

Abstract Selection

Idiopathic palatal myoclonus. Yokota, T., Hirashima, F., Ito, Y., Tanabe, H., Furukawa, T., Tsukagoshi, H. Department of Neurology, Tokyo Medical and Dental University, Japan. *Acta Neurologica Scandinavica* (1990) March, Vol. 81 (3), pp. 239–42.

Two cases with idiopathic palatal myoclonus without other neurological deficits were described. They did not have any other neurological deficits other than myoclonus of branchial muscles. In these cases, the myoclonus disappeared during natural or induced sleep. In Case 1, the myoclonus ceased transiently when the patient was calculating or receiving an injection. In Case 2, the myoclonus disappeared with intravenous injection of saline as a placebo. Detailed examinations, including brain CT, MRI and multiple evoked potentials, showed normal results. The myoclonus in Case 2 disappeared after we had explained that her disease was benign. Since the clinical features and laboratory data in idiopathic palatal myoclonus are quite different from those in palatal myoclonus with other neurological deficits, idiopathic palatal myoclonus is considered to be a separate syndrome. Invasive examinations or excessive medications should be avoided because of its benign prognosis. Author.

Genetic mapping of X-linked albinism-deafness syndrome (ADFN) to Xq26.3–q27.1. Shiloh, Y., Litvak, G., Ziv, Y., Lehner, T., Sandkuyl, L., Hildersheimer, M., Buchris, V., Cremers, F. P., Szabo, P., White, B. N., et al. Department of Human Genetics, Sackler School of Medicine, Tel-Aviv University, Israel. *American Journal of Human Genetics* (1990) July, Vol. 47 (1), pp. 20–7.

X-linked albinism-deafness syndrome (ADFN) was described in one Israeli Jewish family and is characterized by congenital nerve deafness and piebaldness. The ADFN mutation probably affects the migration of neural crest-derived precursors of the melanocytes. As a first step toward identifying the ADFN gene, a linkage study was performed to localize the disease locus on the X chromosome. The family was found to be informative for 11 to 107 RFLPs along the X, and two-point analysis showed four of them—factor 9 (F9), DXS91, DXS37, and DNF1—to have definite or suggestive linkage with ADFN. Multipoint linkage analysis indicated two possible orders within this cluster of loci, neither of which was preferable. In both orders F9 was the most distal, and the best estimate for the location of ADFN was between F9 and the next proximal marker (8.6 cM from F9 ($Z=8.1$) or 8.3 cM from ($Z=7.9$)). These results suggest that the ADFN is at Xq26.3–q27.1. Disagreement between our data and previous localization of DXS91 at Xq11–q13 was resolved by hybridization of the probe pXG-17, which detects the DXS91 locus, to a panel of somatic cell hybrids containing different portions of the X chromosome. This experiment showed that this locus is definitely at Xq24–q26. Together with the linkage data, our results place DXS91 at Xq26 and underscore the importance of using more than one mapping method for the localization of molecular probes. Author.

Three-dimensional phase-contrast MR angiography in the head and neck: preliminary report. Pernicone, J. R., Siebert, J. E., Potchen, E. J., Pera, A., Dumoulin, C. L., Souza, S. P. Department of Radiology, Michigan State University, East Lansing 48824. *American Journal of Neuro-Radiology* (1990) May, Vol. 11 (3), pp. 457–66.

Morbidity and possible mortality associated with contrast angiography lead to its cautious use. A non-invasive method for screening and further delineating known abnormalities would be welcomed. This article reviews the initial results and application of MR imaging to vascular imaging in the head and neck. By using the three-dimensional phase-sensitive method of Dumoulin, Souza, and collaborators, we acquired MR angiograms in 37 min and portrayed blood flow in all the acquired arteries and veins. Feeding arteries and draining veins of arteriovenous malformations were well delineated;

aneurysms as small as 3–4 mm were shown, and obstructed cerebral vessels and the patency of a highly stenotic internal carotid artery were demonstrated. MR angiography of the head or neck offers great promise as a non-invasive means of studying vascular abnormalities. Author.

Facial skeleton remodeling due to temporomandibular joint degeneration: an imaging study of 100 patients. Schellhas, K. P., Piper, M. A., Omlie, M. R. Center for Diagnostic Imaging, St Louis Park, MN 55416. *American Journal of Neuro-Radiology* (1990) May, Vol. 11 (3), pp. 541–51.

