

Abstract selection

Nasal polyps: relationship to infection and inflammation. Stierna, P. L. Department of Otorhinolaryngology, Huddinge University Hospital, Karolinska Institute, Sweden. *Allergy Asthmatic Proceedings* (1996) September-October, Vol. 17 (5), pp. 251-7.

Because no single predisposing disease can account for the formation of nasal polyps in all patients, medical and surgical therapy has to be directed toward the inflammatory process and/or the underlying infection, together with the development of local tissue pathology. Light and electron microscopical studies in experimental models have revealed that the initial polyp formation sequence involves multiple epithelial disruptions with proliferating granulation tissue, where immature branching epithelium migrates to cover the mucosal defect. Other branches spread into the underlying connective tissue, where intraepithelial microcavities with a differentiated epithelial lining separate the developing polyp body from the adjacent mucosa. Polyp formation and growth is thus activated and perpetuated by an integrated process of mucosal epithelium, matrix, and inflammatory cells, which in turn may be initiated by both infectious and non-infectious inflammation. Glucocorticosteroids display a favourable therapeutic profile, directly preventing both polyp formation and polyp growth, but also by reducing local pathology and inflammatory exudate with bacterial colonization. Steroids often combined with antibiotics or surgery aimed at specific events in polyp development have to be used in relation to disease progression, and severity as well as differences in clinical behaviour due to the multifactorial pathophysiological events of nasal polyposis. Author.

Nasal polyps treatment: medical management. Mygind, N., Lildholdt, T. Department of Otorhinolaryngology, Rigshospitalet, Copenhagen, Denmark. *Allergy Asthmatic Proceedings* (1996) September-October, Vol. 17 (5), pp. 275-82.

The objectives of medical management of nasal polyposis are (1) to eliminate nasal polyps and rhinitis symptoms, (2) to re-establish nasal breathing and olfaction, and (3) to prevent recurrence of nasal polyps. Although antibiotics are used for infectious complications of nasal polyposis, only glucocorticosteroids (steroids) have a proven effect on the symptoms and signs of nasal polyps. Topically applied steroids is the therapeutic modality that has been best studied in controlled trials. It reduces rhinitis symptoms, improves nasal breathing, reduces the size of polyps and the recurrence rate, but it has a negligible effect on the sense of smell and on any sinus pathology. Topical steroids can, as long-term therapy, be used alone in mild cases, or combined with systemic steroids/surgery in severe cases. Systemic steroids, which are less well studied, have an effect on all types of symptoms and pathology, including the sense of smell. This type of treatment, which can serve a 'medical polypectomy', is only used for short-term improvement due to the risk of adverse effects. Individualized management of nasal polyposis may use long-term topical steroids, short-term systemic steroids, as well as surgery, in various combinations. Exactly how these therapies, which differ in their control of various symptoms, are optimally combined is not yet well established. Author.

Cricoid cartilage pressure decreases lower oesophageal sphincter tone. Tournadre, J. P., Chassard, D., Berrada, K. R., Bouletreau, P. Service d'Anesthésie-Réanimation Hôpital de l'Hotel-Dieu, Lyon, France. *Anesthesiology* (1997), January, Vol. 86 (1), pp. 7-9.

BACKGROUND: Cricoid cartilage pressure induced to prevent pulmonary aspiration from regurgitation of gastric contents has been recommended, and its efficacy requires a force greater than 40 Newtons. For regurgitation to occur, both an increase in gastric pressure and relaxation of the lower oesophageal sphincter (LES) are necessary. However, the effect of cricoid cartilage pressure on

the LES is unknown. This study evaluated the effects of cricoid cartilage pressure on LES in human volunteers. **METHODS:** Lower oesophageal sphincter and oesophageal barrier pressures (which equals LES pressure-gastric pressure) were measured using a manometric method in eight unanaesthetized volunteers (four men, four women) classified as American Society of Anesthesiologists physical status 1. The force applied to the cricoid cartilage was measured continuously, and LES pressure was recorded at a cricoid force of 20 and 40 Newtons. **RESULTS:** Cricoid pressure decreased LES pressure from 24 ± 3 mmHg to 15 ± 4 mmHg at a force of 20 Newtons ($p < 0.05$) and to 12 ± 4 mmHg with a force of 40 Newtons ($p < 0.01$). **CONCLUSIONS:** These findings may explain the occurrence of pulmonary aspiration before tracheal intubation despite application of cricoid cartilage pressure. Author.

Horizontal canal benign paroxysmal positioning vertigo (h-BPPV): transition of canalolithiasis to cupulolithiasis. Steddin, S., Ing, D., Brandt, T. Department of Neurology, University of Munich, Klinikum Grosshadern, Germany. *Annals of Neurology* (1996) December, Vol. 40 (6), pp. 918-22.

We report on two patients with typical features of horizontal canal benign paroxysmal positioning vertigo (h-BPPV). A vigorous head positioning in these patients from supine to a bending-over, head-on-the-knees position reversed the direction of nystagmus from geotropic initially to ageotropic when rolling the head from side to side while supine. We explain this by a conversion of canalolithiasis into cupulolithiasis and conclude that (1) canalolithiasis and cupulolithiasis may sequentially occur in the same semicircular canal with subsequent positioning manoeuvres and (2) positional nystagmus beating toward the uppermost ear is not a pathognomonic sign of central vestibular disturbance but can indicate occasional cupulolithiasis. Author.

Salvage treatment for inoperable neck nodes in head and neck cancer using combined iridium-192 brachytherapy and surgical reconstruction. Cornes, P. G., Cox, H. J., Rhys-Evans, P. R., Breach, N. M., Henk, J. M. Head and Neck Unit, Royal Marsden Hospital, London, UK. *British Journal of Surgery* (1996) November, Vol. 83 (11), pp. 1620-2.

The results of debulking surgery and re-irradiation with radioactive implants (brachytherapy) are reported for 39 patients with inoperable metastatic neck nodes from primary head and neck cancers. For 13 patients conventional salvage by partial debulking surgery and brachytherapy proved effective, with 68 per cent control at one year, but six patients suffered severe radiation fibrosis, necrosis and contractures. Some 26 patients were treated by combined tumour debulking, skin resurfacing and brachytherapy implant. Initial tumour control and freedom from serious toxicity was achieved in 24 patients. Local control was achieved in 63 per cent of patients at one year, with a serious morbidity rate of 12 per cent. Author.

Pharyngo-oesophageal dysphagia in Parkinson's disease. Leopold, N. A., Kagel, M. C. Department of Medicine, Crozer-Chester Medical Center, Upland, Pennsylvania 19013, USA. *Dysphagia* (1997) Winter, Vol. 12 (1), pp. 11-8; discussion 119-20.

The radiologic characteristics of pharyngo-oesophageal (PE) dysfunction in Parkinson's disease (PD) are not well established, partly because most previous studies have examined only small numbers of patients. We administered a dynamic videofluoroscopic swallowing function study to 71 patients with idiopathic PD. Using the Hoehn and Yahr disease severity scale, patients were subdivided into those with mild/moderate disease, subgroup I ($n = 38$), and advanced PD disease, subgroup II ($n = 33$). From pharyngeal ingestion to gastric emptying, bolus transport was

normal in only two patients. The most common abnormalities occurring during pharyngeal ingestion included impaired motility, valvular and pyriform sinus stasis, supraglottic and glottic aspiration, and deficient epiglottic positioning and range of motion. Oesophageal abnormalities were multiple but most commonly included delayed transport, stasis, bolus redirection, and tertiary contractions. Typical aberrations of lower oesophageal sphincter (LES) function included an open or delayed opening of the LES and gastro-oesophageal reflux. A pathogenesis linking PE with the pathology of PD is proposed. Author.

Hearing threshold as measured by auditory brain stem response in human neonates. Sininger, Y. S., Abdala, C. Children's Auditory Research & Evaluation Center, House Ear Institute, Los Angeles, California, USA. *Ear and Hearing* (1996) October, Vol. 17 (5), pp. 395–401.

