

Abstract Selection

Effect of early or delayed insertion of tympanostomy tubes for persistent otitis media on developmental outcomes at the age of three years. Paradise, J. L., Feldman, H. M., Campbell, T. F., Dollaghan, C. A., Colborn, D. K., Bernard, B.S., Rockette, H. E., Janosky, J. E., Pitcairn, D.L., Sabo, D. L., Kurs-Laskey, M., Smith, C. G. Department of Pediatrics, University of Pittsburgh School of Medicine, and Children's Hospital of Pittsburgh, PA 15213-2538, USA. jpar@pitt.edu. *The New England Journal of Medicine* (2001) April 19, Vol. 344 (16), pp. 1179–87.

BACKGROUND: A main indication for the insertion of tympanostomy tubes in infants and young children is persistent otitis media with effusion, reflecting concern that this condition may cause lasting impairments of speech, language, cognitive, and psychosocial development. However, evidence of such relations is inconclusive, and evidence is lacking that the insertion of tympanostomy tubes prevents developmental impairment. **METHODS:** We enrolled 6350 healthy infants from two to 61 days of age and three years of 429 children with persistent effusion were randomly assigned to have tympanostomy tubes inserted either as soon as possible or up to nine months later if effusion persisted. In 402 of these children we assessed speech, language, cognition and psychosocial development at the age of three years. **RESULTS:** By the age of three years, 169 children in the early-treatment group (82 per cent) and 66 children in the late-treatment group (34 per cent) had received tympanostomy tubes. There were no significant differences between the early-treatment group and the late-treatment group at the age of three years in the mean (\pm SD) scores on the Number of Different Words test, a measure of word diversity (124 ± 32 and 126 ± 30 , respectively); the Percentage of Consonants Correct-Revised test, a measure of speech-sound production (85 ± 7 vs 86 ± 7); the General Cognitive Index of McCarthy Scales of Children's Abilities (99 ± 14 vs 101 ± 13); or on measures of receptive language, sentence length, grammatical complexity, parent-child stress, and behaviour. **CONCLUSIONS:** In children younger than three years of age who have persistent otitis media, prompt insertion of tympanostomy tubes does not measurably improve developmental outcomes at the age of three years.

The role of adjuvant adenoidectomy and tonsillectomy in the outcome of the insertion of tympanostomy tubes. Coyte, P. C., Croxford, R., McIsaac, W., Feldman, W., Friedberg, J. Department of Health Administration, and Home Care Evaluation and Research Centre, University of Toronto, ON, Canada. peter.coyte@utoronto.ca. *The New England Journal of Medicine* (2001) April 19, Vol. 344 (16), pp. 1188–95.

BACKGROUND: Otitis media is the most common medical problem in young children. The usual surgical treatment is myringotomy with insertion of tympanostomy tubes. There is debate about the usefulness of concomitant adenoidectomy or adenotonsillectomy. We examined the effects of these adjuvant procedures on the rates of reinsertion of tympanostomy tubes and rehospitalization for conditions related to otitis media. **METHODS:** Using hospital discharge records for the period 1995 through 1997, we examined the results of surgery for all 37,316 children (defined as persons 19 years of age or younger) in Ontario, Canada, who received tympanostomy tubes as their first surgical treatment for otitis media. We determined the time to the first readmission for conditions related to otitis media and the time to the first reinsertion of tympanostomy tubes. **RESULTS:** As compared with treatment involving the insertion of tympanostomy tubes alone, adjuvant adenoidectomy was associated with a reduction in the likelihood of reinsertion of tympanostomy tubes (relative risk, 0.5; 95 per cent confidence interval, 0.5 to 0.6; $P=0.001$) and the likelihood of readmission for conditions related to otitis media (relative risk, 0.5; 95 per cent confidence interval, 0.5 to 0.6; $P=0.001$). The risk of these outcomes was further reduced if an adjuvant adenotonsillectomy was performed. The

effect was age-related. Children as young as one year appeared to benefit from adjuvant adenotonsillectomy; the benefit of an adjuvant adenoidectomy was apparent in two-year-olds and was greatest for children three years of age or older. **CONCLUSIONS:** Performing an adenoidectomy at the time of the initial insertion of tympanostomy tubes substantially reduces the likelihood of additional hospitalizations and operations related to otitis media among children two years of age or older.

Squamous cell carcinoma of the temporal bone: a radiographic-pathologic correlation. Gillespie, M. B., Francis, H. W., Chee, N., Eisele, D. W. Department of Otolaryngology – Head and Neck Surgery, The Medical University of South Carolina, USA. *Archives of Otolaryngology – Head and Neck Surgery* (2001), July, Vol. 127 (7), pp. 803–7.

