

## Abstract Selection

During the course of last year, a series of abstracts were selected and published by this Journal but to do this required the permission of other editors, parent associations and publishers. We are extremely grateful to all of them and for their kindness in allowing us to publish the abstracts verbatim, and thereby provide what we hope has been a worthwhile and valuable service and one upon which we hope to build over the coming year. Permission was given by 115 journals and some 355 abstracts were published in the ten month period. A list of the journals is given below and without the co-operation of their editors and publishing houses, this service would not have been possible and we are most grateful to them.

Acta Neurologica Scandinavica (Munksgaard International Publishers)  
Alabama Medicine (Medical Association of the State of Alabama USA)  
Allergy (Munksgaard International Publishers Limited)  
Allergy Proceedings (New England and Regional Allergy Proceedings) (Official Journal of Regional and State Allergy Societies)  
American Dental Association Journal (American Dental Association)  
American Journal of Diseases of Children (American Medical Association)  
American Journal of Gastroenterology (Official Journal of the American College of Gastroenterology)  
American Journal of Hematology (Alan R. Liss, Inc., Publishers)  
American Journal of Human Genetics (University of Chicago Press)  
American Journal of Industrial Medicine (Wiley-Liss, Publishers)  
American Journal of Medical Genetics (Alan R. Liss Inc., Publishers)  
American Journal of Neuro-Radiology (Williams and Wilkins)  
American Journal of Orthodontics and Dento-Facial Orthopaedics (C. B. Mosby Co.)  
American Journal of Roentgenology (Williams & Wilkins)—American Roentgen Ray Society  
American Journal of Surgery (Cahners Publishing Co. Inc. Medical-Health Care Group)  
Anaesthesia (Journal of the Association of Anaesthetists of Great Britain and Ireland)  
Anesthesia and Analgesia (International Anesthesia Research Society)—Elsevier Science Publishing Co. Inc.  
Anesthesiology (J.B. Lippincott Co.)  
Annals of Allergy  
Annals of Emergency Medicine (American College of Emergency Physicians and the Society for Emergency Medicine)  
Annals of the New York Academy of Sciences  
Annals of Plastic Surgery  
Archives of Environmental Health (Heldref Publications)  
Archives of Internal Medicine (American Medical Association)  
Archives of Ophthalmology (American Medical Association)  
Archives of Pathology and Laboratory Medicine (American Medical Association)  
Archives of Surgery (American Medical Association)  
Audiology (Journal of Auditory Communication—Official Organ of the International Society of Audiology)—S. Karger  
Aviation, Space and Environmental Medicine (Aerospace Medical Association)  
Brain Research (Elsevier Science Publications)  
British Journal of Cancer (Cancer Research Campaign)  
British Journal of Disorders of Communication (College of Speech Therapists)  
British Journal of Industrial Medicine (British Medical Association)  
British Journal of Oral and Maxillofacial Surgery (Churchill Livingstone Medical Journals)  
British Journal of Plastic Surgery (British Association of Plastic Surgeons)—Churchill Livingstone Medical Journals  
British Journal of Radiology (British Institute of Radiology)  
British Journal of Surgery (Butterworth Scientific Limited)  
British Medical Bulletin (Churchill Livingstone Medical Journals)  
Cancer (J.B. Lippincott Co.)  
Cancer Treatment Reviews (Academic Press Inc. [London] Ltd.)  
Chest (American College of Chest Physicians)