OBJECTIVES: This article evaluates the concept of auditory threshold and discusses the limitations of assessing threshold in human neonates. The advantages and limitations of assessing neonatal threshold by means of auditory brain stem response (ABR) are discussed, and data from several studies of newborn ABR threshold are compared. The authors report data from their own study designed to compare adult and neonatal ABR threshold using tonal stimuli. **EXPERIMENTAL DESIGN:** Several studies are compared. Data from the authors are ABR thresholds for tone bursts of 0.5, 1.5, 4, and 8 kHz, determined from 2-channel recordings in full-term neonates and adults. Stimuli were calibrated in SPL by means of a probe microphone inserted into the ear canal along with the insert transducer of each subject. **RESULTS:** All studies find a degree of threshold elevation in neonates relative to adult threshold. Neonatal ABR thresholds from our laboratory for stimuli from 500 through 8000 Hz are elevated relative to adult thresholds by 5 to 25 dB. Threshold elevation in our data and in other studies has found that neonatal ABR thresholds to high-frequency stimuli show the largest elevation relative to adults and low-frequency stimuli the most mature. **CONCLUSIONS:** Thresholds of neonates, as measured by the ABR, are immature especially for high-frequency stimuli. Proper stimulus calibrations, which removes the influence of ear canal resonance, are important for comparisons of data across age groups. Developmental differences in the conductive mechanism and neural immaturity are the most harmonious explanations for elevation of neonatal ABR thresholds. Author.

Auditory brain stem response generation by parallel pathways: differential maturation of axonal conduction time and synaptic transmission. Ponton, C. W., Moore, J. K., Eggermont, J. J. Department of Electrophysiology, House Ear Institute, Los Angeles, California, USA. *Ear and Hearing* (1996) October, Vol. 17 (5), pp. 402–10.

In attempting to correlate developmental anatomical data with electrophysiological data on maturation of the auditory brain stem response (ABR), a model of ABR generation was necessary to match neuroanatomical structures to ABR components. This model has been developed by reviewing quantitative studies of human brain stem nuclei, results of intrasurgical recordings, studies of correlation of pathology with ABR waveform alterations, and findings from direct stimulation of the human cochlear nuclei through a brain stem implant device. Based on this material, it was assumed that waves I and II are generated peripherally in the auditory nerve and that waves III, IV, and V are generated centrally, i.e., by brain stem structures. It was further assumed that wave III is generated by axons emerging from the cochlear nuclei in the ventral acoustic stria and that waves IV and V reflect activity in parallel subpopulations of these ascending axons at a higher brain stem level. Beyond the cochlear nucleus, the largest component of the brain stem auditory pathway consists of axons projecting without interruption from the cochlear nuclei to the contralateral lateral lemniscus and inferior colliculus. In the proposed model of ABR generation, the III–IV interwave interval is assumed to reflect only axonal conduction in this synaptic pathway. Electrophysiological data from infants indicate that the III–IV interwave interval becomes adult-like by the time of term birth. The second largest component of the brain stem auditory pathway is the bilateral projection through the medial olivary nucleus. The model assumes that activity in this monosynaptic pathway, consisting of axonal conduction time plus one synaptic delay, is reflected in the III–V interwave interval. If both of the

preceding assumptions are true, the IV–V interwave interval represents the difference between the two pathways, i.e., the time of transmission across one synapse. The electrophysiological ABR data indicates that the IV–V interval does not mature until one year of age. It is also possible to apply this model to the peripherally generated portion of the ABR. The I–II interwave interval, assumed to solely represent conduction in VIIIth nerve axons, is adult-like before the time of term birth. The II–III interval, presumed to contain a synapse in the cochlear nuclear complex, does not reach an adult level between one and two year postnatal age. Author.

Maturation of human cortical auditory function: differences between normal-hearing children and children with cochlear implants. Ponton, C. W., Don, M., Eggermont, J. J., Waring, M. D., Masuda, A. Electrophysiology Department, House Ear Institute, Los Angeles, California, USA. *Ear and Hearing* (1996) October, Vol. 17 (5), pp. 430–7.

OBJECTIVE: We investigated maturation of cortical auditory function in normal-hearing children and in children who receive stimulation of their auditory system through a cochlear implant. **DESIGN:** As a measure of cortical auditory function, auditory evoked responses (AERs) were recorded from normal-hearing children and adults as well as from children and adults fitted with a cochlear implant. Morphological and latency changes for evoked responses recorded at electrode Cz are reported. **RESULTS:** For normal-hearing children, there is a gradual evolution of AER features that extends through adolescence, with P1 latency becoming adult-like in the late teens. Latency changes for P1 occur at the same rate for implanted children, but the overall maturation sequence is delayed. By extrapolation from the existing data, the age at which P1 latency becomes adult-like is delayed by approximately five years for the implanted population. Other typical features of the AER, namely N1 and P2, are either delayed in developing or absent in the implanted children. **CONCLUSIONS:** These preliminary findings suggest both similarities and differences in cortical auditory maturation for normal-hearing and implanted children. For implanted children, the five year delay for maturation of P1 latency roughly corresponds to the average 4.5 year interval between the onset of deafness and the time of implantation. These findings suggest that during the period of deafness, maturation of cortical auditory function does not progress. However, some, if not all, maturational processes resume after stimulation is reintroduced. Author.

No age limit for radical radiotherapy in head and neck tumours. Pignou, T., Horiot, J. C., Van den Bogaert, W., Van Glabbeke, M., Scalliet, P. Department of Radiotherapy-Oncology, Hopital de la Timone, Marseille, France. *European Journal of Cancer* (1996) November, Vol. 32A (12), pp. 2075–81.

The elderly are often treated less aggressively in an attempt to preserve their quality of life with regards to toxicity. However, there are few data regarding the acute and late toxicity of radiotherapy (RT) in elderly patients. From February 1980 to March 1995, 1589 patients with head and neck cancers who enrolled in EORTC trials received RT and were available for analysis on RT toxicity. Patients over 65 years of age were in excess of 20 per cent. Data regarding age and acute objective mucosal reactions were available for 1307 patients and 1288 had toxicity \geq or = grade 1. Age and acute functional mucosal reactions were registered for 838 patients and 824 patients had toxicity \geq or = grade 1. Bodyweight alteration during treatment was available in 1252 patients; it increased in 153 patients and decreased in 1099 patients. Late toxicities were examined only if they occurred before an eventual tumour failure in order to avoid confusion between effects of first- and second-line treatments. Seven hundred and forty-nine patients were available for analysis of which 646 had late toxicity grade \geq or = 1. Survival and toxicity were examined in different age ranges from 50 to 75 years and over. There was no significant difference in survival between each age group. A trend test was performed to assess any correlation between age and the acute occurring toxicity. There was no significant difference in acute objective mucosal reactions ($p = 0.1$) and in weight loss > 10 per cent ($p = 0.441$). In contrast, older patients had more severe (grade 3 and 4) functional acute toxicity ($p < 0.001$) than younger patients. We evaluated the probability of late toxicity occurrence in relation to time with the Kaplan-Meier method and the logrank test in each age group. Eighteen per cent

of patients were free of late effects at five years, the logrank test showing no significant difference between ($p = 0.84$). In conclusion, chronological age is irrelevant for therapeutic decisions. Author.

Inverted papilloma of the nose and paranasal sinuses: a study of 56 cases and review of the literature. Raveh, E., Feinmesser, R., Shpitzer, T., Yaniv, E., Segal, K. Department of Otolaryngology, Rabin Medical Center, Petah Tikva, Israel. *Israel Journal of Medical Sciences* (1996) December, Vol. 32 (12), pp. 1163–7.

Over a period of 32 years, 56 patients with inverted papilloma of the nasal cavity and paranasal sinuses were diagnosed and treated at Beilinson Medical Center, Israel. Four patients (7 per cent) had an associated malignancy. Several surgical approaches were used: limited intranasal excision in five patients with an 80 per cent failure rate, a Caldwell-Luc approach in 21 patients with a 48 per cent recurrence rate, and lateral rhinotomy with medial maxillectomy in 18 patients with only a 22 per cent failure rate; a selected group of nine patients underwent an endoscopic procedure, with a 22 per cent recurrence rate. Our results and a review of 19 published reports suggest that medial maxillectomy via lateral rhinotomy remains the treatment of choice for most cases of inverted papilloma. The role of endoscopic excision in selected patients is discussed. Author.

Acoustic characteristics of the piriform fossa in models and humans. Dang, J., Honda, K. ATR Human Information Processing Research Laboratories, Kyoto, Japan. *Journal of the Acoustical Society of America* (1997) January, Vol. 101 (1), pp. 456–65.

