

## Abstract Selection

**Fluticasone propionate aqueous nasal spray does not influence the recurrence rate of chronic rhinosinusitis and nasal polyps 1 year after functional endoscopic sinus surgery.** Dijkstra, M., D., Ebbens, F., A., Poublon, R., M., L., Fokkens, W., J. Department of Otorhinolaryngology, Erasmus MC, Rotterdam, The Netherlands. *Clinical and Experimental Allergy* (2004) Sep, Vol. 34, pp.1395–400, ISSN: 0954-7894.

**BACKGROUND:** Local corticosteroids are widely used in the treatment of nasal polyps and chronic rhinosinusitis both before and after nasal surgery. Their efficacy after functional endoscopic sinus surgery (FESS) has not been fully established by placebo-controlled trials. **OBJECTIVE:** This double-blind placebo-controlled randomized study was performed in order to investigate whether fluticasone propionate aqueous nasal spray (FPANS) reduces the recurrence rate of nasal polyps and chronic rhinosinusitis during the first year after FESS. **PATIENTS AND METHODS:** The trial looked at 162 patients aged 18 years and older requiring FESS for chronic rhinosinusitis or nasal polyps. After FESS combined with peri-operative systemic corticosteroids, patients were randomized and given FPANS 400 microg b.i.d., FPANS 800 microg b.i.d. or placebo b.i.d. for the duration of 1 year. Patients were withdrawn from the trial (but still included in the study for statistical purposes) if there were recurrent or persistent diseases, defined as progressive regrowth of nasal polyps, recurrent signs and symptoms of chronic sinusitis combined with abnormalities on computed tomography scan and persistent complaints for at least 2 months after FESS. **RESULTS:** A significant reduction of symptoms was seen after FESS. After 1 year, 46 patients had been withdrawn from the trial because of recurrent diseases and 32 patients because of persistent symptoms. No differences in the number of patients withdrawn because of recurrent or persistent diseases were found between the patients treated with FPANS and patients treated with placebo. We were also unable to find a positive effect of FPANS compared with placebo in several subgroups such as patients with nasal polyps, high score at FESS or no previous sinus surgery. **CONCLUSION:** This placebo-controlled study does not show that treatment with FPANS up to 1 year after FESS had a positive effect compared with placebo.

**Relationship between temporomandibular joint (TMJ)-related pain and morphological changes of the TMJ condyle in patients with temporomandibular disorders.** Kurita, H., Kojima, Y., Nakatsuka, A., Koike, T., Kobayashi, H., Kurashina, K. Department of Dentistry and Oral Surgery, Shinshu University School of Medicine, Matsumoto, Japan. hkurita@hsp.md.shinshu-u.ac.jp. *Dento Maxillo Facial Radiology* (2004) Sep, Vol. 33 (5), pp. 329–33, ISSN: 0250-832X.

**OBJECTIVES:** The purpose of this study was to analyse the relationship between temporomandibular joint (TMJ)-related pain and morphological change of the TMJ condyle in patients with temporomandibular disorders. **METHODS:** Data were obtained from 178 joints in 89 patients. The joints were clinically assessed for pain on mandibular function and on lateral palpation of the TMJ. They were also assessed for radiographic evidence of bone change at the articular surface (OMS) and resorption of the lateral part of the condyle (RLC). **RESULTS:** A higher prevalence of joint pain on function was observed in joints with OMS than in those without OMS (Chi-square test of independence,  $p < 0.05$ ). Significant relationships were found between palpation pain and OMS and between palpation pain and RLC (Chi-square test of independence,  $p < 0.05$ ). In addition, patients with RLC showed a significantly lower pain threshold for external mechanical stimuli than those without RLC (Welch's  $t$ -test,  $p < 0.05$ ). **CONCLUSIONS:** These results suggest a possible relationship between pain on function and OMS as well as a

relationship between palpation pain and RLC. Pain on lateral palpation may be related to the pathological conditions that induce RLC.

