

Abstract Selection

Intubation through the laryngeal mask. A technique for unexpected difficult intubation. Heath, M. L., Allagain, J. Anaesthetic Department, Lewisham Hospital, London. *Anaesthesia* (1991) Jul., Vol. 46 (7), pp. 545-8.

Unexpected difficulty with tracheal intubation contributes to anaesthetic mortality. The laryngeal mask can almost always be placed satisfactorily and its position should facilitate blind intubation. A 6 mm cuffed tube will pass through both adult sizes of the mask and this study tested the feasibility of intubation through the mask. The effect of the application of cricoid pressure on the technique was also investigated. Intubation via the laryngeal mask was attempted in 100 routine patients: of the first 50 (group 1, no cricoid pressure), 45 (90 per cent) were successfully intubated. Maintenance of cricoid pressure throughout the manoeuvre (group 2) reduced the success rate significantly to 56 per cent (p less than 0.05). Despite the possibility that cricoid pressure may have to be interrupted momentarily, the ease with which the technique can be learnt, and the immediate availability of the necessary apparatus suggest that it should be considered for inclusion in failed intubation drill. Author.

Tracheal tube resistance and airway and alveolar pressures during mechanical ventilation in the neonate. Tipping, T. R., Sykes M. K. Nuffield Department of Anaesthetics, Radcliffe Infirmary, Oxford, UK. *Anaesthesia* (1991) Jul, Vol. 46 (7), pp. 565-9.

The relationship between peak airway pressure, alveolar pressure and respiratory frequency was calculated for the range of compliances and airway resistances which might be encountered during mechanical ventilation of a 3 kg neonate. The pressure/flow relationships of 2.5, 3.0, 3.5 and 4 mm tracheal tubes were determined at a series of flows from 0.5 to 4 litres/min. Peak airway and alveolar pressures were then measured at various frequencies and inspiratory:expiratory ratios with the tubes incorporated in a model lung. Large differences between peak airway and alveolar pressures developed when frequency was increased or inspiratory time decreased; the differences were greatest with the smaller tubes. Shortening expiratory time by increasing the frequency or altering the inspiratory:expiratory ratio resulted in increased end-expiratory pressure because of incomplete emptying of the lung. Author.

Incidence and management of airway problems in the CHARGE Association. Stack, C. G., Wyse, R. K. Department of Anaesthetics, Hospitals for Sick Children, London. *Anaesthesia* (1991) Jul, Vol. 46 (7), pp. 582-5.

The airway problems associated with anaesthesia in patients with the CHARGE Association have been underreported. We undertook a retrospective review of fifty cases, of which anaesthetic records were available for 37 patients. Apart from choanal atresia and cleft lip and palate, 56 per cent of patients has some other upper airway abnormality. There appeared to be greater difficulty in tracheal intubation with increase in age in four patients. The incidence and management of airway abnormalities are discussed. Author.

Neuromuscular effects of succinylcholine on the vocal cords and adductor pollicis muscles. Meistelman, C., Plaud, B., Donati, F. Service d'Anesthésie, Institut Gustave-Roussy, Villejuif, France. *Anesthesia and Analgesia* (1991) Sept, Vol. 73 (3), pp. 278-82.

To quantify the effects of succinylcholine at the laryngeal adductor muscles and the adductor pollicis, 17 adult patients were studied during propofol-fentanyl anesthesia. Train-of-four stimulation was applied to the ulnar nerve at the wrist and the recurrent laryngeal nerve at the notch of the thyroid cartilage. Laryngeal response was measured as pressure changes in the cuff of the tracheal tube positioned between the vocal cords. The force of contraction of the laryngeal adductor muscles and of the adductor pollicis were compared after administration of 0.25 or 0.5 mg/kg of succinylcholine.

With 0.25 mg/kg, maximum blockade of first twitch (T1) was 66 per cent \pm 10 per cent (mean \pm SEM) and 45 per cent \pm 13 per cent at the vocal cords and the adductor pollicis, respectively (P less than 0.01). After 0.5 mg/kg, maximum blockade at the vocal cords (93 per cent \pm 2 per cent) and the adductor pollicis (84 per cent \pm 6 per cent) did not differ significantly. For both doses, time to maximal blockade was shorter for the vocal cords (0.9 ± 0.1 min) than for the adductor pollicis (1.7 ± 0.2 min; P less than 0.01). Time to 90 per cent recovery of T1 after a bolus of 0.5 mg/kg was similar at the vocal cords (4.3 ± 0.5 min) and the adductor pollicis (5.2 ± 0.8 min) (NS). The ED50 was less at the laryngeal adductors (0.170 mg/kg) than at the adductor pollicis (0.278 mg/kg). It is concluded that, in adults, succinylcholine-induced blockade is more rapid and more intense at the laryngeal muscles than at the adductor pollicis. Author.