The piriform fossa forms the bottom part of the pharynx and acts as a pair of side branches of the vocal tract. Because of its obscure form and function, the piriform fossa has usually been neglected in the current speech production models. This study examines the geometric and acoustic characteristics of the piriform fossa by means of MRI-based mechanical modelling, in-vivo experiments and numerical computations. Volumetric MRI data showed that the piriform fossa is 2.1 to 2.9 cm³ in volume and 1.6 to 2.0 cm in depth for four Japanese subjects (three males and one female). The results obtained from mechanical models showed that the piriform fossa contributes strong troughs, i.e., spectral minima, to speech spectra in a region of 4 to 5 kHz. The antiresonances were identified with increasing frequency when water was injected into the piriform fossa of human subjects in in-vivo experiments. Antiresonances obtained from the experiments and simulations were confirmed to be consistent with those in natural speech within 5 per cent. Acoustic measurements and simulations showed that the influence of the piriform fossa extends to the lower vowel formants in addition to the local troughs. This global effect can be explained by the location of the fossa near the glottal end of the vocal tract. Author.

Restoration of the mucociliary clearance of the maxillary sinus after endoscopic sinus surgery. Ikeda, K., Oshima, T., Furukawa, M., Katori, Y., Shimomura, A., Takasaka, T., Maruoka, S. Department of Otorhinolaryngology, Tohoku University School of Medicine, Sendai, Japan. *Journal of Allergy and Clinical Immunology* (1997) January, Vol. 99 (1 pt 1), pp. 48–52.

BACKGROUND: Whether endoscopic sinus surgery (ESS) restores the mucociliary clearance of the maxillary sinus needs further evaluation. **METHODS:** We evaluated the mucociliary clearance of the maxillary sinus by using a radionuclide technique in 12 patients with chronic sinusitis (sinusitis group) and in six patients who had undergone ESS 6 to 14 months after the surgery (post-ESS group). The mucosal cilia taken from the maxillary sinus in 12 patients with sinusitis before and after ESS (paired experiments) were examined by light and electron microscopy. **RESULTS:** The radionuclide placed endoscopically in the maxillary sinus in eight patients immediately after ESS maintained 81.2 ± 16.3 per cent of its radioactivity after 30 minutes. This result was consistent with results in four patients with untreated chronic sinusitis in whom the radionuclide had been instilled by antral puncture (86.9 per cent ± 3.5 per cent). On the other hand, in six patients in the post-ESS group the radionuclide maintained only 25.9 per cent ± 11.6 per cent of its radioactivity, demonstrating statistically significant differences from those of both the sinusitis group without ESS ($p < 0.005$) and the group four days after ESS ($p < 0.005$). The absence of the cilia in the sinusitis condition was recognized in 35.5 per cent ± 12.1 per cent ($n = 12$)

of the epithelial cells. On the other hand, the absence of cilia was significantly ($p < 0.01$) reduced to 5.3 per cent ± 3.7 per cent of the epithelial cells in the post-ESS condition. Electron microscopic observation also revealed abnormal cilia in the sinusitis condition, whereas the mucosal cilia were regularly arranged in the post-ESS condition. **CONCLUSIONS:** The mucociliary clearance of the maxillary sinus disturbed by chronic inflammation was restored by ESS, indicating the clinical effectiveness of ESS for the treatment of chronic sinusitis. Author.

Juvenile active ossifying fibroma. Report of four cases. Lawton, M. T., Heiserman, J. E., Coons, S. W., Ragsdale, B. D., Spetzler, R. F. Division of Neurological Surgery, Barrow Neurological Institute, St. Joseph's Hospital and Medical Center, Phoenix, Arizona, USA. *Journal of Neurosurgery* (1997) February, Vol. 86 (2), pp. 279–85.

Juvenile active ossifying fibroma is a rare lesion seldom seen by neurosurgeons. It originates in the paranasal sinuses during childhood, grows slowly, and encroaches on adjacent orbital and cranial compartments. In the past three years, four patients with this lesion were seen (three men and one woman; mean age 28 years). The clinical presentations were different with each patient: sinusitis, meningitis, periorbital pain, and a unique case of a juvenile active ossifying fibroma presenting with high-grade internal carotid artery stenosis and ischaemic symptoms. Three patients were treated by transfacial approaches: two with a transfrontal-nasal approach and one with a transfrontal-naso-orbital approach. Two open resections resulted in gross-total excision and no recurrence as of the two-year follow-up review. In the third patient, the tumour-encased carotid artery was preserved at the expense of a complete resection; that patient underwent superficial temporal artery-middle cerebral artery bypass and remains without ischaemic symptoms or tumour recurrence at two years. The fourth patient underwent three subtotal endoscopic resections and is also without symptomatic recurrence at two years. Three points must be made concerning these lesions. First, the clinical and radiographic characteristics of juvenile active ossifying fibroma may not be easily recognized by neurosurgeons, which could lead to misdiagnosis and mismanagement of these lesions. Second, this tumour can encase the carotid artery and cause severe stenosis or occlusion. Third, complete resection of the tumour is required to effect a cure, and transfacial approaches, which give wide exposure of the sinuses, appear to yield better, more radical resections than endoscopic procedures. Author.

Once-daily mometasone furoate aqueous nasal spray (Nasonex) in seasonal allergic rhinitis: an active- and placebo-controlled study. Hebert, J. R., Nolop, K., Lutsky, B. N. Centre Hospitalier de l'Université Laval, Ste-Foy, Quebec, Canada. *Allergy* (1996) August, Vol. 51 (8), pp. 569–76.

Mometasone furoate aqueous nasal spray (Nasonex) was compared with beclomethasone dipropionate (BDP) aqueous nasal spray in a double-blind, randomized, placebo-controlled, double-dummy, parallel-group study of adults with moderate to severe seasonal allergic rhinitis. Patients allergic to at least one tree and/or grass aeroallergen received one of the following regimens for up to four weeks: mometasone furoate 100 micrograms once daily (OD) ($n = 126$) or 200 micrograms OD ($n = 126$), BDP 200 micrograms twice daily ($n = 126$), or only placebo spray ($n = 123$). Physician-rated nasal and total symptom scores, and global evaluation of overall condition and therapeutic response by physicians and patients, showed that the three active treatments were equally effective, and all three were significantly superior to placebo at most time points. Overall, mometasone furoate 200 micrograms OD demonstrated somewhat greater numerical, but not statistical, superiority to mometasone furoate 100 micrograms OD at the earliest evaluation time point. At the end of treatment, complete or marked relief was obtained in 77 per cent of patients with mometasone furoate 100 micrograms/day, 79 per cent with mometasone furoate 200 micrograms/day, and 74 per cent with BDP, compared with 54 per cent of placebo vehicle control patients. Mometasone furoate and BDP were equally well tolerated. It was concluded that mometasone furoate adequately controls symptoms of moderate to severe seasonal allergic rhinitis, offers the advantage of OD treatment, and is well tolerated. Author.

Inhibition of mediator and cytokine release from dispersed nasal polyp cells by terfenadine. Crampette, L., Mainprice, B., Bloom, M., Bousquet, J., Campbell, A. M. Clinique des Maladies Respiratoires, Hôpital Arnaud de Villeneuve, Centre Hospitalier Universitaire, Montpellier, France. *Allergy* (1996) May, Vol. 51 (5), pp. 346–9.

The mechanism of action of H1-blockers requires elucidation because they may possess properties unrelated to the blockage of histamine at its receptor level. A study was performed with enzymatically dispersed cells obtained from nasal polyps to examine the effect of terfenadine (0.1–10 μmol) on the release of leukotrienes (LT) (LTC₄/D₄ and LTB₄) after stimulation by anti-IgE, and on the spontaneous release of cytokines (granulocyte/macrophage-colony stimulating factor (GM-CSF) and tumour necrosis factor- α (TNF- α)) released from cells cultured for 6 h. Terfenadine inhibited significantly, and in a dose-dependent manner, the release of LTC₄/D₄, LTB₄, TNF- α , and GM-CSF. IC₅₀ values were determined for LTC₄/D₄ (8 μmol), LTB₄ (9.9 μmol), TNF- α (6.1 μmol), and GM-CSF (4 μmol), Terfenadine was found to possess new antiallergic properties with a novel *in vitro* model which mimics more closely inflammatory cells of allergic rhinitis or asthma. Author.