One hundred patients with recently acquired, externally visible mandibular deformity and no history of previous extra-articular mandible fracture were selected for retrospective analysis. All had been investigated clinically and with radiography, tomography, and high-field surface-coil MR imaging to determine the presence or absence and extent of temporomandibular joint degeneration. Temporomandibular joint degeneration was found in either one or both joints of each patient studied. Chin deviation was always toward the smaller mandibular condyle of more diseased joint, and many patients either complained of or exhibited malocclusion, often manifested by unstable or fluctuating occlusion disturbances. Three radiologically distinct forms of degenerative vs adaptive osteoarthralgic processes—(1) osteoarthritis, (2) avascular necrosis, and (3) regressive remodeling—involving the mandibular condyle and temporal bone were identified in joints most often exhibiting meniscus derangement. Osteoarthritis and avascular necrosis of the mandibular condyle and temporal bone were generally associated with pain, mechanical joint symptoms, and occlusion disturbances. Regressive remodeling was less frequently associated with occlusion disturbances, despite remodeling of the facial skeleton, and appears to result from regional osteoporosis. Forty patients (52 joints) underwent open arthroplasty procedures, including either meniscectomy or microsurgical meniscus repair, at which time major radiologic diagnosis were confirmed. Surgical and pathologic findings included meniscus displacement, disk degeneration, synovitis, joint effusion, articular cartilage erosion, cartilage healing/fibrosis, cartilage hypertrophy, osseous sclerosis, osteophyte formation, osteochondritis dissecans, localized or extensive avascular necrosis, and decreased mandibular condyle mass and vertical dimension. We conclude that temporomandibular joint degeneration is the principal cause of both acquired facial skeleton remodeling and unstable occlusion in patients with intact dentition and without previous mandible fracture. Author.

Orthodontics and temporomandibular disorders: a review of the literature (1966–1988). Reynders, R. M. Department of Orthodontics, Northwestern University, Chicago, Illinois. *American Journal of Orthodontics and Dentofacial Orthopedics* (1990) June, Vol. 97 (6), pp. 463–71.

The orthodontist has been both accused of causing and complimented for curing temporomandibular dysfunction. To better understand the origins of these conflicting opinions, a review of the orthodontic and temporomandibular joint journals was performed for articles published since 1966. A total of 91 publications that discussed the relationship between orthodontics and temporomandibular disorders was found, and these articles were divided in three categories: viewpoint publications, case reports, and sample studies. Among the areas scrutinized in each category was the method that has led to the diversity of viewpoints. From this analysis, the following conclusions were drawn: (1) viewpoint publications and case reports were excessively represented in comparison with the number of sample studies; (2) viewpoint publications and case reports described a wide variety of conflicting opinions on the relationship between orthodontics and temporomandibular disorders; (3) unlike sample studies, viewpoint publications and case

reports have little or no value in assessment of the relationship between orthodontics and temporomandibular disorders; (4) sample studies indicate that orthodontic treatment is not responsible for creating temporomandibular disorders, regardless of the orthodontic technique; and (5) sample studies indicate that orthodontic treatment is not specific or necessary to cure signs and symptoms of temporomandibular dysfunction. Author.

Dome truncation for management of the overprojected nasal tip. Kridel, R. W., Konior, R. J. Department of Otolaryngology—Head and Neck Surgery, University of Texas Health Science Center, Houston. *Annals of Plastic Surgery* (1990) May, Vol. 24 (5), pp. 385–96.

The nasal tip highlights the facial profile, and in its most aesthetic configuration subtly projects anterior to the dorsum to create a soft supratip break. Overprojection of the tip in relation to the vertical facial plane and the nasal dorsum represents one variant of nasal-facial disproportion that can adversely affect an otherwise pleasant facial appearance. Several strategies for reducing either the lateral or the medial crus to deproject the tip have been suggested. This article describes a method of direct truncation of the dome using an external rhinoplasty approach that can reliably produce tip retrodisplacement while maintaining, or enhancing, tip rotation. Tip definition and projection are optimized by precise, direct reduction of the overprojected dome region and accurate sculpting and realignment of the remaining crural units. When the tip is retrodisplaced, alar flaring can occur; therefore, alar base reduction can substantially enhance the final outcome. Author.

Benefits of contact and noncontact YAG laser for periorbital hemangiomas. Apfelberg, D. B., Maser, M. R., White, D. N., Lash, H., Lane, B., Marks, M. P. Department of Plastic Surgery, Palo Alto Medical Foundation, CA 94301. *Annals of Plastic Surgery* (1990) May, Vol. 24 (5), pp. 397–408.

