochlea, risk of post operative meningitis and potential misplacement of the electrode into internal ear canal.

Materials and Methods

We observed three patients with cochleovestibular anomalies. Each patient was underwent high-resolution CT scans and MRI to check a cochlea fluid and nerves in the internal ear canal. Two of them had bilateral cochleovestibular aplasia (Michel's aplasia) (fig. 1, 2).

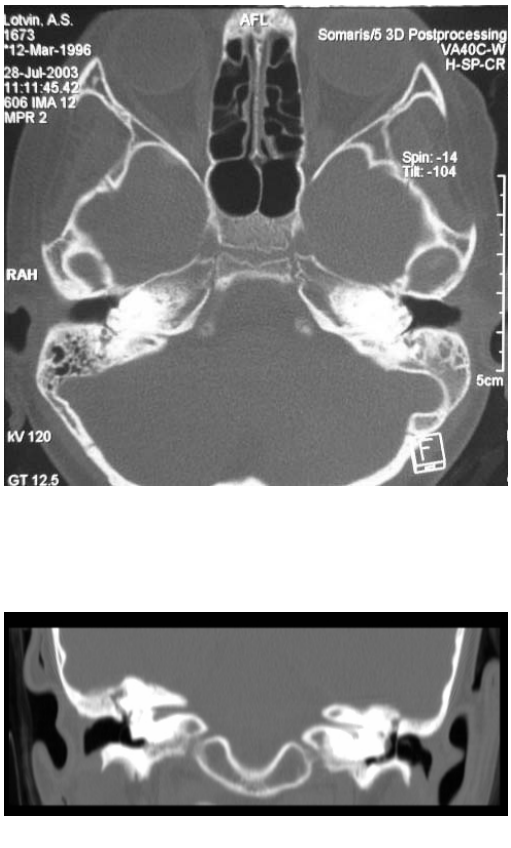

Fig. 1. CT scans 8 years old girl with bilateral inner ear aplasia.

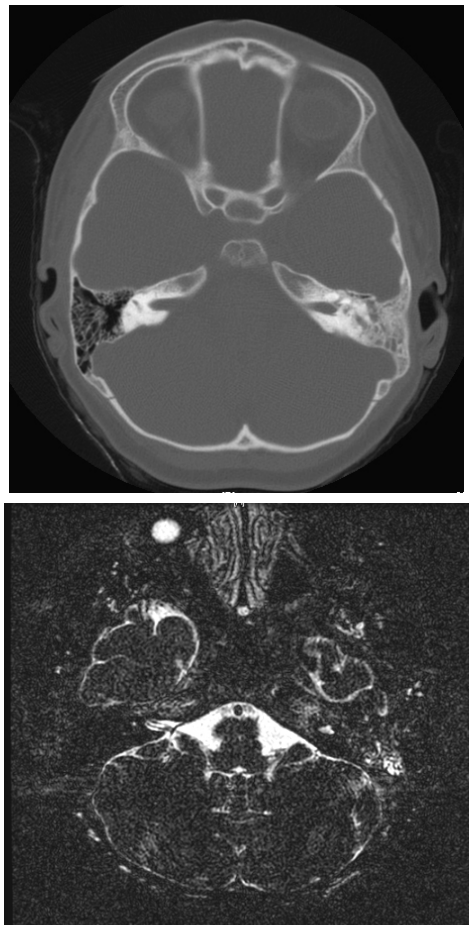

Fig. 2 – CT scans (a) and MRI (b) 5 years old girl with bilateral inner ear aplasia

In on 19-years old patient a right-side Michel's aplasia and left-side Mondini malformation with semicircular canals aplasia was found (fig. 3, 4). That patient underwent

Nucleus®24 ContourTM with SoftipTM CI24R was implanted in the left cochlear. Perilymph leak complicated surgery just after cochleostomy.

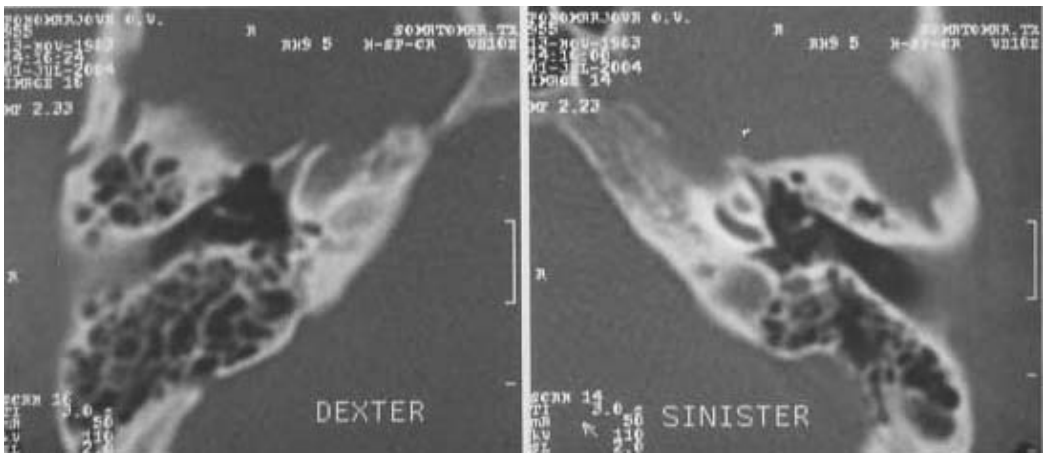

Fig. 3 – CT scans 19 years old patient with right-side inner ear aplasia (a) and left-side labyrinth absence & anatomical structure of cochlea (b).

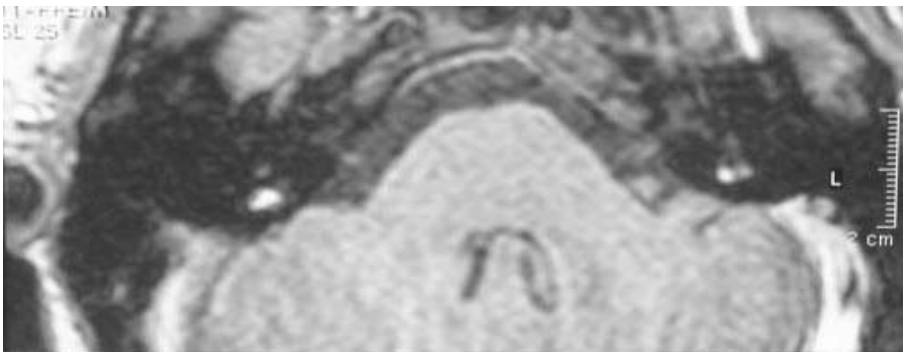

Fig. 4 – MRI 19 years old patient – right-side cochlea liquid absence.

Results

First fitting was made in 4 weeks after cochlear implantation (CI). Number of active electrodes are 22. Patient use her implant daily. She performs very well on speech perception testing. The only problem in following fittings was a very fast hearing adaptation development.

Discussion

With improved radiological diagnostic accuracy, many programs realized retrospectively that children with subtle anomalies had been successfully implanted previously. More important in profoundly deaf children/adults with malformed cochlea to determine a sufficient cochlear lumen for electrode placement and to rule out VIIIth cranial nerve aplasia or hypoplasia. MRI should be maid especially in patients with common cavity abnormality. If appropriate, electrophysiologic tests, such as promontory auditory brainstem response, can give additional information on the neural pathway. Although the surgery is considered feasible, cochlear implantation may be more difficult in children with malformed ears as a result of the abnormal temporal bone anatomy, the possibility of an abberant FN course and the occurrence of the CSF gusher.

CI depends on the presence of spiral ganglion cells and cochlear nerve fibers. A more optimal electrode position can be achieved by performing perioperative NRT.

Some studies have shown that in patients with severe malformations, postoperative speech perception results are highly variable and less certain (Woolley et al., 1998; Mylanus et al., 2004). Most studies state that all children are using their implant, benefit from it, and

perform better than their hearing aids. Perhaps one of the most interesting studies in this regards is the case-control study by Eisenman et al. (2001). In their study, at 24 months after CI, there were no significant differencies in performance on standard measures of speech perception between children with malformed and normal cochlea, although the former group developed at a slow rate.

Conclusion

Presence of anomalous cochleovestibular anatomy should attract a special surgeon's attention as a candidacy for cochlear implantation. Special attention should be paid to the occurrence of intraoperative FN anomalies and CSF leaks through the cochleostomy. In patients with Mondini anomaly it is important to accurately assess the extent of inner ear abnormality and to evaluate the full extent of difficulties of the operation in order to minimize the risk of CSF leakage and meningitis.

It is possible to attain a good functional results in follow-up due to protracted and careful rehabilitation.

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TRANSORAL LASER MANAGEMENT OF LARYNGEAL PATHOLOGY

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CO_2 laser is the most suitable laser for microsurgery of supraglottic and glottic lesions. A fibre-transmissible diode or KTP laser is necessary for subglottic and tracheal lesions. The surgery is precise, and nearly bloodless. The deep thermal damage is minimal. There is very little postoperative oedema.

A range of diseases can be tackled, including malignancy. Pre-requisites are a sound knowledge of laryngeal structures, an adequate access to the lesion and surrounding normal tissue, and a team conversant with laser technology. The anaesthetic tube restricts the access, and poses a real fire hazard. An anaesthetist familiar with tubeless anaesthetic technique is a valuable asset. A range of instrumentation and efficient dedicated plume remover are necessary. Postoperative ITU care is rarely required.

Voice surgery with laser is precise and helps restoration of voice. With sophistication of acublade, it is possible to minimise the thermal damage to the underlying vocal ligament. Vocal nodules, cysts, polypi and Reinke's oedema can be tackled with precision.

Recurrent respiratory papillomatosis requires repeat procedures, since the papilloma virus resides within the respiratory epithelium where it replicates, forming new lesions.

Laryngeal webs and stenosis pose a challenge and may require staged procedures. Stenting may be necessary in some cases to prevent recurrence.

In bilateral vocal fold paralysis, the airway can be improved adequately by undertaking arytenoidectomy, partial cordectomy or both.

Laryngeal malignancy calls for a judicial approach. Laser surgery for T1a, T1b and T2 carcinoma is well established. For advanced lesions of T3 and T4, considerable expertise is necessary to achieve oncological clearance. For obstructing malignant lesions, tracheostomy can be avoided by debulking the tissue prior to definitive surgery. Caution is necessary since inadequate removal may lead to fatal outcome.

Subglottic stenosis can be challenging and tends to recur. Placement of Montgomery tube may be necessary.

Tracheal lesions also are challenging, particularly if they are concentric. Recurrence is not uncommon and requires repetitive procedures.

Laser is thus an elegant tool, capable of tackling a variety of laryngeal and tracheal lesions transorally, with equitable results. Its use is not without dangers, and a thorough understanding of biophysics, a period of peer supervision and an attendance at a course facilitates optimum result with preservation of vocal function in most cases.

EXPERIENCE OF TREATING SNORE AND OBSTRUCTIVE SLEEP APNEA SYNDROME

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Snore and obstructive sleep apnea syndrome (OSAS) are important social and medical problems. This syndrome is rather common among population. Thus, according to the data reported by the Wisconsin Sleep Cohort Study (2003), this pathology occurs in 10-12 % of the total population, while in the middle age group (30-60 years) it affects up to 24 % of people. Ovchinnikov Yu.M. et al. (1995) affirm that more than 60 % of males and 40 % of females over 60 suffer from snore and apnea in sleep. OSAS is observed in 25-30 % of snoring people, the ratio of men and women being 8:1.

Medical practice explains the term "snore", or "ronchopathy", as an acoustic phenomenon, caused by the vibrating soft palate and uvula when an air stream passes along the respiratory tract.

OSAS means the appearance of respiratory arrest episodes in sleep with the rate of more than 10 per hour and longer than 10 seconds each, in combination with respiratory insufficiency and disruption of many functions of the organism, as it is demonstrated by sleepiness at daytime, morning headaches, and arterial hypertension.

From the medical viewpoint, patients with snore and sleep apnea (SA) develop a decreased muscle tone with a resultant narrowing of the lumen in the upper respiratory tract followed by its complete obstruction. The latter, in its turn, causes discontinuation of pulmonary ventilation. Manifested hypoxaemia and hypercapnia lead to compensatory activation of the sympathoadrenal system, cardiac arrhythmia, and the appearance of some tension in the respiratory muscles for restoring patency of the airways. As a result, the patient wakes up, or his sleep turns into the superficial phase with the restoration of ventilation. The blood having been reoxygenated and free-radical metabolites formed, the patient falls asleep again with repeated muscular hypotonia. Here this vicious circle closes up.

In social aspects, snore and SA have a lot of significant negative features too. These phenomena create considerable inconvenience both for the patient himself and for his relatives and friends, who are near the snoring person. As a result, it becomes necessary to isolate the patient from his people at nighttime during sleep. The consequence is that this pathological state of the patient can cause family problems, an inferiority complex with a resultant family breakup (Nopton P.G. et al., 1983). Snore and OSAS can produce economic losses, caused by work decrement, sleepiness at the active time of day, memory problems (Decary A. et al., 2000; Ohayon M.M. et al., 2000). Therefore any work at height, which necessitates a high level of attention, is contraindicated for such patients.

The clinical manifestations of snore and SA in patients are varied. The pathological process here involves the cardiovascular, respiratory, nervous, endocrine and genital systems of the organism. In the cardiovascular system, the patient may develop arterial hypertension, circulatory insufficiency, coronary disease, heart arrhythmia, and stroke.

A disturbance of the respiratory system manifests itself through SA proper and snore with a resultant decrease of blood saturation with oxygen. Such a disturbance of aerodynamics in the upper respiratory tract develops poor gas exchange in the lungs (Cvebtnic V. et al, 1981), thereby entailing a disturbance of tissue metabolism (Lin Y.G. et al., 1983). Oxygen transportation disturbances result in activation of free radical oxidation processes (Meerson F.Z., Pshennikova M.G., 1989). Exerting their effect on erythrocyte membrane phospholipids, free radical oxidation products disrupt their transportation function and decrease the content of oxyhaemoglobin in blood (Farney R. et al., 1986). A lower level

of blood saturation with oxygen contributes to a transfer of sleep into a less deep stage with a higher tone of the upper respiratory tract dilators, and with a resultant widening of the airway lumen.

At daytime, such patients may develop symptoms of their nervous system inhibition: the patients do not notice any refreshing effect of night sleep and demonstrate profound daytime sleepiness (Hublin C. et al., 1996; Kinnari K. et al., 2000). Such things may be dangerous for those people whose labour activity involves driving mechanisms (cars, trucks) or work at height. According to the data, presented by Olsen L. G. (1995) and Bearpark M. et al. (1998), such patients complain of tiredness, jadedness after night sleep, decrease of mental and physical capacity for work, memory problems, and personality changes.

The above patients often suffer from hyperhidrosis.

SA is often accompanied by night-time enuresis and nocturia. This pathology can be often combined with changes in the kidneys and results in prostatitis and erectile dysfunction owing to an affected production of testosterone in 20-25 % of cases in men (Zilber A.P., 1994).

Diagnosis of SA is based on a complex assessment of the clinical picture of the disease (complaints of daytime sleepiness, inability to fulfill social and occupational duties) and an objective examination of the patient (his excess body weight combined with arterial hypertension, the circumference of the neck, and the size of the waist) (Mc. Nawara S.G. et al., 1993).

Patients with SA are indicated consultation and treatment by ENT doctors, who can reveal an abnormal jaw structure, oedema of the nasal mucosa, endonasal polyps, hypertrophy of the nasal turbinates, tonsils, soft palate, uvula and tongue root, all of them being able to develop apnoea.

There are functional techniques for diagnosing SA, polysomnography (PSG) being the most principal of them. PSG simultaneously registers sleep characteristics, the character of respiration, parameters of the heart activity and blood saturation with oxygen. This technique is carried out at sleep laboratories the whole night long. At the same time, electroencephalography, chin and tibial electromyography, oculography of both eyes, electrocardiography and capnometry are performed, thoracic and abdominal respiratory forces, snore, oxygen saturation in blood and body positions are examined.

The purposes of PSG are as follows: to diagnose SA, reveal the degree of its severity and assess the efficacy of the treatment provided (conservative or surgical).

The treatment of SA and snore is a difficult and multicomponent problem. A complex of medical measures consists of quite a number of multi-type procedures.

First of all, this is a modification of the mode of life. It includes: a lower body weight, giving up of tobacco smoking, limited drinking of liquors, sleeping with lateral positions of the body, sleep hygiene, exclusion of taking any sedatives before going to bed, training of the patient.

In order to perform non-invasive ventilation of the lungs, special devices, which create a positive pressure in the upper respiratory tract, are used. These are the so-called continuous positive aviary pressure (CPAP) therapy devices. They are equipped with a unit for producing air, which is directed into the patient's airways. Such an excess pressure prevents collapsing of the upper respiratory tract during sleep. CPAT therapy eliminates all basic disturbances, typical for SA: repeated obstructions of the upper respiratory tract, sleep fragmentation, daytime sleepiness. The performance of this therapeutic technique enables the patient to get rid of hypoxia, decrease activation of his sympathetic nervous system and lower average daily systolic pressure. Also, the process of CPAT therapy makes it possible to open collaborated alveoli, improve respiratory mechanics and decrease loading on the respiratory muscles. CPAT therapy eventually increases the patient's capacity for work and attention focusing, as well as reduces risks of road and occupational injuries.

The technique has the following shortcomings: many patients cannot get accustomed to sleeping with a mask, an operating compressor, the presence of sensors on their body for taking information about the patient's state. In some people, the passage of air under an excess pressure through their upper respiratory tract causes some oedema of the nasal mucosa and dryness in the pharynx with resultant attacks of sneezing and cold. Such treatment was followed by diagnosis of different kinds of sinusitis, eustachitis and rhinitis in some patients (Brander O. E. et al., 1999; Lojandes J. et al., 1999).

In order to reduce symptoms of SA and snore, Minin Yu.V. et al. (2004, 2005) suggested electrostimulation of the soft palate, therapy with extremely high frequencies, and kinesitherapy. But these have little effect as independent therapeutic techniques.

Some authors suggest placing implants into the tissues of the soft palate, with its resultant cicatrization around the implants and a better quality of sleep.

But uvulopalatoplasty is the most effective surgical method of treatment. In recent years, this operation has been performed with help of high-energy surgical lasers. Under our observation there are 25 people, who underwent this operation with help of Lasermed semiconductive laser. All the cases gave us excellent or good effects.

Nevertheless, some authors (Ovchinnikov Yu.M., Fishkin D.V., 2000; Choucad C.H. et al., 1990; Verse T., 2000) notice the appearance of open rhinolalia as one of complications of the above method. In order to prevent this complication and simultaneously achieve a positive result of the treatment, we suggested a technique for assessing the volume of the removed tissues of the soft palate and uvula with help of high-speed spot-film seriography of the upper respiratory tract during the act of swallowing and for measuring a distance between the upper point of the soft palate and the lower point of the Passavant's pad.

All the operated patients underwent such an examination, thereby ensuring absence of any open rhinolalia in them during the postoperative period.

Besides, all the patients were subjected to uvulopalatoplasty under local infiltration anaesthesia with certain peculiarities. Thus, an anesthetic was injected along the border of the hard palate changing into the soft one, rather than near the uvula root or soft palatine structures. Such a modification of local infiltration anaesthesia made it possible to avoid any oedema of the tissues, removed by the laser, and accelerate the operative procedure.

Besides, all 25 patients with snore and SA, parallel to laser uvulopalatoplasy, simultaneously underwent surgical removal of those pathological structures from the nose and pharynx, which facilitated the development of morbid symptoms in these cases.

Thus, 12 people were subjected to septoplasty, and 13 to tonsillectomy. The performance of such operations made it possible to avoid repeated operative interventions on these people and considerably shorten their postoperative period.

Thus, the performance of laser uvulopalatoplasty (with consideration of the suggested peculiarities in the examination and treatment) on patients with snore and SA made it possible to significantly increase the efficacy of the treatment, avoid possible complications, and shorten the terms of the treatment.

