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Abstract Selection

Nasal cytological changes following pharmacological intervention. Meltzer, E. O. Allergy and Asthma Medical Group and Research Center, San Diego, California 92123, USA. *Allergy* (1995), Vol. 50 (23 Suppl), pp. 15–20.
Symptoms of allergic rhinitis are associated with increased numbers of inflammatory cells in the nasal mucosa. The effects of fluticasone propionate on the nasal mucosal cells of patients with symptomatic allergic rhinitis were evaluated in seven multicentre, double-blind, parallel-group, placebo-controlled, randomized studies. In three seasonal allergic rhinitis studies, significantly more patients receiving fluticasone propionate had a decrease in nasal eosinophils following treatment compared with patients receiving placebo. Similarly, more patients receiving fluticasone propionate had a decrease in nasal basophilic cells, but differences from placebo were not significant in all studies. Nearly identical results were observed in two 24-week perennial allergic rhinitis studies: significantly more patients receiving fluticasone propionate or beclomethasone dipropionate had a decrease in nasal eosinophils compared with patients receiving placebo. Furthermore, a higher percentage of patients receiving corticosteroids also had a decrease in the number of basophilic cells. In two separate seasonal allergic rhinitis studies, significantly more patients receiving fluticasone propionate had a decrease in nasal eosinophils compared with patients receiving terfenadine or astemizole, respectively. The decrease in nasal basophilic cells was also significantly greater with fluticasone propionate compared with astemizole. Inhibition of mediator release from eosinophilic and basophilic cells has also been demonstrated in patients receiving fluticasone propionate compared with patients receiving antihistamines. The results of these studies suggest that the therapeutic benefits of fluticasone propionate aqueous nasal spray in the treatment of seasonal and perennial allergic rhinitis may be related to its ability to reduce nasal mucosal inflammatory cells and to inhibit local mediator activity. Author.

The effect of fluticasone propionate aqueous nasal spray on nasal mucosal inflammation in perennial allergic rhinitis. Godthelp, T., Holm, A. F., Blom, H., Klein-Jan, A., Rijntjes, E., Fokkens, W. J. Department of Otorhinolaryngology, Erasmus University, Rotterdam, The Netherlands. *Allergy* (1995), Vol. 50 (23 Suppl), pp. 21–4.
Mast cell degranulation, and the subsequent recruitment of infiltrating inflammatory cells, such as eosinophils, into the nasal mucosa has long been considered the most important model to explain allergic rhinitis. Several studies show a decrease in the number of eosinophils and possibly also mast cells during local corticosteroid treatment. Over the last decade, a new model to explain allergic inflammation has evolved. In this model, Langerhans' cells and T-cells play an important role. Langerhans' cells possess a high affinity receptor for IgE. In patients with allergic rhinitis, allergen provocation results in stimulation of T-cells by the IgE-positive Langerhans' cells. The T-cells produce a number of cytokines which stimulate IgE production as well as the inflammatory reaction. The number of T-cells is not usually influenced by corticosteroid treatment; however, the function of the T-cells, shown by the spectrum of cytokines produced, is clearly influenced. The cells that are most dramatically affected by local corticosteroid treatment are the Langerhans' cells, which completely disappear during treatment. This decrease suggests that there is a reduction in antigen presentation. The subsequent decrease in T-cell stimulation may result in a reduction of the reactions that are dependent on T-cell-derived mediators. Author.

Treatment of seasonal allergic rhinitis with fluticasone propionate aqueous nasal spray: review of comparator studies. Storms, W. W. Allergy Associates, Colorado Springs, Colorado 80907, USA. *Allergy* (1995), Vol. 50 (23 Suppl), pp. 25–9.
Studies have been conducted in the USA comparing fluticasone propionate aqueous nasal spray 200 micrograms once daily with beclomethasone dipropionate aqueous nasal spray 168 micrograms twice daily, oral terfenadine 60 mg twice daily, or oral astemizole 10 mg once daily given for two or four weeks during tree, grass or ragweed pollen seasons. All six were multicentre, randomized, placebo-controlled, double-blind, parallel-group studies. Efficacy was evaluated by patient and clinician assessments of individual nasal symptoms and overall response to therapy. Fluticasone propionate was superior to beclomethasone dipropionate in one trial according to patient evaluations of symptoms, but response to fluticasone propionate and beclomethasone dipropionate was similar in the second study. Comparisons with antihistamines showed fluticasone propionate to have greater efficacy. It was more effective than terfenadenine in both trials according to evaluations by clinicians and patients. Similar findings were observed in the first astemizole trial. The second astemizole study showed superiority of fluticasone propionate over astemizole in terms of patient and clinician evaluations of overall response to therapy and occasionally in terms of symptom evaluations. There were no significant adverse effects, including effects on plasma cortisol concentrations, noted in any of these comparator studies. Author.

