High-resolution CT finds otosclerosis with a sensitivity of 95%, but patients with negative scans who meet appropriate clinical criteria often have otosclerosis.

**Background:** In the past, CT has been used to make the diagnosis of otosclerosis, and reliabilities of >90% have been reported in some series; however, CT technology has advanced since these early studies.

**Objective:** To re-examine otosclerosis using high-resolution CT scans.

**Design:** Prospective case series.

**Participants:** 209 ears in 200 patients who underwent stapes surgery over a 2-year period.

**Methods:** Mean patient age was 47 years. Patients underwent a high-resolution CT scan with helical acquisition. Reconstructed slices were of thicknesses of 0.6 or 1.0 mm. Sites of otosclerosis were classified by location. The decision to undergo surgery was based on clinical criteria. Air-conduction and bone-conduction audiometry was performed in all patients the day before surgery and 2 months after surgery.

**Interventions:** Stapes surgery.

**Results:** Examination of CT scans revealed that 84.2% were positive for otosclerosis in the operated year, 8.6% were doubtful, and 7.2% were negative. On positive CT scans, otosclerotic hypodensities were classified as anterior fenestral in 96.6%, pericochlear in 12.5%, and internal auditory canal in 9.6%. The round window was involved in only 3%. In 65%, the CT scan was bilaterally positive although only 4.5% were operated bilaterally. In opposite ears with no conductive hearing loss, 60% also had a positive CT. Many of these ears did exhibit some sensorineural hearing loss. Distribution of otosclerotic foci in these contralateral ear scans was similar to that of the affected ear. In opposite ears with normal hearing, 46% demonstrated otosclerotic hypodensities. Ears with a positive CT scan result that underwent surgery had a positive diagnosis of otosclerosis during surgery. In the 18 ears with doubtful hypodensity, 94% had a positive diagnosis of otosclerosis during surgery. Among 15 negative CT scans, 10 were diagnosed as otosclerosis during surgery.

**Conclusions:** Sensitivity of high-resolution CT for otosclerosis diagnosis was 95% and its specificity was >99%. Risk of stapes footplate mobilization was 5% overall, but significantly higher at near 15% if the diagnosis on CT was doubtful or negative.

**Reviewer's Comments:** After reading this paper, I'm unsure what role CT should play in making management decisions in otosclerosis patients. These CTs found otosclerotic foci in a large number of ears with had no conductive hearing loss and normal hearing. Furthermore, even when the scan did not demonstrate any otosclerotic foci, patients still usually were found to have otosclerosis during surgery and got a hearing benefit from the procedure. Thus it does not appear that CT scan would have any impact on management decisions in the vast majority of otosclerosis patients. (Reviewer-Benjamin T. Crane, MD).

© 2010, Oakstone Medical Publishing

Keywords: Otosclerosis, Hearing Loss, Radiology, Conductive Hearing Loss, Stapes

Print Tag: Refer to original journal article
The infralabyrinthine approach offers hearing preservation and low risk of recurrence in the treatment of petrous apex cholesterol granulomas.

**Background:** Cholesterol granulomas are relatively uncommon benign lesions of the temporal bone which classically occur in the petrous apex. Several approaches to draining these have been described and it is often debated which technique is best.

**Objective:** To review the management of petrous apex cholesterol granulomas.

**Design:** Retrospective chart review.

**Participants:** 27 cases which were managed over a 9-year period from 1998 to 2007 who had at least 12 months of follow-up.

**Methods:** All patients had a CT, MRI, audiogram, and documentation of symptoms. Asymptomatic patients were treated with observation (n=12). Those with symptoms were treated surgically via infralabyrinthine approach (n=9), transotic (n=1), infratemporal fossa (n=3), or a combination of approaches (n=2).

**Interventions:** Observation versus surgical drainage.

**Results:** CT scan and MRI findings demonstrated a mean size of 27.6 mm. CT generally demonstrated bone erosion. MRI demonstrated lesions which were hyperintense on T1, T2, and FLAIR. Follow-up period averaged 56 months and no patient who presented with asymptomatic lesions developed symptoms during follow-up. Hearing loss was present in 9 patients, 4 had vertigo and tinnitus, 4 had headaches, 6 had diplopia, 1 had hemifacial spasm, 1 had trigeminal neuralgia, and 2 had facial paresthesias. Only 1 patient had otorrhea. Intraoperative cerebrospinal fluid leaks occurred in 2 cases, and in 1 case the internal carotid artery was opened. Only 1 case in this series experienced a recurrence and this patient was managed conservatively. Post-operative facial nerve palsy occurred in 4 patients. This was House-Brackmann grade II in 1 case, grade V in 2 cases, and grade VI in the final instance. Hearing was preserved in the patients who underwent the infralabyrinthine approach. Of patients who underwent a Fisch type B approach, 2 lost their hearing. Only 1 case in this series experienced a recurrence and this patient was managed conservatively.

**Conclusions:** Symptomatic cholesterol granuloma of the petrous apex can be effectively treated using an infralabyrinthine approach. If hearing preservation is not required, exposure can be improved using an infratemporal fossa and/or transotic approach.

**Reviewer's Comments:** This was a nice review of a series of petrous apex cholesterol granulomas. For me, a key point of this series is that a large number of these lesions are asymptomatic and do not progress to a symptomatic stage. Adequate exposure is a common problem with these cases when hearing preservation is desired, but this series demonstrates good results with the infralabyrinthine approach. (Reviewer-Benjamin T. Crane, MD).

© 2010, Oakstone Medical Publishing

Keywords: Hearing Loss, Tinnitus, Facial Pain, Cholesterol Granuloma, MRI, CT

Print Tag: Refer to original journal article
To Reduce Risk of CSF Leak, Use Translabyrinthine Technique

Less Than 1% Cerebrospinal Fluid Leakage in 1,803 Translabyrinthine Vestibular Schwannoma Surgery Cases.

Merkus P, Taibah A, et al:

Otol Neurotol 2009; December 29 (): epub ahead of print

The translabyrinthine technique for vestibular schwannoma surgery has a significantly lower rate of cerebrospinal fluid leak than other published series.

