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Abstract Selection

Primary and recurrent inverting papilloma: appearances with magnetic resonance imaging. Roobottom, C. A., Jewell, F. M., Kabala, J. Department of Radiodiagnosis, Bristol Royal Infirmary, UK. *Clinical Radiology* (1995), July, Vol. 50 (7), pp. 472–5.
Inverting papilloma of the sinonasal cavity is of importance because of its association with squamous cell carcinoma and its tendency to local recurrence. Appearances of inverting papilloma have only been reported infrequently, and never in recurrent cases. We present the magnetic resonance imaging (MRI) appearances of four cases of inverting papilloma, three of which are recurrent. Author.

Swallowing performance in patients with vocal fold motion impairment. Wilson, J. A., Pryde, A., White, A., Maher, L., Maran, A. G. Department of Otolaryngology, Head and Neck Surgery, Royal Infirmary of Glasgow, Scotland, UK. *Dysphagia* (1995) Summer, Vol. 10 (3), pp. 149–54.
Twenty-seven patients with vocal fold motion impairment underwent detailed pharyngoesophageal manometry with a strain gauge assembly linked to a computer recorder. Nine were known to have lesions of the central vagal trunk or nucleus, nine had recurrent laryngeal nerve (RLN) palsy, and the remainder were idiopathic. The site of the lesion was a more important determinant of subjective swallowing performance than the position of the involved cord at laryngoscopy. Patients with central lesions had lower tonic and contraction upper esophageal sphincter (UES) pressures than 25 age-matched controls, suggesting that high cervical branches of the lower cranial nerves are important in UES excitatory innervation. RLN palsy patients showed significantly increased pharyngeal contraction amplitude and reduced pharyngoesophageal wave durations. The results suggest that the dysphagia associated with vocal fold motion impairment is not simply due to the disruption of laryngeal deglutitive kinetics, but to independent effects on pharyngeal function. Author.

Updated management strategy for patients with cervical osteophytic dysphagia. Valadka, A. B., Kubal, W. S., Smith, M. M. Division of Neurological Surgery, Medical College of Virginia, Richmond, USA. *Dysphagia* (1995) Summer, Vol. 10 (3), pp. 167–71.
Anterior cervical osteophytes impinging upon the pharynx or esophagus constitute a rare cause of dysphagia. In severe cases, surgical removal of these osteophytes can provide symptomatic relief. We describe a patient of this type who failed to improve post-operatively, only to be found subsequently to have a carcinoma of the base of the tongue. To assist other clinicians in evaluating similar patients, and also to emphasize the great utility of modern radiologic techniques in these cases, we propose a diagnostic algorithm that incorporates magnetic resonance or computerized tomographic imaging. Author.

Monoclonal antibody induced hearing loss. Nair, T. S., Raphael,Y., Dolan, D. F., Parrett, T. J., Perlman, L. S., Brahmbhatt, V. R., Wang, Y., Hou, X., Ganjei, G., Nuttall, A. L., *et al.* Cell Biology Laboratory, Kresge Hearing Research Institute, University of Michigan, Ann Arbor 48109-0506, USA. *Hearing Research* (1995) March, Vol. 83 (1–2), pp. 101–13.
Monoclonal antibodies KHRI-3 and KHRI-5 identify antigens expressed on inner ear supporting cells and auditory hair cells respectively. To determine if these antibodies affect inner ear function groups of syngeneic Balb/c mice were inoculated with hybridomas KHRI-3, KHRI-5 and other Ig-secreting hybridomas. Hybridomas UM-A9, UM-7F11, the non-secreting SP2/0 myeloma and mice with no hybridoma were used as controls. Animals were tested for auditory brainstem responses (ABR) for frequencies of 4, 8, 16 and 24 kHz, before the inoculation of the hybridomas and at intervals of six to 10 days thereafter or daily once tumours became palpable. In normal mice there were no changes in ABR thresholds over the course of the experiment. Other control animals showed little change in ABR even when the growth of the hybridoma or myeloma tumours were far advanced. Of the KHRI-5 hybridoma bearing animals only one of seven animals exhibited threshold shifts greater than 15 dB. In contrast, most mice bearing the KHRI-3 hybridoma exhibited high frequency threshold shifts of 40-50 dB that coincided temporally with the growth of the hybridoma, the presence of circulating KHRI-3 antibody, and greatly increased immunoglobulin titres. Ears from KHRI-3 bearing mice that developed high frequency hearing loss also had a novel type of lesion in the basal turn of the cochlea that was characterized by loss of outer hair cells and absence of typical supporting cell scars. Such changes were not found in control hybridoma-bearing mice. These findings suggest that KHRI-3 antibody has an effect on hearing that is secondary to damage to the organ of Corti and loss of outer hair cells. Our results have important implications for antibody-mediated mechanisms of hearing loss and provide an animal model in which to study this phenomenon. Author.