Frequency of radiopaque turbinate bones on lateral cephalometric radiographs. Wyche, C. J., Wilmot, J. J., Brooks, S. L. Department of Oral Medicine/Pathology/Surgery, University of Michigan School of Dentistry, USA. *American Journal of Orthodontics and Dentofacial Orthopics* (1995) July, Vol. 108 (1), pp. 56–61.
The lateral cephalometric radiograph of an orthodontic patient demonstrated a large round radiopaque mass resembling an osteoma in the posterior maxillary sinus. Determination that this mass was simply a prominent inferior turbinate bone prompted this study to determine the frequency of visible turbinates on cephalometric radiographs. After calibration, one observer evaluated 479 pretreatment lateral cephalometric radiographs from an orthodontic/orthognathic surgery patient pool for radiopaque inferior turbinates. Ten per cent of the films were reevaluated to assess intraexaminer reliability. The sample had a mean age of 23 years, range of five to 69 years, with a male/female ratio of 1:15. Visible inferior turbinates were observed on 76.8 per cent of the radiographs. The frequency of visible turbinates was independent of gender, age and film density. Clinicians should be aware of the frequency of this anatomic finding, so that patients are not subjected to unnecessary diagnostic tests. Author.

Bulbous nasal tip: an anatomical and histological evaluation. Garramone, R. R. Jr., Sullivan, P. K., Devaney, K. Department of Plastic Surgery, Brown University-Rhode Island Hospital, Providence, USA. *Annals of Plastic Surgery* (1995) March, Vol. 34 (3), pp. 288–90.
The operative management of the bulbous nasal tip is a challenging and unsolved problem. Surgical alteration often leads to disappointing postoperative results. Surgical options for the soft tissue range from tip defatting and scoring of the dermis to no soft tissue removal at all. The goal of this study was to determine anatomically and histologically the exact nature of the nasal tip soft tissue. Forty-two tissue specimens were obtained from 23 patients undergoing nasal surgery. These specimens were stained with standard hematoxylin and eosin stain and a combined Mallory trichrome and elastic stain and examined under light microscopy by a pathologist. Qualitative assessment of the tissue types present demonstrated that collagenous fibrous tissue was abundant. Skeletal muscle was present in significant amounts and

in some cases made up the majority of the subdermal tissue. The adipose tissue component was less than expected. Author.

Functional outcome in patients after excision of extracanalicular acoustic neuromas using the suboccipital approach. Kane, N. M., Kazanas, S., Maw, A. R., Coakham, H. B., Torrens, M. J., Morgan, M. H., Stranjalis, G., Butler, S. R. Department of Neurosurgery, Frenchay Hospital, Bristol. *Annals of the Royal College of Surgeons in England* (1995) May, Vol. 77 (3), pp. 210–6.
An audit of surgery for acoustic neuroma was carried out to determine the frequency and nature of postoperative symptoms and their impact upon the patient's quality of life and vocation. Fifty-six patients were interviewed between six months and five years (mean 26 months) after surgical excision of an acoustic neuroma. The objective surgical results in these patients are good, with normal or near normal functional preservation rates of 80 per cent for the facial nerve (House-Brackmann grade I/II), and 27.3 per cent for a previously functioning acoustic nerve. Despite this there was no significant overall reduction in the reported occurrence of balance problems, tinnitis, headache and other neurological sequelae of the tumour after surgical excision. In 20 per cent of the patients persistent symptoms, including deafness and facial weakness, had prevented the resumption of former social activities. As a result of these symptoms 8.6 per cent of the patients were certified medically unfit for work, but of those employed preoperatively over 70 per cent had returned to their jobs. The success of neuro-otological surgical management of acoustic neuroma is offset by some degree of chronic morbidity. Our patients expressed the need to know whether their symptoms would resolve, but were often too afraid to ask. Patients can be reassured that the majority resume their former social and vocational activities, but should be advised that some symptoms can persist or occur de novo after surgery. Our data suggest that early intervention would reduce the incidence of these troublesome sequelae. Author.