OBJECTIVE: To assess the utility of a previously proposed staging system for patients with primary squamous cell carcinoma of the temporal bone. **METHODS:** Retrospective chart review of 15 patients treated for squamous cell carcinoma of the temporal bone over a 13-year period at an academic tertiary referral center. A review of the medical and surgical records, radiographic studies, and surgical pathology reports allowed for an evaluation of the University of Pittsburgh staging system. Outcome analysis was performed on 13 patients with more than 24 months of follow-up. **RESULTS:** Radiographic and surgical pathology staging according to the University of Pittsburgh staging system was more accurate for larger (T3/T4) tumours than for smaller (T1/T2) tumours (83 per cent vs 67 per cent). When compared with patients with no evidence of disease, nonsurvivors were more likely to present with otalgia (67 per cent vs 43 per cent), facial nerve paralysis (33 per cent vs 0 per cent) and T3/T4 tumours (100 per cent vs 14 per cent). **CONCLUSIONS:** Pathologic staging by the University of Pittsburgh staging system closely correlates with patient outcome and is most sensitive than preoperative radiographic staging. Prognosis in squamous cell carcinoma of the temporal bone is largely determined by the extent of local disease at the time of presentation.

Efficacy of naturopathic extracts in the management of ear pain associated with acute otitis media. Sarrell, E. M., Mandelberg, A., Cohen, H. A. Pediatric and Adolescent Ambulatory Community Clinic of General Health Services, Hairis 7 Moshav Gan-Haim, 44910 Israel. sarrell@netvision.net.il. *Archives of Pediatrics & Adolescent Medicine* (2001) July, Vol. 155 (7), pp. 796–9.

OBJECTIVE: To determine the efficacy and tolerance of Otikon Otic Solution (Healthy-On Ltd, Petach-Tikva, Israel), a naturopathic herbal extract (containing *Allium sativum*, *Verbascum thapsus*, *Calendula flores*, and *Hypericum perforatum* in olive oil), compared with Anaesthetic (Vitamed Pharmaceutical Ltd, Benyamina, Israel) ear drops (containing amfetocaine and phenazone in glycerin) in the management of ear pain associated with acute otitis media (AOM). **DESIGN:** Children between the ages of six and 18 years who experienced ear pain (otalgia) and who were diagnosed with eardrum problems associated with AOM were randomly assigned to be treated with Otikon or Anaesthetic ear drops, which were instilled into the external canal(s) of the affected ear(s). Ear pain was assessed using two visual analog scales: a linear scale and a colour scale. Pain assessment took place throughout the course of three days. The mean score of pain reduction was used to measure outcome. **SETTING:** Primary pediatric community ambulatory centers. **PARTICIPANTS:** One hundred three children aged six to 18 years who were diagnosed with otalgia associated with AOM. **RESULTS:** Each of the two treatment groups were comparable on the basis of age, sex, laterality of AOM, and the effectiveness of ameliorating symptoms of otalgia. The two groups were also comparable to each other in the initial ear pain score and in the scores at each application of Otikon or Anaesthetic drops. There was a statistically significant

improvement in ear pain score throughout the course of the study period ($P=0.007$). **CONCLUSIONS:** Otikon, an ear drop formulation of naturopathic origin, is as effective as Anaesthetic ear drops and was proven appropriate for the management of AOM-associated ear pain.

Double hearing protection and speech intelligibility – room for improvement. Wagstaff, A. S., Woxen, O. J. Royal Norwegian Air Force Institute of Aviation Medicine, Oslo, Norway. anthony.wagstaff@flymed.uio.no. *Aviation, Space and Environmental Medicine* (2001) April, Vol. 72 (4), pp. 400–4.