Staging abdominal ultrasonography in nasopharyngeal carcinoma. Leung, S. F., Metreweli C., Tsao, S. Y., Van Hasselt, C. A. Department of Clinical Oncology, Prince of Wales Hospital, Shatin, Hong Kong. *Australasian Radiology* (1991) Feb, Vol. 35 (1), pp. 31-2.

Abdominal ultrasonograms were performed in 81 unselected patients with newly-diagnosed nasopharyngeal carcinoma without clinical evidence of distant metastases. Two patients had ultrasonographic features suspicious of, but not diagnostic of, hepatic metastases. One of these two patients developed hepatic metastases six months after the examination while the other was free of metastases at follow-up 33 months afterwards. Of the 79 patients without evidence of metastases on ultrasonogram, two developed hepatic metastases after 22 and 32 months. Based on these results, we do not recommend abdominal ultrasonography as a routine staging investigation for nasopharyngeal carcinoma. Author.

Visually-induced sickness in normal and bilaterally labyrinthine-defective subjects. Cheung, B. S., Howard, I. P., Money, K. E. Human Performance in Space Laboratory, York University, Ontario, Canada. *Aviation, Space Environmental Medicines* (1991) Jun, Vol. 62 (6), pp. 527-31.

A group of nine normal subjects (with no overt vestibular dysfunction) and a group of six bilaterally labyrinthine-defective subjects were exposed to a visual field rotating about an Earth-horizontal axis (orthogonal to the gravity axis). The visual stimulus was provided by a 3 m diameter sphere with random dots rotating at 30, 45 and 60 degrees per second (degree/s), about the stationary subject's roll, pitch and yaw axes. The subject's head was positioned at the centre of the sphere such that it experienced apparent motion in all three axes. Results indicated that in the normal group, symptoms of motion sickness were reported in 21 of 27 test-trials. When labyrinthine-defective subjects were exposed to the roll and pitch stimulus, no sickness symptoms were reported or observed. These results strongly suggest that the vestibular system is necessary for sickness induced by moving visual fields. Author.

Raised levels of latent collagenase activating angiogenesis factor (ESAF) are present in actively growing human intracranial tumours. Taylor, C. M., Weiss, J. B., Lye, R. H. Department of Rheumatology, University of Manchester, U.K. *British Journal of Cancer* (1991) Jan, Vol. 64 (1), pp. 164-8.

Endothelial cell stimulating angiogenesis factor (ESAF) is a potent, low molecular mass mitogen, specific for endothelial cells. In common with various protein growth factors, it displays angiogenic activity in a variety of biological test systems. However, it differs from these other factors by virtue of its low molecular mass and its ability to activate latent matrix metalloproteinases in a dose dependent manner. This activity has been used to quantify the factor in both normal and diseased brain tissue. The concentration of ESAF determined in biopsies from different types of intracranial

tumours varied: in some tumour types the level was close to that of control samples whereas in others it rose to levels comparable to those encountered in the pineal gland, the richest source of ESAF in mature mammals. Tumours considered to be benign contained significantly less ESAF than those neoplasms classified as being malignant ($P = 0.025$). There was also a correlation between the mitotic activity of tumour samples, as determined by conventional H&E histochemical staining and the ESAF concentration present. These findings agree with previous studies in which elevated ESAF levels have been found in tissue where proliferation of vascular elements has been observed. Author.

Cranial nerve involvement and base of the skull erosion in nasopharyngeal carcinoma. Sham, J. S., Cheung, Y. K., Choy, D., Chan, F. L., Leong, L. Department of Radiotherapy and Oncology, Queen Mary Hospital, Hong Kong. *Cancer* (1991) Jul 15, Vol. 68 (2), pp. 422–6.

In a prospective study of 262 consecutive patients with nasopharyngeal carcinoma (NPC), using computed tomography (CT) as their baseline evaluation, erosion of the base of the skull and intracranial extension into the middle cranial fossa were found in 31.3 per cent and 12.2 per cent of patients, respectively. Thirty-four of these patients had cranial nerve involvement at presentation; 30 of them had involvement of one or more of the III to VIth cranial nerves. Most cases of intracranial extension of tumour were accompanied by erosion of the base of the skull, but the reverse was not true. All patients with cranial nerve palsy involving the III to VIth cranial nerves had associated erosion of the ipsilateral base of the skull. The CT evaluation of patients with cranial nerve involvement who are believed to harbour NPC should include thin cuts of the base of the skull for detection of subtle bone erosion. This may be the only clue to the presence of a small NPC. The prognostic significance of cranial nerve involvement, base of the skull erosion, and intracranial extension of the tumour on the survival of the group of 84 patients who had T4 tumours was evaluated with regression analysis using the Cox model. Only cranial nerve involvement was found to be a significant factor influencing survival. Author.