MODERN ASPECTS OF APPLICATION OF NEW PHYSICAL METHODS IN MANAGEMENT OF VEGETATIVE NERVOUS SYSTEM AT TREATMENT OF PATIENTS WITH SENSONEURAL HEARING LOSS

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Despite of the certain successes reached in Otorhinolaryngology, the problem of sensoneural hearing loss (SHL) now gets the greatest urgency, because of increase in number of persons with defects of the hearing, caused substantially, due to the given pathology.

It is necessary to note, that the vegetative nervous system (BHC) supervises the general vascular tone of all organism, as a whole, and an internal ear, in particular, and infringements of a capillary tone, haemodynamics and microhaemocirculation of cochlea play the basic role in pathogenesis of sensoneural hearing loss.

For restoration of acoustical function we offer a technique in which under influence of the focused rotating spatially distributed field of low-frequency impulses of a current dynamic correction of sympathetic nervous system in a projection of stellate ganglion and electrostimulation of an acoustical nerve in a projection of mastoid is carried out.

After comparison of results of treatment of three groups of patients it is revealed, that, on set of changes of the parameters describing acoustical function and a condition of vegetative nervous system, hardware dynamic correction of activity of sympathetic nervous system by connection influence on processes mastoideus and cervical ganglion, is noninvasive method, that provides effective restoration of function of vegetative nervous system and sensoneural structures of an acoustic analyzer.

DIAGNOSTIC METHODS AND EMERGENCY CARE IN TREATMENT OF LARYNGOTRACHEAL BENIGN STENOSIS.

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Diagnostics and treatment of complex associated benign stenosis of larynx and cervical trachea are still not completely systematized. Tracheostomy is normally used in case of decompensation stenosis. The share of palliative operations remains considerably highly.

Our work was aimed at improvement of diagnostics methods and development of first aid schemes and the most rational treatment.

Methods: 209 patients (32 children – 15.3%, 177adults – 84.7%) have been reviewed in the course of 3 years (2006 – 2009). Prolonged ventilatory support through intubation tube or tracheostomy tube was the main cause of the stenosis in most cases – 99%; other causes – 1%. Early treatment – surgical (21.3%), recanalization (47%), endoprosthesis (6%), tracheostomy (13.9%) and conservative therapy (11.8%) was inefficient in all cases. 55% were admitted with threat of asphyxia, 45% - with tracheostomy.

Treatment of choice: recanalization with nasotracheal intubation and short preoperative preparation, recanalization with endoprosthesis, recanalization with electrosurgical or laser d-bridement of scar tissues.

Inflammatory complications diagnosed in all cases and required combined therapy. Chondroperichondritis revealed in 36% of cases, oesophagotracheostomy – in 4%, oesophagus obstruction and stenosis – 7%.

Combined tracheo-laryngeal stenosis – 59%, tracheal stenosis – 41%.

Results: 35% - mini-invasive surgery (in local stenosis cases with keeping intaction of laryngeal and tracheal cartilages), 65% - different single-stage resections of stenotic segments with circular or figured formation anastomosis.Inefficiency of anastomosis – 2 patients, stenosis of anastomosis – 3 patients. They were re-operated or recanalization with endoprosthesis, tracheostomy was applied. No mortalities.

Conclusions: 1. Fiberoptic endoscopy is the main diagnostics method, which enables to specify the localization and the nature of the lesion, to carry out different treatment procedures and to control treatment results.

2. Mini-invasive method is the treatment of choice in local and circumscribed laryngo-tracheal stenosis.

3. Structural and extended lesions with fistula complications should be radically operated with the single-stage resection of stenotic region and with simultaneous restoration of resected organs.

RESULTS OF REVISION TYMPANOPLASTY FOR CHRONIC NON-CHOLESTEATOMATOUS OTITIS MEDIA

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Objective: To evaluate the success rate for revision tympanoplasty using different graft materials, to compare results of primary and re-tympanoplasty using the same technique and to analyse the effect of potential influencing factors on closure of tympanic membrane (TM) and hearing outcome.

Methods: Study included all patients, who underwent tympanoplasty (n-617) and re-tympanoplasty (n- 94) for chronic otitis media without cholesteatoma in the period between September 1998 and September 2007. The data on preoperative disease, perforation size, localization, middle ear status, surgical approach, graft material, adjunctive procedures, pre- and postoperative morphological and functional results was analyzed.

Results: Successful closure of the TM perforation in the primary tympanoplasty group had 93, 6 %, in the retympanoplasty - 90, 2 % of the patients. Graft take rate and hearing results did not depend on graft material. Structural changes were found more frequently in the re-tympanoplasty group (63, 4% comparing to 29,5 % of primary cases). Ossiculoplasty was performed more often in revision cases (24, 4% comparing to 11,4 % of primary cases). Successful hearing outcome was achieved for 69, 5 % of retympanoplasty and for 81, 1 % of primary cases ($p<0,01$).

Conclusions: There is no evidence of increased risk of graft failure in re-tympanoplasty cases when compared to primary tympanoplasty operations. Hearing results depend on structural changes in the middle ear (ossicular abnormalities and tympanoscerosis) which in revision cases are found more often. No differences were found between fascia, perichondrum or cartilage/ perichondrium grafts in terms of graft healing and hearing results.

APPLICATION OF CO_2 LASER IN MIDDLE EAR SURGERY.

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Objective: To estimate role of CO_2 laser assistance in timpanostomy(in patients with chronic otitis media with effusion), stapdectomy (in patients with otosclerosis).

Study design: Controlled retrospective consecutive case series

Methods: A CO_2 laser attached to an operating microscope with a microscope laser micromanipulator Acuspot 712 (Lumenis, USA) was used to perform tympanostomies, to penetrate footplate of stape. The average diameter of tympanostomy was 1.6 mm; on average, 12 W was applied for 0.18 seconds (n = 4). The diameters of footplate perforations was 0.5 mm (n=10), 0.7 mm (n=6); on average, 23 W was applied for 0.05 seconds.

Results: Laser-assisted tympanostomy was performed on 4 ears (patient age range: 18 – 64 y) for the diagnosis of chronic otitis media with effusion. Average follow-up time was 32 days. At the time of the follow-up examination all patients had no evidence of fluid and required no further intervention. Laser-assisted stapedectomy was performed on 16 patients (patient age range: 20 – 57 y) with otosclerosis: in 10 cases was applied 0.5 mm perforation (K-Piston 0.4 mm was used) – Group A and in 6 cases was applied 0.7 mm perforation (K-Piston 0.6 mm was used) – Group B. In patients from group B hearing improvement in early postoperative period was much better than in group A. (Group A – average air-bone interval = 17.4 dB; Group B – average air bone interval = 8.2 dB – at an estimation on 12-14 day after operation). Nevertheless at an estimation on 40-45 day after operation distinctions become less considerable.

Conclusions: Laser-assisted tympanostomy appears to be an effective treatment for chronic otitis media with effusion. Laser-assisted stapdectomy appears to be a convinient way, which made such operations more safe and effective.

Key words: laser *myringotomy; otitis media with effusion; otosclerosis; laser-assisted stapedectomy*

COMPARATIVE CHARACTERISTICS OF DIFFERENT METHODS FOR STEADY-STATE RESPONSE REGISTRATION.

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The apparent positive effect of early detection and rehabilitation of hearing loss is well known. The limited application of behavioral tests (pure tone audiometry, speech audiometry) in children of the first years of life dictates the necessity of application of objective methods of diagnosis, which do not require the active participation of patients. Moreover, the fact of identification of hearing loss alone is not sufficient for development of individual rehabilitation programs. Objective methods such as auditory evoked response registration are methods of choice for this age group. The auditory brainstem response registration (ABR) to acoustic clicks is the most studied and easiest method to be applied to clinical conditions. However, this method does not provide full frequency specific information about the state of hearing; it reflects neither the degree nor the configuration of the patient's hearing loss.

To obtain these data we applied different methods of auditory steady state response recording (ASSR) to an amplitude and frequency modulated tone, using the algorithm based on phase coherence determination between amplitude modulation and the response of the auditory pathway structures as well as the algorithm using information on amplitude spectrum of the response. The advantages and disadvantages were estimated while testing normal hearing subjects and patients with different types of sensorineural hearing loss in different age groups. Efficiency criteria included the following parameters: the average time necessary for response recording, the degree of correlation between frequency specific electrophysiological thresholds and the ABR visual detection thresholds, as well as between them and behavioral thresholds. In the course of our research the possibilities of the combined ABR an ASSR application based on phase coherence and the response amplitude spectrum algorithms were also assessed. These methods were successfully used for identification of frequency specificity of the hearing loss in children at the age of 5 months and older. The data necessary for gain parameters setting during hearing aid fitting in children with moderate-to-profound hearing loss were also obtained. In some cases, when the ABR peaks visual detection thresholds at maximal for ABR-equipment intensity levels (103 dB HL) were absent the ASSR thresholds were investigated within the intensities range of 100-120 dB HL. It was shown that this approach can be successfully used for the identification of ear for further cochlear implantation and determination of gain parameters of hearing aids in the preoperative period.

THE APPLICATION OF THE COMPUTER DENSITOMETRY IN NASAL CEREBROSPINAL FLUID LEAK DIAGNOSTIC.

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The diagnostic of the cerebrospinal fluid leakage is a problem of modern medicine. There is no standard diagnostic algorithm of it. All of the diagnostic methods have it's own positive and negative sides.

The modern classification of CSF leak divides it to the traumatical and spontaneous nasal liquorhoea. The reasons of spontaneous one are still unknown.

The **goal** of this study was to find the correlation between spontaneous CSF leak and the osteoporosis.

We use computer densitometry to check the bone mineralization. There were 15 patients with spontaneous CSF leak under observe. T-index of the patients with spontaneous liquorhoea (the first group, n=15) was compared with T-index of the patients with posttraumatical liquorhoea (the second group, n=12, normal bone mineralization). The middle meaning of the T-index if the first group was – 0,75; –0,86 ÷ –0,65 (low Ca mineralization). In the second group it was – 1,14; –1,14÷–0,96 (normal Ca mineralization). In the first group of patients the decrease of Calcium mineralization is the only pathological symptom except spontaneous nasal liquarhoea.

Conclusion. The osteoporosis of the cranium base may be one of the reasons of spontaneous nasal CSF leakage. It has to be considering in the spontaneous CSF leak diagnostic. The computer densitometry is the common non-invasive method, which can apply as a part of complex diagnostic algorhythm. The results have to be noticed before operation treatment had planned.

ENDOSCOPIC SURGERY IN TREATMENT OF RECURRENCE EPISTAXIS.

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Introduction:

In cases of trauma patient could produce severe recurrence epistaxis. Such hemorrhage originates from posterior parts of the nose, supplied by sphenopalatine artery, or from damaged anterior and posterior ethmoid artery, if the bleeding is localized upper the middle nasal turbinate. If nasal packing and noninvasive methods of treatment couldn't stop epistaxis the surgery is necessary.

Anastomoses between branches of external and internal carotid systems from both sides can lead to failure of external carotid artery ligation. Intervention on the end arteries with little collateral flow is more effective. Endoscopic endonasal ligation or coagulation of sphenopalatine and ethmoid arteries becomes difficult due to insufficient visualization in the moment of bleeding. Endovascular embolization of external carotid artery is expensive and has significant risk of severe complications as face tissue necrosis and ischemic stroke. Embolization of ethmoid arteries isn't used due to high risk of blindness.

The method of our choice is endoscopic transantral ligation of maxillary artery and endoscopic anterior and posterior ethmoid artery ligation by Lynch-Howard approach.

The **aim** of our research is to evaluate opportunities of endoscopic ligation of maxillary artery in the pterygopalatine fossa and endoscopic ligation of ethmoid arteries by Lynch-Howard incision, to study anatomical landmarks, to estimate vessel sizes and variability of location.

Materials and methods: Dissection study on 25 cadavers was made in pathologic department of municipal hospital. We used 4mm 0° Karl Storz and 4mm 25° Karl Storz endocopes, surgery instruments, halogenous light source Rudolf HL 2500; a camera Rudolf C2011, video screen Samsung. Procedures were documented using DVD-recorder JVC, photo camera Canon.

Results: Transantral endoscopic ligation of maxillary artery clarified that the mean diameter of the artery was 5-6 mm. We could identify such distal branches as infraorbital artery, descending palatine artery and shenopalatine artery, which were also ligated. The vessels sizes, shape, configuration and location significantly varied.

Endoscopic ligation of ethmoid arteries showed that anterior ethmoid foramina was usually localized near frontoethmoidal sutura line, about 18- 20 mm posterior to the medial margin of the orbit. Posterior ethmoid artery was determined in about 30% of dissections, the mean distance from anterior ethmoid artery was 7-8 mm.

Conclusion: Our investigation demonstrated that endoscopic transantral ligation of maxillary artery and endoscopic ligation of ethmoid arteries by Lynch-Howard approach provided good visualization of the vessels and could be simply performed. Effectiveness of the methods in treatment of patients with recurrent severe epistaxis should be evaluated after further clinical application.

EXAMINATION OF THE OPENING OF THE NASOLACRIMAL DUCT IN PATIENS WITH CHRONIC DISEASES OF PARANASAL SINUSES AND AFTER MAXILLARY SINUSES PUNCTURE

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The chronic diseases of mucous membrane of nose and paranasal sinuses result to decline of mucociliary clearance and development of inflammatory process in the area of the opening of nasolacrimal duct with the possible formation of its obliteration (Ergin NT, Akman A 1999)

The types of the opening of nasolacrimal duct were classified by L. N. Sverzhevskyi (1910), were sorted out four types.

The most preferable variant for a patient is the first type of structure (when a bone channel is closed together with a membrane at one level with each other) thus in case of edema of mucous membrane a compression of the opening of the nasolacrimal duct eliminates.

The purpose of work: 1) to determine different types of the opening of the nasolacrimal duct. 2) to estimate the condition of the opening of nasolacrimal duct after maxillary sinuse puncture.

Materials and methods: Nasal endoscope (caliber 4mm.) with the 0 and 30 degrees was used. 28 patients were examined. They were subdivided into two groups. First group (20 patients) had chronic diseases of paranasal sinuses, second (8 patients) was a control group without chronic diseases of paranasal sinuses.

Results: Type I of opening of the nasolacrimal duct was determined in 5 of 28 patients (18%), type II in 10 of 28 (36%), type III in 11 of 28 (39%), type IV in 2 of 28 (7%). The puncture of maxilary sinuses was performed to 14 patients. In 5 cases from 14 (36%) we determined that a place of punction was straight close to the area of the opening of nasolacrimal duct.

Conclusions: Combination of puncture of the maxillary sinuses with unfavorable variants of opening of the nasolacrimal duct and chronic catarrhal inflammation of mucous membrane is the possible factor of forming stenosis and obliteration of nasolacrimal duct in patients with chronic diseases of paranasal sinuses.

ABNORMAL INTRAPETROUS CAROTID ARTERY AS A CAUSE OF PROGRESSIVE SENSORINEURAL HEARING LOSS

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Abnormal intrapetrous carotid artery anatomical position is so rare and occurs in 5 % in the temporal bone abnormalities. In some cases due to the direct contact to ottic capsule it may a possible cause of pulsatile tinnitus and progressive hearing loss.

During last two years we observed 6 patients with abnormal intrapetrous carotid artery with hearing loss (sensorineural moderate hearing loss). In three cases patients complaints of decreasing of hearing function – in two cases we noted bilateral progressive hearing loss. No others objective causes of hearing loss were observed. Due to the spiral CT scan and MRI data we've found an abnormal intrapetrous carotid artery that was situated too close to the cochlea.

In all cases patients complained on pulsatile tinnitus, in two cases on dizziness and in one cases – fluctuated hearing loss.

One patient with progressive total sensorineural deafness submitted cochlear implantation.

SOME CHARACTERISTICS OF GRANULOMA COURSE IN OTOLARYNGOLOGY.

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Necrotizing respiratory /Wegener's/ granulomatosis is a rare form of a systematic /visceral/ angiitis characterized by inflammatory lesions of mean and small vessels with developing of necroticans granulomas of upper and lower airways. 90% patients are presented improvements, 75% of patients are brought into the complete remission and only 50% recedivations arise. When employing therapy during 5-8 years about 60-80% of patients will live. If there is no any treatment during 2 years only 20% of patient will live. Tuberculosis is a chronic infectious disease affected all organs especially respiratory organs.

The **main target** of researching is to promote a patient surveillance with the assumption of granulomas of ENT-organs.

Methods and materials: during the period of 2000 to 2009 eight patients were operated on granulomatous lesions of ENT-organs. Five of them were operated on Wegener's granulomatosis (4 women and a man) who were united in the first group and 3 patients were operated on tuberculous lesions of temporal bones (a woman and two children) who were united in the second group.

Biopsy of affected area was done in the first group and mastoidoanthrotonomy was done in the second group. Received material was put on histological study. Results: diagnosis of Wegener's granulomatosis was made of three patients from the first group during the primary inspection. In one case the diagnostic search took 1,5 months and histological verification was received after the forth biopsy. In the second group tuberculous afficient was diagnosed on the results of histological studies in two cases and in another case - clinically by a tuberculosis specialist. In the first group four patients were made a diagnosis in 7-10 days; cytostatic and steroid treatment is effective. In one case we had some difficulties with verification of diagnosis where treatment was not effected. In 6 months a patient died of haemorrhage from the carotid artery. In the second group antituberculous treatment was effected only for two patients who were made a diagnosis in 7-10 days. In one case we didn't receive a histological verification that's why treatment was made on the basis of clinical implications. Then the symptoms of meningitis and peritonitis were arisen. In three week after the first visit to a doctor a patient died.

LOCAL APPLICATION OF RECOMBINANT INTERFERON-ALPHA2 IN THE TREATMENT OF RECURRENT RESPIRATORY PAPILLOMATOSIS.

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Introduction

Recurrent respiratory papillomatosis (RRP) is the most common benign laryngeal neoplasm and is caused by infection with the human papilloma virus (HPV).

The tumor leads to hoarseness and airway obstruction due to frequent recurrences, rapid growth and anatomical narrowness of the lumen of the larynx and windpipe.

There is a theory according to which the development and recurrence of papillomavirus infection of any localization contributes to the regulation of the immune response it means the imbalance of Th1/Th2.

Such concept of RRP pathogenesis and the absence of specific treatment of the disease enable to point out the basic issues of the treatment: such as thorough, frequently repeated removal of papillomas, histological examination of the excised papillomas and adjuvant medical therapy to increase the time remission. The most commonly used are cytostatics and interferon-alpha2.

In general, according to different authors, the effectiveness of interferon therapy is from 20 to 71, 7%.

System use of interferon-alfa therapy has certain peculiarities. The course of treatment is long-term and continuous up to 6-12 months; it is administered parenterally. Long period administration to the patient of exogenous IFN in some cases causes formation of buffering antibodies. The abovementioned systemic use of interferon is rather complex. Our case is a localized pathological process. That is why local administration of interferon is preferred, for example, by inhalations, applications and submucous injections.

The aim of this study is to evaluate the clinical and immunological efficiency of local inhalation therapy with recombinant IFN alpha2 for patients with recurrent respiratory papillomatosis.

Materials and methods

81 patients with RRP in age from 16 to 69 years have been examined. There were 38 males and 43 females. Mostly, papillomas are localized in the proper vocal cords especially in the anterior portions (68.9%). The patients were divided into two groups. Group 1(47 patients) -they underwent inhalations therapy to prevent relapse in the early postoperative period (2-3 days after the surgery) Group 2 (34 patients) -they underwent inhalation therapy with interferon as monotherapy without surgical treatment. The greatest interest in terms of exploring the local effect of recombinant interferon is the group of patients who have received a course of the inhalations as monotherapy without prior surgical removal of papillomas

Clinical examination of the patients included: transnasal fibrolaringoskopy, histological and genetic study of surgical and biopsy samples. Immunologic examination included: levels of IFN-γ, TNF-α, GM-CSF, IL-2, IL-4, IL-5, IL-10, IL-12, IL-13 were measured in the laryngeal secretion by multiplex immunoassay analyzer using protein " Bio-Plex »(Bio-Rad, USA) for 5 times: before the treatment, after one day and five days after initiation of the therapy, after completion of inhalation, and 10 days after the treatment.

The study used recombinant interferon α2 Inhalations of 1 million units of the drug dissolved in 5 ml of saline solution were carried out once a day by compression inhaler. The total dose was 10-15 million units of the drug.