Validation and clinical application of computer-combined computed tomography and positron emission tomography with 2-(18F)fluoro-2-deoxy-D-glucose head and neck images. Wong, W. L., Hussain, K., Chevretton, E., Hawkes, D. J., Baddeley, H., Maisey, M., McGurk, M. Department of Oral and Maxillo-Facial Surgery, United Medical School, London, United Kingdom. *American Journal of Surgery* (1996) December, Vol. 172 (6), pp. 628–32.

BACKGROUND: Positron emission tomography with 2-(18F)fluoro-2-deoxy-D-glucose (PET-FDG) improves the detection of head and neck squamous cell cancer (HNSCC), but lacks anatomical detail. The accuracy of registered computed tomography/magnetic resonance (CT/MR) and PET-FDG in delineation of HNSCC at the primary site and its clinical application was investigated. **METHOD:** Pre-operatively 30 patients were staged clinically and each had either CT (23), MR (five), or both CT and MR (two) scans, as well as CT/MR-PET-FDG registration. Tumour margins or infiltration of specific anatomical landmarks on the different scans were compared and judged against histology. **RESULTS:** For primary tumours CT-PET-FDG (97 per cent) and MR-PET-FDG (100 per cent) delineated the tumour more accurately than CT (69 per cent) or MR (40 per cent) alone. Similarly, CT-PET-FDG (98 per cent) and MR-PET-FDG (100 per cent) were better than CT (70 per cent) and MR alone (80 per cent) in identifying tumour invasion of specific anatomical structures. Management was altered in seven of 30 patients. The registered images were particularly useful in delineating tumour extension in the infratemporal fossa, maxilla and mandible, and identifying recurrences obscured by scar tissue. **CONCLUSIONS:** It is possible to accurately register CT, MR, and PET-FDG data sets in the head and neck. The initial results show that registered CT/MR-PET-FDG images provide additional clinically relevant information over that obtained from clinical evaluation or conventional CT/MR imaging. Author.

The value of computed tomography scan versus an explorative surgical approach for removal of squamous cell carcinoma of the posterior pharyngeal wall. van den Hoogen, F. J., Balm, A. J., Hilgers, F. J., Bing-Tan, I., Koops, W. Department of Otolaryngology/Head and Neck Surgery, The Netherlands Cancer Institute, Antoni van Leeuwenhoek Hospital, Amsterdam, The Netherlands. *American Journal of Surgery* (1996) December, Vol. 172 (6), pp. 701–3.

BACKGROUND: The prevertebral fascia plays a key role in surgery of posterior pharyngeal wall tumours. Invasion of the prevertebral muscles determines the irresectability of the tumour and accurate diagnosis of invasion posteriorly is a prerequisite for major ablative surgery. **METHODS:** A retrospective study was performed to define the value of CT scanning versus open neck exploration with regard to the resectability of posterior pharyngeal wall carcinoma. The predictive value of pre-operative CT scans was assessed and compared with the outcome of open neck exploration and resectability of the primary tumour, using the final histopathology report as a gold standard. **RESULTS:** Nineteen patients with 20 tumours were included in this study. Overall the

CT scan was correct concerning prevertebral muscle status in four out of 20 (20 per cent), whereas open neck exploration was correct in 18 tumours (90 per cent). **CONCLUSION:** The predictive value of a suspicious CT scan in determining prevertebral muscle invasion is extremely low in this study. Open neck exploration seems to be superior for determining resectability of posterior wall carcinoma. Author.

Phononicrosurgical treatment of early glottic cancer and carcinoma in situ. Zeitels, S. M. Department of Otolaryngology and Laryngology, Harvard Medical School, Boston, Massachusetts, USA. *American Journal of Surgery* (1996) December, Vol. 172 (6), pp. 704–9.

BACKGROUND: In recent years, transoral resection of early glottic cancer has developed into a phononicrosurgical approach that resulted from the convergence of microlaryngoscopic surgical technique theory with body cover mucosal wave theory of voice production. The vocal outcome from these procedures has improved by minimizing the deep resection margin and thereby maximizing the preservation of the vocal folds' normal layered microstructure (laminae propria and epithelium). Recurrence and cure rates from this narrow-margin approach were examined. **METHODS:** The phononicrosurgical resection approach is composed of four basic procedures in which there is an increasing depth of resection to accommodate a narrow-field deep cancer margin. This approach was employed to treat 13 T1 cancers and seven with carcinoma *in situ* (CIS). **RESULTS:** No patients who underwent a cancer resection developed a recurrence. Minimum follow-up on these patients was two years and the mean follow-up was 42 months. In the group with CIS, two patients developed microinvasive carcinoma despite en bloc excision of the CIS. Both were successfully treated; one was resected transorally and the other underwent radiation therapy. **CONCLUSIONS:** This study indicates that the phononicrosurgical approach, which incorporates a narrow deep cancer margin to enhance the post-operative vocal outcome, resulted in standard control and cure of early glottic neoplasia. Author.

The relationship between uncomfortable loudness level and maximum power output in subjects recently fitted with NHS hearing aids. Munro, K. J., Nind, L., Cleaver, V. C. Regional Audiology Clinic, ISVR Hearing and Balance Centre, University of Southampton, UK. *British Journal of Audiology* (1996) August, Vol. 30 (4), pp. 275–85.

It is generally agreed that the maximum output from a hearing aid should not exceed the subject's uncomfortable loudness level (ULL). However, this relationship is not easily defined as electroacoustic data are usually measured in a 2 cc coupler and auditory measurements are usually obtained from supra-aural transducers calibrated in a 6 cc coupler. The aim of the study was to investigate this relationship in 21 adults who were being fitted with a hearing aid for the first time. A probe-tube microphone system was used to measure the sound pressure level of both variables in the ear canal. The measurement of ULL was determined using the method recommended by the British Society of Audiology (1987). The ULL values were around 110 dB SPL (± 10) when measured in the ear canal. The maximum output of the hearing aid was obtained by correcting the SSPL₉₀ with the subject's own real ear to coupler difference. The results revealed that the real ear saturation response (RESR) of the newly fitted hearing aid was typically 115–120 dB SPL (± 8). The RSR exceeded the ULL for 19 (90 per cent) subjects on average at five of the seven frequencies and by 12 dB. While further research is needed to determine whether discomfort occurred in real life situations, the implications are that the subject may use the hearing aid at less than optimum settings to prevent loudness discomfort or may ultimately reject the hearing aid altogether. Author.

Does hyperbaric oxygen have a role in the management of osteoradionecrosis? Wood, G. A., Liggins, S. J. Department of Oral and Maxillofacial Surgery, Canniesburn Hospital, Bearsden, Glasgow, UK. *British Journal of Oral and Maxillofacial Surgery* (1996) October, Vol. 34 (5), pp. 424–7.

A retrospective study of 12 episodes of osteoradionecrosis treated with hyperbaric oxygen (HBO) in 11 patients was carried out. The cases had been previously treated by more conventional methods including surgery, unsuccessfully. All the cases treated by HBO

had a successful outcome, although 83 per cent of the patients required concomitant surgery to remove necrotic bone. The costs and contra-indications for hyperbaric oxygen therapy are discussed. Author.

Madelung's disease: an uncommon disorder of unknown aetiology? Parmar, C., Blackburn, C. Department of Oral and Maxillofacial Surgery, University Hospital Nottingham, UK. *British Journal of Oral and Maxillofacial Surgery* (1996) October, Vol. 34 (5), pp. 467–70.

A case of Madelung's disease (benign multiple symmetrical lipomatosis Launois-Bensaude syndrome) is described. The characteristic clinical features, associations with chronic alcoholism and a review of the current literature is reported. Author.

Relationship between nasal hyper-reactivity, mediators and eosinophils in patients with perennial allergic rhinitis and controls. de Graaf in t Veld, C., Garrelds, I. M., Koenders, S., Gerth van Wijk, R. Department of Allergology, University Hospital Rotterdam-Dijkzigt, The Netherlands. *Clinical and Experimental Allergy* (1996) August, Vol. 26 (8), pp. 903–8.