Paravertebral muscle metastases from primary tongue and nasopharyngeal carcinomas. Elkowitz, S. S., Patel, M., Hirschfield, L. S. Department of Radiology, Long Island Jewish Medical Centre, Albert Einstein College of Medicine, New Hyde Park, New York. *Clinical Radiology* (1991) Jun, Vol. 43 (6), pp. 401–1.

Skeletal muscle metastases most commonly originate from primary lung, breast, genito-urinary and gastro-intestinal tract malignancies. They have been seen to arise from head and neck tumours. However, the only primary tumours reported to metastasize to muscle from this region have been oesophageal and thyroid neoplasms. We present two cases with paravertebral muscle metastases from primary tongue and nasopharyngeal carcinomas. Author.

Midlatency auditory evoked responses: differential effects of a cholinergic agonist and antagonist. Buchwald, J. S., Rubinstein, E. H., Schwafel, J., Strandburg, R. J. Department of Physiology, UCLA School of Medicine 90024. *Electroencephalography and Clinical Neurophysiology* (1991) Jul–Aug, Vol. 80 (4), pp. 303–9.

The effects of a cholinergic antagonist (scopolamine) and agonist (physostigmine) on the auditory middle latency evoked responses (MLRs) were studied in seven normal male volunteers. Scalp recordings were made from a central (Cz) electrode referenced to linked ear lobes on one channel and to a non-cephalic, sternovertebral reference on a second channel. Three components were statistically analyzed for changes in latency and amplitude; Pa, with peak positivity in the 25–40 msec latency range, Nb, with peak negativity 40–50 msec, and P1 with peak positivity 50–65 msec. Control recordings included responses to click rates of 1, 5, 8 and 10/sec; as has been previously reported, P1 showed a marked decrease and disappeared at the faster rates of stimulation whereas Pa showed no change in amplitude. Intravenous injections of scopolamine resulted in a rapid and complete disappearance of P1 and a slight increase in Pa; concurrently, the subjects reported feeling drowsy but were awake with eyes open through the recordings. Subsequent injections of physostigmine resulted in a rapid reversal of the scopolamine effects so that the subjects became alert, Pa decreased, and P1 reappeared and increased to control amplitudes. Rapid click rates caused P1 to diminish, as in the control period, indicating a common P1 recovery cycle in both the control and physostigmine conditions. These data are discussed in terms of the

hypothesis that the P1 generator system is comprised of a cholinergic brain-stem-thalamic component of the ascending reticular activating system. Author.

Clinical correlates of brain-stem auditory evoked potential variables in multiple sclerosis. Relation to click polarity. Sand, T. Department of Neurology, University Hospital of Trondheim, Regionsykehuset, Norway. *Electroencephalography and Clinical Neurophysiology* (1991) Jul–Aug, Vol. 80 (4), pp. 292–7.

The correlations between clinical signs and BAEP latency, amplitude and dispersion variables were investigated in 98 multiple sclerosis patients. A new dispersion variable, the wave IV-V 'shape ratio' (SR IV-V), correlated most strongly with brain-stem signs (i.e. nystagmus). Severely reduced wave IV-V amplitude was frequently found in patients with vertical nystagmus or internuclear ophthalmoplegia, and interpeak latency (IPL) III-V correlated most strongly with cerebellar dysfunction (i.e. ataxia). The results may reflect different localizing ability among the various BAEP variables. The association between ataxia and increased IPL III-V was significantly stronger for BAEP to C clicks than to R clicks. Patients with abnormal BAEPs to one polarity (C or R) but not to the other, had significantly more clinical dysfunction than patients with normal BAEPs to both C and R clicks. Hence, C vs. R discordance may be interpreted to indicate possible brain-stem dysfunction. Author.

A review of otoacoustic emissions. Probst, R., Lonsbury-Martin, B. L., Martin, G. K. Department of Otorhinolaryngology, Kantonsspital, University of Basel, Switzerland. *Journal of the Acoustical Society of America* (1991) May, Vol. 89 (5), pp. 2027–67.

Otoacoustic emissions measured in the external ear canal describe responses that the cochlea generates in the form of acoustic energy. For the convenience of discussing their principal features, emitted responses can be classified into several categories according to the type of stimulation used to evoke them. On this basis, four distinct but interrelated classes can be distinguished including spontaneous, transiently evoked, stimulus-frequency, and distortion-product otoacoustic emissions. The present review details the findings that have been described for each emission type according to this classification schema. Additionally, the known features of emitted responses are discussed for both normally hearing and hearing-impaired humans and experimental animals, and with respect to their potential clinical applications. The findings reviewed here clearly indicate that future studies of otoacoustic emissions will significantly increase our understanding of the basic mechanisms of cochlear function while, at the same time, provide a new and important clinical tool. Author.