Cleft Palate Journal (American Cleft Palate Association)  
Clinical and Experimental Immunology (Blackwell Scientific Publications Ltd.)  
Clinical Genetics (Munksgaard International Publishers Ltd.)  
Clinical Nephrology (Dustri-Verlag)  
Clinical Nuclear Medicine (J.B. Lippincott Co.)  
Clinical Orthopaedics and Related Research (J.B. Lippincott & Co.)  
Clinics in Plastic Surgery (W.B. Saunders Co.)  
Clinical Science (The Medical Research Society & The Biochemical Society)—Portland Press  
Critical Care Medicine (Society of Critical Care Medicine) Williams and Wilkins  
Developmental Medicine & Child Neurology: Mac Keith Press; Distributed by Blackwell Scientific Publications Ltd., Oxford  
DICP, The Annals of Pharmacotherapy (Harvey Whitney Books)  
Drug Research (Arzneimittel-Forschung)  
Ear and Hearing (American Auditory Society—Williams and Wilkins)  
European Journal of Surgical Oncology (Academic Press Inc. [London] Ltd.)  
Gut (Journal of the British Society of Gastroenterology) (British Medical Association)  
Indian Journal of Leprosy (Quarterly Scientific Journal of the Hindu Kush Nivaran Sangh)  
Indian Journal of Medical Research  
Indian Journal of Pathology and Microbiology (Indian Association of Pathologists and Microbiologists)  
Infection (MMV Medizin Verlag)  
International Journal of Clinical Pharmacology Research (Bioscience Ediprint Inc.)  
International Journal of Pediatric Otorhinolaryngology (Elsevier Science Publishers)  
International Journal of Radiation Oncology, Biology and Physics (Pergamon Press Limited)  
Israel Journal of Medical Sciences  
Japanese Journal of Clinical Oncology (Foundation of Clinical Oncology—National Cancer Centre)  
Journal of the Acoustical Society of America (American Institute of Physics)  
Journal of Allergy and Clinical Immunology (American Academy of Allergy and Immunology)—C. V. Mosby Co.  
Journal of the American Geriatric Society (Elsevier)  
Journal of the American Medical Association (J.A.M.A.)  
Journal of Applied Physiology (American Physiology Society)  
Journal of the Autonomic Nervous System (Elsevier Science Publishers)  
Journal of Biomedical Engineering (Biology Engineering Society)—Butterworth Scientific Ltd.  
Journal of Bone & Joint Surgery—British Volume (British Editorial Society of Bone and Joint Surgery)  
Journal of Burns Care and Rehabilitation (J. B. C. Publishing Inc.)  
Journal of Clinical Pathology (British Medical Association)  
Journal of Dermatologic Surgery and Oncology—Journal Publishing Group  
Journal of Endocrinological Investigation (Italian Society of Endocrinology)—Editrice Kurtis  
Journal of Indian Council of Medical Research  
Journal of Infectious Diseases (Infectious Diseases Society of America)—University of Chicago Press  
Journal of Medical Engineering and Technology (Taylor and Francis Ltd.)  
Journal of Neurological Sciences (Edizioni Minerva Medica)  
Journal of Neurology, Neurosurgery and Psychiatry (British Medical Association)  
Journal of Neurosurgery (American Association of Neurological Surgeons)  
Journal of Occupational Medicine  
Journal of Oral & Maxillofacial Surgery (W.B. Saunders)  
Journal of Radiology/Journale de Neuroradiologie (Societe de Publication de Periodique Internationaux a Francais)

Journal of Pediatrics (C.V. Mosby Co.)  
 Journal of Prosthetic Dentistry (C.V. Mosby Co.)  
 Journal of The Royal Navy Medical Service (Institute of Naval Medicine)  
 Journal of Speech and Hearing Disorders (American Speech-Language-Hearing Association)  
 Journal of Trauma  
 Journal of Tropical Medicine and Hygiene (Blackwell Scientific Publications Ltd.)  
 Medical Journal of Australia (Journal of the Australian Medical Association)  
 Neurosurgery (Journal of the Congress of Neurological Surgeons)—Williams and Wilkins  
 New York State Journal of Medicine (Medical Society of the State of New York)  
 Oral Surgery, Oral Medicine, Oral Pathology (C.V. Mosby Co.)  
 Pediatrics (American Academy of Pediatrics)  
 Pediatric Emergency Care (Williams and Wilkins)  
 Pediatric Infectious Diseases (Williams and Wilkins)  
 Pharmatherapeutica (Clayton-Wrey Publications Ltd.)  
 Postgraduate Medical Journal (Fellowship of Postgraduate Medicine)—Macmillan Press Ltd.  
 Public Health Reports (Journal of the US Public Health Services)  
 Radiographics (Radiological Society of North America)  
 Radiology (Radiological Society of North America)  
 Retina (Journal of Retinal and Vitreous Diseases)—J.B. Lippincott Co.  
 Reviews of Infectious Diseases (Infectious Diseases Society of America)—University of Chicago Press  
 Scandinavian Audiology (Scandinavian Audiological Society)—Almqvist and Wiksell International  
 Science (American Association for the Advancement of Science)  
 South African Medical Journal (Medical Association of South Africa)  
 South African Journal of Communicative Disorders (South African Speech-Language-Hearing Association)  
 Southern Medical Journal (Southern Medical Association)  
 Thoracic & Cardiovascular Surgery (George Thieme, Verlag)  
 Toxicology (Elsevier)  
 Ultrastructural Pathology (Hemisphere Publishing Corporation)  
 West Indian Medical Journal (University of the West Indies)

The following journals have been excluded as it is anticipated that subscribers/readers will already have access to them and will consult them regularly.