**Functional outcomes of transoral laser surgery of supraglottic carcinoma compared with a transcervical approach.** Cabanillas, R., Rodrigo, J., P., Llorente, J., L., Suarez, V., Ortega, P., Suarez, C. Department of Otorhinolaryngology, Hospital Universitario Central de Asturias, and Instituto Universitario de Oncología del Principado de Asturias, Oviedo, Spain. rcabanillas@telecable.es. *Head & neck* (2004) Aug, Vol. 26 (8), pp. 653–9, ISSN: 1043-3074. **BACKGROUND:** Several functional advantages have been described for the transoral laser supraglottic laryngectomy as compared with open techniques. However, comparative studies have been rarely performed. **METHODS:** Functional results in 26 patients treated with a transoral approach were retrospectively compared with those of a comparable series of 26 patients who underwent a transcervical approach. **RESULTS:** The only significant differences found between the two groups were a lesser number of temporary tracheotomies and a shorter time of removal of the nasogastric tube in the laser group. No significant differences were found in the incidence of postoperative complications, hospital stay, and swallowing capacity. **CONCLUSIONS:** The rate of functional problems after transoral laser surgery did not greatly decrease compared with the rate after the conventional procedure. The major advantage of the transoral approach was the lower incidence of temporary tracheotomies.

**Morbidity of the neck after head and neck cancer therapy.** van-Wilgen, C., P., Dijkstra, P., U., van-der-Laan, B., F., A., M., Plukker, J., T., Roodenburg, J., L., N. Department of Oral and Maxillofacial Surgery, University Hospital Groningen, The Netherlands. c.p.van.wilgen@rev.azg.nl *Head & Neck* (2004) Sep, Vol. 26 (9), pp. 785–91, ISSN: 1043-3074.

**BACKGROUND:** Studies on morbidity of the neck after head and neck cancer therapy are scarcely described. **METHODS:** Patients who underwent surgery, including neck dissection, with and without radiation therapy at least 1 year before the study were asked to participate. We assessed neck pain, loss of sensation, range of motion of the cervical spine, and shoulder pain. **RESULTS:** Of the 220 patients who were invited, 153 (70%) participated in the study. Neck pain was present in 33% of the patients ( $n = 51$ ), and shoulder pain was present in 37% of the patients ( $n = 57$ ). Neuropathic pain of the neck was present in 32% ( $n = 49$ ); myofascial pain in 46% ( $n = 70$ ); and joint pain in 24% ( $n = 37$ ). Loss of sensation of the neck was present in 65% ( $n = 99$ ) and was related to type of neck dissection and radiation therapy. Range of motion of the neck was significantly decreased because of the neck dissection and/or radiation therapy in lateral flexion away from the operated side. **CONCLUSIONS:** The occurrences of morbidity of the neck after cancer therapy were considerable and consisted of neck pain, loss of sensation, and decreased range of motion.

**FDG-PET/CT imaging for preradiotherapy staging of head-and-neck squamous cell carcinoma.** Schwartz, D., L., Ford, E., Rajendran, J., Yueh, B., Coltrera, M., D., Virgin, J., Anzai, Y., Haynor, D., Lewellyn, B., Mattes, D., Meyer, J., Phillips, M., Leblanc, M., Kinahan, P., Krohn, K., Eary, J., Laramore, G., E. Department of Radiation Oncology, University of Washington School of Medicine, Seattle, WA 98108, USA. docdls@u.washington.edu. *International Journal of Radiation Oncology Biology Physics* (2005) Jan, Vol. 61 (1), pp. 129–36, ISSN: 0360-3016.

