

## NEW INTERDISCIPLINARY CHALLENGES OF OTORHINOLARYNGOLOGY, HEAD, NECK SURGERY AND MAXILO-FACIAL SURGERY

Modern otorhinolaryngology, head, neck and maxillo-facial surgery and their branches face the challenges of interdisciplinary clinical medicine of the new millennium. The united efforts of a plenty of eminent scientists from Europe are directed to uninterrupted improvement of diagnosis, management and prevention of the socially significant diseases of the head, ear, nose and throat. Since several decades onwards, a series of national, international and European societies and associations have undoubtedly contributed to the advances of theory and practice in this area by promoting the rapid and wide implementation of the new achievements and the fruitful international collaboration. Let us mention some of these organizations only: Politzer Society Inc., an International Society of Otolgic Surgery and Science; the European Academy of Otology and Neuro-Otology (EAONO); the Mediterranean Society of Otology and Audiology (MSOA); the European Academy of Otorhinolaryngology - Head and Neck Surgery (EAORL-HNS); the European Rhinological Society (ERS); the European Laryngological Society (ELS); the European Head and Neck Society (EHNS), the International Black Sea Otolgic and Neuro-Otolgic Association (newly-registered in Varna, Bulgaria), etc.

This special is an example of such co-operation between Bulgarian authors and their friends from abroad who accepted our invitation to contribute to this special issue of *Scripta Scientifica Medica* and to share a piece of their rich experience in their intensive problem-oriented research. The authors of these articles have already delivered interesting lectures during numerous scientific meetings and educational courses around the globe.

S. Spremo et al. from Banja Luka, Serbia, estimate the opportunity for the lateral attic wall reconstruction with autologous cartilage to enable optimal anatomical and hearing results compared to canal wall-down tympanoplasty with attic obliteration in chronic suppurative otitis media in relation to preoperative and postoperative hearing status among 88 patients operated for attic cholesteatoma at a mean age of  $46.1 \pm 16.1$  years (range: 5-78 years). Both tympanoplasty techniques, attic reconstruction and attic obliteration, achieve postoperative hearing improvement which amount measured by the air bone gap closure and mean pure tone average is larger in the first than in the second technique. Lateral attic wall reconstruction with cartilage plate provides better postoperative hearing results. Several preconditions such as intact at least head of the malleus, sufficient tubal function, and intact mucosal lining at least at the medial attic wall should be met. The attic reconstruction in revision cases for cholesteatoma recurrence are, however, not advocated.

During the period from 2009 till 2014, S. Ya. Kosyakov and E. V. Pchelenok from Moscow perform canal wall-down technique with paratympanic spaces' obliteration followed by restoration of the posterior wall of the external auditory meatus and simultaneous tympanoplasty (closed-type surgery) in 189 patients with chronic suppurative otitis media accompanied by acquired cholesteatoma in order to prevent residual disease and its relapses. Long-term follow-up indicates that this technique with bony obliteration is a safe method for primary cases and reconstruction of unstable cavities. MRI technology in the non-EPI DWI regime successfully differentiates soft tissues and enables the detection of residual or recurrent cholesteatoma after surgery.

O. K. Egilmez and M. T. Kalcioğlu from Istanbul systematize the recent scientific literature dealing with the applications of cochlear implants in patient of various age with hearing disorders of different severity and duration. The authors define a variety of indications and contraindications for cochlear implants. To the indications belong severe-to-profound bilateral sensorineural hearing loss and some pathologies limited to the cochleae already in small children. The reasons are divided into prelingual such as genetic, infections, auditory neuropathy, auditory dyssynchrony, and hyperbilirubinemia as well as into per- and postlingual such as infectious, ototoxicity, trauma, noise-induced hearing loss, tinnitus, Ménière disease, and presbycusis. The contraindications are relative and absolute and include deafness because of lesions of eighth cranial nerve or brain stem. The complications of the surgery range from temporary vertigo to death due to meningitis. They are related to medical, surgical cochlear implant problems. They are early and late, major and minor. Infections complicate most commonly cochlear implantation.