Hearing loss in Paget's disease of bone: the relationship between pure-tone thresholds and mineral density of the cochlear capsule. Monsell, E. M., Cody, D. D., Bone, H. G., Divine, G. W., Windham, J. P., Jacobson, G. P., Newman, C. W., Patel, S. C. Department of Otolaryngology–Head and Neck Surgery, Henry Ford Hospital, Detroit, MI, USA. *Hearing Research* (1995) March, Vol. 83 (1–2), pp. 114–20.
We have developed a unique method of quantitative computed tomography (QCT) that enables measurement of the density of the cochlear capsule *in vivo* We performed pure-tone audiometry and QCT on 67 ears from 35 subjects with radiographically confirmed Paget's disease of the skull and on 40 ears from twenty volunteer subjects. The Pearson product-moment correlation coefficients (age- and sex-adjusted) in the group affected by Paget's disease were −0.63 for left ears and −0.73 for right ears for high-frequency air conduction pure-tone thresholds (mean of 1, 2 and 4 kHz) versus cochlear capsule density. Correlation coefficients (age- and sex-adjusted) between cochlear capsule density and air-bone gap (mean at 0.5 and 1 kHz) for the affected group were −0.67 for left ears and −0.63 for right ears. All correlations between hearing thresholds and cochlear capsule density in pagetic subjects were significant at $P<0.001$. The regressions were consistent throughout the ranges of hearing level. There were no significant correlations between cochlear capsule mean density and hearing level in the volunteer subjects. These findings demonstrate the feasibility of precise and accurate density measurements in the temporal bone *in vivo* and support the use of the mean cochlear capsule density as a marker of disease effect. Alteration of cochlear capsule bone density may be related to the mechanisms of hearing loss in Paget's disease of bone. Author.

Family with neurofibromatosis type 2 and autosomal dominant hearing loss: identification of carriers of the mutated NF2 gene. Bijlsma, E. K., Merel, P., Fleury, P., van Asperen, C. J., Westerveld, A., Delattre, O., Thomas, G., Hulsebos, T. J. Institute of Human Genetics, University of Amsterdam, Faculty of Medicine, The Netherlands. *Human Genetics* (1995) July, Vol. 96 (1), pp. 1–5.
A family is presented in which neurofibromatosis type 2 (NF2) and autosomal dominant hearing loss segregate in an apparently independent way. The presence of the latter condition caused anxiety in all family members at risk for NF2 in whom hearing loss became apparent. Previously, we identified a G–>A transition in the donor splice site of exon 5 of the NF2 gene in a family member with proven NF2. As expected, the mutation was present in two other family members who fulfilled the diagnostic criteria for NF2. Four out of five family members at risk for NF2 developed hearing loss. Two of these had the G–>A transition. The mutation was absent in the two other individuals with hearing loss and in the fifth family member without hearing loss or other clinical

symptoms. In this family, the identification of the underlying NF2 gene mutation excluded NF2 as the cause of hearing loss in two potential carriers of the mutated gene. On the other hand, it enabled the identification of two carriers of the NF2 gene mutation who did not fulfil the diagnostic criteria for NF2. They will have to be monitored very carefully for the development of NF2-associated tumours. The consistent association within this family of a relatively mild clinical phenotype with the NF2 mutation, supports earlier suggestions that intrafamilial variability is small in NF2. Author.