Results

Before treatment the study of cytokine secretion of the patients with recurrent laryngeal papillomatosis detected the imbalance of the local immune responses. In the laryngeal secretions there were high levels of cytokines detected, modulating the response to Th1-type (IFNγ and TNFα). A high level of IL-4 was revealed that is characterized by the development of the humoral response. The ambiguity of local immune reactions is confirmed by reduced or normal levels of IL-2 and IL-12, increase of which is to be expected with the development of antiviral immune response. Concentrations of IL-5 and IL-10 were close to zero. The difference between the levels of other cytokines in the control group is not statistically proven.

In the result of the study 14 (41%) patients achieved complete regression of papillomas and restored voice and respiratory function, 17 (50%) – showed a significant decrease in the volume of papillomas with a significant improvement in vocal function. After the treatment patients did not require surgical treatment. In 3 (9%) patients the dynamics there was no dynamics observed, they subsequently underwent surgeries.

In patients with complete regression of papillomas within a day after the treatment started there was a gradual increase in laryngeal secretions levels of IFNγ, IL-12, IL-2 compared with baseline values. Maximum levels of these cytokines have been achieved by the fifth day of the treatment.

In patients with partial regression tumor levels of IFNγ, IL-12, IL-2 a day declined to compare with the baseline values and during the entire course of treatment ranged within normal limits. When analyzing the dynamics of IL-4, IL-10 and IL-13 in both groups of patients one day after the start of the treatment it was revealed a gradual decrease in the levels of these cytokine to normal values typical for humoral immune response which also confirms the shift in local immune reactions in the result of IFNα effect on the cell-mediated immune response. In the group with partial regression of tumor 5 days after withdrawal of interferon levels of IL-4 and IL-13 tended to decrease.

In the analysis of baseline levels of cytokines in the laryngeal secretions of the patients with various success of monotherapy with interferon-α2, we observed that in patients with complete regression following treatment, we revealed higher baseline levels of TNFα, compared to the patients with partial regression of neoplasia. Patients with complete regression of papillomas day after the treatment started showed a significant decrease in the initially elevated levels of TNFα ($p = 0,045$) to normal values. In the future, the cytokine level was normal.

Analyzing the genetic findings, we were unable to make any correlation between the results of these studies and the clinical course of the disease and the immune system of the patients.

Conclusion

In this study we have shown the efficacy of monotherapy with local inhalation of recombinant interferon in patients with recurrent laryngeal papillomatosis.

The prognostic sign of local interferon therapy efficacy may be the initially higher values of TNFα in laryngeal secretions, and indicators of the effectiveness of treatment are raising IFNγ, IL-2 and IL-12. We suggest that the papillomas regress rapidly due to the interferon inhalation therapy which can be used in some cases that is conservative treatment instead of surgery. Reduction of the number of surgical interventions, administering course of inhalation therapy at the first sign of recurrence that will lead to good functional effect, and reduce the tumor size while reducing the amount of surgical intervention and the likelihood of postoperative complications (bleeding, scarring).

ESTIMATED RESULTS IN AUDIOLOGICAL SCREENING OF NEWBORN INFANTS.

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Nowadays the registration of the transient evoked otoacoustic emission as a screening method is most widely applied as early diagnostics of a hearing disorder in newborn children, which corresponds to the effectiveness of the criteria in terms of its safety, sensitivity, specificity, simplicity and usability.

There were examined 4732 children ranging in age from 3-4 days to 6 months at Tomsk maternity hospitals in the period between December 2007 and September 2008.

Three-stage hearing screening program was used. A first test was performed to three-four day of newborns life, then it was repeated at the age of 1-1.5 months and 3-6 months. The children were submitted to audiological evaluation, including audiological screening by registration of transient evoked otoacoustic emission and auditory brainstem responses. Endovideotoscopy, tympanometry, auditory brainstem response (ABR) and ASSR-test was made on request.

According to estimated results 92.5% newborns passed test successfully at the first step. Statistical analysis showed that conductive hearing abnormalities were in 0.25% newborns who failed with the initial audiological screening by registration of transient evoked otoacoustic emission. Transient changes took place in 4.7% newborn infants. We should underscore that such factor as a birth weight less than 3000 g but more than 2000 g should be introduced as a sign influences on the results of the first step of audiological screening by registration of transient evoked otoacoustic emission. Temporary absence of registration of transient evoked otoacoustic emission registered more frequently in the group of children with chronic fetoplacental insufficiency, delay of prenatal development, born by mothers with metabolic syndrome. Meanwhile, time for appearance of otoacoustic emission correlate on the degree of delay of prenatal development.

NEW METHOD OF AUTOMATED CONTROLLED POLITZERIZATION FOR TREATMENT OF OTITIS MEDIA WITH EFFUSION IN CHILDREN.

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According to international clinical recommendations, otitis media with effusion (OME) should be treated conservatively for first 3 months of observation. Eustachian tube disfunction is most common reason for OME especially in children. Therefore OME treatment should include methods pointed at recovery of normal tube function. Undoubtedly, existent methods of politzerization and Valsalva maneuver are very effective in adults. But there are a lot of problems for applying these methods to children.

We invented and clinically tested new method and device for automatic politzerization consist of electronically controlled air pump and manometer. 20 children of age from 1 to 5 with OME were under observation. Medication, recommended by standards, and conventional methods of politzerization were prescribed for control group consisted of 10 children. Study group (10 children) received the same medication, but patients were treated with new device. We estimated immediate results by acoustic impedansometry (analyzing tympanometry changes in ETF-I test) and short-term results by otoscopy, tympanometry and tone audiometry. We performed active treatment for 2 weeks and then observed patients for one month.

Results. Our investigation shows convalescence of 3 children (30%) of control group and 7 children (70%) of study group. Analysis of impedance and audiometric data shows significant difference ($p<0.05$) between study and control groups. Some parents of control group children compliant of adverse effects of conventional politzerization. In study group we observed no adverse effects.

Conclusion. Conservative treatment of OME including tube insufflations is effective and may prevent surgery. New method of automated politzerization improves results of conservative treatment; it is simple and more convenient in use.

ASSESSMENT OF SYSTEMIC AND LOCAL ADAPTIVE IMMUNITY IN POLYPOUS RHINOSINUSITIS ACCORDING TO THE RELAPSE.

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The report presents the results of the study of systemic and local adaptive immunity in polypous rhinosinusitis according to the recurrence of the pathological process. Imunogistochemical study of topography and the density of CD-positive cells in the tissue of nasal pilyps are presented, as well as the level of CD-and Ig-positive cells in the peripheral blood of patiants with polypous rhinosinusitis. It is shown that the density of CD-positive cells in the tissue of nasal pilyps is independent of the reccurence of the disease. In contrast, the adaptive immune system reacts to the reccurence polypous rhinosinusitis significant decrease in the level of the absolute number of CD4+ and CD8+ cells compared with the control group.

At the same time in the group of patient without recurrence showed statistically significant stimulation of fluorescence of CD68+ monocytes and CD68+ granulocytes in the peripheral blood. That is, the recurrence of nasal polyps is accompanied by a deficiency of cells of adaptive cellular immunity, perform the fundamental functions in the inductions of antigen (AG)-specific immune response, namely: T-helper cells (CD4+ cells) and T-cytotoxic cells (CD8+ cells). During the same ORS without recurrence is associated with stimulation of CD68+ monocytes and CD68+ granulocytes. Also a significant decrease in CD20+ cells is determined in patient with recurrent nasal polyps compared with the control group.

The relationship between indicators of systemic and local adaptive immunity expressd in the presence of reliable strong negative correlation relationship with respect to CD68+ cells. In the group of patients without recurrence of nasal polyps, a reliable positive average correlation relationship was determined for CD8+ and CD68+ cells.

METHOD FOR MONITORING THE MUCOCILIARY TRANSPORT SYSTEM FUNCTIONAL STATE UNDER CONDITIONS OF PURULENT SINUSITIS

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Purulent sinusites possess one of the main places among general ENT-pathology.

Despite of medicine abundance nowadays, the occurrence of complications and recurrences, as well as chronization of acute processes remains to be rather frequent when treating according to the present protocols.

So one can assume there are some defects in the diagnostics and estimation of stage and severity of a sinusitis.

Our research was based on the idea that physical and chemical parameters of mucociliary transport system of paranasal sinuses mucosa are important to take into consideration in diagnostics and treatment for purulent sinusitis.

We studied the superficial tension of sinus rinsings as a physical characteristics and acidity as a chemical one.

These parameters reflect the functional state of mucociliary transport system and provide objective information about the inflammation dynamics.

For the investigating of the surface tension level we have applied the method of studying the stability of a foam bubble in a hanging drop, the modified Pattle's method.

We have experienced this diagnostic algorithm in treatment for experimental purulent maxillary sinusitis at rabbits and in treatment for acute and exacerbation of chronic maxillary sinusites at patients in clinic.

The experimental animals were divided into groups which had received Sinupret oral drops as a general mucolytic preparation, Suzacrin solution intrasinusally as a surface-active surfactant preparation, and Sinupret and Suzacrin both.

For the control of inflammatory changes in the mucous membrane on the certain days of the study biopsy was taken for light microscopy, immunohistochemical research and for electronic microscopy.

The patients in clinic have received the standard treatment for sinusites according to the up-to-date protocols.

MUCONASAL IMMUNITY IN TEENAGERS

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Immunity means the resistance to physical, chemical and biological agents activity having features of genetically foreign information i.e. being able to cause pathological conditions. One of the compartments of immune system is Mucosa Associated Lymfoid Tissue-immune system of mucous membranes (MALT) which organizes natural resistance and specific immune protection of respiratory tracts, conjuctiva sac and oral and pharyngeal areas (Bykova B.P., 2003). At present it is generally accepted that there is united neuro-endocrine immune system regulation in the organisms of human being and animals which perform comprehensive function activity coordination of all organs and systems as a single whole providing for organism adaptation to constantly changing factors of external and internal environment. Barrier function is under the constant influence and systemic control from vegetative nervous system side and with tightly connected endocrine system.

Disorders of barrier function and local immunity in the weakness of central mechanisms of humoral homeostasis regulation lead to physiological functions of such structures of mucous membrane of upper respiratory tracts as mucociliar apparatus, intermediate tissue, tissue fluid and others, which strengthen basic pathological process in one's turn causing new defective cycles with the involvement of new organs and systems in it.

Data taken from literature testify about that in the development of local and systemic disturbances of immune genesis in the organism tonsils are involved into pathological processes as well. At the same time palatal tonsils are able to have remarkable influence on the functioning of immune system in the whole.

Thus during patients' examination with chronic tonsilitis it's necessary to pay attention to the organism condition in the whole i.e. we need to take into consideration the presence of linked accompanying pathology. We tried to estimate the influence of chronic tonsilitis on the course of pathology of the nose and accessory nasal sinuses in our investigation.

We have been observing 30 teenagers with chronic tonsilitis (compensated form out of exacerbation) at the age of 12 to 17. There were no complaints about nose and accessory nasal sinuses in 10 of them (group# 1), but 20 teenagers had complaints of nasal breathing difficulties, frequent colds, pathological discharging from the nose (group 2). Microbiological tests of smears from the palatal tonsils and nasal cavities, immunological status of teenagers, pH metria of nasal mucous were done to all of them, functional condition of fibrillar epithelium of nasal cavity (mucociliar clearance), SigA determination in the nose mucus. 7 healthy teenagers were taken as a controlled group (control group 3).

Positive clinical effect was received in patients after the course of conservative therapy: pharyngoscopic picture was better, tonsils' sizes were diminished, lacunae were cleaned, pathological flora were not inoculated. In the following-up the condition of the nose mucous had been improved: in comparison with the initial level the functional condition of fibrillar epithelium (mucociliar clearance acceleration) was improved, pH-medium data of intranasal mucus was normal, pathological flora was not inoculated, the increasing of relative and absolute quantity of T-lymphocytes (SD4+) and the increasing of their functional activity had been found in immune status investigation.

Conclusions:

- Complex treatment of chronic tonsillitis must include sanation of tonsils' lacune , general and local immune therapy.

- Restoring of immunological function of palatal tonsils in chronic tonsillitis contributes to muconasal immunity normalization of mucous membrane of the nose and accessory nasal sinuses.
- It's necessary to consider functional condition of palatal tonsils and correct revealed disturbances for the increasing of treatment efficiency of the nose cavity diseases.

NBI ENDOSCOPY IN DIAGNOSTIC OF ENT DISEASES

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An efficacy of NBI endoscopy was evaluated in diagnosis of diseases of Nasal and Paranasal sinuses cavities, Nasopharynx and Larynx in parallel to light endoscopy. At first light endoscopic examination of the organ was performed and after that an organ was examined with using of NBI regime. In case of pathological changes in Maxillary sinuses (24 sinuses after FESS) NBI regime allowed to differentiate polyps, cysts, tumors much better than light endoscopy. In case of Adenoid(17 cases) NBI regime makes possible to achieve clear visible border between glandular and normal mucosa. In case of laryngeal pathology(21 cases) NBI regime gives an opportunity to define smallest changes of vocal folds even which are not visible with light endoscopy.

Conclusion. NBI regime of endoscopy is a new method in ENT field which allows bringing quality of diagnosis in a new level.

NONCOCHLEAR MANIFESTATION OF GJB2 GENE MUTATION 35DELG.

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Connexins (Cx) are gap junction proteins. It is known that the mutation of genes of a number of connexins is manifested by a single symptom – deep prelingual hearing loss. However, because of connexin's expression in different tissues there are syndromes of hearing loss is associated with dens dysplasia, face dysmorphisms, intestinal injuring, neuropathy and different skin diseases. But there is no information as to how such mutation affects skin derivates, especially hair.

We examined the hairs of a group of 77 deaf people each of whom was a carrier of Cx26 mutation 35delG. Hairs of the following people of the same age group were used for comparison: 1) with normal hearing (24 people); 2) with non-genetical hearing loss (meningitis) (27 people).

We analyzed the thickness and surface condition of the examined hairs using an electronic scanning microscope JEOL JSM-6390 LA with magnification of 1000-5000.

We identified a number of ultrastructural changes in the surface of the hair sampled from the deaf patients. The following signs of degeneration were registered: deformed dermic coat and rough surface.

The above observation, for the first time, allowed to detect degeneration of hair as noncochlear manifestation of 35delG mutation responsible for non-syndrome hearing loss. This phenomenon could be used to monitor the effectiveness of pathogenic treatment or genetic therapy upon implementation of such practices.

OTHEMATOMA AS A CAUSE OF POST-TRAUMATIC CYSTS OF THE AURICLE

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Post-traumatic cysts of the ear that develop as a result of othematoma stand out among the cysts of the ear and the parotid region.

Othematoma often occurs as a result of trauma to the pinna with delamination of perichondrium. Blood accumulates between the cartilage and perichondrium. Sometimes it is enough to punctured hematoma and aspirate blood, apply a pressure bandage and a hematoma is no longer produced, but this is not always.

We have analyzed the results of treatment of auricular hematoma in 70 patients who were treated at the ENT clinic PFUR over the past 20 years. Hematoma was localized in most patients (66) on the front (front-outside) surface of the ear, usually on the upper part of antihelix. The sooner the patient hospitalized, and, therefore, the sooner othematoma is punctured or opened, the greater are the chances of recovery.

The success in treatment of othematoma with puncture or opening may be possible only on condition that it (hematoma) was punctured, or opened in first 2-3 days after trauma. Late (4-6 days after injury) puncture, or autopsy of hematoma are unsuccessful.

Of the 70 patients, 38 with repeated puncture or autopsy of hematoma instead of blood or pus we got a transparent yellow liquid. Such structure can not be termed a hematoma - formed posttraumatic cyst, which shell presents an ear perichondrium exfoliated during trauma.

All these patients had surgical treatment - removal of the cyst together with the capsule. Under local anesthesia we were producing detachment of skin from perichondrium according to the shape and configuration of the cyst, detached perichondrium was completely removed, with closing the free section of the cartilage by skin. Recovery occurred in 34 patients - the wound completely healed without the development of chondrites and deformation of pinna, relapse within 5 years wasn't observed. Inflammation occurred in 4 observations, appointed anti-inflammatory therapy, on 2 patients we cut short the process, on 1 developed hondroperihondritis and deformation of the ear, 1 - recurrence of the cyst.

Thus, the positive result of treatment was achieved in 36 patients, accounting for 94.7% of the total number (38). Development hondroperihondritis in one observation, in our opinion, arose because of the long-term care patients through the puncture, and then opened and drained othematoma. The relapse occurred to the patient that had undergone post-traumatic inflammation of the cyst prior to our treatment and therefore the perichondrium probably was not sufficiently separated from the skin. Remaining perichondrium caused recurrence of the cyst.

Despite the fact that the operation was not successful in all cases, the final result (97.7% of recovery) reflects the high efficiency of intervention.

OUR ORTHOGNATHIC SURGERY EXPERIENCE OF DIFFERENT AGED PATIENTS

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Report contains treatment materials of 120 children with congenital and acquired facial skull deformation and of 50 elder age patients with significant occlusion anomalies distressed in surgical and orthodontic cure. For diagnostics, planning and provisional results prediction computer programs (Amira 4.1, 3d Max and…) in different modifications were used. Autogenous bone graft, apparatus for compression distraction osthesynthesis and Obwegeser -Dalpont osteotomy were applied as surgical treatment methods.

PEDIATRIC NASAL RECONSTRUCTION

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Objectives: Nasal deformities of children are rare as a congenital or post-traumatic with a wide range of clinical findings from a simple midline vermillion notch to major skeletal malformations, including nasal obstruction and orbital hypertelorism. The bifid nose is a relatively uncommon malformation that is frequently associated with hypertelorbitism and midline clefts of the lip. The presenting cases range from a minimally noticeable midline nasal tip central groove to a complete defect of the osteocartilaginous framework, resulting in two complete half noses. We describe our experience in pediatric nasal reconstruction for nasal deformities. The anatomy, extensive treatment, and complications are discussed.

Methods: Retrospective review of pediatric nasal reconstruction and literature review.

Results: Successful creation of an aesthetic nasal contour and near normal nasal function.

Conclusions: Pediatric nasal deformities challenge the rhinoplasty surgeon. A successful outcome is dependent on a thorough understanding of the nasal anatomy, proper patient evaluation, careful preoperative planning, and meticulous surgical technique.

POSTOPERATIVE MANAGEMENT OF PATIENTS AFTER ENDOSCOPIC ENDONASAL DACRYOCYSTORHINOSTOMY

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Dacryocystitis are the basis of all lacrimal gland pathology. In modern dacryology there are two types of operation, the external one is used mainly by ophthalmologist and the internal one used by ENT specialists. Endoscopic endonasal dacryocystorhinostomy (EED) is leading operation in treatment of chronic supparative Dacryocystitis that is used in Astana. Unfortunately, even most modern treatment ways cannot exclude exacerbations. Most common reason of ductus obliteration after dacryocystorhinostomy is improper patients' management.

The aim of study was to analyze the results of postoperative patients management after EED in Astana.

Material and methods: We analyzed the results of treatment of IIZ patients aged 15-78 years with chronic dacryocystitis. Our patients were treated in the 1st Astana city clinical Hospital, ENT Dept.

The planning of operation type based on accurate anatomical data received during endoscopic examination, computer or magnetic tomography in coronal and axillar projections.

The first operation step included the correction of evident nasal abnormalities. That was the reason of septal deviation correction increase by 20%,

To prevent the early complications, especially sinechia formation, we used the original way of nasal tamponage. We used the finger cut from the rubber glove that was filled by levomekol preparation and perforated in the apex part. Antibacterial therapy was administered and nasal cavity washing introduced daily. Nasal washing was done after endoscopic endonasal dacryocystorhinostomy and included levomekol use by syringing. The whole volume (1,0 ml) was introduced into the new cavity. These procedures were made twice daily in the first 3 consecutive postoperative days, and then once daily 3 or 4 days more.

We followed our patients for 1 year, and had seen them once in 3 months. The success rate with the use of this method was 97,5%, which was significantly better, than with the use of traditional approach (82-89%).

We concluded that levomekol introduction by perforated glove finger in postoperative zone of patients after endoscopic endonasal dacryocystorhinostomy was the reason of statistically significant improvement of treatment results.