Background: When Bill House described the translabyrinthine approach in the 1960s, the procedure was associated with a 20% risk of cerebrospinal fluid (CSF) leak. The rate of leak is now lower in most series, but is still a complication almost every neurotologist encounters. This is a potentially serious complication that nearly always increases length of hospital stay and can lead to meningitis.

Objective: To report incidence of CSF leak in a large series of patients and describe techniques which keep the rate low.

Design: Retrospective review.

Participants: 1803 patients who underwent vestibular schwannoma removal via a translabyrinthine approach from July 1993 to July 2009.

Methods: The translabyrinthine approach was performed via standardized technique, which the authors describe. CSF leak was defined as clear fluid draining from the nose, wound, or ear canal. No laboratory tests such as beta2-transferrin were ordered to confirm the leak.

Interventions: Translabyrinthine removal of tumor.

Results: 15 patients (0.8%) developed CSF leaks. The leak occurred 3 days to 42 days after surgery, and the nose was the most common location (n=9) followed by the wound (n=4). Mean tumor size of those with leaks was 1.9 cm and age was 47 years, both of which were not significantly different from the larger group. The authors reviewed papers published in the last decade and found 18 studies of translabyrinthine resections with ≥100 patients. Published rate of CSF leak varied between 1.4% and 20.0% with a pooled rate of 9.5%. The author's rate of CSF leak was significantly lower than the 5 lowest centers.

Conclusions: Translabyrinthine technique minimizes CSF leak risk to 0.8%.

Reviewer's Comments: I enjoyed reading this paper because the authors demonstrate that a low CSF leak can be achieved using surgical technique alone without the use of expensive commercial products. This is also a very large series of patients over an extended period of time so it is difficult to argue with these results, which demonstrate a rate of CSF leak about 10 times lower than the average published series. The issue of what factors put patients at risk for CSF leak remains unresolved. The authors found no correlation with age or tumor size. I would be interested to know if the degree of mastoid pneumatization or a prior history of radiation was a factor but this will have to wait for future studies. (Reviewer-Benjamin T. Crane, MD).

© 2010, Oakstone Medical Publishing

Keywords: Acoustic Neurama, Vestibular Schwannoma, Cerebrospinal Fluid Leak

Print Tag: Refer to original journal article
Elderly patients with dizziness due to presbyastasis who were taught vestibular exercises recovered better than those who were just told to remain active.

**Background:** With age, dizziness not only becomes more common, but it becomes more difficult to manage as other mechanisms of compensation also decline.

**Objective:** To study the effectiveness of vestibular rehabilitation therapy (VRT) in an elderly population.

**Design:** Retrospective case series.

**Participants:** 153 patients with a mean age of 76 years with dizziness due to presbyastasis.

**Methods:** Patients were evaluated for vertigo, dizziness, disequilibrium, as well as any coexisting medical conditions using a standard examination, electronystagmography, posturography, and rotational chair testing. If central pathology was suspected, an MRI was ordered. If no other cause of dizziness was found, presbyastasis was given as the diagnosis. Patients were evaluated using the verbal analogue scale (VAS) and activity-specific balance confidence (ABC) questionnaire. These were assessed initially, at 3 weeks, and at 3 months.

**Interventions:** 107 patients were told to perform VRT exercises 3 times daily. Exercises included side-to-side or up-and-down head motion while maintaining fixation on a target. The speed of head motion was increased with patient tolerance. An additional 46 patients were not taught VRT exercises but were told to carry out daily routine physical activities.

**Results:** Vestibular function testing was abnormal in two-thirds of patients tested, but the nature of these abnormalities is not reported. Scores on VAS were compared between vestibular rehabilitation and non-vestibular rehabilitation groups. These scores were similar between groups prior to treatment and at 3 weeks post treatment. However they were significantly different between the treatment and non-treatment groups when compared 3 months post-treatment. Both groups had a VAS improvement with time. ABC also improved in both groups with each visit. This measure demonstrated significantly improved function in the vestibular rehabilitation group when compared with the untreated group at both 3 weeks and 3 months.

**Conclusions:** This study demonstrates a benefit to teaching patients vestibular rehabilitation exercises over just telling the patients to remain active.

**Reviewer's Comments:** The diagnosis of presbyastasis is not well defined. We are told that most of these patients had abnormal vestibular testing results, but we do not know in what way. I would have preferred more objective documentation of peripheral vestibular function and other medical problems. These patients are not a homogeneous population and I would have liked to see what other factors might affect success with these exercises. It is not clear how the groups were chosen. The large difference in size suggests that it wasn’t random. It is possible that some patients were actually unable to perform these exercises due to other comorbidities, which would bias the findings. Finally, I would have liked to have some reporting of how often these patients actually performed the exercises and if the amount of time they spend doing them correlated with symptomatic improvement. (Reviewer-Benjamin T. Crane, MD).

© 2010, Oakstone Medical Publishing

Keywords: Dizziness, Vestibular Rehabilitation, Vertigo, Vestibular Testing

Print Tag: Refer to original journal article
Hearing preservation appears to improve in patients undergoing a middle fossa approach to vestibular schwannomas versus a retrosigmoid approach.

**Background:** A long-standing debate in the field of otology/neurotology is which approach is superior: the middle fossa or retrosigmoid.

**Objective:** To review a large series of cases in a single group comparing rates of hearing and facial nerve preservation.

**Design:** Retrospective case review.

**Participants:** 88 middle fossa and 50 retrosigmoid cases.

**Methods:** All patients had normal facial nerve function prior to surgery. Groups were similar in age with roughly equal numbers of each gender. Facial nerve function was graded using the House-Brackmann classification. Hearing was classified using the American Academy of Otolaryngology -- Head and Neck Surgery system where grades A & B were considered functional hearing.

**Interventions:** Patients with tumors <1.5 cm in diameter with tumor extension extending at least 5 mm lateral to the porous had their tumor removed by the middle fossa approach. The retrosigmoid approach was used for tumors ≤2 cm when the lateral internal auditory canal was not involved.

