Pathogens That Cause Malignant Otitis Externa Have Changed

Malignant Otitis Externa: Evolving Pathogens and Implications for Diagnosis and Treatment.
Hobson CE, Moy JD, et al:

Otolaryngol Head Neck Surg 2014; (March 26): epub ahead of print

Although *Pseudomonas* has historically caused the vast majority of malignant otitis externa cases, it may no longer be responsible for the majority of cases.

**Background:** Malignant otitis externa (MOE) is essentially an osteomyelitis of the temporal bone and surrounding soft tissue that can be life threatening. It is classically caused by *Pseudomonas aeruginosa.*

**Objective:** To evaluate recent clinical presentations of MOE at the authors' institution.

**Design:** Retrospective review.

**Participants:** Twenty patients (12 men), with a mean age of 65 years at diagnosis, were identified for this study.

**Methods:** All patients diagnosed with MOE between 1995 and 2012 were reviewed. The diagnosis on these cases was based on the Cohen criteria with some modifications. A CT scan showing bony erosion was used instead of a technetium-99 scan. Usually, antibiotics were prescribed although mastoidectomy was also performed in some patients.

**Results:** Data on culture and sensitivity were documented for all patients. Nine patients (45%) had cultures that grew *Pseudomonas aeruginosa.* All of these cases were sensitive to ciprofloxacin, but 1 was resistant to levofloxacin. Two cultures had methicillin-resistant *Staphylococcus aureus* (MRSA) in addition to *Pseudomonas.* Three patients (15%) had cultures positive for only MRSA. One had MRSA and *Klebsiella,* and another had pan-resistant *Acinetobacter.* Of the MRSA cases, 1 was resistant to clindamycin. All MRSA cases were thought to be sensitive to vancomycin, Bactrim, or doxycycline. In the 5 remaining cases, there were multiple organisms and many cultures were polymicrobial. These included *Enterococcus* in 2 patients, methicillin-sensitive *S aureus* (MSSA) in 1, other varieties of Staphylococcus in 1, *Candida* in 1, *Aspergillus* in 1, and others. Three patients had negative cultures. One-third of the patients infected with *Pseudomonas* had a facial palsy. The facial palsy was never seen in an MRSA-infected patient, but because of the relatively small numbers in this series this difference was not significant. Seventy-five percent of the patients had diabetes including all 9 patients with *Pseudomonas.* Only 33% of MRSA-infected patients had diabetes. This difference was statistically significant (*P* =0.04). Seventy-five percent of the patients had documented resolution of symptoms. One died of a central catheter infection while being treated, and the others were lost to follow-up.

The mean antibiotic course was 9.2 weeks, but the most frequent duration of treatment was 6 weeks. Three patients had mastoidectomy. Of the *Pseudomonas*-infected patients, 5 of the 8 who had a documented resolution of symptoms were treated with oral quinolones. The remaining 3 also had IV antibiotics.

**Conclusions:** In this series, only 45% of MOE cases had cultures positive for *Pseudomonas.*

**Reviewer's Comments:** Over the past 20 years there has been a shift in the primary pathogen causing MOE from *Pseudomonas* towards MRSA. The reason for this is not clear but may be related to ciprofloxacin being more commonly used. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Diabetes, Immunosuppression, Infectious Disease, Otitis, Osteomyelitis

Print Tag: Refer to original journal article
Is There a Causal Link Between Meniere Disease and Allergy?

The Link Between Allergy and Ménière’s Disease.

Weinreich HM, Agrawal Y:

Curr Opin Otolaryngol Head Neck Surg 2014; (February 26): epub ahead of print

Several recent articles have pointed out an association between Ménière disease and allergy, but it is not clear that there is a causal link.

**Background:** Ménière disease (MD) was first described >150 years ago. There are now several effective treatments, but it is unclear what causes MD. Many patients have noticed associations between vertigo attacks and weather patterns or dietary factors. A current popular idea is that there may be an association between MD and migraine.