Twenty patients with capillary/cavernous hemangiomas of the periorbital area (eyelid, eyebrow, nose extending to canthus) have been treated with the variety of techniques. Six patients were treated by yttrium-aluminum-garnet (YAG) laser photocoagulation and direct injection of steroids. Rapid shrinkage of the hemangiomas occurred in all patients, and two infants whose eye was totally occluded by the hemangioma had their eyes rapidly opened. YAG laser excision with or without previous photocoagulation plus injection and with arteriogram plus superselective embolization was performed in the other 14 patients. Results were satisfactory in all patients. Author.

Port wine stain: distribution patterns on the face and neck. Ohtsuka, H. Department of Dermatology, Ehime University, School of Medicine, Japan. *Annals of Plastic Surgery* (1990) May, Vol. 24 (5), pp. 409–13.

One hundred and three port wine stains, maximum length 5.0 cm or more in adults, and the length of the patient's thumb or more in children, on the unilateral side, were selected to be part of analysis of port wine stain distribution patterns. Port wine stain lesions were evaluated, and similar lesion patterns were grouped together and outlined on a face map. Six major patterns were found: forehead (F), temporal (T), angular (A), labio-infraorbital (angular) (L-O and L-O-A), labio-infraorbital-angulo (forehead)-temporal (L-O-A-(F)-T) and jaw-neck (J-N). A wide-ranging, unilateral, or even bilateral port wine stain may be evaluated as a mixed form, which is composed of several standard patterns of port wine stains. The cause of port wine stains is also briefly discussed. Author.

Bilateral cervical lymph node metastases in well-differentiated thyroid cancer. Noguchi, M., Kumaki, T., Taniya, T., Miyazaki, I. Operation Center, Kanazawa University Hospital, Japan. *Archives of Surgery* (1990) June, Vol. 125 (6), pp 804–6.

We analyzed the regional lymph node metastases of 98 patients with thyroid cancer who underwent bilateral modified neck dissection. Bilateral jugular lymph node metastases were frequent in patients with papillary carcinoma of the thyroid, especially in those patients with obvious carcinoma in both lobes of the gland, cancer arising in the isthmus, clinically detectable bilateral lymphadenopathy, and recurrent thyroid cancer. In patients whose cancer was clinically confined to one lobe, and where there were no obviously enlarged contralateral lymph nodes, the occurrence of contralateral jugular lymph node metastasis was significantly correlated with the contralateral paratracheal lymph node metastasis. The bilat-

eral lymphadenectomy appears to be appropriate in these instances. Author.

Minnesota Multiphasic Personality Inventory in tinnitus disorders. Collet, L., Moussu, M. F., Disant, F., Ahami, T., Morgon, A. Laboratoire d'explorations fonctionnelles neurosensorielles, Hôpital Edouard-Herriot, Lyon, France. *Audiology* (1990) Vol. 29 (2), pp. 101–6.

The relation between Minnesota Multiphasic Personality Inventory (MMPI) and tinnitus was examined in 100 subjects with tinnitus disorders. The overall profile of tinnitus sufferers on the MMPI was normal. Higher scores on the depression scale were obtained in males. High hypochondria scores were related to long duration of tinnitus. High psychoasthenia scores were associated with hearing loss. Despite an analogy previously described between chronic pain and tinnitus, the psychometric parameters of tinnitus and of headaches are quite different. Author.

Head size as a basis of gender difference in the latency of the brainstem auditory-evoked response. Aoyagi, M., Kim, Y., Yokoyama, J., Kiren, T., Suzuki, Y., Koike, Y. Department of Otolaryngology, Yamagata University, School of Medicine, Japan. *Audiology* (1990), Vol. 29 (2), pp. 107–12.

In order to discuss the source of gender difference in the latencies of the brainstem auditory-evoked response (ABR), correlation analysis between head size (nasion toinion, ear to ear and circumference) and ABR latencies were investigated in 107 adults (57 males and 50 females) with normal hearing. Wave III and wave V latencies and I–III and I–V interpeak latency intervals (IPL) were significantly shorter in females than in males. Moreover, head size of the male subjects was significantly larger than the female subjects' head size with respect to all three parameters. Significant positive correlations were obtained between head size and the above-mentioned ABR wave latencies and IPLs, even when each gender was analyzed separately. These results suggest that head size, which may reflect brain size, is one of the important factors for the basis of gender difference in ABR latencies. Author.

Characteristics of self-reported hearing problems in a community survey. Stephens, S. D., Lewis, P. A., Charny, M. C. Farrow, S. C., Francis, M. Welsh Hearing Institute, University Hospital of Wales, Cardiff, UK. *Audiology* (1990) Vol. 29 (2), pp. 93–100.