Middle ear disease and hearing impairment in northern Tanzania. A prevalence study of schoolchildren in the Moshi and Monduli districts. Bastos, I., Mallya, J., Ingvarsson, L., Reimer, A., Andreasson, L. Department of Otorhinolaryngology, University of Lund, Malmo General Hospital, Sweden. *International Journal of Pediatric Otorhinolaryngology* (1995) April, Vol. 32 (1), pp. 1–12.
A total of 854 schoolchildren from one urban and one rural district in northern Tanzania were examined for the presence of middle ear pathology and hearing loss by means of pneumotoscopy and screening audiometry (air conduction). The prevalence of chronic otitis media (COM) was 1.6 per cent, with no difference between urban and rural children. Scarred and sclerotic tympanic membranes were found in 10.9 per cent of urban children and in 15.1 per cent of rural children, the difference being significant. Hearing loss within the speech frequency range in all the children studied was found in 37 per cent of the urban children and in 18 per cent of the rural children. However, the prevalence of hearing loss above 30 dB HL was three per cent in both districts. High frequency loss was significantly more common among urban than among rural children. Undetected severe hearing impairment/deafness was found in three children in the rural district, while none was found in the urban district. Author.

Acute Salmonella mastoiditis in an infant. Kaplan, D. M., Leiberman, A., Noghreyan, A., Fliss, D. M. Department of Otolaryngology, Head and Neck Surgery, Soroka Medical Center, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel. *International Journal of Pediatric Otorhinolaryngology* (1995) April, Vol. 32 (1), pp. 87–91.
During the last few decades antibiotics have played an extremely important role in the management of otitis media (OM). Nowadays there are only sporadic reports of its sequelae and complications in the developed countries. Nevertheless, complications of OM still arise and the potential seriousness of this problem emphasizes the need for a high degree of monitoring. We report herewith a case of acute mastoiditis in an 18-month-old infant with chronic suppurative otitis media (CSOM). Repeated cultures from the middle ear and mastoid cavity yielded Salmonella type C. The treatment modality and the pathophysiologic aspects are discussed. Author.

Benign juvenile xanthogranuloma of the larynx. Benjamin, B., Motbey, J., Ivers, C., Kan, A. Sydney University, Australia. *International Journal of Pediatric Otorhinolaryngology* (1995) April, Vol. 32 (1), pp. 77–81.
Benign juvenile xanthogranuloma is a normolipaemic, self-limiting condition usually presenting with cutaneous, orbital or occasionally with visceral lesions. It is one type of histiocytosis, a term referring to a group of non-inflammatory, proliferative disorders of the monocyte/macrophage and dendritic cell systems (7). We report a case of benign juvenile xanthogranuloma occurring in the larynx, a location not previously described. Author.

Otitis media with effusion and craniofacial analysis-II: 'Mastoid-middle ear-eustachian tube system' in children with secretory otitis media. Kemaloglu, Y. K., Goksu, N., Ozbilen, S., Akyildiz, N. Gazi University, Faculty of Medicine, Department of Otorhinolaryngology, Besevler, Ankara, Turkiye. *International Journal of Pediatric Otorhinolaryngology* (1995) April, Vol. 32 (1), pp. 69–76.
Secretory otitis media (SOM) is a disease of childhood, and this period is characterized by active growing of the craniofacial skeleton (CFS). In this study, we purposed to answer the question 'how deviations in CFS play a role in ethiopathogenesis of SOM'? Therefore, we evaluated the 'mastoid-middle ear-Eustachian tube (M-ME-ET) system' in 30 SOM cases and 30 healthy children by using lateral cephalographies on which reference points and one line related to CFS and 'M-ME-ET system' were pointed. The results disclosed that the bony Eustachian tube, the vertical portion of the tensor veli palatini (TVP) muscle and the mastoid air cell system were smaller in SOM cases. In the view of the statements of Enlow (1990) on craniofacial growth, we suggest that the deviations in the growth process of the nasomaxillary complex lead to corresponding imbalances in the bony tube and vertical portion of the TVP. However, since regional imbalances often tend to compensate for one another to provide functional equilibrium (Enlow, 1990), improvement of the tubal function occurs with age. Author.