INTRODUCTION: Double hearing protection is used in many air forces around the world for protection in noisy aircraft environments, particularly in helicopters. The usual combination is foam ear plugs under headset or helmet muffs. Much of the research that spurred the introduction of foam earplugs indicated little change in speech intelligibility in persons with normal hearing. However, aircrew often complain about having to maximize intercom volume for speech understanding, causing a situation with no reserve volume and bad sound quality. In recent years, further developments have included so-called hi-fi plus and custom made ear plugs which are claimed to improve speech communication. The aim of the present project was to investigate different types of ear plugs and their effect on speech intelligibility in helicopter noise. **METHODS:** Each of nine normal-hearing pilot subjects were placed in an environment of recorded helicopter noise from a BO-105 helicopter. Speech audiometry was performed under four different conditions: headset only, and three different ear plugs worn under the headset. Fitting of the ear plugs were performed by an ear, nose and throat specialist to ensure similar conditions. The sequence of test conditions was randomized and double-blind. In addition, a subjective rating scale was used. **RESULTS:** Wearing foam ear plugs under the headset decreased speech intelligibility dramatically. The 'hi-fi' plug was somewhat better than foam plugs, and the custom made ear plug provided a speech intelligibility close to the headset-only situation. Subjective rating scores coincided with these findings. **DISCUSSION:** In helicopter noise, custom made ear plugs may provide a much improved speech intelligibility over conventional plugs when worn under a headset, while maintaining improved noise protection over the headset-alone situation. Custom made ear plugs might therefore be a good alternative to other forms of enhanced noise protection in helicopters.

First results of the VoiceMaster prosthesis in three centres in the Netherlands. Eerenstein, S. E., Schouwenburg, P. F., Van Der Velden, L. A., De Boer, M. F. Department of ENT/Head and Neck Surgery, Academic Medical Centre, University of Amsterdam, The Netherlands. S.E.Eerenstein@AMC.UVA.NL. *Clinical Otolaryngology and Allied Sciences* (2001) April, Vol. 26 (2), pp. 99–103.

The VoiceMaster indwelling voice prosthesis was designed and developed for use in laryngectomized patients. The VoiceMaster pre-production model (0-series), tested during 1997 and 1998, proved to be a safe and valid concept. After the refining of a few technical details the currently available VoiceMaster device was introduced in June 1998. The preliminary results obtained with the device were encouraging and led to a multicentre study. The average device life span varies between the participating clinics, ranging up to 4.8 months. As there still are devices in situ, the average life span is still increasing. Factors such as stoma size and fistula position influence the insertion of the device and should be considered before VoiceMaster insertion. The general experience with the VoiceMaster prosthesis has proven it to be a worthwhile new device in prosthetic voice rehabilitation in laryngectomized patients.

Hereditary angioedema: report of a case. Joynt, G. M., Abdullah, V., Wormald, P. J. Department of Anaesthesia and Intensive Care, Prince of Wales Hospital, Chinese University of Hong Kong, 30-32 Ngan Shing Street, Shatin, N.T., Hong Kong, SAR, China. gavinmjoynt@cuhk.edu.hk. *Ear, Nose & Throat Journal* (2001) May, Vol. 80 (5), pp. 321, 324.

Hereditary angioedema is caused by an absolute deficiency or the functional inactivity of C1 esterase inhibitor in plasma. A precise diagnosis is important because, unlike allergic forms of mucocutaneous edema, this condition does not respond to epinephrine,

antihistamines or corticosteroids. We report the case of a 24-year-old man who experienced an acute attack after he had stopped taking his prophylactic medication.

Risk factors for wound infection in head and neck cancer surgery: a prospective study. Penel, N., Lefebvre, D., Fournier, C., Sarini, J., Kara, A., Lefebvre, J. L. Head and Neck Cancer Department, Oscar Lambret Cancer Centre, 3 Rue F. Combemale, Lille 59020 BP 207, France. *Head and Neck* (2001) June, Vol. 23 (6), pp. 447–55.

BACKGROUND: The goal of this prospective study is to determine risk factors for wound infections (WI) for patients with head and neck cancer who underwent surgical procedure with opening of upper aerodigestive tract mucosa. **METHODS:** One hundred sixty-five consecutive surgical procedures were studied at Oscar Lambret Cancer Center within a 24-month interval. Twenty-five variables were recorded for each patient. Statistical evaluation used Chi2 test analysis (categorical data) and Mann-Whitney test (continuous variables). **RESULTS:** The overall rate of WI was 41.8 per cent. Univariate analysis indicated that five variables were significantly related to the likelihood of WI: tumour stage ($P=0.044$), previous chemotherapy ($P=0.008$), duration of pre-operative hospital stay ($P=0.022$), permanent tracheostomy ($P=0.00008$), and hypopharyngeal and laryngeal cancers ($P=0.008$). **CONCLUSIONS:** Despite antibiotic prophylaxis, WI occurrence is high. These data inform the head and neck surgeon, when a patient is at risk for WI and may help to design future prospective studies.