Helical computed tomography for the evaluation of tracheal stenosis. Whyte, R. I., Quint, L. E., Kazerooni, E. A., Cascade, P. N., Iannettoni, M. D., Orringer, M. B. Department of Surgery, University of Michigan Medical Center, Ann Arbor, USA. *Annals of Thoracic Surgery* (1995) July, Vol. 60 (1), pp. 27-30; discussion 30–1.
BACKGROUND. Helical computed tomography with multiplanar reconstruction (CT/MPR) was used to study proximal airway stenosis. METHODS. Twenty-eight helical CT/MPR studies were obtained in 25 patients with known or suspected stenosis of the trachea or main bronchi. Computed tomographic results were compared with planar tomograms and bronchoscopic evaluation of the airway. RESULTS. CT/MPR accurately demonstrated the site and degree of tracheal and main bronchial stenoses with a sensitivity of 93 per cent, a specificity of 100 per cent, and an accuracy of 94 per cent. There was one false negative study in a patient with tracheomalacia. In a second patient, a tracheal web was only apparent on nonstandard viewing windows. CONCLUSIONS. CT/MPR provides good anatomic detail and is an increasingly available technique. Potential drawbacks include the need for a longer breathhold (15 to 45 s) and increased complexity of data compared with conventional tomograms. Helical CT/MPR is useful in the preoperative evaluation of these patients and, as experience accumulates, may replace the use of conventional tomograms. Author.

Dangerous angles and depths for middle ear and middle cranial fossa injury during arthroscopy of the temporomandibular joint. Sugisaki, M., Ikai, A., Tanabe, H. Department of Dentistry, Jikei University School of Medicine, Tokyo, Japan. *Journal of Oral Maxillofacial Surgery* (1995) July, Vol. 53 (7), pp. 803–10.
PURPOSE: Several reports have suggested a risk of injury to the middle cranial fossa and middle ear during arthroscopic procedures in the superior joint space of the temporomandibular joint (TMJ). However, there has been no anatomic study of directions and distances of the TMJ from the posterior portal in relation to the risk of mandibular fossa injury. In this study, the angles and depths at which the risk is greatest for injury to the deepest point of the mandibular fossa (DP) and to the middle ear during arthroscopy were analysed. MATERIALS AND METHODS: Three-dimensional measurements of 96 mandibular fossae in 48 dry skulls were made. RESULTS: It was found that the distance from the lateral rim of the fossa to DP and Hugier's canal was 9.50 ± 2.07 mm and 17.04 ± 3.09 mm, respectively. The most dangerous angle for DP injury in the Frankfort horizontal plane (FH plane) was an inclination of the instrument base of −8 degrees dorsad and 17 and 19 degrees caudad in the frontal plane. The most dangerous angle for Hugier's canal injury was a tilting of the instrument base of 15 degrees ventrad in the FH plane and −2 degrees craniad in the frontal plane. However, these values showed a wide range. CONCLUSION: It was concluded that great care must be exercised in manipulation of instruments near the DP and Hugier's canal to avoid injury to the middle ear or penetration into the middle cranial fossa. Author.

Galanin and somatostatin inhibition of neurokinin A and B induced airway mucus secretion in the rat. Wagner, U., Fehmann, H. C., Bredenbroker, D., Yu, F., Barth, P. J., von Wichert, P. Department of Internal Medicine, Philipps University of Marburg, Germany. *Life Science* (1995), June 9, Vol. 57 (3), pp. 283–9.
Neurokinin A and B are present in neurons situated in lung and NK-1 receptors have been described on tracheal submucosal gland cells. In the present study we compared the ability of substance P (SP), neurokinin A (NKA) and neurokinin B (NKB) to stimulate airway mucus secretion. Furthermore, we characterized the interaction of NKA and NKB with gelanin and somatostatin. The rank order of the tachykinins to stimulate airway mucus secretion was SP>NKA>NKB suggesting that NK-1 receptors mediate these effects (EC50:SP:50 nmol/l, NKA: 200 nmol/l, NKB: 400 nmol/l). Galanin and somatostatin were equally potent to inhibit NK-A and NK-B stimulated airway mucus release. These results suggest that NK-A and NK-B are potent stimulators of airway macromolecule secretion. Galanin and somatostatin potently inhibit these actions of the tachykinins. Therefore, airway mucus secretion is controlled by a complex network of several different mediators. Author.