A survey of ear and hearing disorders amongst a representative sample of grade 1 schoolchildren in Swaziland. Swart, S. M., Lemmer, R., Parbhoo, J. N., Prescott, C. A. Department of Speech Pathology and Audiology, University of the Witwatersrand, Johannesburg, South Africa. *International Journal of Pediatric Otorhinolaryngology* (1995) April, Vol. 32 (1), pp. 23–34.
A representative sample of Grade 1 (first year school entry) schoolchildren in Swaziland were surveyed during a single week to determine the prevalence of ear and hearing disorders: 79.8 per cent had both normal ears and normal hearing, 16.8 per cent had an ear disorder, but 80 per cent of them had normal hearing. The most common disorder was impacted wax, with a prevalence rate of 74/1000. Middle ear disorders were common and the prevalence rate for children with active middle ear disease was 30/1000 (17/1000 having a hearing loss), and for children with inactive ear disease, the prevalence was 21/1000 (5/1000 having a hearing loss); 8/1000 children were found to have a sensorineural hearing loss, 5.3/1000 unilateral and 2.1/1000 bilateral. Improved treatment of acute otitis media, which is also common in the pre-school age group, could reduce the sequelae of the disorder, which has a deleterious effect on hearing and impairs educational achievement once the children enrol at school. Author.

Stereotactic radiosurgery using the gamma knife for acoustic neuromas. Foote, R. L., Coffey, R. J., Swanson, J. W., Harner, S. G., Beatty, C. W., Kline, R. W., Stevens, L. N., Hu, T. C. Mayo Clinic, Division of Radiation Oncology, Rochester, MN 55905, USA. *International Journal of Radiation Oncology, Biology and Physiology* (1995) July 15, Vol. 32 (4), pp. 1153–60.
PURPOSE: To assess the efficacy and toxicity of stereotactic radiosurgery using the gamma knife for acoustic neuromas. METHODS AND MATERIALS: Between January 1990 and January 1993, 36 patients with acoustic neuromas were treated with stereotactic radiosurgery using the gamma knife. The median maximum tumour diameter was 21 mm (range: 6–32 mm). Tumour volumes encompassed within the prescribed isodose line varied from 266 to 8,667 mm3 (median: 3,135 mm3). Tumours < or = 20 mm in maximum diameter received a dose of 20 Gy to the margin, tumours between 21 and 30 mm received 18 Gy, and tumours > 30 mm received 16 Gy. The dose was prescribed to the 50 per cent isodose line in 31 patients and to the 45, 55, 60, 70 and 80 per cent isodose line in one patient each. The median number of isocentres per tumour was five (range: 1–12). RESULTS: At a median follow-up of 16 months (range: 2.5–36 months), all patients were alive. Thirty-five patients had follow-up imaging studies. Nine tumours (26 per cent) were smaller, and 26 tumours (74 per cent) were unchanged. No tumour had progressed. The one- and two-year actuarial incidences of facial neuropathy were 52.2 per cent and 66.5 per cent, respectively. The one- and two-year actuarial incidences of trigeminal neuropathy were 33.7 per cent and 58.9 per cent, respectively. The one- and two-year actuarial incidence of facial or trigeminal neuropathy (or both) was 60.8 per cent and 81.7 per cent, respectively. Multivariate analysis revealed that the following were associated with the time of onset or worsening of facial weakness or trigeminal neuropathy: (a) patients < age 65 years, (b) dose to the tumour margin, (c) maximum tumour diameter > or = 21 mm, (d) use of the 18 mm collimator, and (e) use of > five isocenters. The one- and two-year actuarial rates of preservation of useful hearing (Gardner-Robertson class I or II) were 100 per cent and 41.7 per cent ± 17.3, respectively. CONCLUSION: Stereotactic radiosurgery using the gamma knife provides short-term control of acoustic neuromas when a dose of 16 to 20 Gy to the tumour margin is used. Preservation of useful hearing can be accomplished in a significant proportion of patients. Author.