Ear canal cross-sectional pressure distributions: mathematical analysis and computation. Rabbitt, R. D., Friedrich, M. T. Department of Mechanical Engineering, Washington University, St Louis, Missouri 63130. *Journal of the Acoustical Society of America* (1991) May, Vol. 89 (5), pp. 2379–90.

Cross sectional pressure distributions, natural acoustics modes, and associated cut off frequencies are determined for real ear-canal geometries using an asymptotic theory in combination with a numerical method. The technique is particularly well suited to obtain the higher modes, which are trapped near both ends of the ear canal. Results detail the influence of the canal geometry and frequency on the spatial distribution of the pressure. Adult ear-canal geometries are determined near the concha from ear-mould sections using a light microscope interfaced to a video-data-acquisition system. Computed results compare favourably to the exact solutions for circular and square acoustic waveguides. The cut off frequency of the two adult ear canals studied averaged 20 per cent less than the cut off frequency of a circular tube of identical cross-sectional area. Inserting a probe microphone into the canal decreases the rate of decay of circumferential nonplanar modes while increasing the rate of decay of radial modes. Relative to the pressure beyond the tube, insertion increases the plane-wave component of the pressure around the tube by a multiplicative factor approximately equal to the square root of the original area divided by the occluded area. Eccentric placement of the probe tube has a relatively small influence on the cut off frequency. The transition of the pressure distribution at the entrance to a simple plane wave in the core region of the canal is calculated and shown graphically for the actual geometry of two adults subjects. Author.

Differences in clinical and immunologic reactivity of patients aller-

gic to grass pollens and to multiple-pollen species. II. Efficacy of a double-blind, placebo-controlled, specific immunotherapy with standardized extracts. Bousquet, J., Becker, W. M., Hejjaoui, A., Chanal, I., Lebel, B., Dhivert, H., Michel, F. B. Clinique des Maladies Respiratoires, Centre Hospitalier, Universitaire, Montpellier, France. *Journal of Allergy and Clinical Immunology* (1991) Jul, Vol. 88 (1), pp. 43–53.

The IgE response of patients only allergic to grass pollens differs from response of patients allergic to multiple-pollen species. The IgE immunoblots to orchard-grass pollens confirmed that polysensitized patients had more proteins revealed than patients only allergic to grass pollens. To determine if both groups of patients present a different response toward specific immunotherapy (IT), a double-blind, placebo-controlled study was performed in 70 patients. Patients receiving the active treatment had a rush IT with either a standardized orchard grass-pollen extract or with a standardized mixed-pollen extract prepared, depending on the sensitivity of the patients. The maintenance dose was defined as that dose effective in grass pollen IT in previous experiments. The same equipotent maintenance dose was administered for all pollen species. Symptom-medication scores during the pollen season and nasal challenge with orchard grass-pollen grains demonstrated that grass pollen-allergic patients had a significantly improved efficacy by comparison to placebo treatment, whereas polysensitized patients had a non-significant improvement. Serum grass-pollen IgG was significantly increased after IT in both treated groups. This study demonstrate that the response toward specific IT differs in patients only allergic to grass pollens by comparison to polysensitized patients. Author.

The pathophysiology of rhinitis. V. Sources of protein in allergen-induced nasal secretions. Raphael, G. D., Igarashi, Y., White, M. V., Kaliner, M. A. Allergic Diseases Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892. *Journal of Allergy and Clinical Immunology* (1991) Jul, Vol. 88 (1), pp. 33–42.

Allergic rhinitis is characterized by a profuse rhinorrhea in addition to paroxysms of sneezing, nasal congestion, and pruritus. To define better the sources of nasal secretion produced during rhinitis, nasal allergen challenges were performed on nine atopic subjects with seasonal rhinitis. A single dose of allergen was sprayed into one side of the nose, and nasal lavages were collected bilaterally for seven hours. Nasal lavages were assayed for protein (total protein, albumin, lactoferrin, and lysozyme) and mediator (histamine and prostaglandin D₂) content. Protein concentrations increased and remained elevated above baseline levels in both ipsilateral and contralateral secretions for up to three hours after allergen challenge. The proportion of albumin relative to total protein (the albumin per cent) increased on the ipsilateral side, whereas the relative proportions of lactoferrin and lysozyme (the lactoferrin per cent and lysozyme per cent) increased on the contralateral side. Prostaglandin D₂, but not histamine, increased selectively on the ipsilateral side. These data suggest that the ipsilateral protein secretory response is due to allergen-induced mast cell mediator release causing increased vascular permeability, whereas the contralateral protein secretory response is primarily a reflex-induced glandular secretion. Author.

The effect of cetirizine on the human isolated bronchus: interaction with salbutamol. Advenier, C., Candenas, M. L., Naline, E., De Vos, C. Faculte de Medecine Paris Ouest, Laboratoire de Pharmacologie, France. *Journal of Allergy and Clinical Immunology* (1991) Jul, Vol. 88 (1), pp. 104–113.