The Cardiff Health Survey included a question asking whether the respondents had any difficulties with their hearing and, if so, to specify the biggest difficulty. This self-completed questionnaire was administered to 4,266 individuals randomly sampled from the electoral register of Cardiff in 1986. 14.7% of those responding indicated a hearing disability; and the main specific disabilities listed are described. The commonest complaints were of difficulties hearing the television and radio, and with general conversation. A number of other specific complaints were reported similar to those found in previous studies with the 'Problems Questionnaire'. Age, social class, general health, smoking and the individual's attitudes were found to influence the pattern of response. Author.

The role of tissue expansion in reconstruction of the ear. Bauer, B. S. Northwestern University Medical School, Chicago, Illinois. *Clinics in Plastic Surgery* (1990) April, Vol. 17 (2), pp. 319–25.

The following guidelines are suggested for the use of tissue expansion in ear reconstruction based on both personal experience and my evaluation of the reported results of expansion in the hands of other surgeons experienced in ear reconstruction: (1) Cases should be carefully selected to avoid those with excess scarring from previous surgery or trauma as well as avoid the other common contraindications to the use of tissue expansion. (2) In most congenital cases the expander should be placed through a remote incision within the postauricular hairline, and excision of the cartilage vestige delayed until expansion is completed and the framework is ready for placement. (3) A remote valve expander of a crescent shape with a volume of 60–100cc is ideal; low profile expanders may even be safer. (4) The pocket for the expander should be dissected immediately above the fascia and against the cartilage remnant. (5) Rapid expansion should be avoided; ideally injections should be carried out one time each week and with relatively small quantities (5–10cc per injection). (6) At the time of expander removal and placement of the cartilage framework the capsule should be meticulously excised to allow tight skin-cartilage coaptation. This is further enhanced by effective suction drainage following wound closure. Author.

Tissue expansion in reconstruction of acquired auricular defects. Sasaki, G. H. Section of Plastic Surgery, University of Southern California, Los Angeles. *Clinics in Plastic Surgery* (1990) April, Vol. 17 (2), pp. 327–38.

Over the past 10 years, tissue expansion has gradually become accepted as useful adjunct to ear reconstruction with an autologous framework. The advantage of expanded tissue in these cases has been the addition of more tissue with similar colour, texture, and sensation. In traumatic cases, the creation of well-vascularized tissue allows an improved anterior draping of skin over the cartilaginous framework and production of a well-defined posterior sulcus. Encroachment of hair onto the reconstructed ear is minimized because of the extra tissue produced by expansion. Under favourable conditions, tissue expansion is an acceptable and reliable method for partial or total ear reconstruction. Author.

Real-ear attenuation of earmuffs in normal-hearing and hearing-impaired individuals. Suter, A. H., Lempert, B. L., Franks, J. R. National Institute for Occupational Safety and Health, Division of Biomedical and Behavioural Science, Cincinnati, Ohio 45226. *Journal of the Acoustical Society of America* (1990) May, Vol. 87 (5), pp. 2114–7

Many of the nine million workers exposed to average noise levels of 85 dB (A) and above are required to wear hearing protection devices, and many of these workers have already developed noise-induced hearing impairments. There is some evidence in the literature that hearing-impaired users may not receive as much attenuation from hearing protectors as normal-hearing users. This study assessed real-ear attenuation at threshold for ten normal-hearing and ten hearing-impaired subjects using a set of David Clark 10A earmuffs. Testing procedures followed the specifications of ANSI S12.6–1984. The results showed that the hearing-impaired subjects received slightly more attenuation than the normal-hearing subjects at all frequencies, but these differences were not statistically significant. These results provide additional support to the finding that hearing protection devices are capable of providing as much attenuation to hearing-impaired users as they do to normal-hearing individuals. Author.

A doubler-blind study of the effectiveness of a high-efficiency particulate air (HEPA) filter in the treatment of patients with perennial allergic rhinitis and asthma. Reisman, R. E., Mauriello, P. M., Davis, G. B., Georgitis, J. W., DeMasi, J. M. Department of Medicine, SUNY/Buffalo, N. Y. *Journal of Allergy and Clinical Immunology* (1990) June, Vol. 85 (6) pp. 1050–7.