Oropharyngeal cancer in the elderly. Chin, R., Fisher, R. J., Smee, R. I., Barton, M. B. Department of Radiation Oncology, Prince of Wales Hospital, Randwick, NSW, Australia. *International Journal of Radiation Oncology, Biology and Physiology* (1995) July 15, Vol. 32 (4), pp. 1007–16.
PURPOSE: The poor prognosis of elderly patients in many cancers may be due to less thorough investigation and less aggressive treatment because of the perception that radical treatment will be poorly tolerated and that elderly patients have a limited life expectancy. We wished to assess whether older age is associated with (a) less radical treatment, (b) poorer outcome, or (c) greater toxicity, after adjusting for other possible contributing factors. METHODS AND MATERIALS: A retrospective study of patients with loco-regional oropharyngeal cancer treated between January 1980 and December 1985 was conducted. Patients were treated with radiotherapy, surgery, chemotherapy, or combinations. Cox regression was used to assess age effects while allowing for the influence of other factors. RESULTS: Eighty-eight patients were treated radically and 16 palliatively. Treatment intent (radical or palliative) did not appear to be related to age, before ($P = 0.42$) or after adjusting for other factors ($P = 0.34$). In a selected group of 86 radically treated patients ages ranged from 33 to 85 (median 60). There were 35 loco-regional failures and 58 deaths (38 related to oropharyngeal cancer). Older patients were prescribed and received lower doses of radiation. However, older age was not related to the risk of loco-regional recurrence ($P = 0.96$) or shorter survival ($P = 0.67$), and was not associated with duration of treatment interruption or severity of toxicity after adjustment for prognostic factors. There was some suggestion of a higher risk of recurrence with increasing age for patients under 70 years but with a risk for patients over 70 at least equal to that of the youngest group. Elderly patients in our study may have been a selected group. CONCLUSION: Older patients with loco-regional oropharyngeal cancer, or at least a subset of them, appear to be able to tolerate radical courses of radiotherapy, and to have similar outcomes as do younger patients. Author.

Can an educational program improve the diagnosis and treatment of pharyngotonsillitis in the ambulatory care setting? Raz, R., Porat, V., Ephros, M. Infectious Diseases Unit, Central Emek Hospital, Afula, Israel. *Israel Journal of Medical Science* (1995) July, Vol. 31 (7), pp. 432–5.
The influence of an educational programme on the diagnosis and treatment of pharyngotonsillitis was evaluated in three outpatient clinics in northern Israel during two periods. During both periods—1 January to 31 March 1988 (baseline phase) and 1 January to 31 March 1989 (study phase)—clinical data of all patients for whom antibiotics were prescribed were recorded on special forms, which included the patient's diagnosis and the antibiotic prescribed. In November 1988, two months before the study phase, two one hour sessions on pharyngitis were given by the study physicians to the entire medical staff of two clinics (Clinics B and C), and written material was distributed. A third clinic (Clinic A) served as the control. A comparison of the prescribing habits during the two phases showed that during the study phase the total number of antibiotics prescriptions for pharyngitis declined significantly in Clinics B and C, while the percentage of prescriptions for penicillin V rose with the concomitant decline of amoxycillin. There were no significant changes in prescribing habits in the control clinic. These results show that a modest two hour educational programme involving direct contact with the entire medical staff of the community outpatient clinics can improve the diagnosis of pharyngotonsillitis and reduce both the inappropriate use of antibiotics in general, and the substitution of more expensive antibiotics for cheaper, equally effective ones. Author.

Necrotizing (malignant) external otitis: prospective comparison of CT and MR imaging in diagnosis and follow-up. Grandis, J. R., Curtin, H. D., Yu, V. L. Department of Otolaryngology, University of Pittsburgh, Montefiore University Hospital, PA 15213, USA. *Radiology* (1995) August, Vol. 196 (2), pp. 499–504.
PURPOSE: To compare computed tomography (CT) and magnetic resonance (MR) imaging in the diagnosis and follow-up of necrotizing external otitis. MATERIALS AND METHODS: CT and MR imaging were performed in seven patients at diagnosis and at six and 12 months after initiation of therapy. Imaging findings were compared and correlated with the clinical course of the disease. RESULTS: Cortical bone erosion was best seen on CT scans (n = 5 vs. n = 0 on MR images) and failed to normalize with cure. Subtemporal soft-tissue abnormalities (n = 7 with both modalities) were better appreciated with MR imaging and had low signal intensity on T1- and T2-weighted images. Soft-tissue changes improved but did not disappear completely with treatment. CONCLUSION: CT is preferred at initial diagnosis, as small cortical erosions are better seen. Either modality can be used to follow-up soft-tissue evolution. MR imaging may be better for evaluation and follow-up of meningeal enhancement and changes within the osseous medullary cavity. Author.