The effects of cetirizine (C), a new generation, nonsedative, H₁-antihistamine drug, were studied on human isolated bronchi. C is a potent antagonist of the bronchial muscle contraction induced by histamine, irrespective of whether C is administered by cumulative addition or prophylactically. In the former case, this effect of C was significant at a concentration of 3×10^{-8} mol/L and was maximal at a concentration of 10^{-5} mol/L. The $-\log$ of concentration of C causing 50 per cent of the maximal effect induced was 7.30 ± 0.05 (n = 6), and the effect produced was not significantly modified by bronchial epithelium removal. When C was administered prophylactically, the concentration-response curves to histamine were displaced to the right, but the reduction of maximum histamine response suggests a non-competitive type of antagonism. C is devoid of notable anticholinergic effects. At concentrations of 10^{-8} to 10^{-7} mol/L, C proved capable of enhancing the relaxant effect produced by salbutamol (10^{-7} to 3×10^{-7} mol/L) on

human isolated bronchi that had been contracted by either histamine or acetylcholine (ACh). The synergy appeared to be additive or potentiating, depending on salbutamol (SAL) concentrations. Under similar conditions, mepyramine does not potentiate the effects of SAL against histamine. Finally, at concentrations of 10^{-8} to 10^{-6} mol/L, C reduced the functional antagonism observed between SAL and ACh, as can be observed by the increase, in the presence of C, of the maximal relaxant effect of SAL on contractions produced by 10^{-3} mol/L of ACh. We may, therefore, conclude that C appears to be a specific antihistamine on human isolated bronchi and that it appears to potentiate the bronchodilator effect of SAL on this preparation. Author.

Effect of microgravity on the respiratory system. Engel, L. A. Thoracic Medicine Unit, Westmead Hospital, Sydney, New South Wales, Australia. *Journal of Applied Physiology* (1991) May, Vol. 70 (5), pp. 1907–11.

Because the pleural pressure gradient and regional distribution of pulmonary function are gravity dependent, substantial changes may be expected during weightlessness. Although very few measurements have been made during space flights, a number of observations during brief periods of weightlessness inside aircraft flying with parabolic trajectories confirm these predictions. Single-breath N₂ washouts suggest a marked reduction in the inequality of ventilation distribution seen at 1-G. Similarly, inferences made from cardiogenic oscillations during single-breath washouts suggest a greater uniformity of perfusion during weightlessness. This is supported by changes seen on chest radiographs as well as by more direct measurements of regional blood flow distribution using radioactive iodine-labelled macroaggregates. Vital capacity is only slightly reduced, but functional residual capacity decreases by approximately 10 per cent and maximum expiratory flow rates are slightly decreased, especially at low lung volumes. Weightlessness decreases abdominal girth, increases abdominal compliance, and substantially increases the abdominal contribution to tidal volume during resting breathing. Despite these changes, there does not appear to be any alteration in the temporal pattern of breathing. However, the deposition of inhaled medium-sized aerosol particles is substantially reduced, as predicted by model analyses of gravitational sedimentation. Virtually all these observations describe effects at the very onset of weightlessness. Practically nothing is known of slower functional changes and adaptations to prolonged weightlessness. Systematic repeated measurements during manned spaceflights will hopefully begin to provide some information on this subject in the near future. Author.

Respiratory-related activity of cricothyroid muscle in awake normal humans. Wheatley, J. R., Brancatisano, A., Engel, L. A. Thoracic Medicine Unit, Westmead Hospital, Sydney, New South Wales, Australia. *Journal of Applied Physiology* (1991) May, Vol. 70 (5), pp. 2226–32.

The role of the cricothyroid muscle (CT) in respiration is unclear. To examine the respiratory-related electrical activity of the CT, we measured its electromyogram (EMG) and compared it with that of the alae nasi (AN) in eight healthy subjects. During quiet breathing the CT EMG phasing was inspiratory in seven subjects. This pattern was similar to the AN with respect to phasing and shape of the integrated EMG. The onset of phasic CT and AN activity related to inspiration preceded flow by 173 ± 39 and 570 ± 76 (SE) ms, respectively (P less than 0.01). We measured the duration from onset of phasic activity to peak of the EMG (TA) and the total cycle duration (TT). TA/TT of the CT was 0.29 ± 0.02 , similar to that of the AN (0.28 ± 0.03). Inspiratory resistive loading, panting, and voluntary hyperventilation increased CT activity above the peak level seen during tidal breathing. Voluntary glottic closure increased CT activity to a level above tonic but below peak tidal activity. The findings suggest that the phasic electrical activity of the CT simulates predominantly that of an upper airway dilator. Author.

Cricothyroid muscle responses to increased chemical drive in awake normal humans. Wheatley, J. R., Brancatisano, A., Engel, L. A. Thoracic Medicine Unit, Westmead Hospital, Sydney, New South Wales, Australia. *Journal of Applied Physiology* (1991) May, Vol. 70 (5), pp. 2233–41.