**Results:** Facial nerve function was significantly worse in the middle fossa group 2 weeks and 2 months post-surgery. However, this difference disappeared after a year. In the middle fossa group, 88% had facial nerve function of House-Brackmann grade II or better at their last follow up. In the retrosigmoid group, 90% had grade II or better. If grade I was considered, those undergoing retrosigmoid surgery had a significantly higher rate at 88% versus 72% of the middle fossa patients. Tumor size was not a factor. Class A or B hearing preservation was achieved in 38.5% of retrosigmoid cases and 59.3% of middle fossa cases.

**Conclusions:** The middle fossa approach offers better hearing preservation which comes at the cost of an increased risk to the facial nerve.

**Reviewer's Comments:** One difficulty in comparing surgical approaches is that not everyone does them the same, and results also depend on the variation in indications used by individual surgeons. This was not a randomized study, and these groups had significant differences in terms of tumor size and location making it difficult to generalize these results. The choice of systems used to classify hearing can also be problematic. A similar-sized series comparing middle fossa and retrosigmoid approaches published by Mario Sanna in 2004 found the rate of longer facial nerve preservation was dramatically better in the retrosigmoid group. Sanna also pointed out that almost all of these patients lose some hearing, so the rate of hearing preservation is dependent on the classification system used with some systems demonstrating similar results. This study will not be the last word on this topic, but is an interesting read for those of us that treat these tumors. (Reviewer-Benjamin T. Crane, MD).

© 2010, Oakstone Medical Publishing

Keywords: Hearing Loss, Acoustic Neuroma, Vestibular Schwannoma, Facial Nerve

Print Tag: Refer to original journal article
Not all patients receiving chemoradiation for head and neck cancer require gastrostomy tubes for nutritional support.

**Objective:** To assess whether feeding (PEG) tubes were necessary as part of the treatment algorithm for head and neck cancer patients treated with primary chemoradiotherapy (CRT), as evaluated at a single institution.

**Design:** Retrospective case review.

**Participants:** 91 patients undergoing CRT for curative intent for previously untreated head and neck cancers.

**Methods:** Patients were offered PEG tubes on initial evaluation for existing weight loss >10% of baseline, progressive dysphagia, aspiration risk, and overall poor nutritional status. Otherwise, the decision to place a PEG tube during treatment was again based on ongoing weight loss, dysphagia, aspiration, and overall nutritional status. For the study, associations between PEG tube placement and clinical variables were examined using logistic regression.

**Results:** Of patients, 69 (76%) had stage IV disease, 21 (23%) had stage III, and 1 (1%) had stage II disease. Of patients, 80 (90%) had squamous cell cancers. Many different treatment regimens were used, but to simplify: 33 (36%) had induction chemotherapy prior to CRT, 35 (38%) had CRT alone, and 23 (25%) had postoperative CRT. Based on their criteria, 36 (40%) patients required PEG tube placement; 15 had this placed prior to CRT and 21 had it during CRT. Median duration of PEG use was 5.8 months (range 1.2 to 25.8 months). At 24 months, only 2 patients remained PEG dependent. Based on univariate analysis, there were no clinical variables associated with PEG placement. Pre-treatment dysphagia and advanced T-stage were associated with increased duration of PEG use.

**Conclusions:** Most patients undergoing CRT can be managed without PEG tubes, though they require continual follow-up as they go through therapy.

**Reviewer's Comments:** While the authors' conclusions may be true, I had many questions to ask about this study and whether these data are really giving us the entire picture. First, there was no consistency in treatment regimens. To group chemoradiation as a treatment is not accurate. Not only are there differences in agents and dosing, but type and extent of radiation really matters. Secondly, patients receiving postoperative CRT were a group. In my mind, they are a very different cohort than the primary CRT or induction CRT group, and thus should be considered separately. Thirdly, there were no data regarding the amount of weight loss or whether patients required admissions for dehydration or malnutrition. I'd like to know what the problems are with not having PEG tubes. So while it is appealing to avoid unnecessary procedures, the data presented do not convince me that they are unnecessary. (Reviewer-Patrick K. Ha, MD).

© 2010, Oakstone Medical Publishing

Keywords: Chemoradiation, Percutaneous Endoscopic Gastrostomy Tube, Squamous Cell Carcinoma

Print Tag: Refer to original journal article
**Objective:** To illustrate the treatment algorithm for transoral laser microsurgery (TLM) in treating patients with oropharyngeal cancer.

**Design:** Retrospective review.

**Participants/Methods:** 69 patients at 2 tertiary care medical centers who had previously untreated oropharyngeal squamous cell carcinoma who did not receive adjuvant radiotherapy were reviewed. Patients had TLM performed with curative intent along with neck dissection when indicated. Indications for adjuvant radiotherapy included extracapsular extension, bulky or multiple positive nodes (≥N2 disease), positive tumor margins, or lymphovascular invasion at the primary site. Endpoints analyzed were local and locoregional control as well as survival.

**Results:** From 1996 to 2008, 206 patients underwent TLM, with 159 patients (77%) meeting criteria to receive adjuvant radiotherapy. Of those, 44 did not have indication for radiotherapy and 25 patients refused. Thus, 69 patients were analyzed. Mean hospital stay was 3 days (range 1 to 17 days). The majority of patients (84%) did not require tracheostomy, and only a small minority (7%) required g-tube placement. There were 4 major complications, with 2 patients dying within 30 days of surgery, 1 patient dying 2 days after surgery after a myocardial infarction, and 1 patient who committed suicide 2 weeks after surgery. Of patients, 49 (71%) were alive and without disease, and of these, 48 had normal to near-normal swallow function. For patients, 5-year local control rates were 94%. Of patients without indications for adjuvant radiotherapy, 5-year locoregional control rate was 82%. Of patients who refused radiation, 5-year locoregional control was 74%. The 5-year overall survival was 86%.