Predicting acute maxillary sinusitis in a general practice population. Hansen, J. G., Schmidt, H., Rosborg, J., Lund, E. Department of Otorhinolaryngology, Aalborg County Hospital, Denmark. *British Medical Journal* (1995) July 22, Vol. 311 (6999), pp. 233–6.
OBJECTIVE: To evaluate the diagnostic value of symptoms, signs, erythrocyte sedimentation rate, and C reactive protein for acute maxillary sinusitis. DESIGN: Prospective cohort study. SETTING: Danish general practice in co-operation with the otorhinolaryngology and neuroradiology department at Aalborg County Hospital. SUBJECTS: 174 patients aged 18–65 years who were suspected by the general practitioner of having acute maxillary sinusitis. MAIN OUTCOME MEASURE: the independent association of symptoms, signs, erythrocyte sedimentation rate, and concentration of C reactive protein in patients with acute maxillary sinusitis defined as purulent or mucopurulent antral aspirate. RESULTS: Only raised erythrocyte sedimentation rate ($P = 0.01$) and raised C reactive protein ($P = 0.007$) were found to be independently associated with a diagnosis of acute maxillary sinusitis. The combination of the two variables had a sensitivity of 0.82 and a specificity of 0.57. CONCLUSION: Erythrocyte sedimentation rate and C reactive protein are useful diagnostic criteria for acute maxillary sinusitis. Author.

The prevalence of cervical and thoracic congenital skeletal abnormalities in basal cell naevus syndrome; a review of cervical and chest radiographs in 80 patients with BCNS. Ratcliffe, J. F., Shanley, S., Chenevix-Trench, G. Royal Children's Hospital, Brisbane, Australia. *British Journal Radiology* (1995) June, Vol. 68 (810), pp. 596–9.
The major clinical stigmata of basal cell naevus syndrome (BCNS) appear in adolescence and adult life but some occult skeletal abnormalities are congenital. BCNS is dominantly inherited and it would be useful to identify, as early in life as possible, which of the offspring of patients with BCNS are at risk of developing the syndrome. Radiographs of the neck and chest of 80 patients with BCNS diagnosed confidently on clinical criteria have been examined for abnormalities which were considered to be congenital skeletal anomalies. Congenital abnormalities of the cervical and thoracic spine, mainly spina bifida occulta, were found in 45 per cent. Congenital abnormalities of ribs were found in 49 per cent and of the shoulder(s) in 36 per cent. Overall congenital abnormalities were shown on the neck or chest radiograph in 55 (69 per cent) patients. The presence of one or more of these congenital abnormalities on the chest or neck radiograph of a child who is the offspring of a person with BCNS makes it extremely likely that the child also has BCNS. The absence of these features, and of any clinical features of BCNS, would suggest that the risk of the child developing BCNS has been reduced from the prior expectation of 50 per cent to approximately half that (24 per cent). Author.

The spatiotemporal organization of auditory, visual and auditory-visual evoked potentials in rat cortex. Barth, D. S., Goldberg, N., Brett, B., Di, S. Department of Psychology, University of Colorado, Boulder 80309-0345, USA. *Brain Research* (1995) April 24, Vol. 678 (1–2), pp. 177–90.
Four placements of an 8 × 8 channel microelectrode array were used to map auditory, visual, and combined auditory-visual evoked potentials (AEP, VEP, AVEP) from a total of 256 electrode sites over a 7 × 7 mm2 area including most of somatosensory, auditory, and visual cortex in the right hemisphere of the rat. The unimodal AEP and VEP consisted of an archetypal response sequence representing a systematic spatial and temporal activation of primary and secondary sensory cortex. Spatiotemporal analysis of these waveforms indicated that they could be decomposed into a small number of spatial and temporal components; components