To examine the response of the cricothyroid muscle (CT) to increased chemical drive, we measured its electromyogram simultaneously with that of the alae nasi (AN) in seven normal awake subjects. During both progressive hyperoxic hypercapnia and

hypoxia, peak integrated inspiratory activity (moving time average, MTA) of the CT and AN increased as a power function of mean inspiratory flow (ratio of tidal volume to inspiratory time, VT/TI), given by $MTA = a (VT/TI)^b + c$ (where a, b, and c are constants). The exponent b varied from 0.009 to 3.4 among subjects but was correlated between CT and AN both during hypercapnia ($r = 0.86$) and hypoxia ($r = 0.81$). The onset of inspiratory activity of the CT and AN preceded that of inspiratory flow. Expressed as a percentage of expiratory time, the CT lead time rose from 7 per cent at rest to 20 per cent during hypernea. The corresponding values for the AN were from 22 to 52 per cent (both P less than 0.03). Thus the pattern of response of the CT and AN is similar and related to that of the inspiratory muscles in a curvilinear manner. The findings suggest that during chemical stimulation the electrical activity of the CT is analogous to that of the AN, an upper airway dilator. Author.

Pressure-diameter relationships of the upper airway in awake supine subjects. Wheatley, J. R., Kelly, W. T., Tully, A., Engel, L. A. Thoracic Medicine Unit, Westmead Hospital, Sydney, New South Wales, Australia. *Journal of Applied Physiology* (1991) May, Vol. 70 (5), pp. 2242–51.

In awake supine normal subjects, dimensional changes of the oropharyngeal airway were measured during exposure to negative intraluminal pressures. The pressure was generated (1) 'actively' by subjects inspiring against an externally occluded airway or (2) 'passively' by external suction at the mouth during voluntary glottic closure with no inspiratory effort. Airway dimensions were imaged with X-ray fluoroscopy and anteroposterior diameters measured at levels corresponding to cervical vertebra 3 and 4 (C3 and C4). Cephalad axial displacement of the hyoid bone (CDHY) was also measured. During the 'active' manoeuvre, airway diameters and position were maintained at resting levels despite airway pressure up to -15 cmH₂O. In contrast, during the passive manoeuvre at -15 cmH₂O, C3 was only 15 ± 9 per cent and C4 only 47 ± 8 per cent of control; CDHY was 5.6 ± 1.8 mm. In three subjects airway wall apposition occurred and persisted until an active inspiratory effort. We conclude that, in the absence of inspiratory effort, negative oropharyngeal airway pressures result in marked narrowing and cephalad displacement of the upper airway, even during wakefulness. Therefore, our data suggest that the complex interaction of upper airway and thoracic muscle activity is critical in determining the effective compliance and patency of the upper airway, which is readily collapsible even in normal subjects. Author.

Use of sonography in the follow-up of preoperatively irradiated effere-lymphatics of the neck in oropharyngeal tumours. Hessling, K. H., Schmelzeisen, R., Reimer, P., Milbradt, H., Unverfehrt, D. Department of Oral and Maxillo-Facial Surgery, Medical University, Hannover, Germany. *Journal of Cranio-Maxillofacial Surgery* (1991) Apr, Vol. 19 (3), pp. 128–30.

The applicability of sonography in the control of preoperative radiotherapy of neck lymph nodes in patients with malignancies in the region of the head and neck was established in a prospective study. Lymph nodes with positive reactions showed a simultaneous reduction in size and structure. Postoperative histology showed no malignancy in these lymph nodes. All metastases were found in lymph nodes without sonographic changes under irradiation. In establishing the surgical procedure, clinical criteria should be considered primarily, and these should be supplemented and completed by the sonographic investigation. Author.

Intraoral reconstruction with the nasolabial island flap. A modified technique. Garatea, J., Buenechea, R., Bescos, C., Gonzalez, E., Bassas, C. Maxillofacial Surgery Service, Hospital Valle de Hebron, Barcelona, Spain. *Journal of Cranio-Maxillofacial Surgery* (1991) Apr, Vol. 19 (3), pp. 119–22.

The nasolabial flap has been used for intraoral reconstruction since last century. In this paper, a modification is proposed in order to increase the amount of skin available in male patients. Simple closure of the donor area is not possible and a cheek rotation flap is suggested for closure. Author.

The vascularized fibular flap for mandibular reconstruction. Lyberg, T., Olstad, O. A. Department of Maxillofacial Surgery, Ullevaal University Hospital, Oslo, Norway. *Journal of Cranio-Maxillofacial Surgery* (1991) Apr, Vol. 19 (3), pp. 113–8.