ACTA OTO-RHINOLARYNGOLOGICA BELGICA  
 ACTA OTO-LARYNGOLOGICA (*Stockholm*)  
 ADVANCES IN OTO-RHINO-LARYNGOLOGY  
 AMERICAN JOURNAL OF OTOTOLOGY  
 AMERICAN JOURNAL OF OTOLARYNGOLOGY  
 ANNALES D'OTO-LARYNGOLOGIE  
 ANNALS OF OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY  
 ARCHIVES OF OTOLARYNGOLOGY—HEAD AND NECK SURGERY  
 ARCHIVES OF OTORHINOLOGY  
 AURIS, NASUS, LARYNX  
 BRITISH JOURNAL OF AUDIOLOGY  
 CLINICAL OTOLARYNGOLOGY  
 EAR, NOSE AND THROAT JOURNAL  
 H.N.O.  
 IL VALSALVA  
 INDIAN JOURNAL OF OTOLARYNGOLOGY  
 JOURNAL OF OTOLARYNGOLOGY  
 LARYNGOLOGIE, RHINOLOGIE, OTOLOGIE  
 LARYNGOSCOPE  
 OTOLARYNGOLOGY—HEAD AND NECK SURGERY  
 OTOLARYNGOLOGIC CLINICS OF NORTH AMERICA  
 ORL—JOURNAL OF OTO-RHINO-LARYNGOLOGY AND ITS RELATED SPECIALITIES  
 PAKISTAN JOURNAL OF OTOLARYNGOLOGY  
 REVUE DE LARYNGOLOGIE, OTOLOGIE ET RHINOLOGIE  
 RHINOLOGY  
 VESTNIK OTORINOLARYNGOLOGII

**Radiologic diagnosis of epiglottitis: objective criteria for all ages.** Rothrock, S. G., Pignatiello, G. A., Howard, R. M. Department of Emergency Medicine, Loma Linda University Medical Center, California 92350. *Annals of Emergency Medicine* (1990) Sep, Vol. 19 (9), pp. 978–82.

A retrospective study was undertaken to define objective radiologic parameters in diagnosing epiglottitis on soft-tissue lateral neck radio-

graphic studies. Ratios of soft-tissue structures in 31 patients aged seven months to 61 years with epiglottitis were compared with those of age- and sex-matched controls with croup, pharyngitis, and dysphagia. The ratios of epiglottic width to third cervical vertebral body width (EW/C3W) of more than 0.5, of aryepiglottic width to third cervical vertebral body width (AEW/C3W) of more than 0.35, and of epiglottic width to epiglottic height (EW/EH) of 0.6 or more were all found to be 100 per cent sensitive and specific in differentiating between adult patients with and without epiglottitis. In children, EW/C3W, AEW/C3W, and EW/EH ratios of more than 0.5, or more than 0.35, and of 0.6 or more, respectively, were found to be 100 per cent sensitive in detecting epiglottitis with specificities of 87 per cent, 96 per cent, and 87 per cent respectively. These preliminary results suggest that EW/C3W, EW/EH, and AEW/C3W ratios of more than 0.5, of 0.6 or more, and of more than 0.35, respectively, may be useful in the radiologic diagnosis of epiglottitis in patients of all ages. Author.

**Anterior nasal stenosis secondary to accessory nasal bones.** Zukowski, M. L., Gerson, C. R., Pensler, J. M. Division of Plastic Surgery, Northwestern University, Chicago, IL. *Annals of Plastic Surgery* (1990) Aug, Vol. 25 (2), pp. 98–9.

Choanal atresia may result from a posterior or anterior obstruction of the airway. Treatment is predicated on an accurate identification of the underlying pathological condition by means of physical examination, fluoroscopy, and computed tomographic scan. Expedient surgical management after appropriate diagnosis appears to result in effective relief of the obstruction. Author.

**The effects of fixation and restricted visual field on vection-induced motion sickness.** Stern, R. M., Hu, S., Anderson, R. B., Leibowitz, H. W., Koch, K. L. Department of Psychology, Penn State University, University Park 16802. *Aviation, Space and Environmental Medicine* (1990) Aug, Vol. 61 (8), pp. 712–5.

Approximately 60 per cent of healthy human subjects experience motion sickness when exposed to a rotating optokinetic drum. The purpose of the present study was to determine the effects of certain visual factors on susceptibility to motion sickness. Vection data (illusory self-motion), horizontal eye movement recordings, subjective motion sickness report, and a measure of gastric myoelectric activity (electrogastrogram, EGG) were obtained from 45 subjects, who were randomly divided into the following three groups: a control group that observed the entire visual field with no fixation, a group that fixated on a central target, and a third group that had a visual field restricted to 15 degrees. The experimental session was divided into the following three 12-min periods: baseline, drum rotation, and recovery. The results showed that fixation greatly reduced nystagmus and slightly reduced vection. The restricted visual field slightly reduced nystagmus and greatly reduced vection. Both of these manipulations significantly reduced symptoms of motion sickness and tachyarrhythmia, the abnormal gastric myoelectric activity that usually accompanies nausea. Author.