that are related to patterns of specific and non-specific thalamocortical projections connecting the auditory and visual nuclei of the thalamus with primary and secondary auditory and visual cortex. These data suggest that the AEP and VEP complex are the cortical reflection of asynchronous activation of parallel thalamocortical projection systems. The areal distribution of the AEP and VEP also overlapped, primarily in secondary auditory and visual cortex, indicating that these regions contain populations of cells responding to either modality. Polymodal auditory-visual stimulation resulted in unique activation of two isolated populations of neurons positioned in secondary auditory and secondary visual cortex which were revealed by difference waveforms, computed by subtracting the sum of the AEP and VEP from the AVEP complex. Retrograde labelling of the polymodal zones indicated that they receive parallel thalamocortical projections primarily from non-specific auditory and visual thalamic nuclei including the medial and dorsal divisions of the medial geniculate nucleus (MGm and MGd), the suprageniculate nucleus (SGN), and the lateral posterior nucleus (LP). The polymodal zone in visual cortex also receives specific projections from the dorsal division of the lateral geniculate nucleus (LGd). These data conform to a general model of thalamocortical organization in which specific thalamic nuclei with a high degree of modality specificity make restricted projections to primary sensory cortex and parts of secondary sensory cortex, and association thalamic nuclei with a high degree of sensory convergence make more divergent cortical projections. Primary and secondary sensory cortex, as well as distinct zones of polysensory cortex appear to be activated in tandem via parallel thalamocortical projections. Thus, the cerebral cortex must have simultaneous access to both unimodal and polymodal sensory information. Author.

Automatic auditory discrimination is impaired in Parkinson's disease. Pekkonen, E., Jousmaki, V., Reinikainen, K., Partanen, J. Department of Neurology, University Hospital of Kuopio, Finland. *Electroencephalography Clinical Neurophysiology* (1995) July, Vol. 95 (1), pp. 47–52.
Deviant tones embedded in a sequence of standard tones elicit an event-related potential (ERP) component called the mismatch negativity (MMN), which reflects automatic stimulus change detection in the human auditory system. To determine whether stimulus change detection is impaired in Parkinson's disease (PD), we recorded ERPs in 13 non-demented patients with PD and in 11 age-matched healthy control subjects both when tones were attended and when they were unattended. The difference area between deviant and standard ERPs was used to evaluate the MMN in the 'unattended' condition. The MMN was significantly smaller in patients with PD than in controls. In the attended condition, the amplitudes of both N1 and the N2 complex were smaller in the patient group than in controls. MMN attenuation suggests that PD patients have impaired automatic stimulus change detection compared with healthy controls. This might be caused by dopamine deficiency in PD. Author.

Loratadine reduces allergen-induced mucosal output of alpha 2-macroglobulin and tryptase in allergic rhinitis. Greiff, L., Persson, C. G., Svensson, C., Enander, I., Andersson, M. Department of Otorhinolaryngology, Head and Neck Surgery, University Hospital, Lund, Sweden. *Journal of Allergy in Clinical Immunology* (1995) July, Vol. 96 (1), pp. 97–103.
BACKGROUND: Despite the wide use of antihistamines in the treatment of allergic rhinitis, little is known about effects of these drugs on airway mucosal indices, which specifically reflect either mast cell release activity (tryptase) or microvascular-epithelial exudation of bulk plasma (alpha 2-macroglobulin). OBJECTIVE: This study, involving subjects with seasonal allergic rhinitis, examines the effects of loratadine treatment on allergen-induced nasal mucosal output of tryptase and alpha 2-macroglobulin. Effects on nasal symptoms and eosinophils are also examined. METHODS: Placebo and loratadine (20 mg) were given orally once daily for five days at six-week intervals. Nasal diluent and allergen challenges were carried out on day five. The mucosa was lavaged with saline solution after each challenge, and nasal lavage fluid levels of tryptase and alpha 2-macroglobulin were determined. Nasal symptoms were scored, and nasal peak expiratory flow rates were measured. Superficial cells (eosinophils) were obtained with a brush device before and 24 hours after the allergen challenges. RESULTS: Allergen dose-dependently increased the nasal symptoms and the lavage fluid levels of alpha 2-macroglobulin and tryptase. Allergen also reduced the nasal peak expiratory flow rates. Loratadine inhibited the exudation of alpha 2-macroglobulin and reduced tryptase levels, nasal symptoms, and obstruction, but did not affect the number of eosinophils. CONCLUSION: The inhibitory effects of loratine on nasal lavage fluid levels of alpha 2-macroglobulin suggest that histamine, through effects on microvascular H1-receptors, mediates allergen challenge-induced exudation of bulk plasma in acute allergic rhinitis. The reduced lavage fluid levels of tryptase suggest either that loratadine directly attenuates mast cell release activity or that loratadine, through inhibition of the exudation process, simply attenuates luminal entry of tissue solutes (in this case, tryptase). Author.