Vascularized fibular bone grafts have advantages over other bone grafts in the restoration of the contour and function of defective

mandibles. The fibular graft can be tailored to fit even major mandibular defects; in combination with preformed temporomandibular joint prostheses total mandibular reconstruction can be performed in a single procedure. The fibular transplant is considered ideal for the insertion of implants to support dental suprastructures to obtain maximal oral rehabilitation. We have used fibular grafts in eight cases of primary or secondary reconstruction of a variety of mandibular defects resulting from cancer, chronic osteomyelitis or gunshot injuries. The results have been most encouraging with respect to function and cosmetic appearance. There have been no transplant failures and minimal donor site complications. Author.

Comparison of terfenadine once daily with terfenadine twice daily for the treatment of perennial allergic rhinitis. Rosario, N. A. Department of Paediatrics, University of Parana, Curitiba, Brazil. *Journal of International Medical Research* (1991) Mar–Apr, Vol. 19 (2), pp. 112–20.

In a double-blind, parallel-group study to compare the efficacy of 120 mg terfenadine taken orally once daily with that of the conventional regimen of 60 mg terfenadine taken twice daily, 30 patients with perennial allergic rhinitis were enrolled. Groups of 15 patients were treated for seven days with either 60 mg terfenadine twice daily, morning and evening, or 120 mg terfenadine once daily in the morning and placebo in the evening. The physician detected marked total relief of symptoms (sneezing, rhinorrhoea, nasal pruritus and nasal obstruction) at similar rates (60 and 66 per cent) in the two groups and patients in both groups reported a reduction in symptoms. The incidence of reported side-effects (sedation and mild headache) was low and not significantly different using either regimen. The results indicate that the new once-daily regimen of terfenadine was the effective and as well tolerated as the twice daily regimen for the treatment of perennial allergic rhinitis. Author.

Neurosurgical complications after intranasal ethmoidectomy. Toselli, R. M., de Papp, A., Harbaugh, R. E., Saunders, R. L. Department of Surgery, Dartmouth Hitchcock Medical Centre, Hanover, New Hampshire 03756. *Journal of Neurology, Neurosurgery and Psychiatry* (1991) May, Vol. 54 (5), pp. 463–5.

Intranasal ethmoidectomy is a common otolaryngological procedure. Despite the potential for serious intracranial complications, there is a paucity of reports describing the neurosurgical complications of the procedure. Two patients with intracranial complications of intranasal ethmoidectomy, and the relevant medical literature, are reviewed. The anatomy of the ethmoid air cells and their relation to the intracranial cavity are described. The importance of definitive, emergent repair with attention to the potential for vascular injury is discussed. Author.

Current chemotherapy of head and neck cancer. Amrein, P. Department of Medicine, Massachusetts General Hospital, Boston 02114. *Journal of Oral and Maxillofacial Surgery* (1991) Aug, Vol. 49 (8), pp. 864–70.

This article reviews the results of over 50 published trials testing the use of chemotherapy in patients with squamous cell carcinoma of the head and neck. Among the trials using chemotherapy before standard surgery and/or radiotherapy in stages III and IV disease, none has shown an improvement in survival compared with surgery and/or radiotherapy alone. In these studies, the survival at 3 to 5 years has been generally 40 per cent to 50 per cent. Several trials using chemotherapy after standard therapy, however, have reported survival benefits of 10 per cent to 20 per cent, suggested that further evaluation of classic adjuvant chemotherapy in this disease is warranted. Among studies in recurrent head and neck cancer, the most effective chemotherapy regimens appear to be variations of the program consisting of cisplatin followed by a 5-day infusion of 5-fluorouracil. Nevertheless, median survivals in recurrent disease remain short, generally 5 to 10 months. Author.

Serum sialic acid levels in patients with oral and maxillofacial malignancy. Xing, R. D., Chen, R. M., Wang, Z. S., Zhang, Y. Z. Department of Oral and Maxillofacial Surgery, Second Affiliated Hospital, Hebei Medical College, Shijiazhuang, People's Republic of China. *Journal of Oral and Maxillofacial Surgery* (1991) Aug, Vol. 49 (8), pp. 843–7.

Serum sialic acid levels were measured using the thiobarbituric acid method in 80 healthy subjects and in 40 patients with benign and 61 with malignant tumours in the oral and maxillofacial region. It was shown that the cancer group had statistically higher sialic acid

levels than control group and the group with benign disease (P less than 0.05), but no significant difference was noted between the normal control group and the patients with benign tumour (P greater than 0.05). Serum sialic acid levels were significantly higher in the patients with stages III and IV cancer than in those individuals with stages I and II cancer, but no differences were seen between stages I and II, and between stages III and IV cancer patients (P greater than 0.05). There was also no difference when considering the anatomic site of the malignant lesion. Furthermore, during the serial sialic acid determination in cancer patients before and following treatment, the sialic acid levels usually declined with remission of the disease and increased with recurrence, metastasis, or a poor prognosis. We conclude from this study that the sequential measurement of sialic acid level is particularly useful in monitoring patients with oral cancer, and sialic acid may prove to be a valuable tumour marker in oral and maxillofacial malignancy. Author.