This study was designed to assess the effectiveness of a high-efficiency particulate air (HEPA) filter in alleviating allergic respiratory symptoms. Thirty-two patients were studied who had symptomatic perennial rhinitis and/or asthma during the fall and winter months and had a positive skin test with house dust or house dust-mite extract. An ENVIRACAIRE room air cleaner was placed in the bedroom for eight weeks. In a random manner, the active filter was used for four weeks and a blank filter for four weeks. There was an average 70% reduction in the particulate matter greater than or equal to 0.3 micron with the HEPA filter. In a double-blind design, results were assessed by analysis of the patients' symptom/medication scores and subjective evaluation. For the total study, there was no difference in the total symptom/medication scores or individual symptom scores during the placebo and active-filter periods. Analysis of the last two weeks of each filter period in which respiratory infection was absent demonstrated definite differences in total and individual symptoms, suggesting active-filter benefit. Patients' subjective responses also suggested benefit from the filter. The overall impression is that the HEPA filter can reduce allergic respiratory symptoms. Author.

The microbiology of chronic sinus disease in children with respiratory allergy. Goldenhersh, M. J., Rachelefsky, G. S., Dudley, J., Brill, J., Katz, R. M., Rohr, A. S., Spector, S. L., Siegel, S. C., Summanen, P., Baron, E. J., et al. Department of Pediatrics, University of California, Los Angeles. *Journal of Allergy and Clinical Immunology* (1990) June, Vol. 85 (6), pp. 1030–9.

Chronic maxillary sinusitis is common in children with respiratory allergy and is associated with increased morbidity. The bacteriology of chronic sinus disease in these children has not been adequately evaluated. Between May 1987 and January 1988, 12 children (aged three to nine years), all with documented respiratory allergy and chronic respiratory symptoms consistent with chronic sinusitis (greater than 30 days), were fully evaluated.

History, physical examination, complete blood count, nasal smear, and Waters X-ray were done. All patients had opacification of one or both maxillary sinuses, failed to respond to multiple courses of antibiotics, and subsequently underwent maxillary sinus aspiration and irrigation. Specimens were cultured for aerobic and anaerobic organisms with standard technique, and sensitivities were obtained. Culture results revealed a single organism (*Moraxella* (*Branhamella*) *catarrhalis*) in five patients, one patient yielded *M. catarrhalis* plus *Streptococcus* species, three were negative, and three patients grew multiple organisms (two with multiple aerobic streptococcal species and one patient with aerobic streptococci and *Peptostreptococcus*). All children received appropriate culture-directed antimicrobial therapy. Sequential biweekly follow-up revealed progressive radiographic clearing and significant symptomatic improvement. *M. catarrhalis* is a common pathogen, whereas anaerobic organisms are unusual as a cause of chronic maxillary sinusitis in allergic children. Some children, despite negative cultures, may benefit from maxillary sinus irrigation. Author.

Silica directly increases permeability of alveolar epithelial cells. Merchant, R. K., Peterson, M. W., Hunninghake, G. W. Department of Internal Medicine, University of Iowa College of Medicine, Iowa City 52242. *Journal of Applied Physiology* (1990) April, Vol. 68 (4), pp. 1354–9.

Alveolar epithelial cell injury and increased alveolar-capillary membrane permeability are important features of acute silicosis. To determine whether silica particles contribute directly to this increased permeability, we measured paracellular permeability of rat alveolar epithelium after exposure to silica, *in vitro*, using markers of the extracellular space. Silica (Minusil) markedly increased permeability in a dose- and time-dependent manner. This was not the result of cytolytic injury, because lactate dehydrogenase release from monolayers exposed to silica was not increased. Pretreatment of the silica with serum, charged dextrans, or aluminum sulfate blocked the increase in permeability. Scanning electron microscopy demonstrated adherence of the silica to the surface of the alveolar epithelial cells. Thus silica can directly increase permeability of alveolar epithelium. Author.

Intramuscular and esophageal electrode recordings of posterior cricoarytenoid activity in normal subjects. Kuna, S. T., Smickley, J. S., Insalaco, G., Woodson, G. E. Department of Internal Medicine, University of Texas Medical Branch, Galveston 77550-2778. *Journal of Applied Physiology* (1990) April, Vol. 68 (4), pp. 1739–45.

Six normal human subjects were studied to compare intramuscular and esophageal electrode recordings of posterior cricoarytenoid (PCA) muscle activity. A new electromyographic technique was developed to implant hooked wire electrodes into the PCA via a nasopharyngoscope. The esophageal electrode was similar to that used by other investigators to record PCA activity (P. C. Kosch et al. *Journal of Applied Physiology*, 64, 1968–1978, 1988). Simultaneous recordings from the intramuscular and esophageal electrodes were obtained during wakefulness and sleep. Changes in esophageal electrode activity were compared with changes in intramuscular electrode activity under four conditions: (1) voluntary maneuvers, (2) differences in state, (3) nasal airway occlusion during non-rapid-eye-movement sleep, and (4) spontaneous variations in respiratory efforts during non-rapid-eye-movement or rapid-eye-movement sleep. Although similar results were obtained from the esophageal and intramuscular electrodes, differences were present between the two recordings during both wakefulness and sleep. The esophageal electrode recorded activity from surrounding muscles during voluntary maneuvers, vocalization, and quiet breathing in wakefulness. Discrepancies between the two electrode recordings during sleep occurred under conditions of increased and decreased respiratory motor output. The data suggest that the esophageal electrode may not give an accurate assessment of PCA activity during many conditions in wakefulness and sleep. Author.