**PURPOSE:** Image localization of head-and-neck squamous cell

carcinoma lags behind current techniques to deliver a precise radiation dose with intensity-modulated radiotherapy. This pilot study prospectively examined the use of registered 18-F-fluorodeoxyglucose (FDG)-positron emission tomography (PET)/CT for preradiotherapy staging of the neck. **METHODS AND MATERIALS:** Sixty-three patients with squamous cell carcinoma of the oral cavity, oropharynx, larynx, or hypopharynx were enrolled into an institutional FDG-PET imaging protocol between September 2000 and June 2003. Of these patients, 20 went on to immediate neck dissection surgery and were studied further. Of these 20, 17 (85%) had American Joint Committee on Cancer Stage III or IV disease. All patients underwent preoperative FDG-PET and contrast-enhanced CT of the head and neck. FDG-PET/CT images were created using a non-rigid image registration algorithm developed at the University of Washington. Alternate primary and nodal gross tumor volumes were contoured with radiotherapy treatment planning software, blinded to each other and to the pathology results. One set of volumes was designed with CT guidance alone and the other with the corresponding FDG-PET/CT images. Neck dissection specimens were subdivided into surgical nodal levels intraoperatively, and the histopathologic findings were correlated with the CT and FDG-PET/CT nodal level findings. **RESULTS:** FDG-PET/CT detected 17 of 17 hemeinecks and 26 of 27 nodal zones histologically positive by dissection (100% and 96% sensitivity, respectively). The nodal level staging sensitivity and specificity for FDG-PET/CT was 96% (26 of 27) and 98.5% (68 of 69), respectively. FDG-PET/CT correctly detected nodal disease in 2 patients considered to have node-negative disease by CT alone. Agreement between the imaging results and pathology findings was stronger for FDG-PET/CT ( $\kappa$  0.95, 95% confidence interval 0.82–0.99) than for CT alone ( $\kappa$  0.81, 95% confidence interval 0.63–0.91;  $p = 0.06$  by two-sided McNemar's testing). **CONCLUSION:** These early findings suggest that FDG-PET/CT is superior to CT alone for geographic localization of diseased neck node levels. Confirmatory trials to substantiate the accuracy of FDG-PET/CT neck staging should be prioritized.

**SPECT-CT for topographic mapping of sentinel lymph nodes prior to gamma probe-guided biopsy in head and neck squamous cell carcinoma.** Wagner, A., Schicho, K., Glaser, C., Zettinig, G., Yerit, K., Lang, S., Klug, C., Leitha, T. University Hospital of Cranio-Maxillofacial and Oral Surgery, Medical School, University of Vienna, Austria. arne.wagner@univie.ac.at. *Journal of Cranio-Maxillo-Facial Surgery* (2004) (Dec, Vol. 32 (6), pp.343–9, ISSN: 1010-5182.

**INTRODUCTION:** Lymphoscintigraphic planar imaging is a common procedure for sentinel lymph node imaging prior to lymph node biopsy, but fails to elucidate the specific lymphatic drainage. Composite functional/anatomical imaging (SPECT-CT) has the potential to enhance topographic orientation and diagnostic sensitivity of sentinel lymph node imaging, but has not yet been applied in the head and neck region. **STUDY DESIGN:** A total of 30 patients were investigated. Planar imaging was 5 min, 265 x 265, right and left lateral; 500 kilocounts (Kcts) and SPECT (GE Millenium VG Hawk Eye 6 degrees/30s, step, 128 x 128, slice thickness 4.42 mm). Scans were performed 60 min after intracutaneous injection of 0.1 ml of 20 MBq 99mTc nanocolloid in patients with squamous cell cancer of the head and neck. SPECT studies were analysed by filtered back projection (FBP: Hann (0.7) prefiltering, Butterworth (0.5) postfiltering) and reconstruction (OSEM: Post Filter Hamming (0.85), 2 Iterations) and independently viewed with the co-registered CT image (eNTEGRA Functional Anatomical Fusion Vers 2.0216). The results were validated by comparing the results of each method employed in all 30 cases and intraoperative gamma probe-guided sentinel lymph node biopsy with histological examination in 13 of these patients. **RESULTS:** The majority of patients had more than one sentinel node (mean 1.63, min. 0, max. 4). Seven out of the 30 studies demonstrated lymphatic flow to the contralateral side of the neck. Forty-nine sentinel nodes were identified by iteratively reconstructed SPECT-CT. Thirty-eight out of these 49 could be located in lymphoscintigraphic planar imaging, whereas only 24/49 were detected in filtered back projection, respectively. In 11 of the 30 cases, a clinically unpredictable pattern of lymphatic drainage was observed. No correlation was found between T stage or tumour location and the number of sentinel nodes detected. In one out of the 13 cases, in whom imaging was followed by

