

Abstract Selection

Auditory cortical activation and speech perception in cochlear implant users: effects of implant experience and duration of deafness

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This study aimed to investigate the relationship between outcome following cochlear implantation and auditory cortical activation. It also studied the effects of length of implant use and duration of deafness on the auditory cortical activations. Cortical activity resulting from auditory stimulation was measured using ((18)F)FDG positron emission tomography. In a group of 18 experienced adult cochlear implant users, we found a positive correlation between speech perception and activations in both the primary and association auditory cortices. This correlation was present in a subgroup of experienced implant users but absent in a group of new implant users with similar speech perception abilities. There was a significant negative correlation between duration of deafness and auditory cortical activation. This study gives insights into the relationship between implant speech perception and auditory cortical activation and the influence of duration of preceding deafness and implant experience.

The cochlear targets of cisplatin: an electrophysiological and morphological time-sequence study

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Cisplatin ototoxicity has at least three major targets in the cochlea: the stria vascularis, the organ of Corti, and the spiral ganglion. This study aims to differentiate between these three targets. In particular, we address the question of whether the effects at the level of the organ of Corti and spiral ganglion are mutually dependent or whether they develop in parallel. This question was approached by studying the ototoxic effects while they develop electrophysiologically and comparing these to earlier presented histological data (Van Ruijven *et al.*, 2004. *Hear. Res.* 197, 44–54). Guinea pigs were treated with intraperitoneal injections of cisplatin at a dose of 2 mg/kg/day for either 4, 6, or 8 consecutive days. This time sequence has not revealed any evidence of one ototoxic process triggering another. Therefore, we have to stay with the conclusion of Van Ruijven *et al.* (2004) that both processes run in parallel.

Endoscopic correction of severe laryngomalacia

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Tracheostomy for management of severe laryngomalacia is associated with significant morbidity and mortality. Two cases are reported wherein the laryngeal abnormality was corrected by ary-epiglottic fold incision and CO₂ laser supraglottoplasty. Stridor and respiratory obstruction were relieved and a long term tracheostomy avoided. Endoscopic correction of laryngomalacia offers significant benefits over conventional treatment with

tracheostomy in terms of decreased morbidity and improved quality of life.

Anotia and facial palsy: unusual features of cardiofacial syndrome

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The authors report a child with features of Cardiofacial syndrome with anotia and facial paralysis. This is the first report of such an association.

The viability of speech-in-noise audiometric screening using domestic audio equipment

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Speech-in-noise audiometry has potential application as a low-cost, self-screening test for sensorineural hearing loss. To realize this potential, the influence of variations in audio equipment and listening environment need assessment. The present study assessed: 1) the frequency response and distortion produced by a wide range of commercially available audio equipment; 2) the effects of such variations upon test results with normally hearing subjects using a simple, open-set, word-identification test; 3) the effect of distortion on the speech reception threshold using digitally applied distortion; and 4) the reliability of the test in listening environments with different levels of reverberation. In addition, preliminary tests were conducted with elderly listeners. The results indicate that variations in equipment have negligible effects on speech-in-noise audiometry. The only factor that substantially elevated normally hearing listeners' thresholds was high levels of room reverberation when using loudspeaker presentation. Variations in equipment and environment thus present no significant obstacle to the development of a self-administered audiometric screening test based on speech in noise.

Readiness of paediatric audiology services for newborn hearing screening: findings and implications from the programme in England

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As well as evaluating the newborn hearing screen itself, the government-funded evaluation of the implementation of a Newborn Hearing Screening Programme (NHSP) in England is assessing the impact of the screen on follow-up services. In the UK context, these are principally paediatric audiology, education, and social services. This article presents results from a mixed method research study involving paediatric audiology services specifically. Results demonstrate significant variety in current practice with regard to routine tests and procedures, considerable variability in number of current referrals and time allocated to caseloads, and considerable variability in expectations of how the numbers will change following newborn screening implementation. The challenges of and opportunities afforded by NHSP which were identified by respondents, highlight the urgent need for further training. The study has implications for paediatric audiology services that are yet to start NHSP in the UK, as well as for services and professionals in other countries.

