though the largely scattered distribution of the NR values indicates a rather loose connection between the two variables. On the opposite, there was no statistically significant correlation between the subjective and the objective values if the subject groups with or without complaints were examined. The two groups of subjects are significantly different as it was found with the one-tailed t-test (p<0.001). These two different groups examined as a whole showed different statistical behaviour from the independent groups. In 84% of the cases (104 out of 124) the narrower side of the nose was identified with both, the objective and the subjective methods. The latter was independent from the dimensions of the NR values. Statistically significant correlations were exhibited between the subjective and the objective measures if unilateral NR and the ipsilateral VAS values were related to each other (n=316, r=0.476, p<0.001), in both cases, on the side of the higher and the lower nasal resistances. The best correlation was found on the side of the higher nasal resistance, that is when nasal breathing is more impeded.

A PITFALL IN OBJECTIVE ASSESSMENT OF NASAL PATENCY

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Assessment of nasal patency is extremely important in otorhinolaryngological practice, because nasal obstruction is a common symptom in almost all nasal diseases. Nasal patency is assessed by complaints of patients, anterior and posterior rhinoscopy, radiologic examinations, rhinomanometry and acoustic rhinometry. Recently, the complaint of nasal obstruction is often evaluated by visual analogue scales, and this method is getting popular also in assessment of other subjective symptoms. As for objective assessment of nasal patency, rhinomanometry and acoustic rhinometry are used for clinical practice and research. Nasal patency is greatly attributed to nasal airflow sensation, and then it is well known that the subjective assessment and objective assessment are not always in accordance with each other. This inconsistency is brought about not only by the difficulty in the expression of the subjective symptoms but also by inaccuracy in objective assessment of nasal patency. In this symposium, objective assessment of nasal patency is focused, and points at issue are discussed.

ASSESSING THE NASAL AIRWAYS IN NASAL SURGERY

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To objectively assess the nasal airways in nasal surgery is a matter of course just like audiometric tests are in ear surgery, except for such cosmetic surgery, where it is obvious that the interior of the nose can't be changed. Both pre- and postoperative objective assessments are almost always recommended in the literature, the postoperative one usually at least half a year after the surgery. In no paper a recommendation is found to use only a preoperative objective assessment. Just a few papers recommend objective assessment as an aid for the selection of suitable candidates for surgery i.e. septoplasty. Nasal decongestion with topical vasoconstrictors is recommended in some papers in order to differ between mucosal disease and structural etiology to nasal obstruction (obstruction due to deformed cartilage and/or bone). Pros and cons for the use of rhinomanometry, acoustic rhinometry, and nasal peak flow in connection with nasal surgery will be presented.

COMPARISON OF RHINOMANOMETRICAL FLOW RATE FINDINGS AFTER TREATMENT OF PERENNIAL RHINITIS WITH CO2 LASER TURBINOTOMY AND FLUTICASON PROPIONATE

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The study comprised patients of both sexes. Forty-five patients were treated with CO2 Laser turbinateotomy, 30 patients with Fluticasone propionate (FPANS) and 30 patients had combined therapy with FPANS and CO2 Laser turbinateotomy. The study was comparative, randomized, double-blind, trial. Allergological testing on inhaled allergens was conducted by means of the prick technique and allergy to house dust (HD), DDP, feathers and animal fur was discovered. Approximately 75% of subjects showed allergic reactions to HD and DDP combined or separately, the rest were positive reactions to HD and DDP in the combination with feathers and animal fur. The findings were recorded by Rhinomanometer Mercury NR6, the smear of the nasal mucous was analysed cytologically and RIST and RAST values to HD and DDP were taken. Rhinomanometrical flow rate values were performed in all three groups of subjects before the treatment and two weeks after the end of the treatment in the second and third group. The treatment lasted for ten weeks. The total flow rate values (Vt) for inspiration and expiration ranged between 353.8-209.8 cm3/s. After the treatment the values were from 388.6-250.8 cm3/s at the fixed pressure of 150Pa. Statistical elaboration comprised Sign test, Krusal-Wallis ANOVA test and Descriptive Statistic.

KEYWORDS: rhinomanometrical flow rate values, CO2 Laser turbinateotomy, FPANS

COCHLEAR IMPLANT - PART 1

IMPLANTATION OF THE NEW NUCLEUS CI-3 RECEIVER STIMULATOR AND ELECTRODE ARRAY

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There is an important need to fix the cochlear implant electrode array at a site close to the cochlea, so that the electrode will not slide out, or be subject to differential movement with growth changes. Fixation sites have been in the region of the posterior root of the zygoama and the floor of the antrum. Fixation has been by Dacron mesh tiss, platinum wire tiss, or clips inserted with special instruments. Biological cements have previously been tried but found to be toxic. The most ideal site is in the region of the cochleostomy. Our research studies have demonstrated that a specially-designed collar around the array can be placed through the cochleostomy and provide the necessary locking needed to prevent retraction of the array. It can have a ceramic circumference to encourage union with neighbouring bone and has also been designed with a stress release to reduce fracturing of wires where the array leaves the cochlea. The collar can also provide pressure on the array without risk of damage. The placement of receiver stimulator packages is critical. They should not protrude significantly above the surface of bone and be
placed so that blows to the head do not lead to damage to the package or injuries to bone or structures within the cranium. Studies are in progress to determine the optimal configuration for the package to lie within the mastoid cavity.