The presence of a widened vestibular aqueduct and progressive sensorineural hearing loss in the branchio-oto-renal syndrome. A family study. Stinckens, C., Standaert, L., Casselman, J.W., Huygen, P. L., Kumar, S., Van de Wallen, J., Cremers, C. W. Department of Oto-Rhino-Laryngology, Head and Neck Surgery, KU, Leuven, Belgium. *International Journal of Pediatric Otorhinolaryngology* (2001) July 2, Vol. 59 (3), pp. 163–72.

OBJECTIVE: A new large family with the BOR syndromes is reported with special reference to the presence of a widened vestibular aqueduct and a progressive sensorineural component in the mixed hearing loss. A review of the BOR literature of 184 patients is given. **SETTING:** University Hospitals. **RESULTS:** A BOR family with 17 affected members was studied. Fourteen of those 17 were still alive and 12 of those cooperated in this clinical study. Detailed radiological studies showed in three out of 12 affected family members a widened vestibular aqueduct and progressive sensorineural hearing loss. This raises the question whether there is a true correlation or whether those are coincidental. **CONCLUSION:** In our family with the Branchio-Oto-Renal syndrome, a widened vestibular aqueduct and progressive hearing loss is found in a few affected family members. Imaging of the temporal bone and long-term audiometric follow-up could help to reveal whether the widened vestibular aqueduct is the cause for the progressive hearing loss.

Thyroid ala cartilage reconstruction in neonatal subglottic stenosis as a replacement for the anterior cricoid split. Forte, V., Chang, M. B., Papsin, B. C. The Department of Otolaryngology, The Hospital for Sick Children, University of Toronto, 555 University Avenue, Ontario M5G 18X, Toronto, Canada, vito.forte@sickkids.on.ca. *International Journal of Pediatric Otorhinolaryngology* (2001) July 2, Vol. 59 (3), pp. 181–6.

Cricoid split is the procedure of choice in neonatal subglottic stenosis in many paediatric institutions. However, the post-operative care of these patients is a concern given the potentially lethal complications which can occur, in particular, self-extubation. We have been using the thyroid ala cartilage (TAC) reconstruction, a proven technique, as an alternative treatment for this disorder to avoid these complications. The purpose of this study was to compare the results of the TAC reconstruction for this patient population with the results of the cricoid split procedure previously reviewed at our own institution. Between January 1995 and December 1999, 17 patients that underwent the TAC reconstruction for neonatal subglottic stenosis were retrospectively reviewed. Of the 17 patients, two patients required tracheotomy prior to discharge from hospital. Fifteen patients were discharged from hospital with a safe airway without tracheotomy. There were only two minor complications. Compared with the cricoid split study, the success rate with TAC

reconstruction was higher (88 vs 83 per cent) and the major complication rate was lower (0 vs nine per cent). Factors associated with failed procedures may include prematurity, low birth and surgical weight and presence of severe GER. Those that failed required much greater resources in terms of post-operative care and length of hospital stay. The TAC reconstruction has replaced cricoid split in treatment of neonates with subglottic stenosis at our institution.

Cochlear implantation in children with large vestibular aqueduct syndrome and a review of the syndrome. Fahy, C. P., Carney, A. S., Nikolopoulos, T. P., Ludman, C. N., Gibbin, K. P. Department of Otorhinolaryngology, Head and Neck Surgery, Queen's Medical Centre, NG7-2UH, Nottingham, UK. thomas.nikoloulos@nottingham.ac.uk. *International Journal of Pediatric Otorhinolaryngology* (2001), July 2, Vol. 59 (3), pp. 207–15.

OBJECTIVE: Children with Large Vestibular Aqueduct Syndrome (LVAS) frequently develop speech and language skills prior to deterioration of their hearing. Operations designed to halt the progression of hearing loss have largely failed so the question of Cochlear Implantation in these children has arisen. It had been suggested that there would be technical difficulties in implanting these patients and, therefore, there had been an initial reluctance to proceed to implantation. The aim of the present paper is to assess surgical and functional outcomes in implanted children with LVAS and review the related literature. **MATERIAL AND METHODS:** From the 170 children assessed by MRI in the Nottingham Paediatric Cochlear Implant Programme, seven (four per cent) were identified as having LVAS. Four of these children were implanted and had at least 12 months follow-up. Two of the children are on the waiting lists for implantation and one child was not implanted because of absence of the cochlear nerve. Operative findings, complications and outcome measures were recorded. The auditory skills of the children were assessed before implantation and one year following implantation. A literature search was done to identify other series with experience in implanting children with LVAS. **RESULTS:** Full insertion of the electrode array was achieved in all our cases. After cochleostomy two patients experienced a mild CSF leak that was easily controlled by the muscle graft. On the first day post-operation two patients were discharged within 24 h of surgery. Initial outcome measures at 12 months post-implantation were encouraging showing significant progress in children's auditory skills. **CONCLUSIONS:** The results of the present study and the review of the literature suggest that LVAS is not a contraindication to implantation as initial concerns about severe perilymph leaks and surgical complications have proved to be unfounded. The post-operative progress of these children in listening skills also suggest that these children are suitable for cochlear implantation.