**Generalization of tolerance to motion environments.** Dobie, T. G., May, J. G. Naval Biodynamics Laboratory, New Orleans, LA 70189. *Aviation, Space and Environmental Medicine* (1990) Aug, Vol. 61 (8), pp. 707–11.

The aim of the present investigation was to determine to what extent training tolerance to one motion stimulus would generalize other motion experiences. Twenty subjects prone to motion sickness were selected and assigned to one of four groups after pretesting in a Dichgans and Brandt drum to determine their susceptibility to visually-induced apparent motion. They were also pretested with a VDT display of an expanding surface, and on a revolving/tilting chair. Subjects were assigned to one of the four groups by matching their mean tolerance to visually-induced motion. Subjects in the first group served as controls and received only cognitive counseling regarding their ability to tolerate motion environments. Subjects in the other groups received the same counseling coupled with incremental exposures to the drum, chair, or VDT, respectively. Posttests on each apparatus revealed that the treatments involving the chair and the drum provided specific increases in tolerance to the device used during treatment, and that the treatment involving the chair provided a generalized tolerance to visually-induced motion. These results support the notion that there are both specific and general components in learning to tolerate motion environments. Author.

**Nasolacrimal abnormalities in oblique facial clefts.** Stretch, J. R., Poole, M. D. Oxford Craniofacial Unit, Radcliffe Infirmary, Oxford. *British Journal of Plastic Surgery* (1990) Jul, Vol. 43 (4), pp. 463–7.

A patient with a Tessier No. 4 cleft and an associated bifid nasolacrimal system is presented and considered within the Tessier classification of craniofacial clefting. Previous accounts of nasolacrimal abnormalities associated with facial clefts are reviewed together with the accepted developmental embryology. It is proposed that the bifid nasolacrimal duct system described constitutes a new addition to the literature. Author.

**Treatment outcome of spinal cord compression by nasopharyngeal carcinoma.** Leung, S. F., Tsao, S. Y., Shiu, W. Department of Clinical Oncology, Prince of Wales Hospital, Hong Kong. *British Journal of Radiology* (1990) Sep, Vol. 63 (753), pp. 716–9.

Spinal cord compression occurred in 1.6 per cent of a cohort of 626 patients with nasopharyngeal carcinoma during a median follow-up period of 22 months. The degree of motor deficit before treatment was the most important predictor of subsequent motor recovery. One patient had complete reversal of motor deficit and returned to an ambulatory state by chemotherapy alone. The development of spinal cord compression was associated with a short life expectancy in nasopharyngeal carcinoma. Author.

**Penetrating visceral injuries of the neck: results of a conservative management policy.** Ngakane, H., Muckart, D. J., Luvuno, F. M. Department of Surgery, University of Natal Medical School, Durban, South Africa. *British Journal of Surgery* (1990) Aug, Vol. 77 (8), pp. 908–10.

A study of the conservative treatment of 109 patients with penetrating neck injuries was carried out over three years. Patients with clinical or radiological evidence of injury to the oesophagus or trachea were included in the study while nine patients with major vascular trauma were explored immediately and excluded. Three late vascular operations were performed. The remaining 106 patients were treated conservatively. There were two deaths, both from associated injuries. The remaining 104 patients were treated successfully with only three cases of minor wound sepsis. We conclude that oesophageal and tracheal injuries after stab injuries and low velocity gunshot wounds can be treated successfully by non-operative treatment. Author.

**Mucociliary clearance from central airways in patients with excessive sputum production with and without primary ciliary dyskinesia.** Baum, G. L., Zwas, S. T., Katz, I., Roth, Y. Department of Pulmonary Medicine, Chaim Sheba Medical Center, Tel Hashomer, Israel. *Chest* (1990) Sep, Vol. 98 (3), pp. 608–12.

Studies of mucociliary clearance were made on 17 patients with bronchiectasis and excessive sputum production. Tracheal mucus velocity was measured. Five patients with primary ciliary dysfunction and 12 who had no clinical evidence of this defect were studied. The mean ( $\pm$ SD) tracheal mucus velocity of the five patients with proved or presumptive primary ciliary dysfunction was  $2.9 \pm 0.2$  mm per minute and for the 12 patients without ciliary dysfunction,  $7.9 \pm 1.4$  mm per minute. (The previously determined rate for normals was  $4.7 \pm 1.3$  mm per minute.) In four of five patients with ciliary dysfunction, CBF was below 7.5 Hz while in the one patient of the 12 without ciliary dysfunction CBF was at the lower limit of normal values. Thus, mucociliary clearance responds to load, depends partly on CBF, and has a built-in control system and the means for compensating for ciliary dysfunction. Author.