CONDITION OF LACRIMAL OUTFLOW IN PATIENTS WITH SEPTAL DEVIATION AND TURBINATE HYPERTROPHY

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The **aim** of this study to investigate the lacrimal flow (active transport function) in patients affected by septal deviations and turbinate hypertrophy and to evaluate changes after rhinoseptoplasty with colored nasolacrimal test (CNLT)

Methods: The study prospectively recruited patients having septal deviations with turbinate hypertrophy who underwent surgical evaluation for correction of their respiratory symptoms and were not reffered for epiphora. Patients were excluded if they had obstruction of lacrimal canaliculis. All patients were studied with colored nasolacrimal test preoperatively and postoperatively (on 5th day and then after 1 month after surgical treatment).

Results: A total of 60 patients (42 men and 18 women) were required for the study. In 33,3% lacrimal outflow system we observed complete obstruction and in 15% cases partial disfunction of lacrimal outflow. 1 month after rhiniseptoplasty we observed improvement: in most of the cases lacrimal outflow were corrected (96,6%). Only in 4 nasolacrimal ducts with dysfunction we did not observed changes after surgery. We did not find correlation between duration of nasal obstruction and degree of the obstruction of the nasolacrimal duct. There is no correlation between side of nasal deviation and degree of nasolacrimal duct dysfunction.

Conclusion: A high incidence of nasolacrimal obstruction/dysfunction was found in patients with septal deviations, turbinate hypertrophy and no lacrimal symptoms (48,3%). Correction of intranasal structures may prevent progressing symptomatic conditions. Septal deviations and turbinate hypertrophy play an important role in nasolacrimal obstruction.

THE REHABILITATION OF THE HEARING IN PATIENTS WITH USHER`S SYNDROME BY COCHLEAR IMPLANTS

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Introduction: Usher syndrome is a relatively rare genetic disorder that is associated with a mutation in any one of 10 genes. This syndrome is characterized by deafness and a gradual vision loss. The hearing loss is associated with a defective inner ear, whereas the vision loss is associated with retinitis pigmentosa, a degeneration of the retinal cells. There are three types of Usher syndrome Usher I, II and III.

Objectives: People with Usher I are usually born deaf and often have difficulties in maintaining their balance owing to problems in the vestibular system. People with Usher II are generally hard-of-hearing rather than deaf, and their hearing does not degrade over time. By contrast, people with Usher III experience a progressive loss of hearing.

Materials and Methods: This research was done using the information from cochlear implantation in USA (2000), France (2003) , Netherlands(2006) and England (2008). Among 281 patients given an implantation, 244 were congenitally deaf and 37 had Usher syndrome. The age at implantation ranged from 18 months to 44 years (mean, 17 years 6 month). The mean follow-up was 99 months (range, 9 months to 9 years). All patients received cochlear implants.

Results: The full oral and significant oral communications were obtained in 30 cases (80 %), 7 patients (20%) are still relying on signing. The best perceptive results were obtained in children implanted before the age of 9 years.

Conclusion: The best treatment involves early identification so that educational programs can begin as soon as possible. Rehabilitation will include hearing aids, assistive listening devices or other communication methods. Rehabilitation the hearing in patients with Usher's syndrome type 1 is possible by the cochlear implantation. Cochlear implantation in patients with Usher's syndrome type 1 improves the audiologic performance when patients are implanted at an earlier age.

Acknowledgment: DIDKOVSKYI Viacheslav MD, PhD

THE ROLE OF ENDOSCOPY IN TREATMENT OF PATIENTS WITH A CICATRICIAL LARYNGOTRACHEAL STENOSIS.

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The promising direction in treatment of patients with acute and chronic laryngotracheal stenosis is application of new surgical and endoscopic methods influencing the pathologic process.

Today the endoscopic picture of upper airway together with the clinical data is the basic criterion, allowing to confirm the diagnosis and to define extent of cicatricial process.

246 patients with a laryngotracheal stenosis of a various etiology were treated in our department from 2008-2010. The postintubation laryngotracheal stenosis was revealed in 115 patients, in 14 patients there was acute laryngotracheal trauma, in 55 patients bilateral laryngeal paralysis (vocal fold paralysis), in 62 patients it was caused by other conditions associated with laryngotracheal stenosis.

Endosurgical management was performed before the main surgery to eliminate granulations, to dilatate upper airway, to control endotracheal stent position and to clear tracheobronchial tree. All this procedures had positive influence on a forthcoming operation site condition.

The endoscopic surgery was the basic treatment option of the laryngotracheal stenosis in 26 (10,5 %) patients with postintubation stenosis in a stage of granulation tussue formation and development of cicatrical granulation «cap» over tracheostoma. The removal technique was defined depending on the size of the mass.

In already formed cicatricial laryngotracheal stenosis, the endoscopic treatment is valuable but plays an adjuvant role.

The endoscopic examination after reconstructive operation reflects dynamics of healing process and granulation tissue growth in operation zone, defines necessity of formed cicatricial tissue removal, helps to choose resection and coagulation technique using Surgetron. It also allows to control tracheal stent position.

All these procedures constitute the complex approach to diagnosis and treatment of cicatricial laryngotracheal stenosis.

Thus, the use of endoscopic diagnostic and treatment methods allows to determine cicatricial process stages and to define the best treatment strategy of this difficult patients.

THE MORPHOLOGY OF INFLAMMATORY AND REPARATIVE PROCESSES IN PHARYNGES OF EXPERIMENTAL ANIMALS EXPOSED TO GENERAL IONIZING RADIATION, IN CASE OF LOCAL TREATMENT WITH THIOTRIAZOLINE.

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Despite the fact that since the accident at the Chernobyl nuclear power plant has passed more than 20 years, problems of the interpretation of its medical and biological consequences still remain unresolved.

The objective of this research was two-fold: to compare the nature and the extent of the damage to the throat under the influence of the total ionizing radiation, as well as to determine features of the course of inflammatory and reparative processes in gullet during thiotriazoline therapy and without it.

Materials and Methods: 21 rabbits were included in the experiment. The first group (control) contained 7 healthy rabbits, the remaining 14 were subjected to radiation at a total dose of 0.75 Gy, and then divided into two groups of 7 each: one was irradiated and not been treated (group 2), the other after exposure had topical treatment with 2% ointment form of thiotriazoline (3rd group). A quantitative and qualitative morphometric analyses of the mucosa and its epithelium were performed.

Results: Dystrophic, sclerotic and atrophic changes of the mucous membrane, loss of mitotic and metabolic-synthetic activity of the epithelium, extensive vessel pathology, inhibition of local immune reactions were shown to prevail among the morphological changes. Against the background of treatment with thiotriazoline the lower intensity dystrophic, sclerotic and atrophic changes, as well as normalizing of local immune reactions were recorded.

THE EVALUATION OF OPERATION EXTENTION AND SURGICAL APPROACH IN MANAGEMENT OF MIDDLE EAR CHOLESTEATOMA.

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Objective: to evaluate appropriate extention of operation and surgical approach in management of middle ear cholesteatoma basing on data of examination and intraoperation findings.

Methods: 44 patients with chronic otitis media with cholesteatoma and retraction pockets (in remission) were enrolled in this study. In series of CT images in all patients the soft tissue was determined in attic and antrum. Also there were anatomic features like low middle fossa, presentation of sigmoid sinus, lateral semicircular canal fistula and bone defect of the tegmen tympany in 23 cases. The surgical approach was defined according to CTs' data.

Results: Operations were performed by an intrameatal approach in 23 cases (52%), endaural approach in 9 cases (21%), postauricular incision in 7 (16%) and combined approach in 5 cases (11%). Canal wall up technique was performed in 26 cases (59%), canal wall down technique with tympanoplasty in 18 cases (41%).

Intraoperation findings were as follows: the cholesteatoma was found in 39 patients (89%), with location in attic in 12 cases (31%), in attic with extention to aditus ad antrum in 4 cases (10%) and with extention from attic to antrum in 23 cases (59%). In 5 cases (11%) there were cholesterol granuloma, fibrosis, timpanosclerosis and mucoid.

By data of preoperative pure-tone audiometry the conductive hearing loss was defined in 24 cases (55%), the sensorineural and conductive hearing loss was defined in 20 cases (45%). The hearing after operation was improved in 28 cases (64%), remained unchanged in 14 cases (32%) and hearing loss occurred in 2 cases (4%). The better results in hearing were achieved after canal wall up technique.

Conclusion: At this rate, the selection of operation extention and surgical approach should be individual by every patient and should be determined according to the all data of complex examination. The canal wall up techniques with timpanoplasty are preferred.

A NEW METHOD OF LASER IRRADIATION FOR INTERSTITIAL PHOTODYNAMIC THERAPY OF HEAD AND NECK TUMORS

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Photodynamic therapy (PDT) is a contemporary method for treatment of malignant tumors which is based on irradiation of neoplastic tissues with light of appropriate wavelength after systemic or topical introduction of photosensitizing substance. There are two principal methods of tissue irradiation: distant (when the light source is situated at some distance from illuminated tissues) and interstitial (when the light source is placed within illuminated tissues). Distal technique allows treating tumors located not deeper than 5-15 mm from the surface. Larger and/or deeply located tumors can be adequately exposed only with interstitial technique.

Thermal changes of irradiated tissues pose a serious problem for interstitial PDT, because they decrease tissue penetrability for visible light and therefore lessen overall effect of the procedure.

There are two variants of interstitial laser irradiation: with bare optical fiber or with special cylindrical diffuser tip. First one is cheap and simple, but the output power must not exceed 100 mW with this method, otherwise carbonization of irradiated tissues will occur. Such low irradiation power significantly prolongs the procedure of interstitial PDT, especially when a large tumor should be treated from many irradiation points.

Another variant is to perform interstitial irradiation with cylindrical diffuser tip, which allows using the output power of 400 mW. This method has the following shortcomings: the tip is expensive, disposable and not as thin as bare fiber, which makes it difficult to put into solid tumors.

We introduce a new irradiation method for interstitial PDT. Irradiation is performed with a bare optical fiber which is placed inside a transparent catheter for intravenous injections. The catheter is introduced into the tumor under ultrasound control prior to irradiation. Presence of the catheter prevents direct contact between fiber tip and tumor tissue and allows using output power around 500 mW without any risk of tissue carbonization. Another advantage is that the fiber can be freely moved inside the catheter lumen during irradiation. Therefore this method decreases thermal damage to tissues, shortens the duration of the procedure and makes it more convenient.

A patient with local recurrence after total laryngectomy for laryngeal cancer was treated with palliative intent using this method of interstitial PDT. Progressive growth of the tumor was stopped for several months.

VESTIBULAR DISORDERS IN PATIENTS WITH CHRONIC SUPPURATIVE OTITIS MEDIA BEFORE AND AFTER SURGERY

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Objective: To determine vestibular disorders in patients with chronic suppurative otitis media (CSOM) before and after surgery.

Materials: Thirty nine subjects with CSOM, among them 1) 16 patients before surgical intervention, 2) 11 patients 8-days after surgery, 3) 12 patients 1-year after surgery.

Methods: The patients were examined by videooculography, to determine spontaneous nystagmus (SNy), saccade, smooth pursuit, fistula tests, and by stabilometry, to calculate the quality of balance function (QBF).

Results: In the group 1, three of the 16 patients had vertigo/dizziness complaints and two other patients reported these complains after active questioning. Three patients demonstrated SNy. The mean values of QBF were 84,9% and 74,7% with eyes open (EO) and eyes closed (EC), respectively. Examination didn't show any abnormalities in 13 of the 16 patients. This means that all these patients need to be examined with the use of stress-testing (rotation, head-shaking and vibration-induced nystagmus tests) for correct evaluation of vestibular function.

In the group 2, seven of the 11 patients demonstrated SNy, although only two patients reported vertigo. The mean values of QBF were 78,2% (EO) and 67,6% (EC). Examination (without stress-testing) revealed vestibular dysfunction in most of the cases.

In the group 3, eight of 12 patients reported different vestibular abnormalities. Mean values of QBF were 78% (EO) and 65,8% (EC). But it was impossible to evaluate the real incidence of vestibular dysfunction, because all these patients have had previous ear surgery and chronic inflammation of the mastoid cavity and they had returned for the revision operation.

Conclusion: Active identification of vestibular abnormalities in patients with CSOM may have a significant impact on further patient care and treatment.

PECULIARITIES OF PATHOMORPHISM IN CHRONIC HYPERTROPHIC PHARYNGITIS AND GASTROESOPHAGEAL REFLUX DISEASE

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The absence of any concrete systematized data on macro- and microscopic changes in the mucous membrane tissues of the pharynx in its chronic inflammation under the influence of acidic-peptic refluxes served as a reason for studying peculiarities in the pathomorphosis of chronic hypertrophic pharyngitis (CHP) in gastroesophageal reflux disease (GERD).

Morphological investigations on the cellular level were conducted on the basis of the study of cytological micropreparations, which were made from the smears, taken from the surface of the mucous membrane (MM) of the posterior pharyngeal wall in 25 patients with CHP against a background of GERD.

Macroscopic examinations of the pharynx in CHP patients with underlying GERD revealed a moist, moderately hyperaemic (in 17 cases) and injected (in 7 cases) MM of the posterior pharyngeal wall with the presence of diffusely dilated lymphoid granules of the polymorphic character, in some places in the state of a poorly pronounced inflammation.

As a result of cytological studies of smears from the surface of the pharyngeal MM in patients with CHP and GERD, it was found out that, against a background of the presence of the superficial layer of the pavement epithelium (PE) in all the patients, the intermediate level cells were in 64 % of cases and cells of the deep layers in 20 %. The number of PE cells in a limited visual field varied from small cell groups to considerable accumulations and layers, so-called “layers-exfoliations”, with a more pronounced registration of PE cells for the superficial layer and their significant number for the intermediate layer. Besides, 72 % of cases developed hyperkeratosis of cells in the upper and deep parts of the superficial layer of PE. Dyskeratosis phenomena were revealed in 16 % of cases. PE cells in the state of lysis and disintegration were found in 24 % of the examined, this phenomenon being caused by weaker intercellular contacts. A mild degree of dysplastic changes of PE was observed in 4 % of cases. Cells of the columnar epithelium were revealed in 80 % of cases, 95 % of them demonstrated proliferation of the above cells. Aggregations of lymphoid elements with hyperplasia phenomena were registered in 92% of observations.

Thus, it becomes possible to make up a conclusion that persistent acidic-peptic refluxes developed distortion of reparative processes in the epithelium and an increased exfoliation of all layers of PE in the pharyngeal MM with the formation of less stable relations between the layers.

ENDOSCOPIC EXAMINATION IN TRACHEOTOMISED PATIENTS

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Fibrolaryngoscopy is one of the main modern endoscopical methods in laryngologists practice. Fibrolaryngoscopical examination is helpful for better visualization of specific pathological changes in the airpassages, for prognosis and follow-up management strategy in the cannula-carriers.

The aim of our study: to analyze diagnostic possibilities of laryngoscopy and to describe indications for different diagnostic methods during endoscopy of tracheostomised patients.

Advantages of fibrolaryngoscopy in cannula-carries: visualization of trachea space, identification of tracheal rings differentiations, mucosa membrane condition in trachea, carina and bronchus, position of tracheostomy cannula distal end. In case of correct tracheostomy tube position its inner space continues in the same line with tracheal space. Tracheostomy cannula is unique possibility of retrograde examination of larynx from below. To perform this procedure laryngologist covering distal part of fiberscope change to up to the larynx. In case of long term tracheostomy fibroendoscopic examination of tracheostoma canal without cannula usually have no hazards of spontaneous canal space closure. Subglottal space and lower surface of vocal cords can be visualized. Transcannulare fibrolaryngoscopy is obligatory method for patients with tracheostoma at first days. First days after operation active phlegm and crust formation can lead to breathing disturbance and asphyxia because of cannula obturation. In this case fibrolaryngoscopy is effective not only for diagnostics, but also for treatment. Fibrotracheoscopy must be performed in all cases of regular and intraoperative cannula insertion. For example, during lower tracheotomy distal part of the tube may be in right primary bronchus and its branching may imitate bifurcation of trachea.

715 patients aged from 19 to 73 were examined with fibrolaryngoscopy at the ENT clinic of Saint Petersburg I.P. Pavlov State Medical University during last 5 years. 210 patients were the cannula-carries. All these patients underwent fibrotracheoscopy. In these group endoscopic findings were as follows: stenosis and paresis of larynx, cicatricial and granulation stenosis of larynx and trachea, papillomatosis of upper airways, malignant laryngeal tumors.

133 patients with granulations of tracheal anterior wall of were examined by fibrotracheoscopy. Among them, in 73 patients incorrect cannula position was found. 11 patients after frequent and rough cannula and trachea sanation by suction tube had erosion of tracheal mucosa membrane with bleeding from tracheostomy canal. In the early postoperative period right bronchi cannula was found in 9 patients. In 4 patients correction of tracheal tube position was performed intraoperatively with visual control of distal part. Only in 40 patients correct position of cannula was found. Our experience shows the importance of cannula-carriers fibroendoscopical examination as a part of panendoscopy.

The experience of our department enables to come to the following conclusions: Additional tests and methods are extending diagnostic possibilities of fibroscopy; Retrograde laryngeal examination by flexible endoscope is informative, non-traumatic diagnostic manipulation; Transcannula fibroscopy is an important method of examination at the end of tracheostomy; Control examination during cannula sanation helps to do full delicate suction of trachea; Detail endoscopical control is an important diagnostic part before decanulation planning.

CLINICOPATHOLOGIC ASPECTS OF CHRONIC INFLAMMATION IN MAXILLARY SINUS.

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Russian State Medical University, Moscow,

Russian and foreign epidemiologic studies indicate of increasing number of upper respiratory tract diseases, especially, nose and paranasal sinuses diseases. The number of chronic sinusitis cases has increased twice, last 8 years.

During the period from 2008 to 2009 year we examined 50 patients, who suffered from chronic purulent or pyohyperplastic maxillary sinusitis. All patients were investigated by microbiological analysis and as a result the most common microorganisms were Streptococcus spp (38,2%). Accoding to anamnestic data all patients were treated by wrong group of antibiotic and used it in inadequate dose and small period of time (under 5-7 days). All patients were operated on maxillary sinusitis, and maxillary sinus mucous was put on and made histological study.

After our research we can divided all patients into 7 groups:

1. with chronic inflammation maxillary sinus mucous in exacerbation stage (12%);
2. with chronic inflammation maxillary sinus mucous with strongly sclerosis (22%);
3. with chronic inflammation maxillary sinus mucous with cyst formation (10%);
4. with chronic inflammation maxillary sinus mucous with polypous degeneration (22%);
5. with chronic inflammation maxillary sinus mucous with cyst formation and polypous degeneration together (6%);
6. with chronic purulent inflammation of maxillary sinus mucous with granulation tissue (14%);
7. with chronic inflammation maxillary sinus mucous with epithelium displasia (8%).

Our findings demonstrate that wrong choice of antibiotic medicine, inadequate dose of it and decrease using time involve irreversible changes in maxillary sinus mucous, such as strongly marked sclerosis or polypous degeneration of mucous.

OLFACTORY FUNCTION IN PATIENTS WITH NASAL SEPTUM DEVIATION BEFORE AND AFTER SURGICAL TREATMENT

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Purpose of the study: to assess the status of olfactory analyzer with patients experiencing nasal septum deviation before and after surgical treatment.

Materials and methods: 37 patients (24 men and 13 women) of the age 18-59 years old (average age 33 years old) were involved. All patients were hospitalized for septoplasty surgery. Olfactory function was measured using "Sniffing Sticks test" method, extended version, in all cases. Repeated measurements were carried out 1 month and 4 months after the surgery.

Results: before the surgery hyposmia was diagnosed with 26 patients, anosmia – with two patients, normal olfaction – with nine patients. The olfactory threshold was 4,5±2,2 points, olfactory discrimination - 11,0±3,24, olfactory identification - 11,5±2,9, TDI-index - 27,1±6,9 points. One month after the surgery olfactory function significantly improved in all respects: the olfactory threshold was 5,4±1,8 ($p<0,05$), olfactory discrimination - 11,6±2,5 ($p<0,05$), olfactory identification - 11,8±2,3 ($p<0,01$), TDI-index - 28,8±5,4 ($p<0,01$). Four months after the surgery further improvement of olfactory function in some respects was noted: the olfactory threshold was 4,9±1,9 ($p=0,2$), olfactory discrimination was 11,18±2,7 ($p=0,2$). Olfactory identification (12,09±3,7 ($p<0,01$)) and TDI-index (28,2±7,6 ($p<0,05$)) improved significantly.