Evaluating the neck for percutaneous dilatational tracheostomy. Muhammed, J. K., Major, E., Patton, D. W. Maxillofacial Unit, Morriston Hospital, Swansea, Wales, UK. kamall@breathemail.net. *Journal of Cranio-Maxillo-Facial Surgery* (2000) December, Vol. 28 (6), pp. 336–42.

PURPOSE: The aims of this article are to study how variations in the anatomy of the neck may influence the success of percutaneous dilatational tracheostomy (PDT). **PATIENTS AND METHODS:** Four hundred and ninety-seven patients were included in this study. Patients with a short neck and altered tracheal anatomy were evaluated on the basis of difficulty with

PDT, use of long shank tracheostomy tubes, and need for open surgical tracheostomy. **RESULTS:** 33 (6.6 per cent) patients had an apparently reduced cricoid ring to sternum distance and a deeply lying trachea. Nine of these patients were referred for open surgical tracheostomy. A further five patients had altered tracheal anatomy secondary to disease or surgery. Two of these patients were also referred for open surgical tracheostomy. Thus, unfavourable neck anatomy was responsible for 2.2 per cent (11/497) of patients being referred for open surgical tracheostomy. **CONCLUSION:** Variations in the anatomy of the neck can make PDT both difficult and hazardous. Patients with a deeply lying trachea may need a long shank tube. Open surgical tracheostomy is indicated in some patients with a deeply lying trachea and conditions producing secondary deformity of the trachea. All patients should have a detailed history and thorough clinical examination of the neck and thorax prior to PDT. The selective use of chest radiography, MRI, and ultrasound assessment prior to PDT can assist in the identification of patients unsuitable for this technique.

Sonography of the temporomandibular joint from 60 examinations and comparison with MRI and axiography. Landes, C., Walendzik, H., Klein, C. Klinik fuer Kiefer- und plastische Gesichtschirurgie der Johann Wolfgang Goethe Universitaet Frankfurt, Frankfurt am Main, Germany. c.landes@lycos.com. *Journal of Cranio-Maxillo-Facial Surgery* (2000) December, Vol. 28 (6), pp. 352–6.

BACKGROUND AND OBJECTIVE: Establishing a diagnosis of temporomandibular joint disorder is mainly based on clinical assessment, functional examination, nuclear magnetic resonance imaging (MRI) and axiography. Sonographic examination was compared with MRI and axiography in assessing temporomandibular joint (TMJ) function in 55 patients. **PATIENTS AND METHODS:** Fifty-five patients with different TMJ problems were examined clinically, by means of axiography, sonography and some also by MRI. The range of motion was measured by sonography and axiography and the results compared using Student's t-test. Anatomical details diagnostic for disc-displacement were tested by sonography and MRI. **RESULTS:** The average time required for sonography was two min and for axiography 20 min. The mean measurement differences for condylar movement in maximal mouth opening was 1.7 mm, for protrusion 1.6 mm and for mediotrusion 2.5 mm. The range of condylar movement as measured by sonography and axiography coincided for opening and for protrusion (statistically significant). No significance was found for lateral excursions. The concordance in diagnosis of disc dislocation, hypermobility and impaired range of motion when comparing ultrasound with MRI was 83 per cent. All sonographic examinations were performed by one person only. Sixty repeat examinations in patients produced no complaints and showed an absolute range of difference of 0.6 mm, with a relative range of seven per cent. Student's t-test was significant ($P=0.05$) (two repetitive measurements). **CONCLUSION:** Sonography proved to be a fast and reliable method for evaluating the range of movement of the TMJ. The lateral joint capsule, lateral disc, and upper condyle could be demonstrated. Pathological processes such as anterior or lateral disc displacement, disc perforation, seroma following contusion, capsular fibrosis, crystalline structures in the synovia and fracture dislocation of the condyle could be diagnosed with considerable reliability when compared with MRI. However, the medial aspect of the joint, medial disc dislocation and the angulation of the condylar slope could not be seen.