**Obligate mouth breathing during exercise. Nasal and laryngeal sarcoidosis.** Becker, G. L., Tenholder, M. F., Hunt, K. K. Department of Medicine, Walter Reed Army Medical Center, Washington, DC 20307–5000. *Chest* (1990) Sep, Vol. 98 (3), pp. 756–7.

A young black man presented with simultaneous nasal and laryngeal sarcoidosis, each uncommon entities. Despite severe upper airway obstruction and emergent tracheostomy, there was an uncharacteristic rapid response to oral steroids alone. The patient's predominant initial complaint of early mouth breathing during routine army physical training demonstrates a symptom complex and an alternate mechanism of dyspnea to consider in sarcoidosis. Author.

**Cervical spine and shoulder pain.** Hawkins, R. J., Bilco, T., Bonutti, P. University Hospital, University of Western Ontario, London, Canada. *Clinical Orthopaedics* (1990) Sep (258), pp. 142–6.

The complex problem of combined neck and shoulder pain was investigated in 26 operations in 13 patients who had a shoulder procedure (subacromial decompressions of rotator cuff repairs) and an anterior cervical spine fusion. This select group of complex patients illustrates the diagnostic studies required to determine whether the pain comes primarily from the cervical spine, shoulder, or both. Good pain relief

was accomplished after 24 of the 26 surgical procedures (average follow-up, 4.3 years). In the 13 patients, eight presented with nearly equal neck and shoulder pain as the chief complaint, whereas in the remaining five patients, the initial complaint was predominantly neck pain with only minor shoulder involvement. The shoulder pain became more significant after the anterior cervical fusion in these five patients. This study emphasizes the need for a careful evaluation of patients with combined neck-shoulder pain syndrome in a systematic approach allowing appropriate treatment. Author.

**Nicardipine infusion for postoperative hypertension after surgery of the head and neck.** Halpern, N. A., Sladen, R. N., Goldberg, J. S., Neely, C., Wood, M., Alicea, M., Krakoff, L. R., Greenstein, R. Department of Surgical Critical Care, Veterans Administration Medical Center, Bronx, NY 10468. *Critical Care Medicine* (1990) Sep, Vol. 18 (9), pp. 950–5.

The therapy of postoperative hypertension (POH) after head and neck surgery was evaluated in a prospective, randomized, double-blind trial. Nicardipine hydrochloride, a Ca channel-blocker for iv use, was compared with placebo. Patients were initially randomized to receive nicardipine infusion or placebo. Those not responding to placebo were given nicardipine infusion on an open basis. Hypertension was significantly better controlled in patients treated with nicardipine infusion compared with placebo (83 per cent v 22 per cent,  $p$  less than 0.002). Subsequently, six (86 per cent) of seven of the placebo failures were successfully treated with nicardipine. There were no significant complications in either group. We conclude that the titratable infusion of nicardipine is an effective and safe method for the control of POH after surgery of the head and neck. Further studies are now warranted comparing nicardipine with other drugs currently used to treat this condition. Author.

**Adverse effects of trimethoprim-sulfamethoxazole in a child with dihydropteridine reductase deficiency.** Woody, R. C., Brewster, M. A. Department of Pediatrics, University of Maryland, Baltimore 21201. *Developmental Medicine and Child Neurology* (1990) Jul, Vol. 32 (7), pp. 639–42.

A child with dihydropteridine reductase (DHPR) deficiency developed signs of dopamine insufficiency after being given trimethoprim-sulfamethoxazole (TMP-SMX). She recovered function after the antibiotic was stopped, which suggests that it adversely influenced dopamine metabolism in the CNS. The authors speculate that TMP, a dihydrofolate reductase inhibitor, was the major cause of the patient's deterioration, and suggest that it and other dihydrofolate inhibitors, notably methotrexate, are contra-indicated for patients with DHPR deficiency. Author.

**Lipids in airway mucus of acute quadriplegic patients.** Hincman, H. O., Bhaskar, K. R., O' Sullivan, D. D., Brown, R., Reid, L. Department of Pathology, Children's Hospital, West Roxbury, MA. *Experimental Lung Research* (1990) Jul–Aug, Vol. 16 (4), pp. 369–85.