B. E. Mostafa from Cairo, Egypt, performs a systematic analysis of 31 studies of the management of vestibular Schwannomas retrieved from *PubMed* database. He examines comparatively these publications concerning the different patient's quality of life measures when presenting the therapeutic outcomes. The investigators in this field make predominantly use of Short Form-36 Health Survey while some other approved questionnaires such as the validated 26-item Penn Acoustic Neuroma Quality-of-Life Scale (2010), the Glasgow Benefit Inventory, an 18-item postintervention questionnaire, six-grade classification of House-Brackman Scale (1983), Short Form-12 Health Survey etc. are occasionally applied, too. The challenges of this difficult surgical management are emphasized.

Within a randomized, double-blind clinical trial, A. Tavallaei and A. R. Shitaz from Shiraz, Iran, examine the postoperative analgesic effects of preoperative intravenous Apotel and Remifentanil in 60 patients who have undergone septorhinoplasty. After Apotel administration, both postoperative shivering ( $p=0.011$ ) and pain ( $p=0.041$ ) are significantly less common as well as visual analogue scale is significantly lower in comparison to Remifentanil at one ( $p=0.035$ ), two ( $p=0.026$ ), and four ( $p=0.028$ ) hours after surgery. The need for rescue analgesic use is significantly lower in Apotel group compared to Remifentanil one ( $p=0.001$ ), too.

G. Stoyanov et al. from Varna, Bulgaria, create an easy to apply digital algorithm for post process correction of images taken with otorhinolaryngological endoscopes, standard Hopkins rod lens endoscopes – 0° and a flexible nasopharyngolaryngoscope. They correct the distortion rate given and select the most appropriate endoscope for indirect laryngoscopy in an experimental setting in order to visualize the true size and proportions of the human laryngeal complex using standard endoscopic techniques. The new software correction algorithm is useful and easily applicable as a post process step for image correction and provides great results with the laryngeal complex of the intubation mannequin thus allowing for the first time to obtain an anatomically and proportionally correct image of a human model larynx using a standard two-dimensional Hopkins rod lens endoscope. This model algorithm would give a good opportunity for both better surgical preparation and correct *in vivo* examinations of anatomic structures in a variety of clinical areas.

M. M. Khan and S. R. Parab from Pune, India, evaluate the surgical outcomes of 571 primary endoscopic dacryocystorhinostomy procedures performed without stenting in 309 consecutive female and 262 male patients aged between 13 and 82 years with nasolacrimal duct obstruction because of chronic acquired and congenital dacryocystitis, lacrimal sac mucocoele and lacrimal abscess. The success rate of this technique without lacrimal stenting is 87.39% and it is comparable to that of the external approach. It depends on stoma size and avoiding the trauma to the nasal mucosa.

Lobular capillary hemangioma or pyogenic granuloma is a benign vascular lesion of the skin and mucous membranes occurring predominantly in females aged between 20 and 40 years. Its localization in the larynx is extraordinarily rare. O. K. Egilmez et al. from Istanbul report a clinical case of laryngeal lobular capillary hemangioma in a 47-year-old male patient and comprehensively review the literature available. Videolaryngoscopic examination reveals varicosity mass located on the vocal process of posterior part of the left vocal fold obstructing the rima glottis. Successful and uneventful surgical excision of the tumour mass is carried out. Trauma and chronic irritation to the larynx are the main etiological factors for this pathology.

Ts. Tonchev et al. from Varna, Bulgaria, concisely review the recent achievements in the field of parotid gland endoscopy or sialoendoscopy as a minimally invasive technique for safe and effective treatment of benign salivary gland diseases. The publications of several meta-analyses in this interdisciplinary field testify to the reached maturity of the topic. The development of miniaturized endoscopic imaging instruments in recent years enables the permanently broadening clinical applications of sialoendoscopes for successful visualization of parotid gland lesions as the stiffness permits manipulation and navigation of the internal salivary anatomy by means of grasping forceps, biopsy forceps, drills, needles, laser fibers, and lithotripters as well. The results from the usage of interventional sialoendoscopy in children and adult patients with chronic parotitis and with salivary gland stones are convincingly demonstrated.

In conclusion, these invited papers have shed light on certain interesting issues of diagnosis and management and thus contributed to the further advances of our knowledge and to our international collaboration.

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