Reconstruction of the anterior cranial base with the galeal frontalis myofascial flap and the vascularized outer table calvarial bone graft. Hasegawa, M., Torii, S., Fukuta, K., Saito, K. Department of Plastic and Reconstructive Surgery, Nagoya University School of Medicine, Japan. *Neurosurgery* (1995) April, Vol. 36 (4), pp. 725-9; discussion 729–31.
Reconstruction of the anterior cranial base after tumour extirpation must seal off the cranial cavity from the upper respiratory tract. The key to success is to use vascularized materials for the structural support of the brain. From October 1989 to July 1992, 10 patients underwent anterior cranial base reconstruction after basicranial tumour resection; the lesions were four meningiomas and six malignant tumours of the ethmoid, maxilla, and orbit. The malignant tumours included four recurrent tumours that had been previously treated by a transfacial approach. After tumour extirpation, the resultant bony defects in the anterior cranial base, involving the oribital roof as well as the cribriform plate, ranged from 4 × 3 to 6 × 7 cm in size. The materials used in reconstruction were the galeal frontalis myofascial flap and the outer table calvarial bone flap, which is based on the temporoparietal galeal flap. Both materials are known to have rich blood supplies. These flaps make a reliable separation between the cranial cavity and the respiratory tract in three layers: the galeal frontalis myofascial flap, the vascularized calvarial bone, and the temporoparietal galea. Postoperative complications included one subcutaneous hematoma and one temporary cerebrospinal fluid rhinorrhea. We think this reconstructive technique will be useful in selected circumstances, especially after resection of a recurrent malignant tumour. Author.

Oral glycerol and intravenous dexamethasone in preventing neurologic and audiologic sequelae of childhood bacterial meningitis. The Finnish Study Group. Kilpi, T., Peltola, H., Jauhiainen, T., Kallio, M. J. Division of Infectious Diseases, Children's Hospital, Helsinki, Finland. *Pediatric Infectious Diseases Journal* (1995) April, Vol. 14 (4), pp. 270–8.
To assess the value of adjunctive intravenous dexamethasone (DXM) and oral glycerol (GLY) for the treatment of bacteriologically proved bacterial meningitis, 122 infants and children with bacterial meningitis were randomly assigned to receive DXM intravenously (n = 32), GLY orally (n = 30), DXM plus GLY (n = 34) or neither (n = 26) of these drugs. All patients were treated with the same antimicrobial agent, ceftriaxone. The patients were

followed neurologically for as long as six months. A thorough hearing evaluation was performed routinely two months or more after discharge from hospital. Overall four (seven per cent) of the GLY-treated patients, compared with 11 (19 per cent) of those not given GLY, developed audiologic or neurologic sequelae (P = 0.052), the relative risk of sequelae being 2.94 (95 per cent confidence interval, 0.99 to 8.72). The patients who had received GLY showed less severe or profound bilateral hearing impairment than those not given GLY (0 vs seven per cent, P = 0.049), and none of them had other neurologic abnormalities three or six months after discharge, compared with five (nine per cent) of those not treated with GLY (P = 0.024). The DXM recipients showed only a tendency to less severe hearing impairment than those not given DXM. In conclusion oral GLY prevented neurologic sequelae in infants and children with bacterial meningitis more effectively than intravenous DXM. Author.