Conclusion: Measurement of olfactory function is essential for patients with nasal septum deviation since olfactory dysfunction was detected in 76% of cases, although most of the patients didn't complain of it. Restoration of nasal breathing improves not only the functioning of the peripherical section of olfactory analyzer (alters the olfactory threshold), but also the operation of the central olfactory structures (improves olfactory discrimination and identification).

CLINICAL RATIONALE FOR THE CHOICE OF PARATIMPANIC SPACES OBLITERATION METHOD.

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Russian medical academy for postgraduate education.

Paratimpanic spaces obliteration is now a very popular direction in the cholesteatoma treatment in the whole world. But among thousands of publications there are almost no data on the comparative studies of different methods of obliteration, which aroused our scientific interest.

Our **aim** is to create an algorithm for selecting surgical techniques, methods and materials of paratimpanic spaces obliteration during cholesteatoma surgery.

We compare two material for oblitertion: bone-paté and osteoconductive synthetic material “Biosit”. The method of obliteration, surgical access and some features of surgical technique are selected depending on the incidence of cholesteatoma, ossicular chain and other structures of the middle ear preservation.

After cleanup and ossikuloplasty bone-paté or "Biosit" are moistened with antibiotic solution and is placed in the mastoid. Then posterior wall reconstruction is performed with cartilage, cortical bone chips or fascia.

Functional state of the auditory canal is evaluated after surgery. The patient is considered healthy in case of self-cleaning function restoring and water tolerance. The minimal period of observation is 1.5 years. After 12 month control CT scan is made.

Preliminary results: the best functional result was obtained with bone-paté. At deficiency of healthy bone material justified the usage of “biosit”. To get a good functional outcome the auditory canal shape should be restored. Even a small deviation of the reconstructed posterior wall toward the mastoid increases the healing time. Posterior wall reconstruction technique is critical. We have developed the technique of layering obliterated cavities with biomaterials allowing to properly form the posterior wall and to reliably fix all the fragments of cartilage, bone or fascia.

ENDOLARYNGEAL COBLATION MICROSURGERY OF THE LARYNX.

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Nowadays the method of the treatment of benignant neoplasms in the larynx is their endolaryngeal removal under the general anesthesia.

ENT specialists from different countries have been interested in the problem of the benign lesion in the larynx for many years.

The purpose of the work is to increase the efficiency of endolaryngeal microsurgical treatment of the patients suffered from the benign lesion in the larynx with the application of Coblation.

We have examined 80 patients both female and male, aged 18-73 years suffered from different kinds of the benign lesion in the larynx.

In the postoperative period the vocal therapy and respiratory gymnastics were carried out among the all patients. On the basis of the computer acoustic analysis of the voice we can draw a conclusion on the essential depression of the vocal function of 100 % of the patients suffered from the benign lesion in the larynx.

The research of vocal larynx function has revealed voice restoration among 78,1 % of the patients, voice improvement among 18,8 % of the patients, 3,1 % of the patients didn't have any changes.

The conclusion: the developed technique of endolaryngeal microsurgery with the application of Coblation surgery in the treatment of benign lesion in the larynx allows improving the results of the vocal function. These results are evident in the statistically authentic improvement of the data of the acoustic indicators of a voice in comparison with the tool and laser methods.

THE INFLUENCE OF NERVOUS GROWTH FACTOR AND NIMODIPINE ON FACIAL NERVE REGENERATION IN THE RATS

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Sushko Yu.A., Minina A.Yu. (Kiev)

The influence of nervous growth factor and nimodipine on the regeneration of face nerve after its dissection in extracranial part with morphologic evaluation on 6-th and 14-th weeks after neurorraphia have been evaluated in experiment. Nervous growth factor and nimodipine cause an expressive stimulating action on regeneration, which is manifested to increase of filament and axial cylinder of facial nerve diameter as well as to decrease both of number of vacuoles of degeneration and dystrophy manifestations in the distal part of the regenerating filament.

Material and methods*:* Experiment was perfomed on 47 adult rats, female. Morphological evaluation was performed by light microscopia in semifine slices, and electron microscopia with magnification 20000 and 32000. We counted quantitative and qualitative features of the regeneration.

Results*:* The diameter of nerve fiber and axial cylinder increased in 20-22% with NGF, and 15-17% with nimodipine. The influence NGF and nimodipine on regeneration of myelin sheath wasn't observed.

Conclusion*:* NGF and nimodipine have significant and reliable positive effect on regeneration of the FN. The regeneration of myelin sheath under effect of this bindings on quantitative relation was not marked. Whereas side effects of NGF were not investigated, and the permission for nimodipine to be used in clinics we recommended to investigate the effect of nimodipine on functional recovery of the FN after its surgical treatment.

NGF and nimodipine both have a similar action on nerve regeneration. Use of nimodipine in the patients during neurorraphy of the FN may improve the functional results.

DIFFERENTIAL APPROACH TO SURGICAL TREATMENT OF MAXILLARY ODONTOGENIC CYSTS

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I.P.Pavlov Medical University Saint Petersburg

Introduction: We did not find in the literature available to us, a precise data on the frequency of occurrence of maxillary intrasinusoidal odontogenic cysts.

The question of assessing long-term results of surgical treatment of odontogenic intrasinusoidal cysts also was not found in the literature.

Factors determining the possibility and the necessity of a deeper study of the diagnosis, classification, and selecting approach to the choice of methods of treatment of upper jaw intrasinusoidal odontogenic cysts. Firstly, the development of diagnostic radiological methods. Secondly, the development of endoscopic surgery. Thirdly, the successfulness of dental implantlogy.

The **purpose** and **objectives** of the study:

- on the basis of clinical observations and long-term results of treatment
- to produce a new classification for the intrasinusoidal odontogenic cysts - to develop a differentiated multi-disciplinary approach to planning treatment of patients with this disease

The **object** of study - 249 patients with cysts of the upper jaw, treated at the clinic of Maxillo-facial Surgery of St. Petersburg I.P.Pavlov Medical University in the period from 2000 to 2007 year. Examination and investigation of patients included:

Determination of complaints, Inspection, palpation, Elektroodontometry, X-rays, Computed tomography, endovideorhinoscopy and sinusoscopy, Path histological study.

Research results:

Among of the 249 patients, cystorinosinusostomy operation was performed in 106 patients. The objective of this operation is – to Combine the cyst cavity with the sinus cavity and to create anastomosis with the lower nasal meatus.

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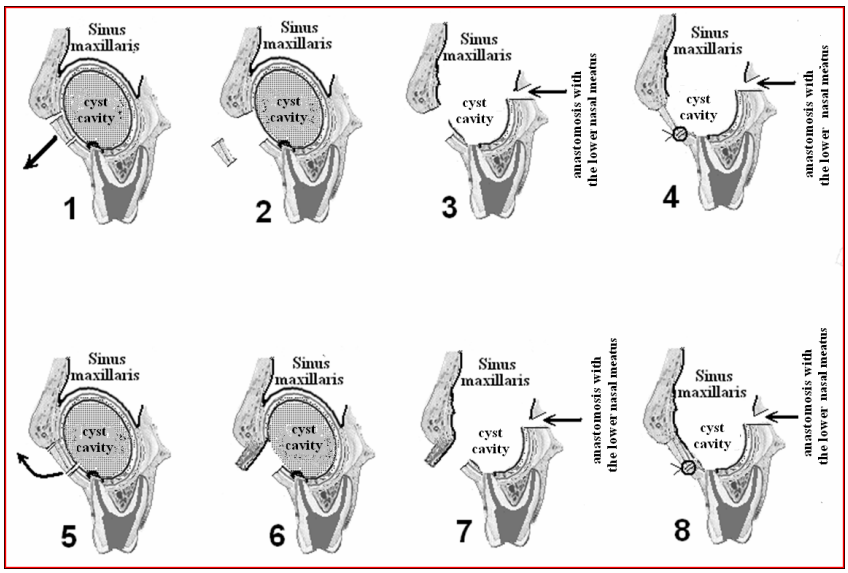
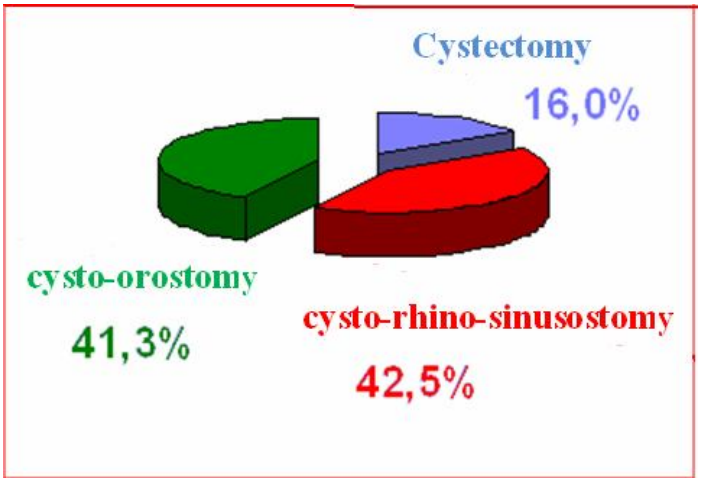


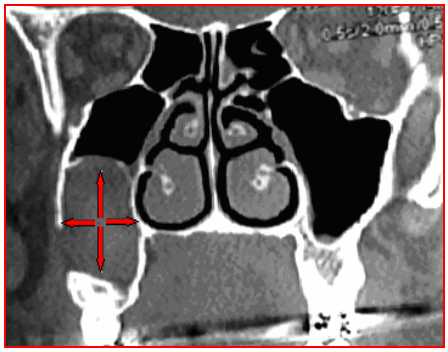
The Stages of cystorinosinusostomy



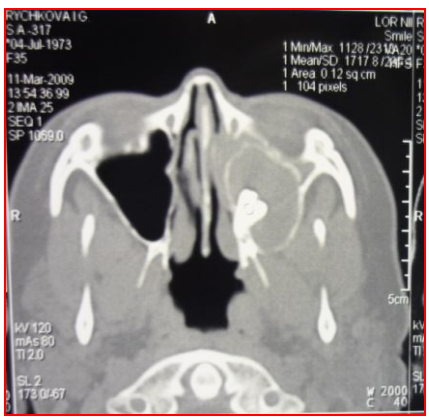
As can be seen on the figure, the operation cysto-orostomy and cysto-rhino-sinusostomy applied equally

Based on the analysis of clinical and radiological picture, we proposed the following classification of the upper jaw intrasinosoidal odontogenic cysts.

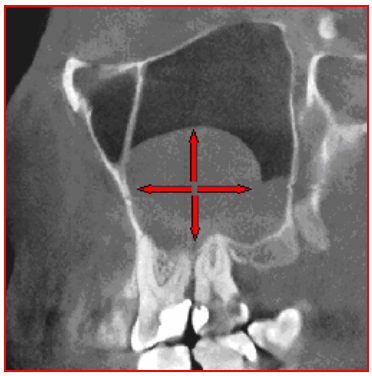
I. Radicular cysts of the upper jaw, "sprouting" in the sinus cavity



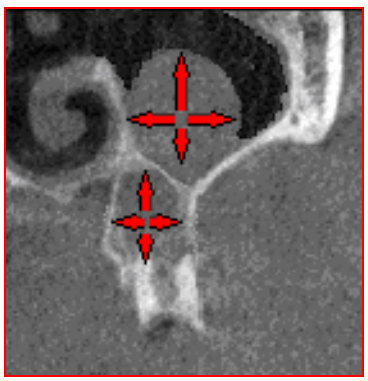
II. Follicular cysts of the upper jaw, "sprouting" in the sinus cavity



III. Cysts of the sinus mucosa (Shneyder's membrane), pathogenesis of infectious-inflammatory processes in periodontal of tooth.

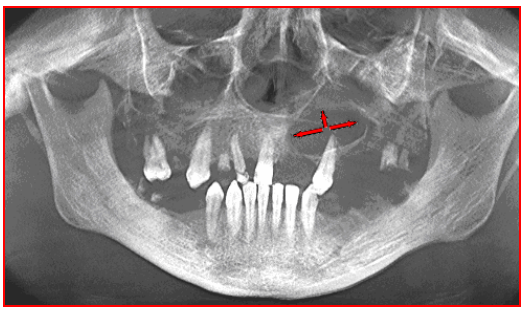


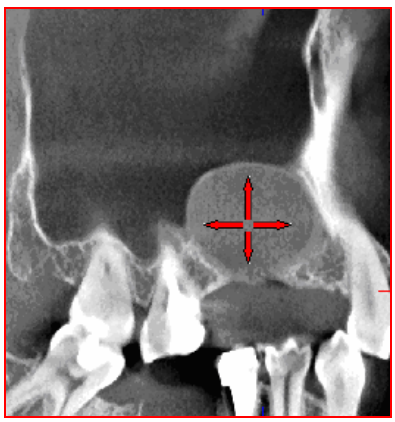
IV. Combination of Radicular cysts of the alveolar bone with cyst of sinus mucosa.



V. Residual Odontogenous intraosseous cyst - cyst, the remaining or arising after the removal of teeth.

Odontogenous residual mucosa of the sinus cyst - cyst sinus mucosa, the remaining or arising after the elimination of infectious and inflammatory foci in the alveolar process by removing the tooth, removal of odontogenic cyst.





Subsections classification intrasinusoidal Odontogenous radicular, follicular cysts and cysts sinus mucosal

By the size of the cyst - the number of teeth associated with the cyst and the ratio of the size of the cyst with the size of the sinus

In the direction of growth of cysts: A - in the direction of the sinus; B - in the direction of the nasal cavity; B - in the direction of the anterior-lateral wall of the sinus

By the conserved bone wall between the cyst cavity and sinuses

Result and discussion:

Long-term results of surgical treatment of patients with intersinusoidal odontogenic cysts of the maxillary bone using surgery cysto-orino-sinusostomiya in the 106 operated patients were analyzed in 79 patients. 74 of them had no complains. 62 of them refused any examination. 2 patients complained of recurrent nasal discharge on the side of surgical intervention. 2 patients complained of paresthesia after surgery in the infraorbital area. 1 patient complained of a periodic discharge from the nose and paresthesia in the skin of the infraorbital area. Thus, we studied the 79 patients from 1 to 5 years after surgery, was presenting complaint in 5 patients that amounted to 6,3%.

Instrumental methods of examination of patients:

Results of rhinoscopy and sinusoscopy using endovide systems. We examined 17 of patients after 1 year or more after cysto-rhino-sinusostomy. 13 patients with artificial ostium between the lower meatus of the nasal cavity and the cyst associated with sinus was adequate. Its diameter in 10 patients was 10-19 mm, 3 patients - less than 5 mm, i e. was inadequate. In 6 patients the deviation of the nasal septum, turbinate hypertrophy on the side of the operated sinus was find.

Computer tomography:

17 patients was performed spiral computer tomography. In the analysis of tomograms data were obtained, coinciding with the data obtained during endoscopic rinosinusoscopy. In 3 patients a slight thickening of the mucous membrane of maxillary sinus were detected.

Indication for surgery cysto-rhino-sisnusostomii:

1. Radicular intrasinosoidal cyst with the absence or drastic thinning of the bony wall separating it from the sinus in the absence of severe somatic pathology in the patient.
2. Radicular intrasinosoidal cyst with the presence of well-defined bony partition separating it from the sinus, filling the sinus more than one third.
3. Radicular intrasinosoidal cyst with distinct clinical and radiological signs chronic sinusitis.
4. Radicular intrasinosoidal bone cyst of the bony wall between its cavity and the tops of intact adjacent teeth.

Odontogenic cyst sinus mucosa in the projection before tooth extraction or radicular cyst. Removal of such cysts without the intervention of the alveolar process may be carried out by a specialist (ENT specialists, dentists, maxillofacial surgeon), who have experience in Functional Endoscopic Sinus Surgery.

Conclusion:

Operation cysto-rhino-siusostomii is an effective method of treatment of the maxillary intrasinosoidal cysts, which gives a possibility to preserve intact teeth, reduce time and improve the quality of the rehabilitation of the patient.

PROGNOSTIC VALUE OF STIMULATING ELECTRONEURONOGRAPHY IN MANAGEMENT OF FACIAL NERVE TRAUMA

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Unfavorable effect of facial nerve trauma for the patient is widely known [1]. The increasing number of cranial trauma cases determines the importance of contemporary diagnostics and choice of treatment of facial nerve traumatic neuropathy (FNTN) [2, 3].

The research aimed to improve early diagnostics and making objective indications for operation in case of FNTN is being performed at otorhinolaryngology department of St.-Petersburg Medical Academy of Postgraduate Studies. To achieve this patients with facial nerve trauma caused by temporal bone fracture have been exposed to stimulating electroneuronography registering parameters of M-response. The patients with the amplitude of M-response to relatively decrease by more than 90% have been put into a main group of surgical treatment. Otherwise the patients have been given basic conservative therapy and exposed to electroneuronography in dynamics every days. Patients with degeneration to reach 90% have been included into surgical treatment group, while others comprised the comparison group of conservative treatment (Fig. 1).

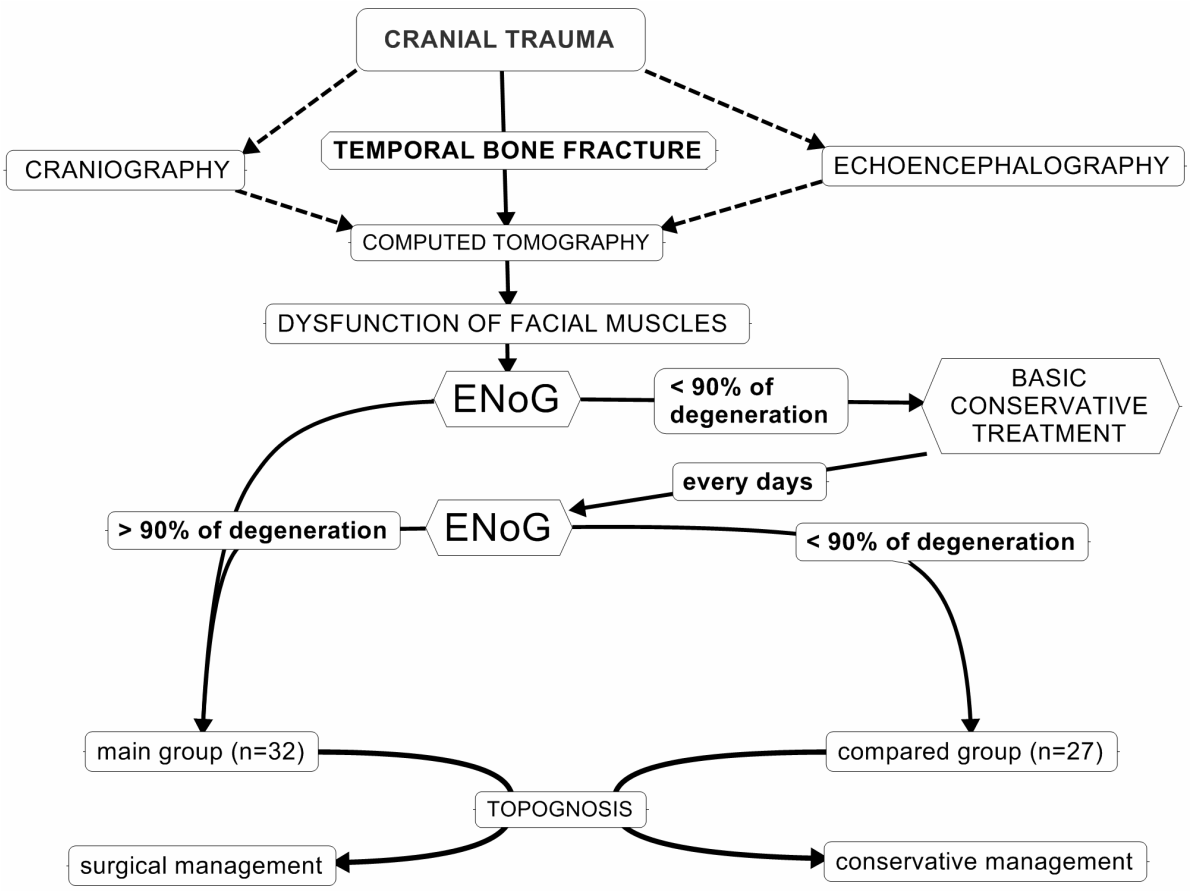

Fig. 1. Scheme of groups forming

The purpose of next figure is to indicate the place of FNTN within a structure of other complications of temporal bone fracture (Fig. 2). Intimate anatomic relations between facial and vestibulocochlear nerves as well as with structures of middle ear and labyrinth define the injury type in case of temporal bone fracture. Thus a complex of injuries develops which becomes evident through a clinical constellation. This allows to fully estimate functional condition of facial nerve as well as extent and the type of the injuries of neighbor structures through analysing the number of factors amongst which are anamnesis, degree of the functional deficit of facial nerve, otoscopy results, tonal audiometry, methods of radiologic and regional diagnostics and electroneuronography.