BACKGROUND: In perennial allergic rhinitis, patients are almost daily exposed to aeroallergens. This ongoing allergic reaction results in increased sensitivity to allergens and non-specific stimuli. It is generally known that inflammatory cells and mediators are involved in the pathogenesis of the allergic reaction. **OBJECTIVES:** To study the relationship between nasal hyper-reactivity and nasal inflammation during natural allergen exposure. **METHODS:** In 48 patients with perennial allergic rhinitis and in 11 volunteers a nasal brush, a nasal lavage and a histamine challenge were performed. Nasal inflammation was estimated by the number of eosinophils, levels of albumin, tryptase, prostaglandin D₂ (PGD₂), eosinophil cationic protein (ECP) and leukotriene C₄/D₄/E₄ (LTC₄/D₄/E₄). **RESULTS:** In contrast to PGD₂ and tryptase, eosinophils (1.9 vs 0 per cent, $p = 0.0023$), LTC₄/D₄/E₄ (17.51 vs 1.43 pg/mL, $p < 0.0001$) and albumin (8.61 vs 2.37 mg/mL, $p = 0.0008$) were significantly increased in rhinitis patients as compared with controls. Patients also showed increased responses to nasal histamine challenge assessed using a composite symptom score (21.5 vs 4 points, $p < 0.0001$). The nasal response to histamine was weakly correlated with the total number of eosinophils in the cytospin (correlation coefficient $r = 0.38$, $p = 0.009$). **CONCLUSION:** Nasal hyper-reactivity is correlated with the percentage of eosinophils in patients with perennial rhinitis. The patients' mediator profiles suggest that eosinophils are important in the ongoing allergic reaction and nasal hyper-reactivity. Author.

Evolution of transient evoked otoacoustic emissions in preterm newborns: a preliminary study. Eshraghi, A., Francois, M., Narcy, P. Department of Otorhinolaryngology, Hopital Robert Debre, Faculty Bichat, University Paris VII, France. *International Journal of Pediatric Otorhinolaryngology* (1996) October, Vol. 37 (2), pp. 121–7.

Transient evoked otoacoustic emissions (TEOEs) were recorded in a cohort study of preterm neonates in order to study their basic properties as a function of gestational age. Their main properties were: (1) TEOEs spectrum did not vary with age; it was analogous to those of full term; (2) there was no statistically significant variation of the TEOEs amplitude with age. The maturation of outer hair cell properties appears to be complete at a gestational age of 29 weeks. Because a number of infants at risk for hearing loss are preterm babies, screening for TEOEs has to be performed in the neonatal care unit. To improve the accuracy and efficiency of the test, screening should take place as close to hospital discharge as possible, with the optimum time at 35 gestational weeks. Author.

Childhood pseudohypacusis. Pracy, J. P., Walsh, R. M., Mephram, G. A., Bowdler, D. A. Department of Otolaryngology, Head and Neck Surgery, Lewisham General Hospital, London, UK. *International Journal of Pediatric Otorhinolaryngology* (1996) October, Vol. 37 (2), pp. 143–9.

Pseudohypacusis is a condition in which a hearing loss is exhibited in the absence of any organic disease. The mainstay of diagnosis is a lack of consistency in audiological testing. It is usually easier to diagnose in children than in adults, as children are less able to produce consistently erroneous results on repeated testing. In

spite of this, the diagnosis is often missed in children, probably due to a lack of awareness of the condition. We present the findings in ten children seen in the past year. Initially they had average pure tone thresholds of 51.3 db in the right ear and 51.4 db in the left ear. All of the children underwent repeat pure tone audiometry and speech audiometry. In nine cases the speech audiograms confirmed the diagnosis. In one child the speech audiogram was consistent with a mild hearing loss subsequently confirmed as a 30–40 db low frequency sensorineural hearing loss. Following a programme of close follow up and support, the pure tone thresholds returned to within normal limits in nine children and to a level consistent with the clinical impression in the child with a sensorineural loss. None of the children required brain stem evoked response audiograms to confirm the diagnosis. Author.

Bilateral ear canal stenosis from retained Goode T-tubes. Yanta, M. J., Brown, O. E., Fancher, J. R. Department of Otolaryngology, UT Southwestern Medical Center at Dallas 75235-9035, USA. *International Journal of Pediatric Otorhinolaryngology* (1996) October, Vol. 37 (2), pp. 173–8.

A 14-year-old white male presented with a two-year history of bilateral otorrhoea. Purulent otorrhoea with very stenotic external auditory canals (EAC) were found, and the patient was treated with topical otic solutions. Bilateral conductive hearing loss was found on audiometric studies. Biopsies were taken after the patient failed medical treatment. The results were consistent with granulation tissue and chronic inflammation. A CT scan revealed complete bilateral EAC stenosis. At surgery the patient was found to have bilateral retained Goode T-tubes, which were placed at two years of age. After removal of the tubes, the patient made a good recovery with improved hearing. This case illustrates a severe complication of retained tympanostomy tubes. Patients with these tubes require close long-term follow-up with careful management of problems such as granulation tissue or otorrhoea to prevent this type of complication. Author.

Microsurgical anatomy of the infratemporal fossa as viewed laterally and superiorly. Vrionis, F. D., Cano, W. G., Heilman, C. B. Department of Neurosurgery, Tufts University School of Medicine, Boston, Massachusetts, USA. *Neurosurgery* (1996), October, Vol. 39 (4), pp. 777–85.

OBJECTIVE: Benign tumours involving cavernous sinus, trigeminal nerve, and middle cranial fossa occasionally extend to the infratemporal fossa (ITF). In this study, we describe the microsurgical anatomy and dissection of the ITF, as viewed laterally and superiorly. We also describe a new bypass graft to the supraclinoid internal carotid artery using the internal maxillary artery (IMA), which is found in the ITF. **METHODS:** Twelve cadaver specimens were used. Dissection required zygomatic arch osteotomy, downward displacement of the temporalis muscle, extensive subtemporal craniectomy, and mild elevation of the temporal lobe together with the dura. **RESULTS:** The anatomic relationships between the lateral and medial pterygoid muscles and the neurovascular bundle of the ITF are demonstrated. The neurovascular bundle contains the IMA, which run horizontally, and the main branches of the mandibular nerve, which run vertically. The course and anatomic variations of the IMA and inferior alveolar, lingual, auriculotemporal, and buccal nerves are shown. The distal IMA was quite tortuous and, when the artery straightened, we were able to perform a tension-free *in situ* IMA graft to the supraclinoid carotid artery in nine of 12 specimens. **CONCLUSIONS:** Knowledge of the anatomy of the ITF is a prerequisite for tumour resection in this area. The IMA may serve as a bypass graft to the supraclinoid internal carotid artery if the cavernous or petrous carotid artery is involved by tumour and needs to be sacrificed. Author.

Comparison of ceftriaxone and trimethoprim-sulfamethoxazole for acute otitis media. Greater Boston Otitis Media Study Group. Barnett, E. D., Teele, D. W., Klein, J. O., Cabral, H. J., Kharasch, S. J. Maxwell Finland Laboratory for Infectious Diseases, Boston City Hospital, MA 02118, USA. *Pediatrics* (1997) January, Vol. 99 (1), pp. 23–8.

OBJECTIVE: The purpose of this prospective, randomized, single-blind trial was to assess the clinical efficacy of a single intramuscular dose of ceftriaxone compared with 10 days of oral trimethoprim-sulfamethoxazole (TMP-SMZ) in treating acute otitis media (AOM). **METHODS:** Children aged 3 months

through 3 years diagnosed with AOM (signs of acute illness plus evidence of middle-ear effusion) were randomized to treatment with either a single intramuscular dose of ceftriaxone (maximum dose of 50 mg/kg) or 10 days of oral trimethoprim-sulfamethoxazole (8 mg of TMP and 40 mg of SMZ/day in two divided doses). Children were evaluated at scheduled visits on days 3, 14, and 28, and the parents were telephoned on day five. Children were assessed as cured, improved, or failed on day three, and as cured or failed on days 14 and 28. Children ill at other times during the study period were, if possible, seen and assessed by the study team. RESULTS: Of 596 children enrolled during the study period, 484 were evaluable. Characteristics of evaluable subjects did not differ significantly by drug. On day 3, 223/241 children in the ceftriaxone group (92.5 per cent) and 231/243 (95.1 per cent) in the TMP-SMZ group were cured or improved. On day 14, 158/197 (80.2 per cent) in the ceftriaxone group and 174/212 (82.1 per cent) in the TMP-SMZ group were cured. On day 28, 108/136 (79.4 per cent) in the ceftriaxone group and 124/155 (80 per cent) in the TMP-SMZ group were cured. Persistence of middle-ear fluid did not differ between groups at day 14 (55 per cent in the ceftriaxone group vs 47 per cent in the TMP-SMZ group; $p = 0.16$) or at day 28 (39 per cent vs 43 per cent; $p = 0.48$). Pain at the injection site persisting at day three occurred in 8.4 per cent of children receiving ceftriaxone. New diarrhoea was more common in the ceftriaxone group (23.6 per cent vs 9.2 per cent; $p < 0.001$). CONCLUSION: A single intramuscular dose of ceftriaxone is comparable in clinical efficacy to 10 days of oral TMP-SMZ for treatment of AOM. Author.