Diagnostic criteria for allergic fungal sinusitis. De Shazo, R. D., Swain, R. E. Division of Allergy/Immunology, College of Medicine, University of South Alabama, Mobile, USA. *Journal of Allergy in Clinical Immunology* (1995) July, Vol. 96 (1), pp. 24–35.
Diagnostic criteria for allergic fungal sinusitis have not been established, and clinical information consists primarily of isolated case reports. We proposed five diagnostic criteria for allergic fungal sinusitis including: (1) the demonstration of the characteristic eosinophil-rich allergic mucin visually or histopathologically, (2) a positive fungal stain or culture from the sinus at surgery, and (3) the absence of immunodeficiency or diabetes. With these criteria, seven patients in our metropolitan area with allergic fungal sinusitis were identified in a short period. Initial symptoms in our seven patients reflected those in 99 case reports in that two children were first seen with proptosis, one child and three adults with nasal congestion, and one adult with symptoms of chronic sinusitis. All had pansinusitis as shown on X-ray films. Six patients were atopic, five had nasal polyposis, and five had Curvularia species cultured from the sinuses. Infections with Bipolaris species, asthma, and chronic sinusitis were less common in our patients than in those previously reported. Recurrent symptoms and additional surgery sometimes resulted when the diagnosis was delayed by failure to obtain silver stains for fungus on surgical material sent for histopathological review. Sinus tomography showed that the fungal material in the sinuses was of high density, which distinguished it from polyps or bacterial exudate. Bony compression, erosion, and rupture of the sinus walls were common. Results of IgE levels, precipition determinations, and eosinophil counts were variable in both our patients and those in the literature. On the basis of our review, we believe that the simple diagnostic criteria proposed are appropriate for both research and clinical purposes. Author.

Use of dexamethasone in the outpatient management of acute laryngotracheitis. Cruz, M. N., Stewart, G., Rosenberg, N. Department of Pediatrics, Children's Hospital of Michigan, Detroit 48201, USA. *Pediatrics* (1995) August, Vol. 96 (2 Pt 1), pp. 220–3.
OBJECTIVE. Recent studies have demonstrated that a single intramuscular injection of dexamethasone (0.6 mg/kg) shortens the duration and severity of illness in hospitalized patients with acute viral laryngotracheitis (croup). Our objective was to determine if dexamethasone has a role in the outpatient management of patients with acute viral croup of moderate severity. METHODS. Patients, six months to five years of age, who came to the emergency department (ED) with acute viral croup, a croup score of at least two (range 0 to 17), and a disposition of discharge were randomized in a double-blind fashion to receive a single intramuscular injection of dexamethasone, 0.6 mg/kg, or an equal volume of normal saline before discharge from the ED. Patients were excluded if they had any structural abnormalities, had received any steroids in the preceding 24 hours, or if they required beta-agonist therapy, more than one racemic epinephrine treatment, or hospitalization. Patients were followed-up by telephone 24 hours and seven to 10 days after discharge to determine whether additional medical attention was sought for perceived lack of improvement or worsening of symptoms. Secondary outcome included the parents' perception of how the child was doing at 24 hours, based on a four-point ordinal scale: worse (one), same (two), improved (three), symptoms resolved (four), and the number of days it took for complete recovery. RESULTS. Of the 38 patients comprising the study group, 19 received dexametha-

sone. The median age was 19 months (range six to 66 months), and median pretreatment croup score was three (range two to five) for both groups. The number of patients requiring racemic epinephrine was similar in both groups. Five patients sought additional medical attention within 48 hours. Four of the five patients had received placebo (21 per cent of the placebo group) and one had received dexamethasone (five per cent of the steroid group) (not statistically significant). At the 24-hour telephone follow-up, significantly more patients in the dexamethasone group had a score consistent with improvement compared with placebo (84 per cent vs 42 per cent, $P = 0.003$). There was no difference in the number of days for symptoms to completely resolve between the two groups. CONCLUSION. The use of dexamethasone in the outpatient management of viral croup was associated with a reduction in severity of illness within 24 hours after treatment. Patients with viral croup of moderate severity should be considered as candidates for the use of dexamethasone before discharge from the ED. Author.

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