The more damage is caused by temporal bone fracture the more likely the poor prognosis on facial nerve is issued. The analysis of clinical constellation in two investigated groups allows to conclude on a prognostic value of electroneuronography.

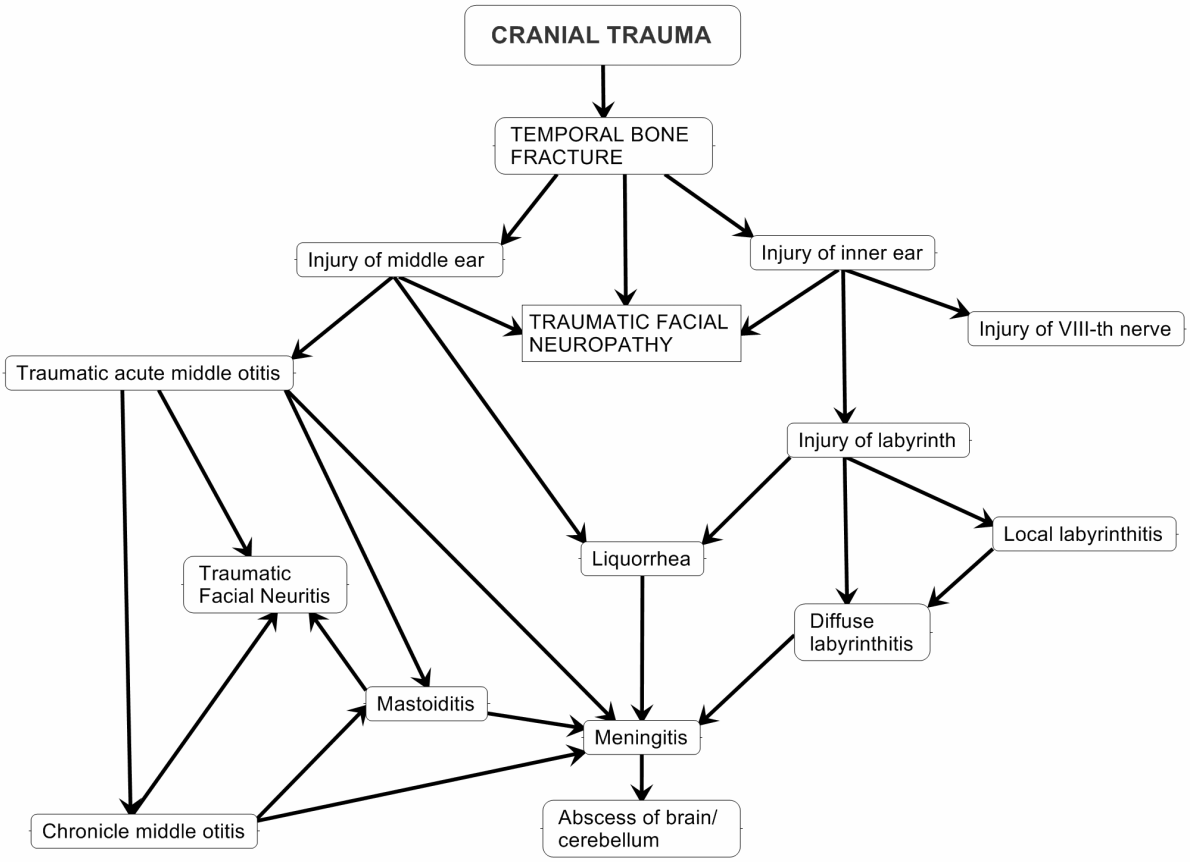

Fig. 2. Aftereffects of cranial trauma

The analysis of the onset of FNTN demonstrate twice more cases of acute development of illness in main if compared to conservativly group in which most of the patients show deferred development (Fig. 3).

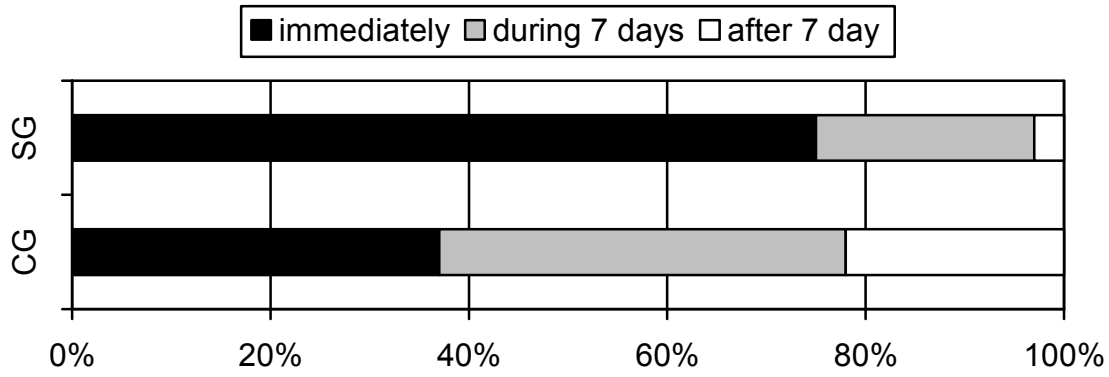

Fig. 3. Onset of facial nerve traumatic neuropathy:
SG – surgical group, CG – conservative group

The part of severe and total facial nerve disfunction characterizes surgery group while in comparison group part of patients with moderete and moderately severe neuropathy prevailed (Fig. 4).

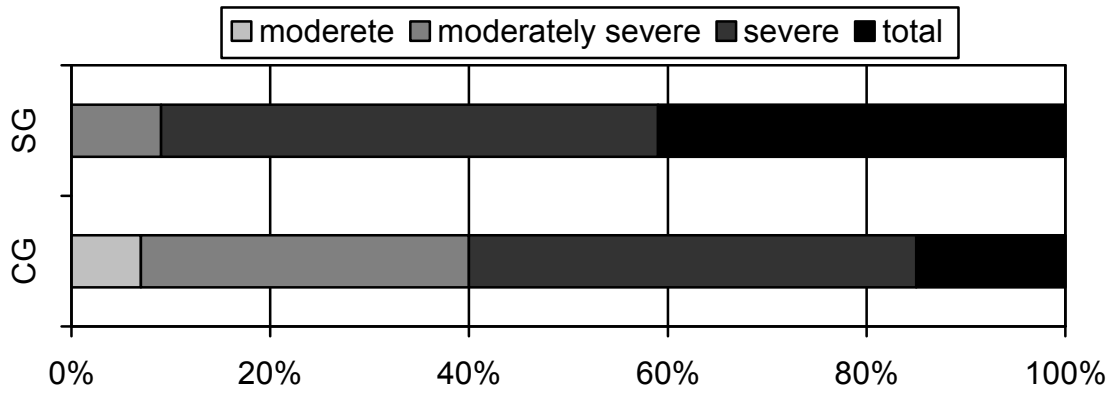

Fig. 4. Clinical degree of facial nerve dysfunction
(by scale of House J.W. and Brackmann D. E., 1985 [4]):
SG – surgical group, CG – conservative group

In surgery group the tympanic membrane perforation and bleeding from external auditory canal has been observed more often while there was more patients with heamatotympanium in conservativly group (Fig. 5).

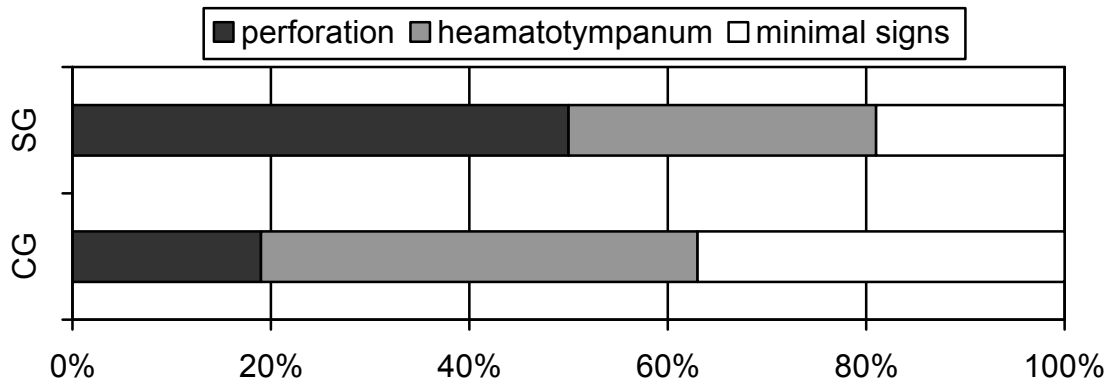

Fig. 5. Otoscopic signs:
SG – surgical group, CG – conservative group

There was more patients with hearing disorders in surgery group than in group of comparison. At the same time the conductive hearing loss was more often observed in conservativly group while the deafness of sensoneural origin has been more often spotted in main group (Fig. 6).

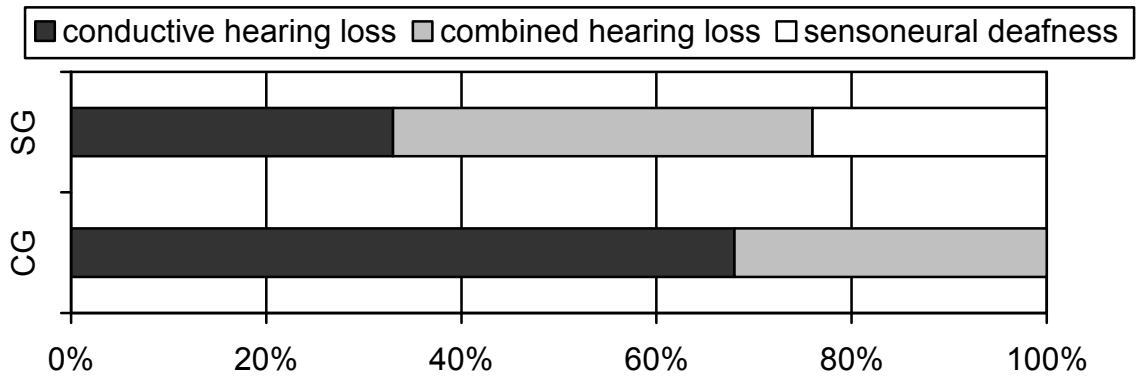

Fig. 6. Hearing disfunction:
SG – surgical group, CG – conservative group

While patients with first and second degree of hearing loss prevailed in conservativly group in main group there were more cases of second and third degree of hearing loss and deafness as estimation has shown (Fig. 7).

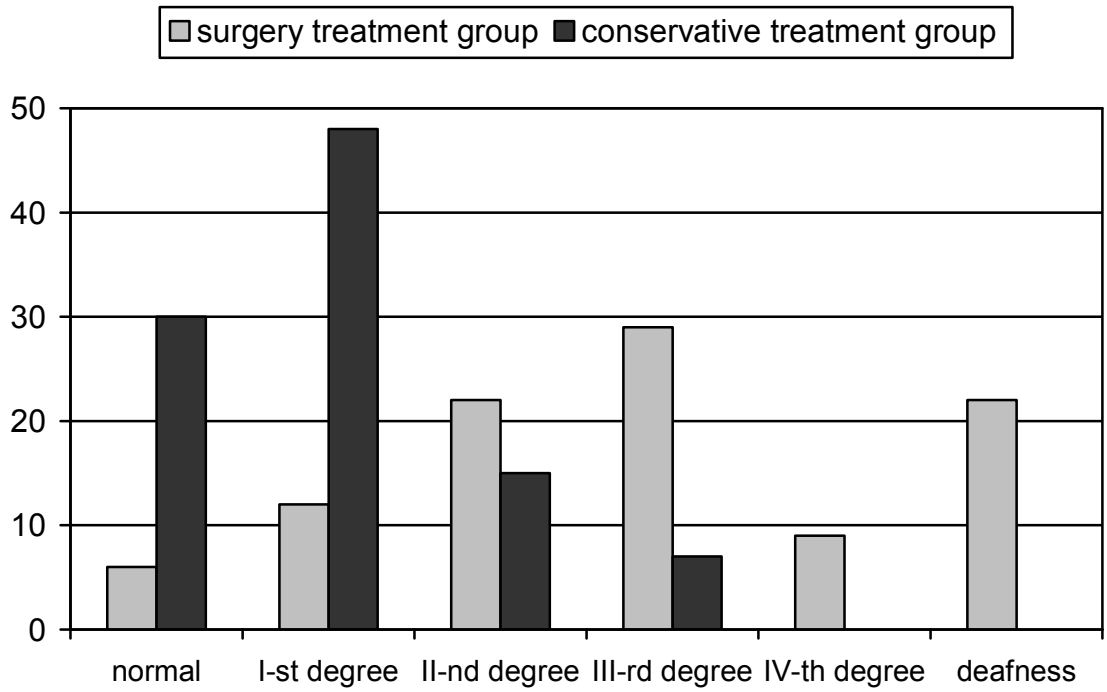

Fig. 7. Hearing loss degree:
SG – surgical group, CG – conservative group

Relative distribution of specific signs of temporal bone fracture in observed groups reflects the severity of the disorder and bear prognostic significance. Thus the part of early and severe disorders of facial nerve is more in surgery group than in the group of comparison (Tab. 1). Severe hearing alterations also have been seen more often in main group. Besides there were more patients with intact inner ear in conservativly group what is considered to be good prognostic sign. A trauma of the facial canal used to be more often discovered in

surgery group according to computed tomography results. As the analysis shown mostly the patients with unfavorable prognosis which had been proved by electroneuronography had comprised main group.

Tab. 1. Relative distribution of clinical signs

Signs	Groups of	
	surgery treatment (n=32)	conservative treatment (n=27)
Immediatly onset	75%	37%
Total disfunction	41%	15%
Sever disfunction	50%	44%
Hearing disorders	78%	59%
Vestibular disorders	9%	3%
Injury of facial canal	41%	32%

In both groups facial nerve function has been measured in 6-graded House-Brackmann scale before and after applying the treatment. Chi-square analysis of illness signs before the treatment allowed to determine the existence of statistically significant differences between surgery and conservativly treatment group in illness onset, severity of facial nerve disorder, etc. As there were more patients with poor prognosis in main group one should have anticipated to achieve better results in group of comparison in case of equal efficiency of conservative and surgical approach.

However we received comparable results of treatment for both groups allowing us consider surgical treatment to be relatively more efficient for the patients with poor prognosis.

It should be noted that facial nerve function used to recover faster in surgery group (Fig. 8). By tenth day after operation we had observed no patients with total facial nerve dysfunction. Part of the patients with severe dysfunction had decreased from 50 to 6 per cents. By twentieth day after operation 12 of 32 patients had fully recovered mobility of mimic muscles, 11 patients had light dysfunction. Treatment results of that period corresponded to those achieved after the six months.

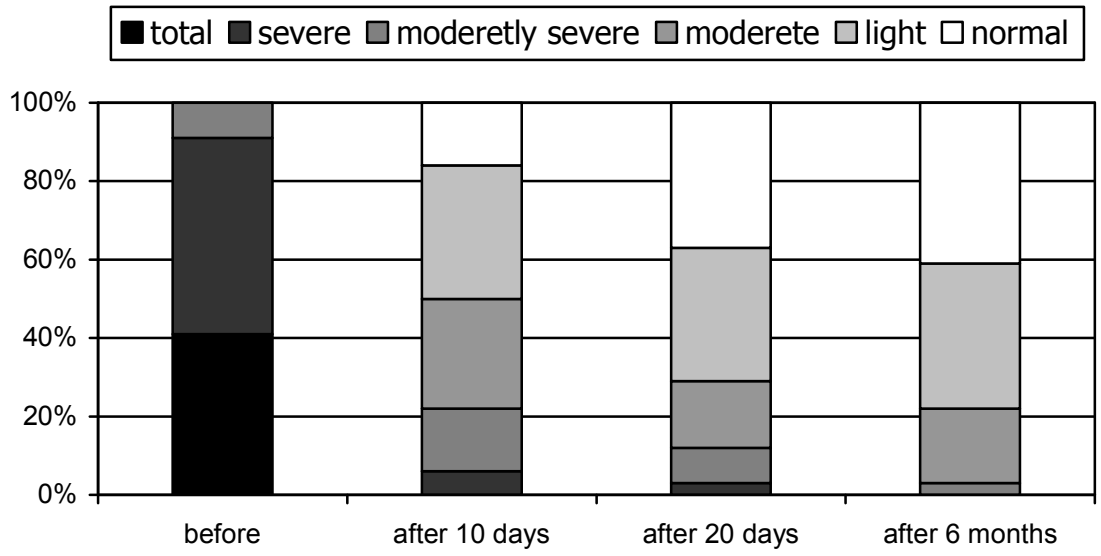

Fig. 8. Recovery dinamics of facial nerve function in surgery group

Period of recovery lasted longer in a group of comparison (Fig. 9). So that even by twentieth day part of patients with severe dysfunction had decreased from 44 to only 26 per cents. After 3 months we had observed no patients with total dysfunction. Recovering dynamics has been observed within a period of 6 months.

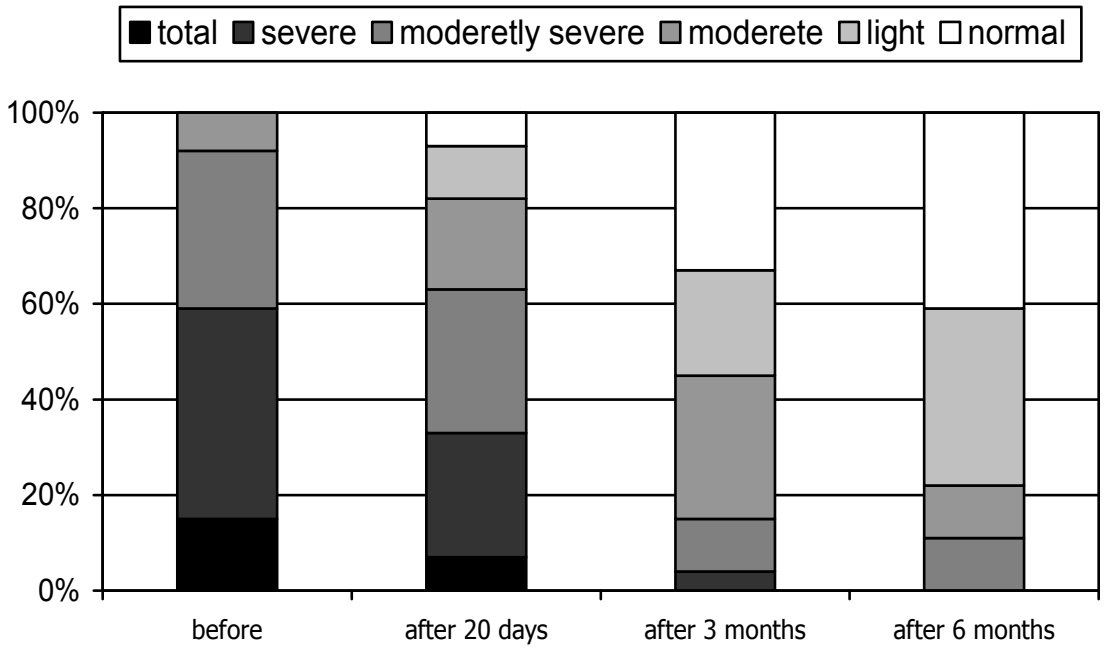

Fig. 9. Recovery dinamics of facial nerve function in conservative group

In surgery group we estimated comparative clinical effect after 6 months of facial nerve decompression depending on the terms of operation (Fig. 10). It's important to note that the earlier the operation was done the better was the effect.