Intranasal stent for stabilization and fixation of interstitial radioactive isotopes. Meyer, J. B. Jr., Knudson, R. C., Butler, E. B. Wilford Hall U.S. Air Force Medical Centre, San Antonio, Texas. *Journal of Prosthetic Dentistry* (1991) Jun, Vol. 65 (6), pp. 813–5. This article introduces the use of an intranasal stent for the stabilization and fixation of afterloading catheters during interstitial radiation therapy. After catheters have been positioned to desired locations within the stent, they are immobilized with light polymerizing resin. The fixation of the catheters to the stent allows the radiotherapist to afterload predetermined radiation sources to desired locations. This technique maximizes tumour response and minimizes untoward effects to normal surrounding tissues. Author.

A prospective analysis of a two-year experience using computed tomography as an adjunct for cervical spine clearance. Borock, E. C., Gabram, S. G., Jacobs, L. M., Murphy, M. A. Trauma Program, Hartford Hospital, CT 06115. *Journal of Trauma* (1991) Jul, Vol. 31 (7), pp. 1001–5.

The role of CT scanning as an adjunct to plain roentgenograms of the cervical spine was reviewed in acutely injured blunt trauma patients. Following institution of a protocol to evaluate the cervical spine in all blunt trauma patients, 179 patients underwent CT scanning of their cervical spine. This was performed for patients whose X-ray findings were positive, for patients with plain X-ray films suggestive of a pathologic condition, for patients with plain X-ray films that did not reveal all of the cervical vertebrae, and for patients who had persistent pain or neurologic deficits despite normal plain X-ray films. Of 123 patients not able to have their cervical spine cleared by normal roentgenograms, 93 per cent were cleared within 24 hours of admission based on CT scans. There were no missed injuries in this setting. A false-positive rate of 28 per cent and a false-negative rate of 1.5 per cent were found for plain roentgenograms. Computed tomographic scans detected 98 per cent of

the injuries in our study and when combined with a three-view plain X-ray series of the cervical spine, 100 per cent of cervical spine injuries were detected. Computed tomographic scanning as an adjunct to plain X-ray films of the cervical spine is a highly accurate and expedient modality to clear the cervical spine of blunt trauma patients. Author.

Clinical-radiologic issues in perineural tumour spread of malignant diseases of the extracranial head and neck. Parker, G. D., Harnsberger, H. R. Department of Radiology, University of Utah Medical Centre, Salt Lake City 84132. *Radiographics* (1991) May, Vol. 11 (3), pp. 383–99.

The radiologic and clinical records of 52 patients with radiologically documented perineural tumour were reviewed to assess the spectrum of tumours responsible, the nerves most commonly involved, and the optimal methods for imaging perineural tumour infiltration. Perineural tumour infiltration was most commonly seen with head and neck squamous cell carcinoma, followed by adenoid cystic carcinoma and several others, such as non-Hodgkin lymphoma, malignant schwannoma, minor salivary gland malignancy, and other sarcomas. The second and third divisions of the trigeminal nerve and the facial nerve were most commonly involved with perineural tumour. Both antegrade and retrograde perineural tumour spread were seen, although retrograde spread was significantly more common. Both high-resolution direct coronal computed tomography and magnetic resonance (MR) imaging clearly showed perineural tumour below the skull base. MR imaging best depicted skull base, cisternal, and brain stem perineural tumour infiltration. T1-weighted MR imaging before and after administration of gadopentetate dimeglumine is the study of choice in investigation of perineural tumour. Author.

A case of 'bronchial-string'—a rare anomaly of the bronchus. Takayama, S., Miura, H., Kimura, Y. Department of Internal Medicine, Yokosuka Kyosai Hospital, Japan. *Respiration* (1991), Vol. 58 (2), pp. 115–6.

An incidental string-like structure spanning the lumen of the intermediate bronchus was found during bronchoscopy in an 18-year-old woman. We consider that the lesion may be a rare fibrous anomaly of the bronchus and may be closely related to a bronchial web. We have named this unusual structure 'bronchial string'. Author.

Pott's puffy tumour and subdural empyema following frontal sinusitis. Holder, J., Corbin, D., Marquez, S., Clarke, H., Walcott, J., Thomas, R. Department of Medicine, Queen Elizabeth Hospital, Bridgetown, Barbados. *West Indian Medical Journal* (1991) Mar, Vol. 40 (1), pp. 33–6.

A previously healthy 17-year-old lad presented with purulent sinusitis and subsequently developed subdural empyema in association with Pott's puffy tumour. Complete resolution occurred with an intensive antibiotic regime and drainage of the subgaleal space. Author.