Fluticasone propionate aqueous nasal spray: a well-tolerated and effective treatment for children with perennial rhinitis. Richards, D. H., Milton, C. M. Glaxo Wellcome Research & Development Ltd, Uxbridge, UK. *Pediatric Allergy and Immunology* (1996) February, Vol. 7 (1), pp. 35–43.

A total of 535 children aged 4–11 years with perennial rhinitis were recruited to two double-blind studies performed at 56 centres in eight European countries, Israel, and South Africa. One study compared the efficacy and tolerability of fluticasone propionate aqueous nasal spray (FPANS), at either 100 micrograms once daily (od) or 100 micrograms twice daily (bd), with beclomethasone dipropionate (BDPANS) 200 micrograms bd for 12 weeks in 120 children aged 6–11 years. The second study compared FPANS 100 micrograms od with FPANS 200 micrograms od and placebo for 4 weeks in 415 children aged 4–11 years. Efficacy was determined by means of patient assessments of nasal symptoms of perennial rhinitis and by investigator assessments of symptoms and nasal condition. The symptoms of nasal blockage, on waking and during the day, sneezing, rhinorrhoea, and nasal itching were assessed by the investigator at clinic visits and by the completion of a patient daily diary card. Safety was assessed by collection of adverse event information, routine haematology and biochemistry testing, and monitoring plasma cortisol levels. FPANS demonstrated good control of symptoms at each dose regimen, which was equivalent or superior to BDPANS and superior to placebo. There was no difference between the dose regimens of FPANS. FPANS was as well tolerated as placebo and BDPANS. It is concluded that FPANS 100 micrograms od is an effective and well-tolerated treatment for perennial rhinitis in children aged 4–11 years. Author.

Efficacy of antimicrobial prophylaxis for recurrent middle ear effusion. Mandel, E. M., Casselbant, M. L., Rockette, H. E., Bluestone, C. D., Kurs-Lasky, M. Department of Otolaryngology, Children's Hospital of Pittsburgh, PA 15213-2583, USA. mandele@chplink.chp.edu. *Pediatric Infectious Diseases Journal* (1996) December, Vol. 15 (12), pp. 1074–82.

OBJECTIVES: This trial compared the efficacy of amoxicillin prophylaxis with that of placebo for the management of recurrent middle ear effusion (MEE) in children. METHODS: Children between 7 months and 12 years of age who were effusion-free at entry but had histories of chronic or recurrent MEE were randomly assigned to receive either amoxicillin (20 mg/kg once daily) or placebo for one year. They were examined monthly and when there were symptoms of ear, nose or throat disease. Acute otitis media (AOM) and new episodes of otitis media with effusion (OME) were treated with amoxicillin-clavulanate; tympanocentesis was performed when possible for episodes of AOM. Throat cultures were obtained at entry; 4, 8 and 12 months after entry;

and with new episodes of AOM and OME. Tympanometry was performed at each visit and audiometry was performed at entry and 4, 8 and 12 months after entry. RESULTS: One hundred and eleven children were entered in this study. The rates per person year of new episodes of disease in the amoxicillin and placebo groups, respectively, were: MEE, 1.81 vs. 3.18 ($p < 0.001$); AOM, 0.28 vs. 1.04 ($p < 0.001$); and OME, 1.53 vs. 2.15 ($p = 0.016$). Subjects in the amoxicillin group had less time with MEE than the placebo group (19.7 and 33.2 per cent, respectively; $p = 0.002$). Middle ear and throat cultures did not reveal any increase in beta-lactamase-producing organisms or in *Streptococcus pneumoniae* attributable to daily use of amoxicillin. CONCLUSIONS: Amoxicillin prophylaxis lowered the rates of occurrence of MEE, AOM and OME and decreased the percentage of time with MEE. However, because of present day concerns regarding antibiotic resistance, management should be individualized. Author.

Cancer of the nasal cavity and paranasal sinuses. Prognosis and outcome of treatment. Jakobsen, M. H., Larsen, S. K., Kirkegaard, J., Hansen, H. S. Department of Otolaryngology, Head & Neck Surgery, National University Hospital, Rigshospitalet, Copenhagen, Denmark. *Acta Oncologica* (1997), Vol. 36 (1), pp. 27–31. A retrospective study of 121 patients, 77 men and 44 women, with sino-nasal cancer, admitted to the National University Hospital, Rigshospitalet, during the period 1983–1993, is presented. The median follow-up time was 21 months (range 3–124). Forty-six per cent of the tumours originated from the nasal cavity, 29 per cent from the maxillary sinuses and 5 per cent from the ethmoid sinuses. In 18 per cent of the cases, the site of origin was not clear due to advanced local growth. Sixty-five patients received primary radiation therapy with curative intention of whom five underwent secondary surgery. Forty-nine patients underwent primary surgery, 38 of them received post-operative radiation therapy. The overall five-year survival rate in this material was 35 per cent and the disease-specific five-year survival was 45 per cent. Patients with well-differentiated squamous cell carcinomas had a significantly higher five-year survival rate than patients with poorly differentiated carcinomas and patients with regional metastases had a significantly poorer five-year survival than patients without. The five-year local control was 48 per cent (41/121). Six of nine patients with regional metastases at admission were controlled locally, whereas 16 patients developed regional metastases after primary treatment. Author.

Changing trends in the incidence of laryngeal cancer. Raitiola, H. S., Pukander, J. S. Department of Otorhinolaryngology, University of Tampere Medical School, Finland. *Acta Oncologica* (1997), Vol. 36 (1), pp. 33–6.

The incidence of laryngeal cancer during the period 1962–1991 in the Tampere University Hospital area, with a population of 400 000, was evaluated. There were 302 (95 per cent) male and 16 (5 per cent) female patients. The mean annual age-adjusted incidence rate was 4.4 per 100 000 inhabitants for males and 0.2 for females. The incidence among males decreased significantly from 6.7 to 2.6 over the study period, the most prominent decline being in the age group 40–49 years. No distinct trend was detected in females. The frequency of the disease increased along with age in both sexes. One of the prominent phenomena was a distinct increase of the glottic to supraglottic incidence ratio from 0.5:1 to 1.9:1 in males. Author.

Immediate obturation of the surgical defect after partial maxillectomy in the edentulous patient. Marker, P., Svane-Knudsen, V., Jorgensen, K. E., Nielsen, A., Hansen, O. Department of Oral and Maxillofacial Surgery, Odense University Hospital, Denmark. *Acta Oncologica* (1997), Vol. 36 (1), pp. 41–4.

Closure of the surgical defect immediately after partial maxillectomy is the treatment of choice. The advantages are: maintaining facial contour, rapid re-establishment of speech, swallowing and mastication. A number of methods for the fixation of the immediate obturator in patients without teeth have been described. A new technique is reported where a transnasal wire holds the existing denture in position after partial maxillectomy. The method has been carried out on seven patients with sino-nasal cancer during the period 1978–1994. The advantages of the technique are that the wire acts as an axis of rotation which

together with the sponge in the cavity provide good stability of the denture. There is minimal pre-operative laboratory work and simplification in replacing the surgical dressing. Author.

Cancer of the nasal cavity and paranasal sinuses. A clinico-pathological study of 277 patients. Harbo, G., Grau, C., Bundgaard, T., Overgaard, M., Elbrond, O., Sogaard, H., Overgaard, J. *Acta Oncologica* (1997), Vol. 36 (1), pp. 45–50.