**Conclusions:** TLM with or without neck dissection is an effective means of treating T1 to T3 oropharyngeal tumors, with good functional and survival outcomes. A portion of patients may thus safely avoid radiation and chemotherapy.

**Reviewer's Comments:** The authors certainly present very favorable oncologic and functional outcomes in this patient population. However, one glaring omission is the inclusion of human papillomavirus status, as we know that this can greatly affect our expectations of survival data. Nonetheless, it is interesting to see that surgery can be a successful primary treatment modality, and in about 20% of patients, radiation can be avoided altogether. Furthermore, the patients are quite functional after TLM. (Reviewer-Patrick K. Ha, MD).
Successful placement of a tracheoesophageal puncture can be accomplished in the office using transnasal esophagoscopy guidance.

**Objective:** To assess outcomes of transnasal esophagoscopy (TNE)-guided tracheoesophageal puncture (TEP) after total laryngectomy.

**Design:** Retrospective chart review.

**Participants:** 39 patients who underwent TNE-TEP at 2 institutions during a 4-year period.

**Methods:** Of patients, 46% experienced preoperative radiation therapy and an additional 13% experienced chemoradiation prior to salvage surgery. Of patients, 64% underwent total laryngectomy with the remainder undergoing extended surgery. Also, 49% had primary closure with 36% requiring free tissue transfer.

Communication outcomes were ranked by speech pathologists at the last visit prior to disease progression and included the Performance Status Scale for Head and Neck Cancer's "Understandability of Speech Subscale" and primary means of communication.

**Results:** Overall success rate for the procedure was 97% with 1 unsuccessful attempt. No statistically significant correlation was found between failure and prior radiation therapy or cricopharyngeal myotomy. Technical difficulty was encountered due to scar formation in 4 subjects, nasopharyngeal stenosis in 1 subject, and cervical esophageal stenosis in 1 subject. Average time to TEP placement after the procedure was 4.3 days. Of subjects, 79% used their TEP as primary communication at their last clinic visit and 64% of those patients were 100% intelligible. Of subjects, 8 were not using their TEP at last follow up.

**Conclusions:** TNE-guided TEP placement is a technique which can be safely and effectively employed for secondary puncture placement.

**Reviewer's Comments:** TEP and voice prosthesis placement have been established as the preferred method for communication rehabilitation after total laryngectomy due to improved naturalness and intelligibility of speech. Many patients are able to undergo primary puncture at the time of laryngectomy; however, a small percentage of patients are deemed to be suboptimal candidates for primary puncture due to factors such as extended reconstruction, cognitive limitations, and motivation factors. Additionally, some patients require re-puncture after a primary puncture has closed. Traditionally, the secondary puncture has required a trip to the operating room and a general anesthetic. The procedure described in this study simplifies this with very good outcomes recorded. The authors report that each patient undergoing this procedure was included for analysis; however, specific criteria establishing candidacy for the procedure are not well-defined. It would be beneficial for readers to have access to which factors might have made patients poor candidates. If inclusion criteria were limited, it would strengthen the applicability of this technique. A fair number of subjects did not continue to use their prosthesis despite successful puncture. This was reportedly due to factors such as cognitive limitations, noncompliance, recurrence, difficulty with stomal occlusion, and frequent leakage through the prosthesis. These findings suggest the importance of a multidisciplinary approach in evaluating candidates for this procedure. (Reviewer-Heather Starmer, MA, CCC-SLP).

© 2010, Oakstone Medical Publishing
Overall quality of surgical care appears to be better at ambulatory surgical care in comparison to a hospital-based facility.

**Background:** In this current climate of changes in health care, cost and quality of health care are being carefully assessed by those who will be paying for them. This is applicable to otolaryngology as well as other surgical fields.

**Objective:** To address whether the site of outpatient surgery, either ambulatory surgery center (ASC) or hospital-based facility (HBF), was important for overall outcome.

**Design:** Retrospective chart review.

**Methods:** At a pediatric academic center, 486 cases were reviewed, focusing on outpatient pediatric otolaryngology procedures. These consisted of pressure equalizing tubes (PET), adenotonsillectomy, dental rehab, and PET/adenoidecomies. The 5 quality measures quantitated safety, patient-centeredness, timeliness, intraoperative efficiency, and equitability. Safety measures consisted of unplanned trips to the operating room (OR), emergency department, or unplanned admissions. Patient-centered quality was measured with a 17-question survey. Timeliness and efficiency were measured from an electronic OR management system that recorded time intervals of the surgery, turnover time, and overall cost of disposables and equipments used. Equitability was measured by evaluating median household income from the census tract and proximity to the facility.

**Results:** In terms of results, HBF had more unexpected events compared to ASC. ASC also had better timeliness and intraoperative efficiency measures. ASC also had 12% to 23% less charges in comparison to HBF. Patient satisfaction survey was comparable in both facilities, but patients treated at HBF tended to live in neighborhoods with less income.

**Conclusions:** Overall, results suggest improved performance for ASC in comparison to HBF.

**Reviewer's Comments:** The content of the abstract was very intriguing, but this report is fraught with various limitations. First, the design shares the majority of limitations. The retrospective study nature limits some of its ability to extract valuable data. It is clear that ASC is more efficient in terms of overall operative and turnover time, but this does not address whether this is due to resident involvement or lack of nursing and anesthesia staff experience. In other words, there were critical variables that can affect the differences between the two facilities, but this was not accounted for in their analysis. Surgeries performed appeared to be identical in groups, but 2 factors in their results suggest that there may selection bias in their study. The ASC group tended to live in wealthier neighborhoods, and tended to have fewer complications. This suggests more complex cases in the HBF, which would explain greater OR time and more use of disposables and consumables during the case. (Reviewer-Young J. Kim, MD).
Endoscopic sinus surgery improves quality of life for patients with chronic rhinosinusitis, particularly those with primary surgical intervention.

**Background:** Given that chronic rhinosinusitis (CRS) severely affects patient quality of life (QOL), instruments have been frequently used to follow those who undergo endoscopic sinus surgery (ESS). Previous studies have attempted to address this, but they were either retrospective or not validated. A few prospective studies have been performed, but these were limited by small sample size.