Use of polyvinyl feeding tubes and iatrogenic pharyngo-oesophageal perforation in very-low-birthweight infants

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Acta paediatrica (Oslo Norway: 1992), (2005) Dec, Vol. 94, pp. 1825–8, ISSN: 0803-5253.

Background Placement of a feeding tube may be associated with various complications, including iatrogenic pharyngo-oesophageal perforation.

Aim To determine the incidence of pharyngo-oesophageal perforation secondary to the use of polyvinyl feeding tubes in newborns weighing less than 1500 g, we conducted a retrospective study over a 3(1/2)-y period.

Methods All the hospital files of the 371 very-low-birthweight newborns admitted were retrospectively reviewed.

Results Three iatrogenic pharyngo-oesophageal perforations were observed, giving an incidence of 1:124 preterm infants. This incidence reaches values of 1:25 newborns weighing less than 750 g. Data from our cases included clinical presentation and outcome, radiological evaluation, and type of feeding tube. One infant died of sepsis, and the clinical course was compatible with mediastinitis. The other two infants were treated successfully with conservative non-surgical management.

Conclusion Pharyngo-oesophageal perforation in our experience exclusively involved preterm infants weighing less than 750 g after traumatic placement of a polyvinyl feeding tube. The use of a silastic feeding tube with a really soft end instead of polyvinyl catheters could probably avoid iatrogenic oesophageal perforation.

Optimal management of community-acquired acute bacterial rhinosinusitis: the allergist's perspective

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Annals of allergy asthma & immunology: official publication of the American College of Allergy Asthma & Immunology, (2006) Mar, Vol. 96, pp. 390–7, 55 refs, ISSN: 1081-1206.

Objectives To characterize the antibiotic resistance seen in community-acquired respiratory tract infections (RTIs) and determine which characteristics to look for in an antibiotic to improve clinical outcomes and decrease the potential for development of resistance.

Data sources Using MEDLINE, we performed a search of articles published from 1966 to 2004 to evaluate the current literature on the subject of antibiotic resistance and strategies to overcome it. Additional cited references, such as abstracts, were also identified.

Study selection Relevant original research articles, reviews, and published abstracts were selected for inclusion in this review.

Results Several factors were identified that should be considered when choosing empiric antibiotic therapy for community-acquired RTIs with the goal of improving clinical outcomes while minimizing the risk of resistance. These factors include spectrum of activity, bactericidal vs bacteriostatic activity, chemical structure, elimination half-life, and potency.

Conclusions The results of these studies support the use of targeted antibiotic agents that, based on structural and chemical properties, are optimized to have a low potential to induce resistance. This approach to antimicrobial therapy appears to be the most suitable for patients with acute bacterial rhinosinusitis and other community-acquired RTIs.

Revision cochlear implantation for facial nerve stimulation in otosclerosis

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Archives of otolaryngology-head & neck surgery, (2006) Apr, Vol. 132, pp. 398–404, ISSN: 0886-4470.

Objective To find if patients experiencing postsurgical facial nerve stimulation caused by underlying disease process (ie, otosclerosis)

can improve their hearing performance with their cochlear implant by reimplantation and by an optimal programming strategy.

Design Retrospective analysis.

Setting Academic tertiary referral center.

Patients Two cochlear otosclerosis patients with resistant facial nerve stimulation (FNS). Both patients were initially implanted with Nucleus 22 devices (Cochlear Corporation, Englewood, Colo) and they developed FNS after a period of use. Owing to the decreasing number of active electrodes, concurrent decreases in speech understanding occurred.

Interventions Various programming approaches were used to address the FNS. Both subjects ultimately received Nucleus 24 devices. One was reimplanted in the same ear, and the other was implanted in the opposite ear. Both have been followed up for 8 months following the reimplantation.

Main outcome measures Cochlear implant programming levels, cochlear implant performance, and facial nerve stimulation.