**ANCHORING AND FIXATION OF COCHLEAR IMPLANTS**

Noel L. Cohen, M.D.
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It has become increasingly apparent that fixation of both the (proximal) cochlear implant body and the (distal) electrode array are desirable, necessary, and act to reduce both immediate and long-term complications.

Failure to anchor the cochlear implant body may render it more vulnerable to external trauma as well as to the possibility of movement and extrusion over time. If the electrode array is not fixed close to the cochleostomy, migration may occur over time, resulting in a decrease in patient performance and the possible occurrence of complications such as non-auditory sensation.

We will describe the surgical techniques available to achieve both proximal and distal fixation of several devices.

**SOFT SURGERY TECHNIQUE IN COCHLEAR IMPLANTATION**

E. Lehnhardt
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- **What is Soft Surgery?**
  It is a special surgical technique of cochleostomy and electrode insertion. It is performed with extreme care and aims to reduce the surgical trauma to the cochlea.

- **What is the rationale behind it - what do we hope to prevent?**
  We try to preserve as much of the inner ear structures as possible by minimizing the necessary insertion trauma, regardless of the extent of residual hearing. All sensorineural structures that may contribute to hearing and electrical stimulation should be spared.

- **How do we do it carefully - what makes this surgery special?**
  We try to prevent any bleeding or damage to the subtle structures of the scala tympani. No bone, connective tissue or blood should be induced into the cochlea. According to the outdated surgical procedure for fenestration of the lateral semicircular canal in cases of otosclerosis, the perilymphatic spaces are left intact as long as possible. For the short moment of electrode insertion the endosteal layer of the scala tympani is carefully opened under protection and closed as soon as possible.

- **What could be the benefit - what can we achieve?**
  Residual hair cells and hearing can be at least partially preserved in a number of patients. However, these patients perform extremely well with electrical stimulation and rely on the cochlear implant rather than their conventional hearing aids. This may be due to the continuous hearing experience or the preservation of neural structures. With the growing success of cochlear implantation the selection criteria include more and more candidates with residual hearing. These patients will benefit most of cochlear implantation with soft surgery.

**A PRACTICAL TOUR THROUGH ENDOSCOPIC SINUS SURGERY**

David W. Kennedy, M.D.
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Safe endoscopic sinus surgery requires an intimate knowledge of the detailed regional anatomy, good visualization and a careful systematic approach to the dissection. This demonstration will illustrate minimal tissue trauma techniques. Although mucosal preservation is usually not possible in a preserved specimen, the importance of mucosal preservation in patients will be stressed. Although, in life, the extent of surgery is dependent on the extent of disease present, for demonstration a complete sphenoethmoidectomy with frontal sinusotomy will be demonstrated. The role of powered instrumentation will be discussed. An ordered approach to the dissection will be presented as involving several stages: 1) infundibulotomy, 2) anterior to posterior dissection through the ethmoid inferiorly, 3) posterior to anterior ethmoid dissection more superiorly, 4) sphenoidotomy, 5) frontal sinusotomy, 6) antrostomy. This demonstration will provide an overview of the use of different instrumentation and will demonstrate the relevant anatomy. The importance of early identification of the medial orbital wall and of superior retrograde ethmoid dissection will be stressed.

**THE MIDDLE TURBINATE - PATHOLOGY AND TREATMENT**

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The main controversy, from the surgical point of view, is whether to remove the middle turbinate or to preserve it. In this abstract, the surgical experience of the author is summarized, as well as the observed anatomical variations and pathologies and the possible surgical solutions, including the use of Powered Instrumentation.

The most common abnormalities observed in the middle turbinate are the Concha Bullosa (present in 28% of the patients), the Paradoxically bent middle turbinate, the Bulging into lateral nasal wall and the Enlarged and anterior extending middle turbinate. The middle turbinate originates polyps in 15% of the cases. The surgical strategy must be different for adults and for children. The surgical solutions usually suggested for the treatment of the turbinal pathology are the following: a) Partial turbinectomy, b) Lateral turbinectomy, c) Middle turbinectomy window, d) Crushing the turbinate, e) Conchoplasty. Likewise, we will comment on the benefits of: 1) Preserving the turbinate, 2) Removing the turbinate, 3) Stenting or not. The indications vary depending whether the middle turbinate is: a) the cause of the pathological disorder, b) not the cause, but has a participation in the disorder, c) not related to the disorder. We establish a treatment criteria on the basis of results shown in 150 cases treated with our technique, the use of Powered Instrumentation, in the treatment of middle turbinate pathology.
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