Posterior cricoarytenoid muscle activity during wakefulness and sleep in normal adults. Kuna, S. T., Smickley, J. S., Insalaco, G. Department of Internal Medicine, University of Texas Medical Branch, Galveston 77550-2778. *Journal of Applied Physiology* (1990) April, Vol. 68 (4) 1746–54.

Six normal adults were studied (1) to compare respiratory-related posterior cricoarytenoid (PCA) muscle activity during wakefulness

and sleep and (2) to determine the effect of upper airway occlusions during non-rapid-eye-movement (NREM) sleep on PCA activity. A new electromyographic technique was developed to implant hooked-wire electrodes into the PCA by using a nasopharyngo-scope. A previously described technique was used to induce upper airway occlusions during NREM sleep (Kuna and Smickley, *Journal of Applied Physiology*, 64, 347–353, 1988). The PCA exhibited phasic inspiratory activity during quiet breathing in wakefulness and sleep in all subjects. Discounting changes in tonic activity, peak amplitude of PCA inspiratory activity during stage 3–4 NREM sleep decreased to 77% of its value in wakefulness. Tonic activity throughout the respiratory cycle was present in all subjects during wakefulness but was absent during stage 3–4 NREM sleep. In this sleep stage, PCA phasic activity abruptly terminated near the end of inspiration. During nasal airway occlusions in NREM sleep, PCA phasic activity did not increase significantly during the first or second occluded effort. The results, in combination with recent findings for vocal cord adductors in awake and sleeping adults, suggest that vocal cord position during quiet breathing in wakefulness is actively controlled by simultaneously acting antagonistic intrinsic laryngeal muscles. In contrast, the return of the vocal cords toward the midline during expiration in stage 3–4 NREM sleep appears to be a passive phenomenon. Author.

Medical management of chronic suppurative otitis media without cholesteatoma in children. Fliss, D. M., Dagan, R., Houri, Z., Leiberman, A. Department of Otolaryngology, Soroka University Medical Center, Beer-Sheva, Israel. *Journal of Pediatrics* (1990) June, Vol. 116 (6), pp. 991–6.

To determine whether systemic administration of antibiotics may eliminate or reduce the need for tympanomastoid surgery in chronic suppurative otitis media without cholesteatoma, we undertook a randomized, prospective study comparing three regimens: (1) daily suction and debridement, with intravenous administration of mezlocillin until three days after the discharge stopped, (2) daily suction and debridement, with intravenous use of ceftazidime until three days after the discharge stopped, and (3) daily suction and debridement without antibiotics. No topical antimicrobial agents were used during the study. Fifty-one patients were included, and 48 children completed the study. The duration of discharge from the ear before treatment was two to 123 months (median 20 months). In 26 patients (51%), the disease was bilateral. Aerobic cultures, obtained with the Alden-Senturia middle ear aspirator, yielded *Pseudomonas aeruginosa* in 98%, enteric gram-negative bacilli in 33%, staphylococci in 25%, and *Haemophilus influenzae* in 12%. The first 33 patients were randomly assigned to one of the three regimens. In the 21 patients treated with suction and antibiotics (either mezlocillin or ceftazidime), the discharge stopped completely, versus in only one (8%) of 12 patients in the suction-only regimen (p less than 0.01). Therefore the following 18 patients were randomly assigned to one of only two groups, which included the two suction-and-antibiotic regimens. In all patients treated initially with antibiotics, discharge stopped after four to 18 days (mean 12.0 days), but 25% needed treatment for greater than 14 days. Amoxicillin prophylaxis was administered to 27 (56%) of the patients after completion of therapy. All patients were followed for six months. Drainage recurred in 12 (25%) patients during the first three months after the study. The recurrence rate was not affected by the antibiotic regimen, the patient's age, the duration of drainage before initiation of antibiotic therapy, or prophylaxis. We conclude that intravenous wide-spectrum antibiotic therapy in conjunction with daily suction and debridement is efficacious for the treatment of chronic suppurative otitis media without cholesteatoma. Author.