Results The FNS was managed for more than 3 years through optimized programming. However, the FNS progressed until performance dropped below acceptable levels. Reimplantation was believed to be the only option for improvement. After reimplantation and programming, both subjects showed immediate improvement in speech discrimination. One user increased his consonant-nucleus-consonant word score from 12% preoperatively to 42%, and the other's performance increased from 0% to 86%.

Conclusions Our results suggest that having more programming options with newer devices is critical in otosclerotic or ossified users who experience FNS. Also, reimplantation may be a useful tool to improve performance.

Metastases in the sphenoidal sinus in a patient with papillary thyroid cancer

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Unidad de Medicina Nuclear, Hospital Modelo, La Coruna, Spain. *Clinical & translational oncology: official publication of the Federation of Spanish Oncology Societies and of the National Cancer Institute of Mexico*, (2005) Aug, Vol. 7, pp. 324–7, ISSN: 1699-048X.

Tumours that produce metastases in the paranasal sinuses or sphenoidal sinus are rare; the carcinomas of kidney and lung being the most frequent with this type of metastasis. Distant metastases from differentiated thyroid carcinoma are rare and, moreover, when they metastasize, they do so into lung and bone. We report a patient who had a papillary thyroid carcinoma with metastases into the sphenoidal sinus.

The 'microflora hypothesis' of allergic diseases

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Clinical and experimental allergy: journal of the British Society for Allergy and Clinical Immunology, (2005) Dec, Vol. 35, pp. 1511–20, 119 refs, ISSN: 0954-7894.

Increasingly, epidemiologic and clinical data support the hypothesis that perturbations in the gastrointestinal (GI) microbiota because of antibiotic use and dietary differences in 'industrialized' countries have disrupted the normal microbiota-mediated mechanisms of immunological tolerance in the mucosa, leading to an increase in the incidence of allergic airway disease. The data supporting this 'microflora hypothesis' includes correlations between allergic airway disease and (1) antibiotic use early in life, (2) altered fecal microbiota and (3) dietary changes over the past two decades. Our laboratory has recently demonstrated that mice can develop allergic airway responses to allergens if their endogenous microbiota is altered at the time of first allergen exposure. These experimental and clinical observations are consistent with other studies demonstrating that the endogenous microbiota plays a significant role in shaping the development of the immune system. Data are beginning to accumulate that a 'balanced' microbiota plays a positive role in maintaining mucosal immunologic tolerance long after post-natal

development. Other studies have demonstrated that even small volumes delivered to the nasopharynx largely end up in the GI tract, suggesting that airway tolerance and oral tolerance may operate simultaneously. The mechanism of microbiota modulation of host immunity is not known; however, host and microbial oxylipins are one potential set of immunomodulatory molecules that may control mucosal tolerance. The cumulative data are beginning to support the notion that probiotic and prebiotic strategies be considered for patients coming off of antibiotic therapy.

Topical corticosteroid inhibits interleukin-4, -5 and -13 in nasal secretions following allergen challenge

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Clinical and experimental allergy: journal of the British Society for Allergy and Clinical Immunology, (2005) Dec, Vol. 35, pp. 1608–14, ISSN: 0954-7894.

Background Cytokines and chemokines produced by allergen-reactive T-helper type 2 (Th2) cells may be pivotal to the pathophysiology of allergic disorders.

Objective This study was performed to assess the effect of 7 days of topical corticosteroid on nasal allergen challenge (NAC) in terms of eosinophils, cytokines and chemokines obtained by nasal lavage and filter paper methods.

Methods Patients with grass pollen seasonal-allergic rhinitis (n = 13) out of season received nasal challenge following matched placebo (twice daily into each nostril for 7 days) and fluticasone propionate (100 microg twice daily into each nostril for 7 days). Chemokine and cytokine levels were analysed using a sensitive automated bead immunoassay system at intervals up to 8 h after NAC.