Quadriplegic patients have difficulty in clearing lung mucus due to paralysis of muscles of respiration. In about 25% of these patients, excessive mucus in the airway necessitates tracheostomy, and in some patients it is fatal. In others there is spontaneous recovery. To determine if the excessive mucus results from secretion of abnormal mucus or from accumulation of normal mucus, we analyzed the lipids in mucus from eight quadriplegic patients. Lipids were separated from other constituents of the mucus by density gradient ultracentrifugation, extracted with chloroform-methanol (2 : 1), and examined by high-performance thin-layer chromatography (HPTLC). Cholesterol was the major neutral lipid; phosphatidylethanolamine, phosphatidylcholine, and sphingomyelin were the main phospholipids. Glycolipids were predominant, lactosylceramide (CDH) being the highest in amount. Two-dimensional HPTLC as well as high-performance lipid chromatography also revealed the presence of gangliosides: comparison with standards indicated the presence of GM1, GM2, GM3, and some unidentified gangliosides. In normal mucus, cholesterol is the predominant lipid; phospholipid is present in smaller amounts but glycolipids are not identified. Thus, results of our lipid analysis show that mucus from the quadriplegic patients is abnormal and similar to that in hypersecretory diseases such as chronic bronchitis and cystic fibrosis. Unlike these latter cases, hypersecretion in the quadriplegic has a rapid onset and, often, spontaneous recovery, suggesting that this is due to abnormal stimulation rather than an increase in the population of secretory cells. Author.

**Radiation-induced ocular injury in the dog: a histological study.** Ching, S. V., Gillette, S. M., Powers, B. E., Roberts, S. M., Gillette, E. L.,

Withrow, S. J. Department of Pathology, Colorado State University, Fort Collins 80523. *International Journal of Radiation Oncology, Biology and Physics* (1990) Aug, Vol. 19 (2), pp. 321–8.

Radiation-induced ocular injury secondary to treatment of nasal cancer occurs in humans and animals. Dogs with nasal carcinomas were randomized to receive 36 to 67.5 Gy in fractionated doses given in four weeks using a 6 MV linear accelerator. Ophthalmic examinations were performed according to a predetermined protocol and eyes were removed for histologic examination when dogs were euthanized. The eye in the radiation field exhibited greater injury than the contralateral eye with nasal areas of the globe having more severe lesions than temporal areas. Lesions occurred in all dogs and at all doses. At one month or less postirradiation treatment, all dogs had blepharitis, keratoconjunctivitis and corneal epithelial atrophy. Surface lesions persisted in all eyes, becoming less severe and more chronic with time. At 3–6 months postirradiation treatment, degenerative angiopathy of retinal vessels appeared with multifocal retinal hemorrhage and mild diffuse retinal degeneration which affected outer layers first and progressed inwardly with time. At six months postirradiation treatment, there were cataracts, fibrosis of retinal vessel walls with loss of vascular smooth muscle, retinal hemorrhage, and mild to moderate retinal degeneration. At one year postirradiation treatment, retinal vessels remained sclerotic, retinal hemorrhage was less frequent, and there was moderate retinal degeneration with swelling and loss of ganglion cells. By two years or more postirradiation treatment, optic nerve axonal degeneration secondary to retinal changes had appeared. Tapetal and choroidal atrophy were inconsistently seen. Thus, ocular lesions at the doses received developed along a relatively predictable time course and recovery was not seen. Structures of the canine eye appear sufficiently sensitive that even relatively low total doses given in small doses per fraction cause significant long-term injury. Author.

**Irradiation alone for supraglottic larynx carcinoma: can CT findings predict treatment results? (see comments).** Freeman, D. E., Mancuso, A. A., Parsons, J. T., Mendenhall, W. M., Million, R. R. Department of Radiation Oncology, University of Florida College of Medicine, Gainesville. *International Journal of Radiation Oncology, Biology and Physics* (1990) Aug, Vol. 19 (2), pp. 485–90, Comment in: *International Journal of Radiation Oncology, Biology and Physics* (1990) Aug, Vol. 19 (2), pp. 497–8.

Between January 1982 and December 1986, 54 patients with squamous cell carcinoma of the supraglottic larynx were treated for cure with radiation therapy alone; all had a minimum two-year follow-up. For 31 patients, high-quality pretreatment CT scans were available for review. Scans were retrospectively evaluated by a single radiologist for the percentage of preepiglottic space involvement by tumor, the percentage of paralaryngeal space involvement, and the total tumor volume in cubic centimeters (cc). Volume was measured using a computer digitizer for each CT slice showing tumor. Results showed a significant difference in local control for tumors less than 6 cc versus tumors greater than or equal to 6 cc (15/18 or 83 per cent v 6/13 or 46 per cent;  $P = 0.038$ ). This difference was independent of both T stage and primary site. For T3 lesions, there was a trend towards decreased local control with increasing percentage of preepiglottic space involvement (0–25 per cent = 85 per cent local control; greater than 25 per cent = 60 per cent local control;  $p = 0.384$ ); in most cases, however, the amount of preepiglottic space involvement reflected tumor volume (0–25 per cent, 8/12 or 67 per cent of tumors were less than 6 cc; greater than 25 per cent, 7/10 or 70 per cent of tumors were greater than or equal to 6 cc). There was no clear association between degree of paraglottic space involvement and local control. Tumor volume did not correlate with complications of treatment. Because of the limited number of patients in the current study, conclusions should be considered preliminary. However, the data do suggest that pretreatment CT findings, particularly tumor volume, can predict the likelihood of local control with radiation therapy alone for squamous cell carcinoma of the supraglottic larynx. Author.