**Objective:** To evaluate the effect of CRS on QOL in a large patient cohort.

**Design:** Prospective multi-institutional cohort study from tertiary academic centers.

**Participants:** 302 patients with CRS.

**Methods:** Patients were enrolled and their postoperative courses followed for an average of 17 months. Symptoms or signs of asthma, polyposis, environmental allergies, aspirin intolerance, depression, and previous sinus surgeries were documented as clinical variables. Mucosa from the surgeries was analyzed in terms of eosinophilia, basement membrane thickening, and edema. Rhinosinusitis Disability Index (RSDI) and Chronic Sinusitis Survey (CSS) were used to monitor the disease-specific QOL. A general health-related QOL instrument, SF-36, was used to assess overall QOL before and after the surgery. Clinical improvements were defined as having >50% the standard deviation of baseline QOL score preoperatively. Multivariate regression analysis was performed to identify preoperative clinical variables that predicted clinical improvements after surgery.

**Results:** Surgical patients had improvements in all QOL scores. Most notably, >70% of those with the worst preoperative QOL had clinically significant improvements.

**Conclusions:** In terms of clinical characteristics that predict QOL success, patients undergoing primary ESS were twice as likely to improve in terms of the disease-specific QOL compared to patients having revision surgery. Interestingly, those with high eosinophilia density and subepithelial edema appeared to benefit 2 to 4 times QOL compared to those with lower eosinophilia and edema.

**Reviewer's Comments:** Previous QOL studies for ESS have been limited in the fact that they could not be generalized since most had limited number of patients in a single institution. This study corroborates these previous findings that ESS does improve the QOL of patients with CRS. One surprising finding in their multivariate predictive model was that clinical characteristics previously thought to affect QOL were not found to be statistically significant. These include polyposis, asthma, environmental allergies, ASA intolerance, and depression. Univariate analysis showed these factors can affect QOL, but when analyzed in a multivariate fashion, improvements in QOL were not significant. Unfortunately, the authors do not provide an explanation for these discrepancies. (Reviewer-Young J. Kim, MD).

© 2010, Oakstone Medical Publishing

Keywords: Endoscopic Sinus Surgery, Chronic Rhinosinusitis, Quality Of Life

Print Tag: Refer to original journal article
Objective: To determine the effect of adjuvant radiotherapy in patients with regional metastatic melanoma of the head and neck.

Design: Retrospective review.

Participants: 64 patients with regional neck melanoma treated with neck dissection between 1989 and 2004.

Methods: Patients with newly diagnosed melanoma affecting their neck nodes underwent either surgery alone (n=24) or surgery with adjuvant radiotherapy (n=40). Criteria for adjuvant radiotherapy were extracapsular extension, nodes >3 cm, or ≥2 positive nodes. Radiotherapy was given of 6 Gy once a week for 4 to 6 weeks for a total dose of 24 to 36 Gy. Primary end point was ipsilateral regional recurrence with secondary end points of local control, contralateral regional control, disease-free and overall survival.

Results: The 2-year ipsilateral regional recurrence rate in the surgery group was 46% versus only 18% in the surgery/radiotherapy group, though this was not statistically significant. Additionally, the radiotherapy group was much more likely to have more aggressive disease (extracapsular extension, multiple nodes, and larger nodes). Local recurrence and contralateral regional recurrence were not significantly different between groups. Disease-free and overall survival was both worse in the surgery/radiotherapy group. In the surgery group, selective neck dissection was associated with a trend towards increased regional recurrence compared to patients who received a modified neck dissection. However, type of neck dissection did not affect the regional recurrence rate in the surgery/radiation group. On multivariate analysis, the addition of radiation was most significant in reducing regional recurrence in patients with ≥2 nodes.

Conclusions: Regional control is improved with adjuvant radiotherapy in patients who have ≥2 nodes involved with melanoma. In addition, selective neck dissection is associated with an increased chance of regional recurrence in patients who receive surgery alone.

Reviewer's Comments: There is considerable debate as to what the benefits are in adding radiotherapy in patients with melanoma involving regional neck disease. This study helps to answer some questions, though it lacks power to satisfy all of the multivariate analyses that would be nice to see. Nonetheless, it appears that radiotherapy is beneficial in reducing regional recurrence, though doesn't have any effect on survival. (Reviewer-Patrick K. Ha, MD).

© 2010, Oakstone Medical Publishing

Keywords: Melanoma, Radiation, Regional Recurrence, Neck Dissection

Print Tag: Refer to original journal article
Are Midface Lifting Procedures Necessary?

The “Midface-Lift” as a Misnomer for Correctly Identifying Procedures Designed to Lift and Rejuvenate the Cheeks and Malar Regions of the Face.

McCollough EG, Scurry WC Jr, Shirazi MA:

Arch Facial Plast Surg 2009; 11 (July-August): 257-262

The classic sub-superficial musculoaponeurotic system suspension imbrications facelift procedure can significantly rejuvenate the midface.

Background: The aging middle third of the face has traditionally been a challenging area to rejuvenate. Classic signs of aging midface include a deepened nasolabial fold and descending cheek mound. A number of innovative midface-lift procedures have been proposed as independent means to rejuvenate the midface.

Objective: To demonstrate that the classic temporal cheek facelift procedure is sufficient in achieving the desired midface rejuvenation effect.

Design: Retrospective study.

Participants: 53 patients who underwent the classic temporal cheek facelift procedure from January 2005 to June 2007.

Methods: All procedures were performed by the primary author. Pre- and postoperative frontal and oblique views were shown to 3 independent plastic surgeons and assessed on a 4-point scale focusing on the midface including positions of the cheek mound, melolabial fold, oral commissure, and lateral canthus.

Results: Average patient age was 57 years and mean patient follow-up period was 11 months. Based on scores, >60% to 70% of patients achieved significant aesthetic improvement in the midface: cheek mound (79%; n=42), melolabial fold (70%; n=37), oral commissure (72%, n=38), lateral canthus (65%, n=34).