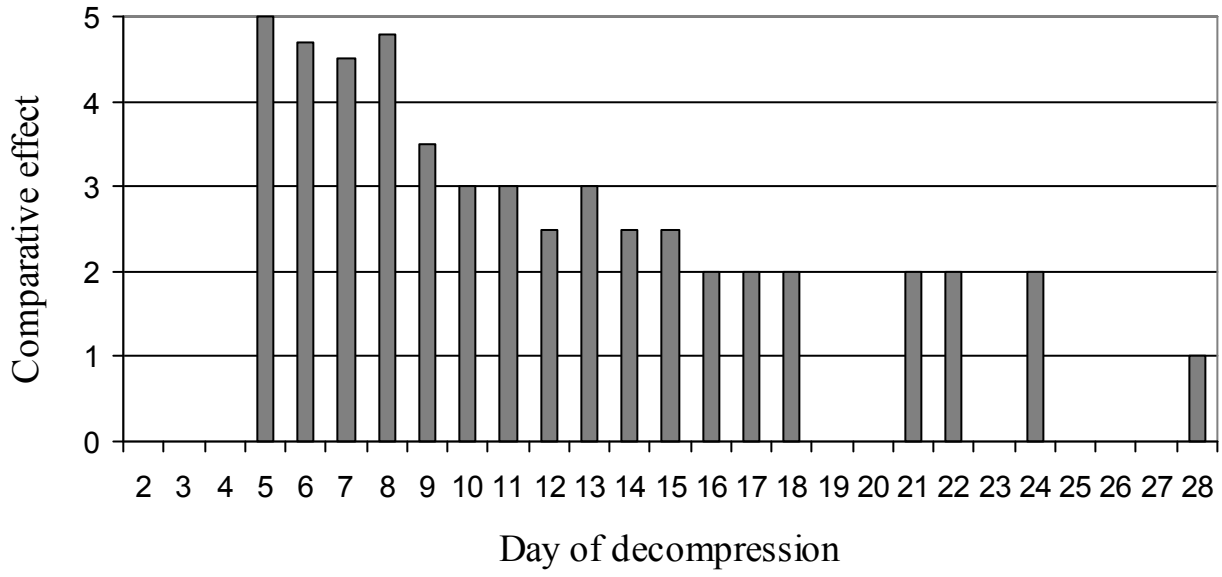

Fig. 10. Comparative clinical effect of decompression depending on the time of operation

Performed study has led us to the following conclusions:

1) In case of facial nerve traumatic neuropathy caused by temporal bone fracture the relative decrease of negative phase of M-response amplitude by 90% present a sign of poor prognosis and indicates the necessarily of surgical treatment.
2) Positive results of treatment and dynamics of recovery of facial nerve in both groups indicate comparatively better efficiency of surgery for group of patients with poor prognosis.
3) In surgery treatment group high efficiency of early decompression was proven by better results among the patients operated within 2 weeks.

Based upon made conclusions we propose to review conservative treatment approach of facial nerve traumatic neuropathy. Indications for surgical treatment of primary (early) neuropathy accompanied by facial paralysis should be extended. In other cases stimulating electroneuronography together with basic therapy may deliver certain indications to either operation or continuation of conservative therapy (Fig. 11).

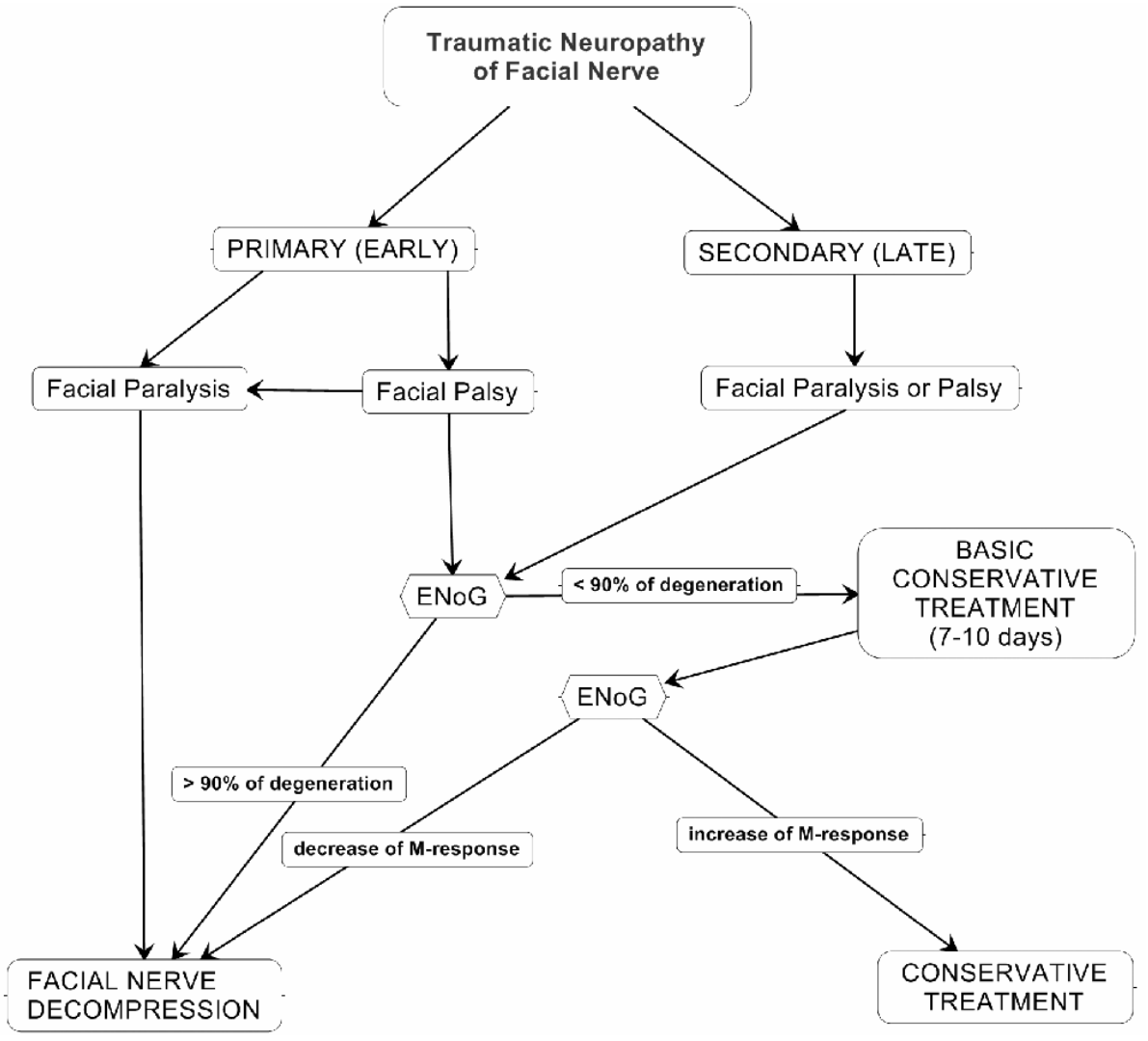

Fig. 11. Management of facial nerve traumatic neuropathy

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STUDY OF THE RELATIONSHIP BETWEEN EOSINOPHILIA AND THE EXPRESSION OF TOLL-LIKE RECEPTORS ON THE PERIPHERAL BLOOD CELLS AND NASAL POLYPOUS TISSUE IN POLYPOUS RHINOSINUSITIS

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Numerous studies on polypous rhinosinusitis (PRS) do not have far too fundamental changes in views on the etiology and pathogenesis of this disease. The results are regularly held international consensus conference on this issue only served to confirm lack of knowledge and understanding of this problem. None applicable at present therapies, including topical steroid therapy, does not allow to control the disease. Given the results of clinical and immunological studies, many authors consider the PRS as "asthma of the nose," referring to the PRS system immunodependent disease. Indeed, data from recent work in this area can be attributed to the PRS Th-2-dependent eosinophilic inflammation of the nasal mucosa, which leads to a violation of the collagen framework and, consequently, to the remodeling of the nasal mucosa. Inflammation is a complex one, and one of the most important pathogenetically important components of this process is the eosinophilia in the peripheral blood. Note that eosinophils in the tissue of nasal polyps, which are among the major cell-productive members of inflammation, are also the cells of hematogenous origin.

At present, the study of innate immunity in PRS paid much attention. It is believed that the first stage of the induction of AG-specific adaptive immune response is the interaction of receptors of innate immunity with the alien, especially infectious antigens. Receptors of this type are the Toll-like receptors.

Our work is devoted to studying the expression of these receptors on cells of inflammatory infiltrate in the tissue of nasal polyps by immunohistochemistry and in cells of the peripherial blood of patients with PRS by flow cytometry using monoclonal antibodies to Toll-1 - Toll-10 receptors firms SeroTec (UK) and Alexis (USA).

Some results of immunohistochemical study of expression of Toll-like receptors on cells within the inflammatory infiltrate in polypous rhinosinusitis following. On the slide shows the results of the study Toll-1 positive cells. Positive reaction to this and other drugs identified by brown staining cells.

It is clear that Toll-1 positive cells are diffusely in the tissue of nasal polyps, cell density of these cells corresponds to the actual location of inflammatory infiltrate.

On this slide shows the expression of Toll-2 receptor at high magnifications. Clearly visible positive reaction of mononuclear cells on the membrane of monoclonal antibodies to Toll-2 receptor. Indeed, these receptors are known from the literature as a predominantly membrane-associated. Toll-2 positive cells are located in close topographical relation to the stroma of nasal polyps and also in the inflammatory infiltrate.

This slide presented Toll-3 positive cells in the tissue of nasal polyps. Toll-3 receptor belongs to the intracellular and shows that the color really touched through out the cytoplasm of cells. The intensity of DAB-positive reaction was much greater than, for example, with membrane-associated Toll-2 receptor. Given the fact that the bulk of inflammatory cells in many cases consisted of eosinophils, these cells can be defined as Toll-3-positive eosinophils. The epithelium of nasal polyps gave positive reactions to the monoclonal antibody to Toll-3 in 14% of cases, staining intensity was negligible.

On this slide shows the expression patterns of Toll-4 receptor in the SW. 100. It is seen that the Toll-4 positive cells are diffusely in the inflammatory infiltrate, with larger

increases were determined weakly positive cells, resembling a macrophage. The reaction of the epithelium to the MAT to the Toll-4 was positive in 16% of cases.

Important was to study the expression of Toll-5 receptor on cells of inflammatory infiltrate in polypous rhinosinusitis, because this receptor is given enough attention in various diseases, including diseases of ENT organs. Distinctive feature of the expression of this receptor was its predominant localization in the surface epithelium. It is seen that the lining contrasted so clearly that it seemed that the only positive is the epithelium. However, Toll-5 positive cells were found in tissue of nasal polyps, and cell density was even greater, as compared with others.

This slide presented Toll-7 positive cell. Toll-7 receptor is intracellular and the picture shows that the entire cell cytoplasm stained homogeneously. Their density was negligible. Many of the drugs were determined by a tendency to perivascular localization of these cells.

Expression of Toll-9 receptor is presented on this slide. Clearly visible positive reaction and a tendency to diffuse location of these cells.

Cytofluorimetric study the expression of Toll-like receptors are found in these slides.

On this slide before the histogram of fluorescence Toll-3 positive monocytes, which can be seen clearly separated peaks of isotypic control, left, and the fluorescence intensity Toll-3 positive monocytes, on the right. That is a fact of expression of this receptor is obvious and, most importantly, there is a possibility of quantitative measurement of gene expression.

Given the fact that eosinophils in the peripheral blood is an important factor in the pathogenesis of PRS, we examined the state of innate immunity in patients with PRS, depending on this factor. The level of eosinophilia in 150 cells in 1 microliter of blood is taken by us as well-known statistical norm.

On the slide presents IHC-study the expression of Toll 1-10 - receptors in surgically surveyed patients. It is seen that, firstly, the inflammatory cells are expressed all studied Toll-receptors - from first to tenth, and, secondly, the cell density of DAB-positive cells in all cases was small and ranged from 6 to 20 cells in the S / W in SW. 400. Statistically significant increase in the number of Toll-positive cells (red) were recorded in patients with eosinophilia of up to 150 cells / mm, and this was only 8 + Toll and Toll 9 + cells. It is important to note that in the control intact tissue lining of the nose level of Toll - positive cells was quite low, and Toll - 1,3,4,5 and 9 - positive cells were not recorded.

On the slide shows the results of cytometric studies Toll-1-10 and Nod-2 receptor-expression on monocytes from two groups of patients with PRS. It should be noted that the table presents the fluorescence intensity of monocytes (in arbitrary units of fluorescence), taken in monocyte window cytogram patients on parameters of small-angle light scattering (FSC) and side scattering (SSC) in the mode of "dot-plot". It is evident that in patients with eosinophilia of up to 150 cells / mm statistically significant increase in the expression of Toll-receptors, compared with the control group were recorded in relation to the Toll-3 and Toll-9 ($p < 0.05$, red), and group of patients with eosinophilia of more than 150 cells / mm in relation to Toll-1 and Toll-2 receptors ($p < 0.05$, red). In general, patients with PRS expression of virtually all Toll-receptor was significantly higher or tended to increase. Expression of the Nod-2 receptor, which are intracellular, did not differ from the control group. Interpretation of facts selectivity enhancing the expression of Toll-receptors (in our case, Toll-1, Toll-2, and Toll-3 and Toll-9) in terms of modern immunology is the subject of separate analysis. In this case, the important statement of changes in the expression of specific Toll-receptors on specific cells in the two groups of patients studied PRS, to explore the pathogenetic relationship between these facts with eosinophilia in peripheral blood.

This slide presents cytometry in the two studied groups in granulocyte window cytogram. Seen that in patients with eosinophilia of up to 150 cells / mm a statistically significant increase in the intensity of expression was registered in relation to the Toll-2, Toll-3, Toll-5 and Toll-9 receptor, as compared with the control group. In contrast, the

luminescence intensity of Toll-8-receptor in the same group was significantly reduced, but compared with a group of patients with PRS with eosinophilia greater than 150 cells / mm. Of all the Toll-receptor inhibition of expression has been registered against precisely this receptor. We emphasize that it is an expression of Toll-receptors on granulocytes of the peripheral blood of patients with PRS. In the group of patients with eosinophilia of more than 150 cells / mm increased expression was observed in relation to the Toll-4 receptor, and inhibition of expression in relation to the Toll-10 receptor ($p < 0.05$ in both cases). As can be seen in the two groups of patients increased, and inhibition of expression of Toll-receptors is determined in relation to different types of these receptors. There is an obvious connection between the level of eosinophils and expression of specific types of Toll- like receptors on granulocytes of patients PRS.

This slide quite interesting from the point of view, that is lymphocytes, ie cells of adaptive immunity, also express the Toll-like receptors. However, the degree of expression, as seen on the slide, much less in comparison with similar data on monocytes and granulocytes. In patients with eosinophilia of up to 150 cells / mm determined by reliable stimulation of the Toll-3 and Toll-5 receptor as compared with the control group, and in patients with eosinophilia of greater than 150 cells / mm, this stimulation is determined in relation to the Toll-4 and Toll - 5 receptors (all red). Note that the differences in Toll-3 receptor is also determined and a comparison group of patients PRS with each other.

Very interesting study found correlations between the expression of Toll 1-10 receptors on peripheral blood monocytes and the absolute number of Toll 1-10-positive cells in the tissue of polyps, depending on eosinophilia. Calculation of correlation coefficients showed the presence of reliable direct coupling of Toll-7 receptor ($r = 0,875$, $p < 0,05$) and Toll-8-receptor ($r = 0,929$, $p < 0,05$). Thus, of all the Toll-receptor positive, reliable, strong correlations were determined only in respect of Toll-7 and Toll-8 receptors in patients with eosinophilia PRS than 150 cells / mm.

Thus, these results ascertain the active participation of mechanisms of innate immunity in eosinophilic inflammation of the nasal mucosa in the PRS. The presence of significant differences and correlations between the Toll-positive cells in the systemic circulation and in situ, and the obvious correlation between these indicators and the level of eosinophilia in peripheral blood of study emphasizes the perspective of the problem in terms of developing new methods of systemic and topical immunotherapy.

PHOTODYNAMIC THERAPY OF RECURRENT RESPIRATORY PAPILLOMATOSIS WITH 5-AMINOLAEVULINIC ACID

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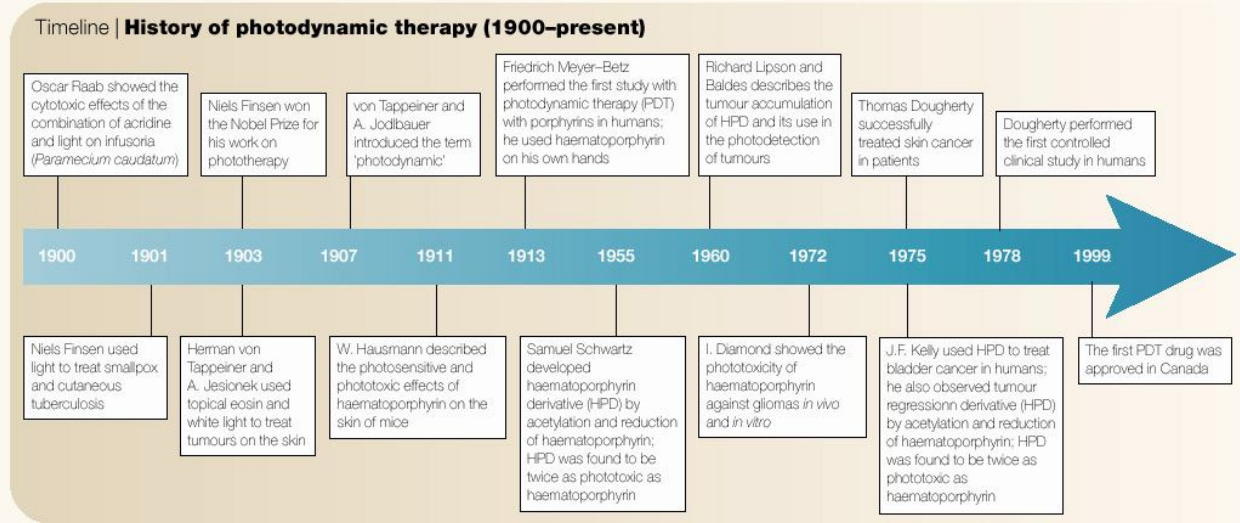
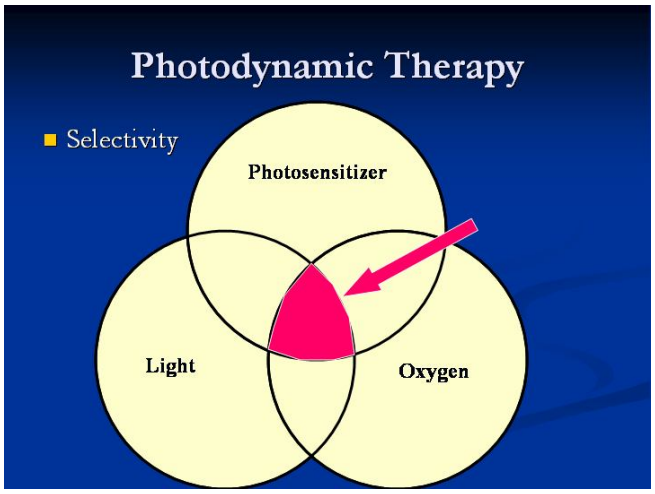
Photodynamic therapy is a new and one of the most promising and discussed method in a field of head and neck lesions. The concept of PDT is not new. In 1903 Jesionek and Tappeinner described this technique with their method of a treatment of human tumors with eosin as a photosensitizer. Unfortunately, no further reports followed (Pic. 1).



Pic.1. Timeline. History of photodynamic therapy

In the second half of XX century an interest to the PDT returned. We can see a lot of reports about using a PDT in different fields of medicine and more and more photosensitizers were described.