**Thyroarytenoid muscle activity during hypoxia, hypercapnia, and voluntary hyperventilation in humans.** Insalaco, G., Kuna, S. T., Cibella, F., Villeponteaux, R. D. Department of Internal Medicine, University of Texas Medical Branch, Galveston 77550. *Journal of Applied Physiology* (1990) Jul, Vol. 69 (1), pp. 268–73.

Intramuscular electromyographic activity of the thyroarytenoid (TA) muscle, a vocal cord adductor, was recorded in nine normal adult humans during progressive isocapnic hypoxia and hyperoxic hypercapnia. Four of the nine subjects also performed voluntary isocapnic hyperventilation. During quiet breathing of room air, the TA exhibited phasic activity in expiration and often tonic activity throughout the respiratory cycle. Both phasic and tonic TA activity progressively

decreased with either increasing hypoxia or hypercapnia. Tonic activity appeared to decrease more rapidly than phasic activity with increasing chemical stimulation. At comparable tidal volume increments, the relative decrease in phasic TA activity appeared to be greater under hypoxic than under hypercapnic conditions. During voluntary isocapnic hyperventilation, phasic TA activity decreased without significant change in tonic activity. At tidal volumes approximately double those of base line, the relative decrease in TA activity was similar during both hypercapnia and voluntary hyperventilation, although differences appeared at higher tidal volumes. The results, in combination with recent findings in humans regarding the posterior cricoarytenoid muscle, a vocal cord abductor, suggest that vocal cord position is dependent on the net balance of counteracting forces not only during quiet breathing but also during involuntary and voluntary hyperpnea. Author.

**Mathematical modeling of heat and water transport in human respiratory tract.** Daviskas, E., Gonda, I., Anderson, S. D. Department of Thoracic Medicine, Royal Prince Alfred Hospital, Camperdown, Australia. *Journal of Applied Physiology* (1990) Jul, Vol. 69 (1), pp. 362–72.

Excessive heat and water losses from the airways are stimuli to asthma. To study heat and water vapor transport in the human respiratory tract, a time-dependent model, based on a single differential equation with an analytical solution, was developed that could predict the intra-airway temperatures and water vapor contents. The key feature is the dependence of the temperature and water vapor along the respiratory tract as a function of the air residence time at each location. The model assumes disturbed laminar flow leading to enhanced transport mechanisms and wall temperature profiles modeled according to experimental data (E. R. McFadden, Jr, B. M. Pichurko, H. F. Bowman, E. Ingenito, S. Burns, N. Dowling, and J. Soloway. *Journal of Applied Physiology*, 58: 564–570, 1985). It predicts that (1) the air equilibrates with the wall before it reaches body conditions (37 degrees C, 99.5 per cent relative humidity); (2) conditioning of the inspired air involves several generations, with the number depending on the respiratory conditions; and (3) the walls of the upper airways are unsaturated, although it is difficult to judge at this state the depth of the respiratory tract affected. Author.

**Development of a probe for the in vivo measurement of airway humidity during anaesthesia.** Farley, R. D., Dougall, J. R., Patel, K. R. Department of Respiratory Medicine, Western Infirmary, Glasgow, UK. *Journal of Biomedical Engineering* (1990) Jul, Vol. 12 (4), pp. 328–32.

Airway drying can arise during long-term respiration of anaesthetic dry gases and this may have implications for the function of the airway wall. Monitoring airway humidity can identify drying trends, although previous attempts have been limited for technical reasons. The design and development of a probe to measure mid-tracheal air humidity is described. The device comprises a commercially available capacitive humidity sensor and a thermocouple. The assembled probe is catheter-like with a diameter of 9.5 mm and a length of 312 mm. Water vapour transfer response times of 1.4 s (absorption) and 3.6 s (desorption) were evaluated for the probe. A preliminary trial to record airway humidity in ambient air and involving six patients was performed during anaesthesia. Author.

**Collagen sheeting implants in cosmetic and reconstructive surgery.** Panje, W. R., Dobleman, T. J. Department of Surgery, University of Chicago, Pritzker School of Medicine, Illinois. *Journal of Dermatology and Surgical Oncology* (1990) Sep, Vol. 16 (9), pp. 861–5.

In this study, collagen sheeting is used for correction of various contour deformities of the face. This material, which was used in 16 patients, is easily implanted, does not lead to infection, and has an average resorption rate of 21 per cent at six months. It provides excellent cosmetic results. Author.