Interposition of the thymus as a pedicled flap in tracheal reconstructive surgery. LoCicero, J. III., Michaelis, L. L. Department of Surgery, Northwestern University Medical School, Chicago, Illinois. *Journal of Trauma* (1990) June, Vol. 30 (6), pp. 741–4. Thymus was interposed in six patients following tracheal reconstruction: three tracheo-innominate fistula repairs, two resections for stenosis, and one repair of a membranous tear, during esophagectomy. The two resections for stenosis were elective; the others were emergent repairs. This gland, readily accessible in the upper mediastinum, is easily dissected from the pleura and pericardium and separated into two lobes. Pedicles based at the thoracic inlet measure between 15 and 20 cm by 4 cm. Each lobe receives independent arterial blood supply and venous drainage which remains

intact even if the innominate vein must be divided to effect tracheal repair. All patients survived the perioperative period. The patient with the tracheo-innominate fistula died one month later. No patient had evidence of further vascular complications or tracheal anastomotic leak even though one patient developed a long segment of necrotic trachea. Reinforcement following tracheal reconstruction is important in preventing complications from anastomotic leak or vascular erosion. The pedicled thymus gland is an excellent, readily available interposition flap for emergent or elective tracheal reconstruction. Author.

Radiosurgery for acoustic neurinomas: early experience. Linskey, M. E., Lunsford, L. D., Flickinger, J. C. Department of Neurological Surgery, University of Pittsburgh School of Medicine, Pennsylvania. *Neurosurgery* (1990) May, Vol. 26 (5), pp. 736–44; discussion 744–5.

We reviewed our early experience with the first 26 patients with acoustic neurinomas (21 unilateral, five bilateral) treated by stereotactic radiosurgery using the first North American 201-source cobalt-60 gamma knife. Follow-up ranged from six to 19 months (median, 13 months). Serial postoperative imaging showed either a decrease in tumor size (11 patients) or growth arrest (15 patients). Loss of central contrast enhancement was a characteristic change (18 patients). Seven patients had good or serviceable hearing preoperatively. In all seven the preoperative hearing status was retained immediately after radiosurgery. At follow-up, three had preserved hearing, one had reduced hearing, and three had lost all hearing in the treated ear. Hearing in one patient that was non-serviceable preoperatively later improved to a serviceable hearing level. Delayed facial paresis developed in six patients, and delayed trigeminal sensory loss developed in seven patients, none of whom had significant deficits before radiosurgery. Both facial and trigeminal deficits tended to improve within three to six months of onset with excellent recovery anticipated. Lower cranial nerve dysfunction was not observed. All 26 patients remain at their preoperative employment or functional status. At present, stereotactic radiosurgery is an alternative treatment for acoustic neurinomas in patients who are elderly, have significant concomitant medical problems, have a tumor in their only hearing ear, have bilateral acoustic neurinomas, refuse microsurgical excision, or have recurrent tumor despite surgical resection. Although longer and more extensive follow-up is required, the control of tumor growth and the acceptable rate of complications in this early experience testifies to the future expanding role of this technique in the management of selected acoustic neurinomas. Author.

Melanotic neuroectodermal tumor of infancy. Judd, P. L., Harrop, K., Becker, J. Department of Dentistry, Hospital for Sick Children, Toronto, Ontario, Canada. *Oral Surgery, Oral Medicine, Oral Pathology* (1990) June, Vol. 69 (6), pp. 723–6.

The case of a two-month-old male infant treated for melanotic neuroectodermal tumor of infancy is presented to demonstrate the importance of early treatment in the containment of the growth of such lesions. Although the lesion itself is rare, the posterior maxillary location and involvement of the optic nerve in this patient's lesion made his case even less typical of those commonly documented in the literature. Complete surgical excision of the lesion was not possible in this patient because of the gross mutilation it would have caused. There was no evidence of the tumor recurring in 18 months of follow-up examinations. These results support the current theories regarding the debulking effect in conjunction with bodily defenses on residual tumor cells and the effect of the removal of stimulatory cells on invading peripheral cells. This case points out the importance of an early and rapid investigation of a mass that initially occurs on the alveolar ridge of an infant. Author.

Development of serum bactericidal activity following nontypable *Haemophilus influenzae* acute otitis media. Barenkamp, S. J., Bodor, F. F. Edward Mallinckrodt Department of Pediatrics, Washington University School of Medicine, St Louis, MO 63110. *Pediatric Infectious Diseases Journal* (1990) May, Vol. 9 (5), pp. 333–9.