intraoperative gamma probe-guided biopsy, no sentinel node could be detected with the probe in the proximity of the primary tumour, although the node was clearly discernible in the reconstructed SPECT-CT. **CONCLUSION:** Composite functional/anatomical imaging (SPECT-CT) is feasible for sentinel lymph node detection. It enhances topographic orientation and diagnostic sensitivity with more sentinel nodes being detectable than by planar lymphoscintigraphy alone. Planar imaging should be accompanied by iterative reconstructed SPECT-CT to identify lymph nodes adjacent to the primary lesion. Such nodes are easily overlooked by planar lymphoscintigraphy and intraoperative gamma probes, as the high activity at the injection site can obscure their detection.

**Reduced nasal IL-10 and enhanced TNFalpha responses during rhinovirus and RSV-induced upper respiratory tract infection in atopic and non-atopic infants.** van-Benten, I., J., van-Drunen, C., M., Koevoet, J., L., M., Koopman, L., P., Hop, W., C., J., Osterhaus, A., D., M., E., Neijens, H., J., Fokkens, W., J. Department of Otorhinolaryngology, Erasmus Medical Centre, Rotterdam, The Netherlands. *Journal of Medical Virology* (2005) Feb, Vol. 75 (2), pp.348–57, ISSN: 0146-6615.

Rhinovirus and respiratory syncytial virus (RSV) are the most prevalent inducers of upper respiratory tract infections (URTI) in infants and may stimulate immune maturation. To estimate the amount of immune stimulation, nasal immune responses were examined during rhinovirus and RSV-induced URTI in infants. Nasal brush samples were taken from infants (2–26 months; 57% atopic family) with rhinovirus-induced URTI ( $n = 20$ ), with RSV-induced URTI ( $n = 7$ ), and with rhinovirus-induced rhinitis ( $n = 11$ ), from children with asymptomatic rhinovirus infection ( $n = 7$ ) and from eight non-infected children. Numbers of nasal brush cells positive for Th1-, Th2-, regulatory and proinflammatory cytokines were measured by immunohistochemistry or by measuring protein levels using a cytometric bead array analysis. During rhinovirus and RSV-induced URTI, fewer regulatory cytokine IL-10 positive cells were found compared to non-infected children. This fall was accompanied by an increase in levels of the Th1 cytokine TNFalpha. IL-10 responses were inversely related to TNFalpha responses. No enhanced responses were observed for IFNgamma, IL-12 and IL-18. Cytokine responses were comparable in children with rhinovirus-induced URTI and in children with rhinitis, while responses in asymptomatic rhinovirus-infected children were located between those for symptomatic and asymptomatic rhinovirus-infected children. Cytokine responses did not depend on the age of the child or atopy in the family. In conclusion, reduced nasal IL-10 responses during URTI in infants could facilitate the induction of a TNFalpha response. TNFalpha in turn could replace the immature production of IL-12, IL-18 and IFNgamma during URTI to induce an effective clearance of the viral infection and which could stimulate the maturation of Th1 cytokine production in infancy.

**Treatment of epistaxis in Rendu-Osler-Weber disease by in situ Ethibloc injections.** Roux, V., S., Pasco, P., A., Laccourreye, L., Dubin, J. Service d'Oto-Rhino-Laryngologie et de Chirurgie Cervico-Faciale, Centre Hospitalier et Universitaire d'Angers, 49033 Angers cedex 01, France. srollx-vaillard@libertysurf.fr *Journal of Neuroradiology* (2004) Mar, Vol. 31 (2), pp. 110–5, ISSN: 0150-9861.