Otitis media in developing countries. Berman, S. Department of Pediatrics, University of Colorado School of Medicine, Denver, USA. *Pediatrics* (1995) July, Vol. 96 (1 Pt 1); pp. 126–31.
OBJECTIVE. This article reviews the available information concerning the disease burden, epidemiology, and etiology of otitis media in developing countries and the likelihood that case management with appropriate antibiotic therapy can reduce the burden of this disease. METHODOLOGY. The available literature was reviewed to determine the extent to which otitis media impacts mortality and morbidity in developing countries. EPIDEMIOLOGY. In community studies, perforation was present in 0.4 per cent to 33.3 per cent of children and youth; otorrhea occurred in 0.4 per cent to 6.1 per cent; and mastoiditis occurred in 0.19 per cent to 0.74 per cent. In school surveys, perforation was identified in 1.3 per cent to 6.24 per cent of students, and otorrhea was found in 0.6 per cent to 4.4 per cent. Mastoiditis was diagnosed in 18 per cent of children and youth who presented to a hospital ear, nose, and throat (ENT) clinic in Uganda. The proportion of patients presenting to ENT clinics with mastoiditis regardless of their initial symptoms varied from 1.7 per cent to five per cent. Patients presenting to these ENT clinics with mastoiditis often experience severe complications, including subperiosteal abscess, labyrinthitis, facial palsy, meningitis, and brain abscess. Hearing impairment was a major public health problem comprising the quality of life in approximately one third of the population of developing countries. ETIOLOGY. The pathogens isolated from ear aspirates in children with acute otitis media and chronic suppurative otitis (CSOM) carried out in developing countries are similar to those isolated in studies carried out in developed countries. CASE MANAGEMENT. Historical data supports the effectiveness of antibiotic therapy in reducing the frequencies of mastoiditis and CSOM complicating acute otitis media. In addition, the introduction of primary care services targeted at otitis media for high-risk populations living in developed countries may have reduced the prevalence of mastoiditis and CSOM. However, it is not clear whether there is a causal relationship between these programmes and the reduction because of the use of historical controls. CONCLUSIONS. International research organizations should support controlled intervention studies to document the impact of case management of otitis in developing countries. In addition, the efficacy of a conjugated pneumococcal vaccine to prevent otitis and its complications should be evaluated in a developing country site. Pending the results of studies, developing countries should develop primary care case management programmes to diagnose and treat otitis and its associated complications. Author.

Efficacy of 20- versus 10-day antimicrobial treatment for acute otitis media. Mandel, E. M., Casselbrant, M. L., Rockette, H. E., Bluestone, C. D., Kurs-Lasky, M. Department of Pediatric Otolaryngology, Children's Hospital of Pittsburgh, PA 15213-2583, USA. *Pediatrics* (1995) July, Vol. 96 (1 Pt 1), pp. 5–13.
OBJECTIVE. The purpose of this trial was to determine whether 20 days of antimicrobial teratment is more efficacious than 10 days of treatment for acute otitis media (AOM) in clearing middle ear effusion and preventing recurrences of AOM, and whether changing to a beta-lactamase-stable antimicrobial agent after the initial 10-day treatment with amoxicillin for AOM is advantageous. METHODS. Children between seven months and 12 years of age with AOM were randomly assigned to three treatment groups: (1) amoxicillin for days one through 10, then amoxicillin for days 11 through 20; (2) amoxicillin for days one through 10, then amoxicillin-clavulanate for days 11 through 20. (3) amoxicillin for days 1 through 10, then a placebo for either amoxicillin or amoxicillin-clavulanate for days 11 through 20. Medication was dispensed in a double-blind manner. Children underwent tympanocentesis at entry and were re-examined on days 10, 20, 30, 60, and 90 after entry. RESULTS. Two hundred and sixty-seven children entered the trial. At the 20-day visit, the percentages of children who were effusion free in the amoxicillin, amoxicillin-clavulanate, and placebo groups were 72.4 per cent, 80.8 per cent, and 52.5 per cent, respectively. There was no statistically significant difference in the percentage of children who were effusion free between the amoxicillin and amoxicillin-clavulanate groups (95 per cent confidence interval, −21.7, 4.9). Subsequent to the day 10 visit, the average proportions of time with middle ear effusion were not significantly different in the amoxicillin, amoxicillin-clavulanate, and placebo groups (0.29, 0.27, and 0.34, respectively) nor were there significant differences in the rates of recurrent episodes of AOM (0.56, 0.59, and 0.68, respectively). Regardless of treatment group, approximately 75 per cent of children were effusion free at the time of their last visit CONCLUSIONS. More children were effusion free by the day 20 visit if given antimicrobial treatment for 20 days rather than for 10 days, but this advantage was present for only a short time; by the end of the 90-day study period, the treatment groups were comparable with regard to effusion status. Recurrence in AOM during the study period was not prevented by the additional 10 days of treatment. Routine use of an additional 10-day course of antimicrobial treatment is therefore not recommended if a child is symptom free after the initial 10 days of treatment of AOM. Author.