Results Levels of cytokines and chemokines from filter paper were generally higher than from nasal lavage. Fluticasone propionate caused a reduction in symptoms, total leukocyte counts and eosinophils, and abrogation of IL-4, IL-5, IL-6 and IL-13 responses in the filter paper taken in the late phase (P < 0.05 for IL-4 and IL-13, P < 0.01 for IL-5 and IL-6). Levels of chemokines (eotaxin, RANTES, MCP-1, MIP-1alpha, IL-8 and IP-10) were also reduced in the late phase (P < 0.01 at 8 h). However, levels of IL-2, IL-3, IL-7, IL-12 (p40 and p70), -15, TNF-alpha, IFN-gamma and GM-CSF were not affected.

Conclusion Fluticasone propionate has selective inhibitory effects on Th2 cytokine synthesis following nasal challenge, while also decreasing release of chemokines, but not affecting levels of Th1 cytokines.

Fusiform elliptical Burow's graft: a simple and practical esthetic approach for nasal tip reconstruction

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Dermatologic surgery: official publication for American Society for Dermatologic Surgery (et al.), (2006) Jan, Vol. 32, pp. 91–5, ISSN: 1076-0512.

Background Reconstruction of cutaneous nasal tip and supratip defects presents a common challenge in which esthetic outcomes are dependent on appropriate flap or graft selection and execution.

Observation We describe the fusiform elliptical Burow's graft, a modified full-thickness skin graft, for repair of moderately sized nasal tip and supratip defects. It has the advantage of being a one-stage procedure with incisions and undermining similar to a

primary closure. This technique allows the defect to become smaller in size and shallower in depth while taking the shape of a fusiform ellipse confined to a single cosmetic subunit. The color and texture match of the adjacent Burow's skin graft combined with its fusiform elliptical shape allow it to blend in more naturally with the nasal tip contour compared with the traditional circular-shaped Burow's graft, which is typically used on the nose.

Conclusion The fusiform elliptical Burow's graft is a simple, reliable, easily reproducible, and esthetically pleasing technique for repair of defects on the nasal tip and supratip.

Endoscopic myotomy of the cricopharyngeal muscle with CO2 laser surgery

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Head & neck, (2005) Aug, Vol. 27, pp. 703–9, ISSN: 1043-3074.

Background Cricopharyngeal dysfunction may lead to severe dysphagia and aspiration. Several treatment modalities are available, such as external myotomy of the muscle, dilatation, and local infiltration with botulinum toxin. Recently, endoscopic transmucosal myotomies using a CO2 laser have been described.

Methods Endoscopic cricopharyngeal myotomy using a CO2 laser was performed in 10 consecutive patients with dysphagia supposedly caused by cricopharyngeal muscle dysfunction without Zenker's diverticulum. All patients received prophylactic antibiotics and a feeding tube. Assessment was composed of clinical observation, a questionnaire, and a physical examination including flexible endoscopy and videofluoroscopy.

Results In all the patients, the procedure was feasible and without complications. Improvement of the complaints occurred in most patients. One patient had recurrent dysphagia and required a second endoscopic procedure.

Conclusions Endoscopic laser surgery seems to be a safe and effective technique to treat cricopharyngeal dysfunction.

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Measurement of vocal fold collision forces during phonation: methods and preliminary data

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Journal of speech language and hearing research: JSLHR, (2005) Jun, Vol. 48, pp. 567–76, ISSN: 1092-4388.

Forces applied to vocal fold tissue as the vocal folds collide may cause tissue injury that manifests as benign organic lesions. A novel method for measuring this quantity in humans in vivo uses a low-profile force sensor that extends along the length and depth of the glottis. Sensor design facilitates its placement and stabilization so that phonation can be initiated and maintained while it is in place, with minimal interference in vocal fold vibration. In 2 individuals with 1 vibrating vocal fold and 1 nonvibrating vocal fold, peak collision force correlates more strongly with voice intensity than pitch. Vocal fold collision forces in 1 individual with 2 vibrating vocal folds are of the same order of magnitude as in previous studies. Correlations among peak collision force, voice intensity, and pitch were indeterminate in this participant because of the small number of data points. Sensor modifications are proposed so that it can be used to reliably estimate collision force in individuals with 2 vibrating vocal folds and with changing vocal tract conformations.