After a brief review of Rendu-Osler-Weber disease, we present the results from a series of 13 patients treated by Ethibloc injections for epistaxis. Based on a review of the literature, typical treatments are presented along with discussion of their efficacy and side effects. In our series, 90% of patients improved after only one injection. All patients reported a decrease in hemorrhage, especially patients with recurrent epistaxis. Five of nine patients reported a decrease in the length of the bleeding episodes. Improvement was reported by 85% of patients within one month following Ethibloc injection. Fifty percent of these patients have persistent good results at 4 year follow-up. Our results indicate that Ethibloc injections are safe and effective as an alternative treatment for patients that have failed standard treatment options.

**Radiosurgery of vestibular schwannomas: summary of experience in 829 cases.** Lunsford, L., D., Niranjan, A., Flickinger, J., C., Maitz, A., Kondziolka, D. Department of Neurological Surgery and Radiation Oncology, The University of Pittsburgh School of

Medicine, Pittsburgh, Pennsylvania 15213, USA. lunsfordld@upmc.edu *Journal of Neurosurgery* (2005) Jan, Vol. 102 Suppl, pp. 195–9, ISSN: 0022-3085.

**OBJECT:** Management options for vestibular schwannomas (VSs) have greatly expanded since the introduction of stereotactic radiosurgery. Optimal outcomes reflect long-term tumor control, preservation of cranial nerve function, and retention of quality of life. The authors review their 15-year experience. **METHODS:** Between 1987 and 2002, some 829 patients with VSs underwent gamma knife surgery (GKS). Dose selection, imaging, and dose planning techniques evolved between 1987 and 1992 but thereafter remained stable for 10 years. The average tumor volume was 2.5 cm<sup>3</sup>. The median margin dose to the tumor was 13 Gy (range 10–20 Gy). No patient sustained significant perioperative morbidity. The average duration of hospital stay was less than 1 day. Unchanged hearing preservation was possible in 50–77% of patients (up to 90% in those with intracanalicular tumors). Facial neuropathy risks were reduced to less than 1%. Trigeminal symptoms were detected in less than 3% of patients whose tumors reached the level of the trigeminal nerve. Tumor control rates at 10 years were 97% (no additional treatment needed). **CONCLUSIONS:** Superior imaging, multiple isocenter volumetric conformal dose planning, and optimal precision and dose delivery contributed to the long-term success of GKS, including in those patients in whom initial microsurgery had failed. Gamma knife surgery provides a low risk, minimally invasive treatment option for patients with newly diagnosed or residual VS. Cranial nerve preservation and quality of life maintenance are possible in long-term follow up.

**Can infrared thermography be a diagnostic tool for arthralgia of the temporomandibular joint?** Fickackova, H., Ekberg, E. Institute of Biophysics and Informatics, Department of Clinical Radiobiology, 1st Medical Faculty, Charles University Prague, Prague, Czech Republic. hfickackova@hotmail.com *Oral Surgery Oral Medicine Oral Pathology Oral Radiology and Endodontics* (2004) Dec, Vol. 98 (6), pp. 643–50, ISSN: 1079-2104.

This paper presents a review of the use of infrared thermography in diagnosis of temporomandibular joint (TMJ) arthralgia. The question examined was whether the infrared thermography could be reliably used as a tool to diagnose arthralgia by objectively assessing the site of origin and the degree of irritation. Controlled studies were performed by using advanced thermographic devices to show both diagnostic validity and reliability of infrared thermography as a screening test for selecting healthy subjects from patients with unilateral TMJ arthralgia. The study revealed that thermography fails to meet the criteria of high level of evidence. Further studies are required to confirm these results in order to specify analysis of facial thermal patterns and to better understand the relationship between TMJ arthralgia and regional temperature changes. Until then infrared thermography cannot be recommended for routine use as a diagnostic technique to identify TMJ disorders.

**Cochleosaccular dysplasia: a morphometric and histopathologic study in a series of temporal bones.** Sampaio, A., L., L., Cureoglu, S., Schachern, P., A., Kusunoki, T., Paparella, M., M., Oliveira, C., A., C., P. Brasilia University Medical School-Capes, Fulbright Scholarship, Brasilia, Brazil. *Otology & Neurotology* (2004) Jul, Vol. 25 (4), pp. 530–5, ISSN: 1531-7129.