In the period 1963–1991, a total of 277 consecutive patients with malignant tumours of the nasal cavity and paranasal sinuses were treated at Aarhus University Hospital. The major histological types included squamous cell carcinoma (46 per cent), lymphoma (14 per cent), adenocarcinoma (13 per cent), and malignant melanoma (9 per cent). Kaplan-Meier estimates of five-year corrected survival (death from cancer) showed the best prognosis for adenoid cystic carcinoma (87 per cent), adenocarcinoma (65 per cent) and lymphoma (56 per cent), and the poorest prognosis for undifferentiated carcinoma (17 per cent) and malignant melanoma (24 per cent). The five-year corrected survival for squamous cell carcinoma was 35 per cent. Of the 180 patients with treatment failure, the vast majority occurred locally ($n = 166$); a minor proportion was regional ($n = 23$) or distant ($n = 30$). For the 195 patients with carcinoma, the following parameters were of statistical prognostic significance (five-year corrected survival): histological differentiation (moderate-well 65 per cent vs. poor 22 per cent), primary T-site (nasal cavity 56 per cent vs. maxillary antrum 39 per cent vs. other sinuses 24 per cent), tumour stage (T2 68 per cent vs. T3 37 per cent vs. T4 29 per cent), nodal stage (N0 48 per cent vs. N1–3 21 per cent), treatment (radiotherapy + surgery 56 per cent vs. radiation alone 35 per cent). Author.

New formulation of aqueous flunisolide nasal spray in the treatment of allergic rhinitis: comparative assessment of safety, tolerability, and efficacy. Ratner, P., van Bavel, J., Gross, G., Bynum, L., Munshi, A. *Sylvana Research*, San Antonio, Texas, USA. *Allergy Asthmatic Proceedings* (1996) May–June, Vol. 17 (3), pp. 149–56.

This six-week, multicentre, double-blind, randomized, placebo-controlled, parallel-group trial compared the safety, efficacy, and tolerability of a new formulation of flunisolide nasal spray with the original formulation in the treatment of allergic rhinitis due to mountain cedar pollenosis. It was conducted at three clinical centres in close geographic proximity. A total of 216 patients, ranging in age from 14 to 77 years (mean, 44 years), took at least one dose of study drug and therefore were evaluable for the safety analysis. A total of 185 patients (85 per cent) completed the study, and 136 patients were evaluable for the efficacy analysis. Both formulations of flunisolide were comparable in terms of relief of rhinitis symptoms, and the new flunisolide formulation was better tolerated than the original formulation. Both active formulations were superior to their respective vehicles ($p < 0.001$) using multiple measures of allergic rhinitis symptoms relief. Use of escape medication (chlorpheniramine maleate) was significantly ($p < 0.034$) greater in the placebo group when compared with their respective active treatment groups. No therapeutic effect was observed with symptoms of allergic conjunctivitis. Significantly fewer patients who were treated with the new formulation flunisolide reported nasal burning and stinging when compared with the original formulation ($p = 0.006$). In conclusion, the new formulation showed similar efficacy and improved tolerability in the treatment of allergic rhinitis compared with the original formulation. This new formulation not only offers clinicians a useful therapeutic addition for the treatment of allergic rhinitis, but may also improve patient compliance. Author.

Free colon transfer: a versatile method for reconstruction of pharyngoesophageal defects with a large pharyngostoma. Nakatsuka, T., Harii, K., Ebihara, S., Hirano, K., Haneda, T., Hayashi, R., Nibu, K., Ichimura, K. Department of Plastic and Reconstructive Surgery, Faculty of Medicine, University of Tokyo, Japan. *Annals of Plastic Surgery* (1996) December, Vol. 37 (6), pp. 596–603.

Free transverse colon transfers based on the middle colic vessels were used to reconstruct a pharyngoesophageal defect in nine patients. In all patients, cancer invaded up to the oropharynx. Resection resulted in a larger pharyngostoma than normally seen following standard total pharyngolaryngoesophagectomy. In such

cases, it can be difficult to achieve good swallowing function after reconstruction using the free jejunal transfer. This mainly results from a significant discrepancy between the diameter of the pharyngostoma and that of the jejunum. Compared to the jejunum, the transverse colon has a larger diameter with a longer vascular pedicle and can provide a longer, straight intestinal tube, facilitating easy passage of a food bolus. In our series, all transfers survived well and all patients had good swallowing function post-operatively. We consider that a free colon transfer is more suitable than a free jejunal transfer for pharyngoesophageal reconstruction in patients with a large pharyngostoma. Author.

Orbital hemorrhage during rhinoplasty. Hunts, J. H., Patrinely, J. R., Stal, S. Department of Ophthalmology, Cullen Eye Institute, Houston, TX, USA. *Annals of Plastic Surgery* (1996) December, Vol. 37 (6), pp. 618–23.

The most common complication of rhinoplasty is peri-operative and post-operative haemorrhage. We present two patients who experienced intra-operative orbital haemorrhage during rhinoplasty. Patients with a history of previous nasal trauma, because of scarring/altering anatomy, may be more prone to this serious complication. A precise and well-placed osteotomy must be done to avoid aberrant anatomy and complications. The proposed mechanism for orbital haemorrhage is shearing or tearing of fibrovascular scar tissue involving the angular vessels during the surgical dissection. Prompt recognition and management of an orbital haemorrhage during or following rhinoplasty is necessary to prevent possible ocular injury and loss of vision. A management algorithm for orbital haemorrhage is presented along with a discussion of surgical techniques to prevent this complication. Surgeons performing rhinoplasty should be cognizant of this type of intra-operative complication along with its medical and surgical management. Author.

Double blind placebo controlled trial of nebulized budesonide for croup. Godden, C. W., Campbell, M. J., Hussey, M., Cogswell, J. J. Department of Paediatrics, Poole NHS Trust Hospital, Dorset. *Archives of Diseases in Children* (1997) February, Vol. 76 (2), pp. 155–8.

AIMS: To determine whether nebulized budesonide improves the symptoms or shortens the duration of stay of children admitted to hospital with a clinical diagnosis of croup. METHODS: A prospective, randomized, double blind placebo controlled trial. Patients received either nebulized budesonide or placebo every 12 hours. The main outcome measures were duration of in-patient stay and croup scores at 30 minutes, one, two, four, 12, and 24 hours. RESULTS: Eighty-seven patients (89 admissions) aged 7–116 months entered the trial. Nebulized budesonide was associated with a significant improvement in symptoms at 12 hours (95 per cent confidence interval (CI) 1 to 3) and 24 hours (95 per cent CI 0 to 3). Patients with an initial croup score above 3 demonstrated a significant improvement in symptoms at two hours (95 per cent CI 1 to 3). Nebulized budesonide was also associated with a 33 per cent reduction in the length of stay (95 per cent CI 2 per cent to 63 per cent) when the confounding variables of age, initial croup score, and coryzal symptoms were taken into consideration. CONCLUSIONS: Nebulized budesonide is an effective treatment for children admitted to hospital with a clinical diagnosis of croup. Author.

Magnetization transfer contrast MR in lesions of the head and neck. Gillams, A. R., Fuleihan, N., Grillone, G., Carter, A. P. Department of Radiology, Boston University Medical School and BCH Imaging Foundation, MA, USA. *American Journal of Neuro-Radiology* (1996) February, Vol. 17 (2), pp. 355–60.

PURPOSE: To compare lesion-to-background contrast with and without magnetization transfer (MT) in lesions of the head and neck. METHODS: Twenty lesions (16 malignant, four benign) were evaluated in 17 patients (11 men, six women; mean age, 58 years; age range, 39–76 years). In 13 patients, MR imaging was performed at 0.1 T with continuous-wave, off-resonance MT; in four patients, MR imaging was performed at 1.5 T with on-resonance, binomial MT prepulses. Fifteen sequences were conducted before the administration of gadopentetate dimeglumine; 13 were conducted after the administration of that contrast material. The ratio of signal intensity with the MT pulses (Ms) to signal intensity without the MT pulses (Mo) was calculated, as were the lesion-to-background contrast and the contrast-to-noise

ratios. **RESULTS:** Ms/Mo showed both wide variability and considerable overlap among different lesion types. Images from MT sequences showed better contrast than those from non-MT sequences in 23 of 28 lesions (12 of 15 before and 11 of 13 after the administration of contrast material). The mean contrast improvement percentages (\pm standard deviation) were 165.5 per cent (\pm 58 per cent) on unenhanced images and 186.6 per cent (\pm 84.8 per cent) on contrast-enhanced images. The mean improvements in contrast-to-noise ratios were 156 per cent (\pm 60 per cent) on unenhanced images and 171.6 per cent (\pm 98.1 per cent) on contrast-enhanced images. **CONCLUSION:** MT improved contrast between nodes or tumours showing an MT effect and background tissue (usually fat) not showing an MT effect. MT also improved contrast between contrast-enhanced neoplastic lesions and background tissue that showed an MT effect. Author.