Conclusions: Midface rejuvenation can be achieved by standard temporal cheek facelift procedure without the need for additional separate procedures.

Reviewer’s Comments: A plethora of literature has been written on the different midface lift procedures. As it is often said and suggested by the authors, when many ways exist to combat a single problem, no single method provides the ideal solution. One weakness of this study is that some patients underwent a simultaneous neck-lift as well, and this may contribute to some of the overall cosmetic improvement. The classic sub-superficial musculoaponeurotic system suspension imbrication facelift procedure alone can significantly rejuvenate the midface as shown in this study, particularly in those patients without significant aging neck changes. Conversely, 20% to 30% of those patients who underwent the classic facelift procedure did not receive significant improvement in the midface, reaffirming the challenges encountered by even the most experienced surgeons in rejuvenating the midface. (Reviewer-Tang Ho, MD).

© 2010, Oakstone Medical Publishing

Keywords: Facelift, Midface Lift, Superficial Musculoaponeurotic System

Print Tag: Refer to original journal article
A single case is reported in which electroconvulsive therapy was safely administered in a patient with a cochlear implant.

**Background:** Cochlear implant (CI) recipients are now able to undergo most procedures, but magnetic resonance imaging (MRI) and electroconvulsive therapy (ECT) are currently contraindicated by the Food and Drug Administration (FDA). There have now been small series of patients who have undergone MRI after cochlear implantation. Patients with implanted deep brain stimulators have previously undergone ECT. However, there is concern that the electric current in ECT may damage the implant or the patient.

**Objective:** To report a case of successful ECT in a patient with a CI.

**Design:** Case report.

**Participants:** Patient aged 17 years who received a Nucleus 22 CI at age 3 years and who underwent ETC.

**Discussion:** Patient presented to the emergency department agitated with auditory and visual hallucinations and was diagnosed with delirious mania. He was initially restrained and treated with antipsychotics, benzodiazepines, and anti-seizure medications. After starting clozapine, patient developed fever, muscle rigidity, and neuroleptic malignant syndrome was feared. Because of the life threatening nature of his symptoms, ECT was considered despite the risk to the CI.

**Methods:** Patient underwent 2 unilateral ECT treatments on consecutive days. Settings used were a charge of 48 mC, energy of 9.9 J, static impedance of 2800 omega, frequency of 40 Hz, and duration of 0.75 seconds. Patient had a tonic-clonic seizure lasting <2 minutes.

**Interventions:** Cochlear implantation, ECT.

**Results:** Testing of the CI 17 days after ECT revealed that the device was functioning normally. The psychiatric condition improved and patient was able to use his CI for communication.

**Conclusions:** This CI patient underwent successful ECT without damage to his device. This is the first known reported case of a CI patient undergoing ECT.

**Reviewer's Comments:** This is the first known case of ECT in a cochlear implanted patient and is the type of case that none of us would want to be involved in. Given the patient's condition, the decision to deliver ECT with the implant in place is an understandable one. I believe this is an import case for otolaryngologists to know about in case we are ever consulted on a patient with a similar condition. (Reviewer-Benjamin T. Crane, MD).

© 2010, Oakstone Medical Publishing

Keywords: Hearing Loss, Mania, Cochlear Implant, Electroconvulsive Therapy, Psychiatry

Print Tag: Refer to original journal article
Sutures in Upper Blepharoplasty -- Absorbable Vs Nonabsorbable

Absorbable Suture Compared With Nonabsorbable Suture in Upper Eyelid Blepharoplasty Closure.

Jaggi R, Hart R, Taylor SM:

Arch Facial Plast Surg 2009; 11 (September-October): 349-352

No clinical difference exists in wound healing between absorbable and nonabsorbable suture material in upper blepharoplasty.

**Background:** Complication rates are generally low for upper blepharoplasty and previous studies have not shown any significant different between absorbable versus nonabsorbable sutures in terms of complications. Milia have been shown to be the most common complication in upper blepharoplasty.

**Objective:** To assess overall patient satisfaction with upper blepharoplasty performed with absorbable versus nonabsorbable sutures.

**Design:** Prospective study.

**Participants:** 6 patients with upper blepharoplasty incisions.

**Methods:** Incisions were closed with absorbable sutures (6.0 fast-absorbing gut) in one eyelid and nonabsorbable sutures (6.0 nylon) in the opposite eyelid. Outcomes were assessed by a previously validated questionnaire (Blepharoplasty Outcome Evaluation) and a visual analog scale evaluating the visibility of the surgical scar and discomfort associated with the experience.

**Results:** Neither suture type was found to be superior on statistical analysis. Overall satisfaction score exhibited a trend toward absorbable suture as did the scar severity and pain scale, but did not reach statistical significance. No major complication was seen in any of the patients.

**Conclusions:** Absorbable suture is an excellent alternative to the traditional nonabsorbable suture used in blepharoplasty wound closure. No clinical difference was seen between absorbable and nonabsorbable sutures with respect to scar quality, pain, and overall patient satisfaction.

**Reviewer's Comments:** Absorbable sutures can cause notable inflammation and erythema during the degradation process, but because no removal is necessary they are associated with less pain. Nonabsorbable sutures cause less tissue reactivity but result in significant discomfort in certain patients during the removal process. This study, albeit underpowered, was performed in a prospective manner. It could certainly benefit from enrollment of additional subjects. It affirms what has been observed clinically by many, in that no significant healing differences exist between absorbable and nonabsorbable sutures. (Reviewer-Tang Ho, MD).

© 2010, Oakstone Medical Publishing

Keywords: Wound healing, Blepharoplasty, Sutures

Print Tag: Refer to original journal article
Intraoperative PTH May Not Be Necessary For Certain Adenomas


Smith N, Magnuson JS, et al:


Intraoperative parathyroid hormone may not be necessary for well-localized adenomas using sestamibi and high-resolution ultrasound.