**OBJECTIVE:** The objective of this study was to perform a morphometric analysis of a series of temporal bones with cochleosaccular dysplasia to clarify the extent of inner ear changes in this disease. **STUDY DESIGN:** This human temporal bone histopathologic study of a series of deaf-mute cases involves morphometric analysis, including stria vascularis and spiral ligament area measurements and spiral ganglion and hair cells counts. **SUBJECTS:** Thirteen temporal bones were selected from 35 with deaf mutism based on the histopathologic findings described by Scheibe. Twenty normal age-matched control subjects were used for comparisons. **RESULTS:** All temporal bones had the main histopathologic findings described by Scheibe, as well as severe affected stria vascularis. Seven temporal bones had cystic areas in the stria and three had concretions. Cross-sectional stria areas in temporal bones with cochleosaccular dysplasia were smaller than normal in all cochlear turns; however, no difference was found in spiral ligament cross-sectional areas. Reissner's membrane was

hydropic in three temporal bones and the organ of Corti was absent in at least one cochlear turn in five. Concretions were present in the macula of seven temporal bones. Twelve temporal bones showed some level of spiral ganglion cell loss. No hair cells were observed in any temporal bone. A familial history of deafness was found in three cases. **CONCLUSION:** Pathologic findings were variable and limited to the saccule and scala media. The variation, perhaps, reflects the different etiologies involved in the origin of cochleosaccular dysplasia.

**Intratympanic gentamicin therapy for Meniere's disease: a meta-analysis.** Chia, S., H., Gamst, A., C., Anderson, J., P., Harris, J., P. Division of Otolaryngology, Head and Neck Surgery, Department of Surgery, School of Medicine, University of California at San Diego, USA. *Otology & Neurotology* (2004) Jul, Vol. 25 (4), pp. 544–52, ISSN: 1531-7129.

**OBJECTIVE:** This study compared the effectiveness of five different techniques of intratympanic gentamicin administration for Meniere's disease. **DATA SOURCES:** A MEDLINE search of the English language literature from 1978 to 2002 was performed using the key words intratympanic, gentamicin, therapy, Meniere's, and disease. **STUDY SELECTION:** Inclusion criteria to select articles for meta-analysis were clear description of gentamicin delivery technique, clearly reported vertigo control results, and report of hearing loss post-treatment. Seven studies ( $n = 218$ ) describing the multiple daily dosing technique (delivery three times per day for  $\geq 4$  d), two studies ( $n = 84$ ) describing the weekly dosing technique (weekly injections for four total doses), eight studies ( $n = 253$ ) of the low-dose technique (one to two injections with retreatment for recurrent vertigo), four studies ( $n = 156$ ) of continuous microcatheter delivery, and six studies ( $n = 269$ ) of the titration technique (daily or weekly doses until onset of vestibular symptoms, change in vertigo, or hearing loss) were entered into the model. **DATA EXTRACTION:** Vertigo control results were stratified into complete, substantial, or poor control. Hearing results were separated by profound, partial, or no hearing loss. Individuals undergoing caloric testing were separated by degree of vestibular ablation (complete versus partial) and analyzed for vertigo control ( $n = 301$ ) and hearing loss ( $n = 333$ ) after treatment. **DATA SYNTHESIS:** Comparisons between the rates of complete vertigo control, effective vertigo control (complete plus substantial control), overall hearing loss (partial plus profound), and profound hearing loss by delivery method were based on a parametric empirical Bayes analysis using binomial generalized linear models and backward variable selection (joining). Relative risk for vertigo control and hearing loss by partial or complete ablation was examined study by study using residual maximum likelihood to carry out a parametric empirical Bayes analysis. **CONCLUSION:** The titration method of gentamicin delivery demonstrated significantly better complete (81.7%,  $p = 0.001$ ) and effective (96.3%,  $p < 0.05$ ) vertigo control compared with other methods. The low-dose method of delivery demonstrated significantly worse complete vertigo control (66.7%,  $p < 0.001$ ) and trends toward worse effective vertigo control (86.8%,  $p = 0.05$ ) compared with other methods. The weekly method of delivery trends toward less overall hearing loss (13.1%,  $p = 0.08$ ), and the multiple daily method demonstrated significantly more overall hearing loss (34.7%,  $p < 0.01$ ) compared with other groups. No significant difference in profound hearing loss was found between groups. Degree of vestibular ablation after gentamicin therapy is not significantly correlated with the resulting vertigo control or hearing loss status.