**Transsphenoidal approach to infrasellar tumors involving the cavernous sinus.** Hashimoto, N., Kikuchi, H. Department of Neurosurgery, Kyoto University Medical School and Hospital, Japan. *Journal of Neurosurgery* (1990) Oct, Vol. 73 (4), pp. 513–7.

The authors review their 2-year experience with a rhinoseptal transsphenoidal approach to skull-base tumors of various pathologies involving both the sphenoid and cavernous sinuses. Eight patients with cranial nerve palsies attributable to compression of the contents of the cavernous sinus and/or optic canal are included in this report. Among these patients, a total of 17 cranial nerves were affected. Postoperative normalization was achieved in eight nerves, significant improvement in seven nerves, and no improvement in two nerves. There were no operative complications of aggravation of cranial nerve palsies in this series.

In spite of the limited operating field, the results demonstrate the effectiveness and safety of this approach. The authors recommend that this approach be considered before more aggressive surgery is undertaken. Author.

**Chronic noise exposure, high-frequency hearing loss, and hypertension among automotive assembly workers.** Tarter, S. K., Robins, T. G. Saturn Corporation, Spring Hill, TN 37174. *Journal of Occupational Medicine* (1990) Aug, Vol. 32 (8), pp. 685–9.

The prevalence of hypertension and mean blood pressure was studied in 150 white men and 119 black men exposed to industrial noise of 85 dBA or greater for a minimum of five years. Mean decibel loss of 4,000 Hz was 28.3 among the black workers and 45.3 among the white workers. 31.9 per cent of the black men and 22.0 per cent of the white men had hypertension, defined as diastolic blood pressure greater than 90 mm Hg and/or currently taking hypertensive medication. After controlling for several potential confounding factors, hearing loss at 4,000 Hz and years worked in high-noise departments were significantly associated with mean blood pressure and hypertension among the black workers. No correlation between mean blood pressure or the presence of hypertension and hearing loss at 4,000 Hz or years worked in high-noise departments was found among the white workers. Author.

**Noise-induced hearing loss: a possible marker for high blood pressure in older noise-exposed populations.** Talbott, E. O., Findlay, R. C., Kuller, L. H., Lenkner, L. A., Matthews, K. A., Day, R. D., Ishii, E. K. Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, PA 15261. *Journal of Occupational Medicine* (1990) Aug, Vol. 32 (8), pp. 690–7.

The present study assessed the relationships among occupational noise exposure, noise-induced hearing loss, and high blood pressure. The study population consisted of 245 retired metal assembly workers from Pittsburgh aged 56 to 68 with chronic noise exposure of 30 or more years at greater than or equal to 89 dBA. Results of the audiometric testing indicated 52 per cent of the younger workers (ages 56 to 63) have severe

noise-induced hearing loss (greater than or equal to 65 dBA loss at 3, 4, or 6 kHz) and 67 per cent of older workers (ages 64 to 68). Body mass index and alcohol intake were significantly related to systolic and diastolic blood pressure. Among older men, there was a marginally significant increased prevalence of high blood pressure (greater than or equal to 90 mm diastolic or taking blood pressure medicine) among those with severe noise-induced hearing loss ( $P = 0.05$ ). Moreover, another measure of hearing loss at high frequencies, speech discrimination score in noise (measured in the better ear), referred to as the W-22 MAX score, was also found to be related to the prevalence of high blood pressure in the older (64 to 68) age group ( $P$  less than 0.05). Multiple regression analysis revealed W-22 MAX and severe noise-induced hearing loss were independent predictors of hypertension in the older, but not in the younger group of retired workers. Author.

**Sensorineural hearing loss associated with Kawasaki disease.** Sundel, R. P., Newburger, J. W., McGill, T., Cleveland, S. S., Miller, W. W., Berry, B., Klein, A. M., Burns, J. C. Department of Medicine, Children's Hospital, Boston, Massachusetts. *Journal of Pediatrics* (1990) Sep, Vol. 117 (3), pp. 371–7.

In five children who met the diagnostic criteria for Kawasaki Disease, sensorineural hearing loss, developed in association with the acute illness. The children, aged seven months to 13 years, had deficits ranging from mild to profound bilateral sensorineural hearing loss. There were no associated neurologic abnormalities, and immunologic investigations and magnetic resonance imaging failed to reveal a cause. Treatment regimens differed among the children, but none had high salicylate levels (greater than 20 mg/dl) or received other ototoxic medications. Antiinflammatory therapy was not obviously beneficial in any case, and four of the children have persistent hearing deficits. We conclude that auditory involvement may be a complication of Kawasaki disease; screening of clinically affected children should be considered. Author.