Background: With recent advances in localization studies for parathyroid adenomas, some have questioned the use of intraoperative parathyroid hormone (PTH) assay. This is particularly important given that the turnover time for intraoperative PTH can take longer than the surgery. A recent report from Medical College of Georgia asked this question, but they did not have firm data to support their hypothesis.

Objective: To determine if intraoperative PTH is necessary in certain minimally invasive parathyroidectomy cases.

Design: Retrospective review.

Participants: 428 patients who underwent parathyroidectomy for primary hyperparathyroidism (HPT) without previous parathyroid explorations.

Methods: Included were those with preoperative sestamibi, high-resolution ultrasound, and intraoperative PTH values available. Those with thyroid disease or non-primary HPT were excluded. Preoperative localizing tests were characterized as concordant/localizing, concordant/non-localizing, or discordant.

Results: Of patients, 209 patients had concordant/localizing preoperative studies. Among groups, 97% of patients had appropriate drop (<50%) of intraoperative PTH value. In the 4 concordant/localizing cases that did not drop appropriately in intraoperative PTH value, bilateral exploration was performed. Of those with discordant studies, 87% has successful minimally invasive parathyroidectomy using intraoperative PTH values.

Conclusions: For patients with 2 preoperative tests that are concordant and localizing, intraoperative PTH adds little to the success of the surgery.

Reviewer’s Comments: This is now the fourth study demonstrating that intraoperative PTH may not be necessary for parathyroid adenomas that are well localized with 2 independent preoperative studies. Rather than utilizing resources for more retrospective studies that will yield the same results, time appears to be ripe for prospective studies to rest this issue. (Reviewer-Young J. Kim, MD).

© 2010, Oakstone Medical Publishing

Keywords: Minimally Invasive Parathyroidectomy, Intraoperative Parathyroid, Sestamibi, Ultrasound

Print Tag: Refer to original journal article
Method to Manage Excess Septal Caudal Cartilage Appears Successful

Cutting and Suture Technique of the Caudal Septal Cartilage for the Management of Caudal Septal Deviation.

Jang YJ, Yeo N-K, Wang JH:


The L-strut of caudal septal deviation can be straightened by cutting and removing excess caudal cartilage then re-suturing to maintain nasal tip structures.

Background: Most otolaryngologists in practice have been trained to believe that the L-strut is sacred structure that should be violated during septoplasty. However, for those with severe caudal septal deviation, standard submucous resection does not fully straighten the midline and causes persistent nasal airway obstruction. There have been multiple methods to correct this, and this report adds to the armamentarium of methods to address is difficult issue.

Objective: To introduce the caudal septal cutting and suture method of managing caudal septal deviation and to evaluate efficacy and outcomes.

Design: Retrospective study.

Participants: 45 patients who underwent endonasal septoplasty.

Methods: The surgery, called caudal septal cutting and suture method, consisted of typical approaches for endonasal septoplasty. Using a hemitransfixion incision, the caudal aspect of the L-strut was mobilized and cut at the most convex portion of deviation. Excess portion was removed, and remnants ends were sutured in an overlapping fashion. In some cases, septal batten grafts were used to bolster this repair. Patients were followed from 3 to 31 months. Nasal airway obstruction was assessed using visual analog scale, and septal deviation was assessed by an independent surgeon using photographs. Some patients also underwent turbinate reduction as well.

Results: According to the subjective visual analog scale, patients reported improvements in nasal airway obstruction. Most patients had improved caudal septal deviation on exam. No frank collapse of the tip was noted, but one patient did have saddle nose deformity. Conclusion: This method of cutting and suturing the L-strut can improve caudal septal deviation.

Reviewer’s Comments: For those with excess caudal septal cartilage, this method can be used to improved nasal airway obstruction. For those patients undergoing open septorhinoplasty, a comparable method has been introduced previously with success. However, the worry of saddle nose deformity is a real concern given one of their patients did have this complication. Furthermore, long-term results are not fully reported here. (Reviewer-Young J. Kim, MD).

© 2010, Oakstone Medical Publishing

Keywords: Septoplasty, L-Strut, Nasal Airway Obstruction, Septal Deviation

Print Tag: Refer to original journal article
Deep midface lesions whereby the facial nerve branches are at risk can be safely approached using a parotidotomy approach.

Background: The approach to the midface for excisional biopsies and resection can be problematic when confronted with need for facial incisions and to minimize any injury to the facial nerve.

Objective: To cite experience with the parotidotomy approach to the deep tissue of the midface.

Design: Case series study.

Participants: 7 patients with deep midface lesions that required surgical excisions.

Methods: The parotidotomy approach is initiated using either Blair incision or facelift incision. The pes is identified and midface branches are dissected. The parotid tissue is bisected along the zygomatic and buccal branches. The Stenson duct is also identified and preserved. The midface lesion is identified and resected with a normal cuff of tissue. The bisected gland is repositioned.

Results: Of patients, 2 were low-grade salivary gland malignancies, and the rest were benign lesions. All were measured to be <1.5cm. All were satisfied with the cosmetic results. Conclusion: This parotidotomy approach is feasible for deep midface lesions that require excision. There was no permanent facial nerve paralysis or Frey's syndrome in this series.

Reviewer's Comments: Although reported as a novel method, this method is an extension of partial parotidotomy with nerve dissection for small parotid lesions. The surgical steps are comparable to facial nerve dissection with the addition of identification of Stenson duct deep to the nerve and the re-approximation of bisected parotid tissue. Although the report stated that cosmetic results were good, there were no clear methods to measure this. (Reviewer-Young J. Kim, MD).

© 2010, Oakstone Medical Publishing

Keywords: Midface Lesions, Parotidotomy Approach

Print Tag: Refer to original journal article
Anatomic variations may explain failure of intratympanic drug delivery in some cases.

**Background:** There have been several recent studies of intratympanic drug delivery. Most of these therapies require the medication to diffuse through the round window membrane (RWM) to be effective. In a fraction of patients who undergo this therapy, it does not have an effect, which may be due to the medication not entering the inner ear. The factors which improve diffusion through the RWM include low molecular weight medications, high-osmolarity solution, and suctioning near the RWM.