**Management options for cerebrospinal fluid leak after vestibular schwannoma surgery and introduction of an innovative treatment.** Selesnick, S., H., Liu, J., C., Jen, A., Carew, J., F. Department of Otorhinolaryngology, Weill College of Medicine of Cornell University, New York, New York 10021, USA. shselen@mail.med.cornell.edu *Otology & Neurotology* (2004) Jul, Vol. 25 (4), pp. 580–6, ISSN: 1531-7129.

**OBJECTIVE:** To review the management of cerebrospinal fluid leak after vestibular schwannoma removal reported in the literature and to present a novel approach to management of recalcitrant cases. **DATA SOURCES:** MEDLINE and PubMed literature search using the terms cerebrospinal fluid leak or cerebrospinal fluid fistula and acoustic neuroma or vestibular schwannoma covering the period from 1985 to present in English. A review of bibliographies of these studies was also performed.

**STUDY SELECTION:** Criteria for inclusion in this meta-analysis consisted of the availability of extractable data from studies presenting a defined group of patients who had undergone primary vestibular schwannoma removal and for whom the presence and absence of cerebrospinal fluid leakage was reported. Studies reporting combined approaches were excluded. No duplications of patient populations were included. Twenty-five studies met the inclusion criteria. **DATA EXTRACTION:** Quality of the studies was determined by the design of each study and the ability to combine the data with the results of other studies. All of the studies were biased by their retrospective, non-randomized nature. **DATA SYNTHESIS:** Significance ( $p < 0.05$ ) was determined using the chi test. **CONCLUSIONS:** Incisional cerebrospinal fluid leakage responded well to local management and lumbar drainage. Rhinorrhea often necessitated surgical intervention. No specific reoperation techniques correlated exclusively with better reoperation outcomes. The transaural/transnasal approach presents an alternative for surgical management of cerebrospinal fluid rhinorrhea.

**Hearing preservation with the transcrural approach to the petroclival region.** Kaylie, D., M., Horgan, M., A., Delashaw, J., B., McMenomey, S., O. The Otology Group, Nashville, Tennessee 37203, USA. dkaylie@comcast.net. *Otology & Neurotology* (2004) Jul, Vol. 25 (4), pp.594–8, ISSN: 1531-7129.

**OBJECTIVE:** We studied the hearing results and outcomes after transcrural craniotomy. **STUDY DESIGN:** We conducted a retrospective review. **SETTING:** This study was conducted at a tertiary care hospital. **PATIENTS:** We studied 10 consecutive patients, including two men and eight women, who underwent transcrural craniotomy for petroclival masses or tumors. **INTERVENTION:** The intervention consisted of therapeutic removal of petroclival meningioma. **MAIN OUTCOME MEASURE:** The main outcome measure of this study was hearing preservation as measured by standard audiogram. **RESULTS:** There were six meningiomas, one eighth nerve schwannoma, one fifth nerve schwannoma, one chordoma, and one midbasilar artery aneurysm. Postoperative hearing was measured according to the AAOHNS criteria. Complications and further therapies were recorded. Postoperative hearing was measured in eight. The cochlear nerve was severed in one patient. One was unavailable for follow up. Eight patients retained hearing at or near preoperative levels, seven with SRT within 10 dB and speech discrimination within 10% of preoperative levels. Four patients presented with trigeminal symptoms, one with third nerve palsy and two with facial weakness. Postoperative deficits included fourth, sixth, seventh, and eighth nerve palsies in three patients. Complications included one wound infection, two cerebrospinal fluid leak, and two cases of meningitis, both of which were sterile. There were secondary procedures in five patients – three radiosurgery, two shunts, one tracheotomy, and one g-tube. **CONCLUSIONS:** Transcrural craniotomy is a safe and effective approach to the petroclival region. Excellent hearing results can be expected with this technique.