We monitored the development of serum bactericidal antibody in eight children with acute nontypable *Haemophilus influenzae* otitis media and correlated its development with the appearance of antibody against lipooligosaccharide and surface-exposed outer membrane proteins of the infecting strains. Complement-dependent bactericidal activity was absent in acute sera but increased to titers of 1:4 to 1:32 in sera obtained four to six weeks later. Absorption of

anti-lipooligosaccharide antibodies from convalescent sera had no effect on bactericidal titers of five patients and resulted in small decreases in titer in three patients. Lipooligosaccharide-absorbed samples had persisting bactericidal titers of 1:4 to 1:16. Four of eight acute samples lacked antibodies to surface-exposed outer membrane proteins whereas four had low concentrations of antibody directed against one or more Mr 100,000 to 250,000 outer membrane proteins. Convalescent samples from all eight children showed substantial increases in antibodies directed primarily against Mr 100,000 to 250,000 proteins. Thus, both surface-exposed Mr 100,000 to 250,000 outer membrane proteins and lipooligosaccharide are immunogenic during *Haemophilus* otitis media and are potential targets of bactericidal antibody. Author.

MR imaging-based volume measurements of the hippocampal formation and anterior temporal lobe: validation studies. Jack, C. R. Jr, Bentley, M. D., Twomey, C. K., Zinsmeister, A. R. Department of Diagnostic Radiology, Mayo Clinic, Rochester, MN 55905. *Radiology* (1990) July, Vol. 176 (1), pp. 205–9.

An experiment was designed to compare the accuracy and reproducibility of three different techniques for *in vivo* magnetic resonance (MR) imaging-based volume measurements of brain structures. These techniques were tracing, thresholding, and random marking. Anterior temporal lobe (ATL) and hippocampal formation (HF) volumes in 10 volunteers were measured from MR images, as were four cylinders of known volume. The upper limit of accuracy of *in vivo* volume measurements is estimated to be within 0.1 cm³ of true volume for the HF and 0.9 cm³ for the ATL with a combined tracing-thresholding technique. Intra- and inter-observer variations were estimated from the pooled standard deviations of HF and ATL measurements. With the combined tracing-thresholding technique, the coefficient of variation for HF measurement was 1.9%; for the ATL measurement, it was 0.7%. The results indicate that MR-based volume measurements of these brain structures can be made with high precision and reproducibility. Author.

Juvenile nasopharyngeal angiofibroma: efficacy of radiation therapy. Fields, J. N., Halverson, K. J., Devineni, V. R., Simpson, J. R., Perez, C. A. Radiation Oncology Center, Mallinckrodt Institute

of Radiology, Washington University School of Medicine, St Louis, MO. *Radiology* (1990) July, Vol. 176 (1), pp. 263–5.

From 1962 to 1984, 13 patients with juvenile nasopharyngeal angiofibroma (JNA) were treated with megavoltage radiation therapy. Follow-up ranged from 40 to 255 months (median, 136 months). Two patients received radiation therapy as the initial treatment; the other 11 patients had undergone unsuccessful previous surgical treatment (median, three resections). Gross tumor was evident at the start of radiation therapy in seven patients, and orbital, sphenoid sinus, or intracranial extension was noted in eight of 13 (62%). Doses ranged from 3,600 to 5,200 cGy (median, 4,800 cGy in daily fractions of 180–200 cGy). Tumor was controlled in 11 patients (85%) after irradiation. Two patients were treated with embolization for residual mass; both remained asymptomatic and without evidence of tumor 134 and 83 months after embolization, respectively. With the exception of xerostomia and caries, no significant chronic morbidity was seen. This review and other studies demonstrate that megavoltage radiation therapy is an effective and appropriate treatment for advanced and recurrent JNA; its routine use for early tumors remains controversial. Author.

Premature onset of degenerative disease of the cervical spine in rugby players. Scher, A. T. Department of Radiology, University of Stellenbosch, Parowvallei, CP. *South African Medical Journal* (1990) June 2, Vol. 77 (11), pp. 557–8

Rugby players and other individuals with the changes of degenerative disease of the cervical spine are at risk of spinal cord trauma after hyperextension injury. In an attempt to assess whether rugby players are prone to the development of premature degenerative disease, radiographs of the cervical spines of 159 rugby players were compared with a control group of 150 male hospital patients. The study revealed that rugby players showed premature and advanced changes of degenerative disease when compared with the control group. These changes were most marked in the cervical spines of the tight forwards. Rugby players so affected are therefore more likely to present with the symptoms and signs of cervical osteoarthrosis and are at greater risk of hypertension injury to the cervical spinal cord. Author.