**Objective:** To describe anatomy variation in the RWM, which may be a barrier to drug delivery.

**Design:** Review of temporal bone specimens.

**Participants:** 117 temporal bone donors.

**Methods:** Histology of 202 temporal bones from the author’s institution was reviewed. Two cases of false RWN are presented.

**Interventions:** None.

**Results:** Previous literature of the morphologic integrity of the RWM is reviewed. In this series, 11% have fibrous tissue or fat plug blocking the RWN, and 21.3% had an extraneous (false) RWN. These false membranes are 3-layered with normal appearing epithelium, which suggest they are normal epithelium than has become draped over the promontory.

**Conclusions:** Anatomic variations may explain failure of intratympanic drug delivery in some cases.

**Reviewer’s Comments:** Intratympanic drug deliveries of steroids for sudden sensorineural hearing loss and Ménière’s disease have recently become popular and are generally effective treatments. These methods have the advantage of a potentially high concentration of drug were it is needed while avoiding system side effects. However, these methods also have the disadvantage in that it is not possible to know exactly what concentration of drug is being delivered. Because of this, the effects of these treatments can be variable. Attempts have been made to adjust the formulations of these medications to improve delivery to the inner ear. This report reinforces the point that anatomic variation exists and may be a cause of failure of drug delivery. Reasons for these anatomic variations are not known, but should be considered by clinicians in patients who do not respond to therapy. These results suggest that exploring the round window and removing these false membranes may improve the response to therapy in some patients who fail initial therapy. (Reviewer-Benjamin T. Crane, MD).

© 2010, Oakstone Medical Publishing

Keywords: Hearing Loss, Intratympanic Drug Delivery, Histopathology, Ménière’s, Sudden Hearing Loss

Print Tag: Refer to original journal article
The ability to stimulate the dissected recurrent laryngeal nerve at a threshold ≤0.5mA can predict whether the nerve will function postoperatively.

**Background:** Use of a recurrent laryngeal nerve (RLN) monitoring device is controversial; there is no clear evidence that its use will decrease the frequency of nerve injury. However, others have used it to locate the nerve using high currency on the nerve stimulator.

**Objective:** To determine if a nerve stimulator may be used to predict the function of the RLN postoperatively.

**Design:** Prospective cohort outcomes study.

**Participants:** 210 patients undergoing thyroidectomy.

**Methods:** 273 nerves were assessed. Fiberoptic laryngoscopy was used to assess nerve function before and after the surgery. Intraoperative, the length of nerve dissected and the minimum milliamp stimulus needed to generate a response was measured. Extent of nerve dissection, minimum threshold for stimulation, and nerve function postoperatively were correlated with independent t test. Xomed NIM II monitoring and stimulator system was used throughout the study.

**Results:** Of nerves dissected, only 10 had nerve dysfunction postoperatively. When compared to the normally functioning nerve, the injured nerve required statistically significant higher milliamp of stimulation. Greater length of nerve dissection was associated with normal nerve function, but this variable was not statistically significant.

**Conclusion:** Recurrent laryngeal nerves that stimulate at ≤0.5mA are more likely to have normal nerve function.

**Reviewer's Comments:** The biggest criticism of this report is the low number of abnormal nerves used for this study. Only 10 abnormal nerves were found throughout the study. There is also the variation created with how each nerve is monitored throughout the surgery. There is no documentation of impedance of the electromyography probes used during the surgery. The authors acknowledge that the nerve stimulator varied whether a layer of fascia or blood covered the nerve. In short, this study falls short in demonstrating whether nerve monitors should be used for thyroidectomy, but the result from this study is consistent with previous reports which state nerves that stimulate with ≤0.5mA are normally functioning nerves. (Reviewer-Young J. Kim, MD).

© 2010, Oakstone Medical Publishing

Keywords: Thyroidectomy, Recurrent Laryngeal Nerve

Print Tag: Refer to original journal article
Opened vials of Ciprodex and Gentamicin drops can be effective against *Staphylococcus aureus* and *Pseudomonas aeruginosa* after 4 months.

**Background:** Although there are dates on the antibiotic drops, there are no clear clinical data that these expiration dates are applicable in patients who require more frequent use of these medications. Frequently, the pharmaceutical companies recommend that these medications are discarded one month after their use.

**Objective:** To determine an empirical method evaluating whether these antibiotic drops can be used after they have been used previously for otitis.

**Design:** Experimental study.

**Methods:** Commercially available antibiotic ear drops that contained ciprofloxacin and gentamicin were tested for their efficacy on agar plates containing both *Staphylococcus aureus* and *Pseudomonas aeruginosa*. Secondly, they looked for contamination from opened and used vials.

**Results:** Using commercially available meds containing ciprofloxacin and gentamicin, both medications continued to show effectiveness against both *Staph* and *Pseudomonas* over a 4-month period in a laboratory setting. Furthermore, no opened vials grew out any contamination in laboratory culture setting. Moreover, even vials that were used by infected patients did not grow out any contaminations.

**Conclusions:** Antibiotic ear drops that contain ciprofloxacin or gentamicin can be used even after 4 months of opening and using the vial.

**Reviewer’s Comments:** This was a sound, clinical study showing that we should be wary of pharmaceutical companies. Most companies recommend that the medication should be discarded after 1 month. However, this study demonstrates that the medications can last longer than this. The biggest limitation of this study was that the agar plate titration was stopped at 4 months, limiting any information as to how long these medications can be stored after opening. Of course, the study was also focused only on testing against *Staph* and *Pseudomonas*. The paper cannot conclude that the used vials can be effective for ear infections in patients, but they have convincing data that empiric treatment with 4 month old vials is clinically sound. (Reviewer-Young J. Kim, MD).

© 2010, Oakstone Medical Publishing

Keywords: Otitis Media Therapy, Antibacterial Agents, Topical Administration, Gentamicin, Ciprofloxacin

Print Tag: Refer to original journal article