**Endolymphatic sac tumors: a review of the St. Vincent's hospital experience.** Rodrigues, S., Fagan, P., Turner, J. Department of Otolaryngology, Head and Neck Surgery, St Vincent's Hospital, Sydney, Australia. stephenrodrigues@hotmail.com *Otology &*

*Neurotology* (2004) Jul, Vol. 25 (4), pp. 599–603, ISSN: 1531-7129. **OBJECTIVE:** To describe the clinical, radiologic and histopathologic features of endolymphatic sac tumors using the St Vincent's Hospital experience with these tumors to highlight important aspects of tumor diagnosis and treatment. Possible explanations are given for the apparent increasing incidence of these tumors. **STUDY DESIGN:** Retrospective review of the senior author's (P.A.F.) database of skull base lesions. **SETTING:** Tertiary referral teaching hospital. **PATIENTS:** All patients with a proven diagnosis of endolymphatic sac tumor treated at St Vincent's Hospital, Sydney. **OUTCOME MEASURES:** Survival in months, after surgery. **RESULTS:** Seven cases of endolymphatic sac tumors. All were treated surgically. Mean follow-up of 70.2 months (range, 6–144 mo). **CONCLUSION:** Endolymphatic sac tumors are becoming increasingly recognized because of awareness of their existence as a separate entity from middle ear tumors. This has been achieved by improved imaging and histopathologic techniques. Surgery is the mainstay of treatment.

**Preoperative appearance of facial muscles on magnetic resonance predicts final facial function after acoustic neuroma surgery.** Kaylie, D., M., Jackson, C., G., Aulino, J., M., Gardner, E., K., Weissman, J., L. The Otology Group, Nashville, Tennessee 37203, USA. dkaylie@comcast.net *Otology & Neurotology* (2004) Jul. Vol. 25 (4), pp. 622–6, ISSN: 1531-7129.

**OBJECTIVE:** Several previous studies have shown that muscle appearance on magnetic resonance is a sensitive indicator of muscle denervation. Previous attempts at determining preoperative indicators of final facial function after acoustic neuroma removal have been mostly unsuccessful. The goal of this study was to determine if the appearance of the facial muscles on preoperative imaging is predictive of final facial function after surgical removal of vestibular schwannomas. **STUDY DESIGN:** We conducted a retrospective chart and magnetic resonance review. **SETTING:** This study was conducted at a tertiary referral center. **PATIENTS:** We included all patients who underwent vestibular schwannoma removal between January 1, 1997, and December 31, 2001, with available preoperative magnetic resonance images and a minimum of 12 months follow up. **INTERVENTIONS:** We used translabyrinthine, middle fossa, and suboccipital approaches for tumor removal. A neuroradiologist, blinded to preoperative or final facial function after tumor removal, retrospectively reviewed preoperative magnetic resonance images. **MAIN OUTCOMES MEASURES:** Facial muscles were evaluated on magnetic resonance and classified as symmetric or asymmetric. Facial function was graded using the House-Brackmann scale. Preoperative facial function was noted on the preoperative physical examination. Final function was determined at least 12 months postoperatively. **RESULTS:** A total of 247 patients underwent tumor removal during the study period. One hundred thirty-two patients had adequate preoperative magnetic resonance images. Patients with preoperative facial muscle asymmetry seen on preoperative magnetic resonance indicating muscle atrophy had significantly worse final facial function, regardless of tumor size. **CONCLUSION:** The preoperative appearance of facial muscles provides valuable insight into the physiology of the facial nerve in the presence of vestibular schwannomas. Patients with preoperative facial muscle symmetry have significantly better facial function than those with atrophy.