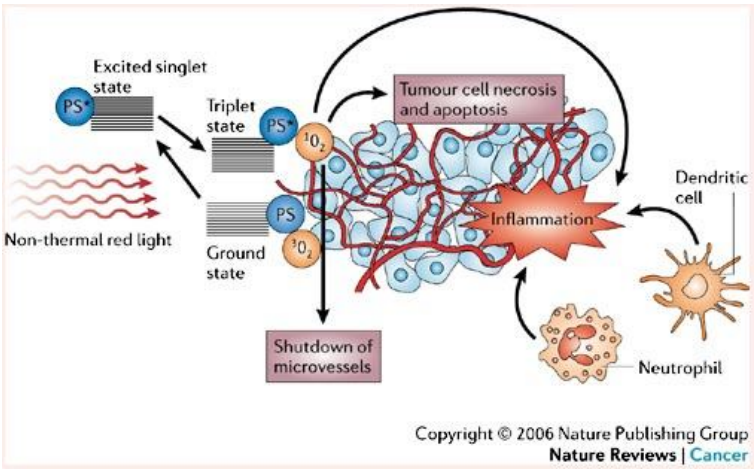
Pic. 2. The selectivity of photodynamic therapy

As we know now, there are three fundamental elements of PDT: an oxygen, a photosensitizer and visible light (Pic. 2)

The photosensitizer is activated by light and interacts with molecular oxygen to produce singlet oxygen. This form of oxygen is highly reactive. It acts in two ways: directly kills tumor cells by the induction of apoptosis and necrosis and directly damage the microvasculature of the tumor. Pic. 3

The main advantages of PDT over a chemo or radiotherapy are 100% specificity, absence of unwanted systemic effect and it can be repeated in case of recurrence or a new primary tumor in the previously treated area. All this options based on tumor cells ability to accumulate a photosensitizing agent better, than a normal tissue and on a photosensitizer's property not to accumulate within cell nuclei, so the photosensitizer utilize

more or less quickly and through the common ways. Those two options give us a possibility to use a PDT in a field of premalignant and malignant lesions.



Pic. 3. Photodynamic therapy – how it works

In our opinion, one of the most promising fields in head and neck PDT is a laryngeal papillomatosis. The possibility to use a PDT in this area was described by Abramson et al in several reports. They used first- and second-generation photosensitizers on animal models and clinical trial and achieved good results.

One of the most important problem we solved before the study is a photosensitizer's choice. As we wrote before, there are the numerous photosensitizers and most common and usual is a synthetic photosensitizers. They use it in many directions and in the field of laryngeal papillomatosis too. But we think that parameters of all synthetic photosensitisers aren't suits for laryngeal papillomatosis because of their strong skin photosensivity, hepato- and renal intoxication ability. We can bear all of this in case of cancer but not for the laryngeal papillomatosis.

Further, the second question is how to use PDT. The usual way is to perform PDT as a single treatment and in our opinion that is not ideal too. When we collect all this information and we decide to combine both endoscopic surgery and photodynamic method in one treatment. We decide to use a PDT only for the cleaning postoperative larynx from small pieces of untouched and partially removed papilloma mass.

In collaboration and with assistance of Department of Otolaryngology, Head and Neck Surgery, Philipps-University of Marburg, Germany we elaborate our own way in treatment of laryngeal papillomatosis with 5-aminolaevulanic acid.

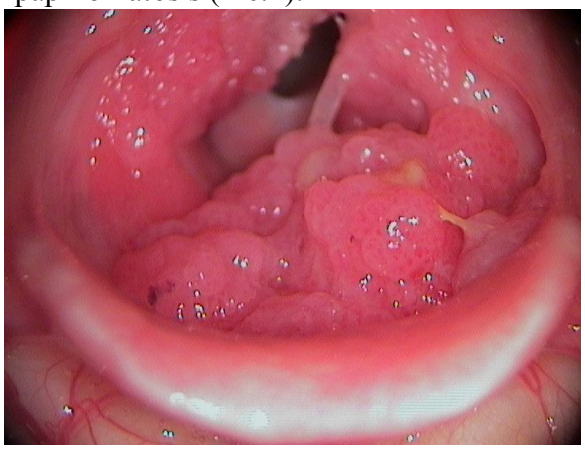
The usage of pro-drug aminolevulinic acid (ALA) to a patient in order to enhance the generation of endogenous protoporphyrin IX for the fluorescence diagnosis and photodynamic therapy (ALA-PDT) has become a widely accepted, popular procedure, with minimal side effects.

The main fields for ALA are: dermatology, urology, neurosurgery, gynecology and gastroenterology, where it used for the diagnostic and treatment of malignant diseases of skin, mucosa of oral cavity, esophagus, bladder and cervix. In otolaryngology ALA was used for FD and PDT of different malignant and pre-malignant lesions.

When PpIX is sufficiently available in the target tissue, it may be irradiated with visible light for photoactivation. The irradiation wavelength should be chosen according to the absorption maxima of PpIX and the desired outcome, i.e. fluorescence for diagnostics or physic-chemical reactions (predominantly with oxygen) for therapeutic purposes. Irradiation is carried out with wavelengths near 400 nm for FD and 635 nm for PDT, provided by lasers, lamps or LED sources. The depth of effect is near 0,2 cm.

The advantages of ALA are it natural way of effect, and because of this way it not provoke any hepato- and renal disorders. Further, in our experience we didn't meet a nausea problem, which is very usual for other photosensitisers. Talking about ALA small depth of effect we consider that for our goals it enough.

For our study we take a patient with a history of biopsy-proven laryngeal papillomatosis (Pic.4).

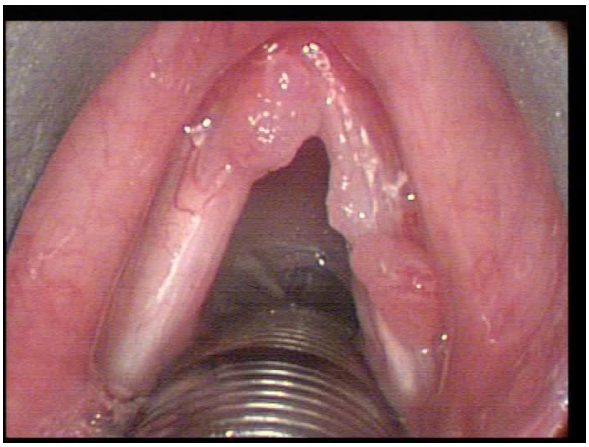


Pic. 4. Laryngeal papillomatosis

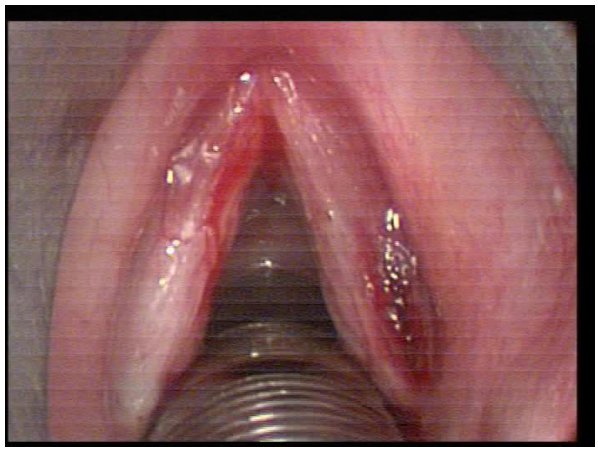
Each patient was preoperatively underwent transoral laryngeal endoscopy under the local anesthesia to establish the present of papillomas in larynx. Selected patient were exposed to the treatment in two steps.

As a first step of treatment we used an endoscopic papilloma excision under the general anesthesia, using a CO2-laser and cold instruments (Carl Storz) (Pic. 5). After that, during the five days we examined the patient every day, till the moment, when postoperative edema will mostly regress. Then we prepare the patient to the second step (Pic. 6).

In a second step, in a fifth day after the operation we performed a photodynamic therapy with 5-aminolaevulanic acid hydrochloride ("Alasens"), produced by FGU "Niopic", Moscow, Russian Federation.



Pic. 5. Laryngeal papillomatosis. During the procedure.



Pic.6. After the procedure. Step 1 finished.

1,5-2 hours prior to therapy we dissolve 3 grams of ALA-powder in 200 ml of distilled water and give it to the patient for a drink (30-50 mg/kg).

Under the general anesthesia we performed a direct laryngoscopy and placed a cylindrical optical diffuser fiber next to the target fields. Then, a 100-150 J/cm2 light dose with the flux of 250-300 mW/cm2 was delivered using a due module, connected to a LESA-01 laser (He-Neon laser system, wave length – 632,8 nm (red light), "Biospec", Moscow, Russia).

After the procedure patient remain in a dark room till the evening.

Photo documentation was performed 48 hours, 1 week and will be performed 3 and 6 month later after PDT.

Eight patients were underwent a PDT in a period between February and December 2009. In all 8 cases, that we use in our study we didn't have any postoperative complications. Small post-PDT edema disappeared in one week and didn't provoke any breathing obstruction. Skin photosensibilisation that is always a problem in case of synthetic photosensitizers was insignificant and one evening in shadowed room was more than enough for it total regression. We didn't have any skin burning in our study.

All this cases was examined and operated in a period from March till December 2009. After 3 month after case we performed a follow-up examination. In seven case after 6 month we find no recurrence and only in one case in the base of epiglottis we found a solitary papilloma.

In **conclusion** we want to say that, of course, the 5-aminolaevulanic acid is not the most modern and the best photosensitizer, but in our opinion it is most suitable for laryngeal papillomatosis and we found the way, when it advantages and property works most widely. The biggest question now will be the long-term follow-ups, and this research is now in progress.

CONDITION OF THE NASAL MUCOSA AND BUCCAL EPITHELIUM OF THE COAL MINES' WORKERS

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Abstract:
Under the influence of coal and rock dust in the upper airways degenerative processes of varying degrees develop, leads to the development of atrophic changes in the epithelium of the mucous membrane of the nasal cavity. Cytomorphologic tests are highly sensitive in the evaluation of swabs from the nasal mucosa, buccal epithelium of the miners and can be recommended for the practice of the research to identify the earliest morphological processes in the upper airways.
Key-words: the nasal mucosa, the buccal epithelium, cytomorphologic test

Upper airways are important in the pathogenesis of the lungs' dust diseases. The respiratory channel is a "gateway" for the production's and environmental pollutants. As a result of the long-time coal dust exposure coal mines' miners often have changes in the airways. Dust diseases of the bronchopulmonary apparatus are in direct dependence on the degree of dystrophic changes in the upper airways. Cytomorphological and functional integrity of the mucous membranes of the upper airways is as an essential element of the first line of the organism defense from the effects of unfavourable factors (dust, pollutants, and microorganisms). Mucous membranes are available for research and make it easy to get material for studying the functional state of the protective barrier of the upper respiratory channel. Important information can be obtained by studying cytogram of the replica from the surface of the mucosa of the nasal cavity and buccal epithelium.

In studying the relationship of the environmental factors and workers' health it was found that the greatest impact on the morbidity is done by the industrial environment. Many factors polluting inndustrial environment are not always a direct reason of the disease but they are capable to cause nonspecific changes in the organism leading to the decrease of its resistance [1-3, 5-7].

Materials and methods

The purpose of this study is to investigate cytomorphologic indicators of the nasal mucosa cells and buccal epithelium of the coal mines' miners. The study involved 42 men who were divided into 2 groups. Group 1 included 18 donors (control group) not contacting with the industrial dust (28 ± 1,1 years old), Group 2 included 24 healthy miners (mine workers, sinkers), who undergo a medical examination each year, at the average age of 37,7 ± 1,3 with the working experience of 12,5 ± 0,3 years.

The secretion of the nasal mucous membrane was taken by the sterile cotton tampon with rotational movements and smears were done on the slides and scrapes were taken from the cheek membrane with a spatula. The slides were dried in the air, then fixed in the Nikiforov mixture (spirit ± ether 1:1) for 10 minutes, then stained by hematoxylin and eosin. While microscopy 300 cells from each apparatus were counted.

Results

The results of the control group (18 people of donors) during the analysis process of the nasal mucosa: 11 people's (66%) nasal mucosa had no changes, 3 people (17%) had catarrhal rhinitis, 3 people (17%) had chronic hypertrophic rhinitis. It was found that 24 apparently healthy miners: 7 people (30%) - had no significant changes in the nasal mucosa, 11 people (46%) had catarrhal rhinitis, 6 people (24%) had chronic atrophic rhinitis.

Cytomorphologic study of the nasal mucosa cells of the workers of the second group in comparance with the donors showed the decrease in the number of the squamouse epithelium (table 1). The squamose epithelium with the damage signs was increased to 34% in the 2nd group. Cuboid epithelial cells were fixed in the 2nd group (0,4 ± 0,04). Segment- and stab neutrophils with the damage signs (vacuolated and destructive) also were increased to 38% (p <0,01). Index of alteration of the squamouse epithelium and neutrophils was increased in the 2nd group.

Table 1 - Rynocytogram and morphometry of the nasal mucosa smears of the surveyed miners (M ± m,%)

Cell type	Group 1 n=18	Group 2 n=24
Squamose epithelium	62.5 ± 2.53	57.6 ± 2.98
Squamose epithelium with the damage signs	20.8 ± 1.24	28.0 ± 2.4 *
Cuboid and epithelial cells	0.0 ± 0.00	0.4 ± 0.04
Segment-and stab neutrophils	7.3 ± 1.93	6.5 ± 1.04
Segment-and stab neutrophils with the damage signs	5.4 ± 1.3	8.68 ± 1.82 *
IA-squamouse epithelium	0.24 ± 0.0	0.33 ± 0.02 *
Monocytes / macrophages	0.0 ± 0.00	0.0 ± 0.00
Eosinophyles	0.0 ± 0.00	0.0 ± 0.00
Lymphocytes	0.0 ± 0.00	0.0 ± 0.00
IA-squamouse epithelium	0.24 ± 0.01	0.33 ± 0.02 *
IA-cuboid epithelium	0.0 ± 0.00	0.0 ± 0.00
IA-neutrophil	0.48 ± 0.03	0.66 ± 0.04 *
Note: * - firm changes compared with the donors (p <0.05)		

Our results showed that in the result of the influence of the coal and rock dust distrofic processes of variuos degrees are developing in the upper airways. In the 2nd group 46% had primary degenerative changes as the predominant form of the pathological process, which says about the reduction of the barrier function of the mucous membrane of the nasal cavity of healthy miners reflecting the adverse effects of dust on the upper airways. As it is known, the transport function of the ciliated epithelium of the nasal mucosa plays an important role in the protective mechanism of breathing, it depends on the rate of the removal of the dust particles settled on the surface of the turbinate and the duration of their parts' impact on the body. Mucociliary transport is important in ensuring the homeostasis of the respiratory system.

Inhibition of the transport function and disturbance of the acid-base balance in the mucosal surface increase, which leads to the forming of the vicious circle in which the physiological methods of compensation are impossible. Atrophic changes of the nasal mucosa are observed at 24% of surveyed miners.

While studying cells of the buccal epithelium of healthy miners we observed the increase of the cells with the signs of cornification in 5 times, binuclear cells to 3.7 times, cells with vacuolar dystrophy 2,6 times and a decreased number of the normal buccal cells by 94% (table 2). Percentage of the microbial semination (streptococci) increased to 79% compared with the donors.

Table 2 - Cytomorphological indicators of the buccal epithelium cells of the miners (M ± m,%).

Cell type	Group 1 n = 18	Group 2 n = 24
Atomized infusion in the cytoplasm	7.7 ± 1.1	8.5 ± 0.6
By drop infusion in the cytoplasm	7.75 ± 1.1	9.6 ± 1.6 *
Signs of keratinization	0.0 ± 0.00	5.0 ± 0.5
Anuclear cells	5.75 ± 1.2	6.3 ± 0.4 *
Degenerated neutrophil leukocytes	7.8 ± 1.9	8.1 ± 0.6 *
Binuclear cells	0.8±0.2	2.5±0.2*
Normal cells	58.9 ± 2.2	30.3 ± 2.08
Cellular vacuolar degeneration	11.3 ± 1.1	29.5 ± 2.2 *
Blood cell		
Monocytes	0.0 ± 0.00	0.0 ± 0.00
Lymphocytes	0.0 ± 0.00	0.0 ± 0.00
RBC	0.0 ± 0.00	0.0 ± 0.00
Percentage of microflora semination (streptococci)	7.1 ± 1.5	12.7 ± 1.5 *
Note: * - firm changes compared with the donors ($p < 0.05$)		

The nasal mucosa is the first and most important biological barrier to the industrial contaminants. The presence of mucociliary clearance in it, bacterial properties of the mucus covering the ciliate cells, migration of mononuclear phagocytes on the surface, leukocytes, and, finally, the ability of the epithelial structures of the nasal mucosa to toxic substances metabolization determine the opportunity to realize various mechanisms of protective-adaptive reactions. in the respiratory channel.

Study of the morphofunctional state of the mucous membranes of nose and mouth of the coal miners with different work experiences allowed to establish that prolonged exposure of the dust causes disturbance of protective-adaptive mechanisms of the airways, the severity of which depends on the duration of the dust factor effect and individual characteristics of the body. It determines the difference in the course and severity of occupational disease [4,8-10].

Thus, the analysis of the data shows that the reason of the development of degenerative and reparative changes in the epithelium of the nasal cavity mucosa can be found in disturbance of the mechanisms of intracellular regeneration of the miners contacting with the coal dust. In the rezult of which the conditions for the development of chronic pathologies of the upper airways are created. Tha data allow to make the following conclusions: possessing sensitivity to the dust factor cells of rynocytogram and buccal cells are also a subject to functional changes by different violationsof the local and systematic homeostasis.

This can be seen by several cytomorphologic parameters. These observations reflect the reactivity of the mucous epithelium in the common system of homeostasis allowing you to use the most accessible of its elements (in particular, rynocytogram and buccal epithelial cells) in the clinical and laboratory practice.

Conclusions:

1. Under the influence of coal and rock dust in the upper airways degenerative processes of varying degrees develop.Violation of the mechanisms of intracellular regeneration of the miners contacting with the coal and dust waste leads to the development of atrophic changes in the epithelium of the mucous membrane of the nasal cavity.

2. Application of morphometric methods (rynocytogram) taking into account the cellular composition (differentiation of epithelial cells), the number of leukocytes and monocytes in the nose mucous membrane of the miners is necessary to assess the purifying function and protective reaction of the respiratory system during the long-term effects of industrial factors on the miners' bodies.

3. Cytomorphologic tests are highly sensitive in the evaluation of swabs from the nasal mucosa, buccal epithelium of the miners and can be recommended for the practice of the research to identify the earliest morphological processes in the upper airways.

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III INTERNATIONAL WORKSHOP ON EAR MICROSURGERY 18- 31 SEPTEMBER 2009 ST. PETERSBURG

The III International Workshop on Ear Microsurgery took place on the 18 – 31 of September 2009 in the Department of Otorhinolaryngology within the Clinic of St.Petersburg Pavlov State Medical University.

Professor E.Steinbach of Tübingen University (Germany) conducted the workshop.

35 surgical operations were performed on different ear diseases and a number of lectures given. All surgical operations had been transmitted by video link to the audience.

Subsequent reviews and discussions were held after each surgical operation.

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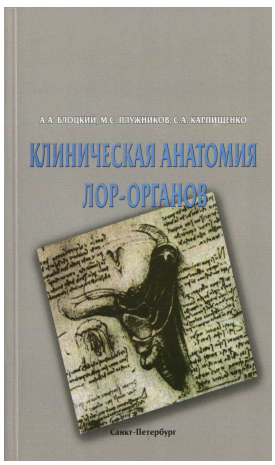

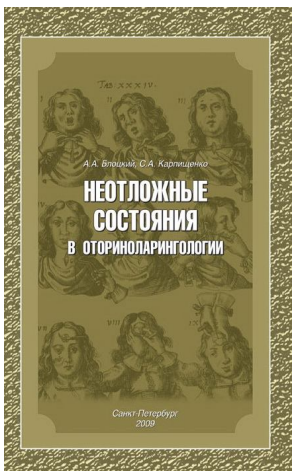

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