MR of the endolymphatic duct and sac: findings in Meniere disease. Tanioka, H., Kaga, H., Zusho, H., Araki, T., Sasaki, Y. Department of Otolaryngology, Faculty of Medicine, University of Tokyo, Japan. *American Journal of Neuro-Radiology* (1997) January, Vol. 18 (1), pp. 45-51.

PURPOSE: To compare the visibility of the endolymphatic duct and sac on high-resolution MR images with the symptoms and clinical course in patients with Meniere disease. **METHODS:** Twenty-two patients with unilateral Meniere disease were sorted into two groups on the basis of the clinical stage of their disease at the time of imaging. Group 1 included patients in the acute phase, who presented with vertigo. Group 2 comprised patients in the non-acute phase of the disease, who were studied nine days or more after an episode of vertigo. **RESULTS:** During acute attacks, the endolymphatic duct and sac were not adequately visible in the affected ear but were visible in the unaffected ear. During remission, the endolymphatic duct and sac were not observed in clinically advanced patients, but they were seen in patients in the early and intermediate stages. **CONCLUSION:** High-resolution MR imaging can be used to evaluate the endolymphatic duct and sac: visible abnormalities and lack of a visible endolymphatic duct and sac correlate with the clinical course of Meniere disease. Author.

Multiatribute utility assessment of outcomes of treatment for head and neck cancer. Hodder, S. C., Edwards, M. J., Brickley, M. R., Shepherd, J. P. Department of Oral Surgery, Medicine, and Pathology, University of Wales College of Medicine, Dental School, Cardiff, UK. *British Journal of Cancer* (1997), Vol. 75 (6), pp. 898-902.

Good clinical practice is dependent on continuous audit. Most audits of head and neck cancer treatment planning have been subjective, with only five-year survival rates being considered objectively. Improvements in clinical care require not only measurable goals that relate to patients' perspectives, but also a means of assessing to what extent those goals have been met. In this context, five-year survival rates are too crude to be useful, although they remain important for other reasons. Because a simple clinical objective measure of outcome applicable to head and neck cancer is not available, multiattribute assessment techniques were used to develop a clinically based scale for outcomes following treatment for head and neck cancer, with domains centred on social function, pain, physical appearance, eating and speech problems, nausea, donor site problems and shoulder function. Domains were weighted relative to each other: pain (mean weight 85) and social function (89) were considered most important followed by physical appearance (76), eating (76) and speech problems (74). A series of graded statements was constructed within each domain and scaled relative to each other. These components were also combined into an overall scale that will enable objective outcome assessment in this important area of medical care. Author.

Duration and recurrence of otitis media with effusion in children from birth to 3 years: prospective study using monthly otoscopy and tympanometry (see comments). Hogan, S. C., Stratford, K. J., Moore, D. R. University Laboratory of Physiology, Oxford. *British Medical Journal* (1997) 1 February, Vol. 314 (7077), pp. 350-3. Comment in: *British Medical Journal* (1997) 1 February; 314 (7077): 354; Comment in: *British Medical Journal* (1997) 1 February; 314 (7077): 354-5.

OBJECTIVE: To monitor the natural course of otitis media with

effusion. **DESIGN:** Prospective, longitudinal assessment of the state of the middle ear by otoscopy and tympanometry at monthly intervals from birth to 3 years. **SETTING:** Domiciliary visits to family homes. **SUBJECTS:** Ninety-five full term infants born between August 1991 and November 1993. **MAIN OUTCOME MEASURES:** Observed and simulated data (Monte Carlo) for the duration of single episodes of otitis media with effusion. **RESULTS:** Seventeen of the children had unilateral or bilateral otitis media with effusion for more than half of their first three years of life. Thirty-three of the 95 children had tympanograms suggestive of otitis media with effusion at more than a third of observations; the remaining 62 had such tympanograms at less than a third of observations. The data of each group were described by a first order Markov model, yielding a mean duration of unilateral effusion episodes of 5-6 weeks in both groups; the mean duration of bilateral effusion was six and 10 weeks in the low and high incidence groups, respectively. However, the main difference between the groups was the time spent between episodes of effusion: effusion free periods were, on average, three times longer in the children who experienced less otitis media with effusion. **CONCLUSION:** Children who are susceptible to otitis media with effusion tend to have more separate episodes of effusion rather than an increased overall duration of episodes. Such children are primarily distinguished by the likelihood with which they acquire the disease than by their ability to recover from it. Author.

Seasonal rhinitis and azelastine: long- or short-term treatment? Ciprandi, G., Ricca, V., Passalacqua, G., Truffelli, T., Bertolini, C., Fiorino, N., Riccio, A. M., Bagnasco, M., Canonica, G. W. Department of Internal Medicine, Genoa University, Italy. *Journal of Allergy and Clinical Immunology* (1997) March, Vol. 99 (3), pp. 301-7.

BACKGROUND: Azelastine is a topical antihistamine, clinically demonstrated to be effective in allergic rhinitis. **OBJECTIVE:** We evaluated the clinical efficacy and the antiallergic activity of azelastine nasal spray, administered 0.56 mg per day, 0.28 mg per day, or on demand over a three-month period during natural allergen exposure, in a double-blind, placebo-controlled fashion. **METHODS:** Thirty patients, sensitized to grass or Parietaria pollen, were allocated to three treatment groups: those receiving the standard dosage (0.14 mg/nosril two times a day), half the dosage (0.07 mg/nosril two times a day), or placebo daily for three months. All patients were allowed to take additional doses of azelastine when needed. Evaluation parameters were as follows: clinical symptoms recorded on a diary card, number of additional, on-demand azelastine puffs, nasal inflammatory cell count, intercellular adhesion molecule-1 expression on nasal epithelial cells, and pollen count. **RESULTS:** This study showed the following: (1) the half dose (0.28 mg/day) and the standard dose (0.56 mg/day) were equally effective in reducing clinical symptoms ($p = NS$), although the standard dosage required fewer additional puffs during times of peak pollen counts ($p < 0.05$); (2) both dosages were able to reduce the allergic inflammation ($p < 0.05$ vs placebo); and (3) on-demand use achieved acceptable clinical control but did not significantly reduce allergic inflammation. **CONCLUSION:** Continuous treatment was more effective than on-demand use as assessed by both clinical evaluation and anti-inflammatory action. Author.

Management of 1000 vestibular schwannomas (acoustic neuromas): hearing function in 1000 tumor resections. Samii, M., Matthies, C. Department of Neurosurgery, Nordstadt Hospital, Hannover, Germany. *Neurosurgery* (1997) February, Vol. 40 (2), pp. 248-60; discussion 260-2.

OBJECTIVE: The realistic chances of hearing preservation and the comparability of international results on hearing preservation in complete microsurgical vestibular schwannoma resections were the focus of this study in a large patient population treated by uniform principles. **METHODS:** One thousand vestibular schwannomas were operated on at Nordstadt Neurological Department, from 1978 to 1993, by the senior surgeon (MS). There were 1000 tumours in 962 patients, i.e. 880 patients with unilateral tumours and 82 patients operated on for bilateral tumours in neurofibromatosis-2 (120 cases). Preservation of the cochlear nerve was attempted whenever possible. The audiometric data were analyzed by the Nordstadt classification system and graded in steps of 30 dB by audiometry and in steps of 10 to 30 per cent by speech

discrimination; for comparability, the data were also evaluated by the criteria of Gardner, Shelton, and House, and they were assessed in relation to the Hannover tumour extension grading system. **RESULTS:** Anatomic cochlear nerve preservation was achieved in 682 of 1000 cases (68 per cent), as well as in some pre-operatively deaf patients, a very few of whom regained some hearing. Of a total of 732 cases with some pre-operative hearing, anatomic cochlear nerve preservation was achieved in 580 cases (79 per cent) and functional cochlear nerve preservation in 289 (39.5 per cent); analysis over time revealed an actual preservation rate of 47 per cent in the most recent 200 cases. Specific factors,

such as gender, tumour extension, pre-operative hearing quality, and symptom duration, were investigated for their predictive value for hearing preservation. Male gender, small to medium tumour size (mainly extending within the cerebellopontine cistern; Classes T2 and T3), good to moderate hearing (up to 40-dB loss), and short duration of hypoacusis (<1.5 year) or of vestibular disturbances (<0.7 year) were advantageous factors, with chances of hearing preservation between 47 and 88 per cent. **CONCLUSION:** Functional cochlear nerve preservation in complete microsurgical resection should belong to the contemporary standard of treatment goals. Author.