**Objective:** Review the current literature on the correlation between MD and allergy.

**Design:** This review article included 16 recently published papers looking at allergy and MD.

**Methods:** The literature was reviewed, and expert opinion was rendered. The current status of the literature does not allow more in depth meta-analysis type review.

**Results:** This association between MD and allergy was first proposed in 1923. In this early case, the MD symptoms resolved after treatment with epinephrine. More recent cross-sectional surveys have noted the prevalence of diagnosed allergy is 3 times higher in those with MD relative to the general population; 58% of those with MD had a history of allergy and 41% had a positive skin test. It was also shown that MD patients have a greater chance of elevated IgE levels, interleukins, immune complexes, and autoantibodies relative to the normal population. Histamine receptors have been found in the endolymphatic sac (ELS), which supports these theories. Food allergies have also been proposed, and wheat or gliadin is the most common food allergen in MD patients. One recent study demonstrated an early phase response to gliadin in 8 of 33 MD patients with the remaining patients demonstrating a late-phase response. A study by Topuz et al tried to further establish the allergic response by giving a prick test then performing electrocochleography (ECochG). After a subsequent exposure, 63% of patients experienced tinnitus and 12% had vertigo. The summation potential/action potential ratio on ECochG of ≥0.5 went from 29% of ears to >70%. There may be confounding factors in these studies. One factor is that there is some overlap between MD and migraine symptoms, and some have argued that the association is between migraine and allergy rather than MD and allergy. There are currently no studies that have examined the possible correlation between MD and allergies using a multivariable analysis.

**Conclusions:** Although there are several studies that show a correlation between MD and allergy, there are no studies that have verified this with multivariate analysis. There are also no good studies demonstrating that MD can be better controlled by treating allergy symptoms.

**Reviewer’s Comments:** This is a hot area right now, and although there appears to be some association between MD and allergy, it is far from certain that allergies can cause MD or that treatment of allergies can improve MD symptoms. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Ménière Disease, Endolymphatic Hydrops, Allergy

Print Tag: Refer to original journal article
Are Young IDA Patients At Higher Risk for SSNHL?

Sudden Sensorineural Hearing Loss Associated With Iron-Deficiency Anemia: A Population-Based Study.

Chung SD, Chen PY, et al:


In young patients with iron-deficiency anemia, the odds ratio of developing sudden sensorineural hearing loss is significantly higher than that seen in a control population.

**Background:** Sudden sensorineural hearing loss (SSNHL) has an annual incidence of 5 to 300 cases per 100,000 population. Most of these cases are idiopathic although several potential mechanisms and etiologies have been proposed.

**Objective:** To describe the correlation between iron-deficiency anemia (IDA) and SSNHL.

**Design:** Retrospective database review.

**Participants:** A total of 4004 patients aged ≥18 years who were given the diagnosis of SSNHL between 2001 and 2011, as well as 12,012 controls, were analyzed.

**Methods:** The Longitudinal Health Insurance Database (LHID2000) includes one million patients randomly selected from almost 24 million who are enrolled in the Taiwan National Health Insurance program. Patients with a diagnosis of SSNHL on 2 consecutive visits were included.

**Results:** Patients who experienced SSNHL were significantly more likely to have several medical conditions than were controls \((P < 0.001)\). These included diabetes, hypertension, coronary artery disease, high cholesterol, and renal disease. There was no significant difference in alcohol abuse between the 2 populations. IDA was present in 4.3% of the patients with SSNHL, but only 3% of the controls. Although this difference is small, due to the large sample size, it was also highly significantly \((P < 0.001)\) using the chi squared test. The odds ratio of having previously diagnosed IDA was 1.34 in the SSNHL patients relative to the controls, even after controlling for potentially cofounding conditions including income, geographic location, and medical comorbidities including those previously mentioned. The 95% CI was 1.11 to 1.61. The strength of the relationship between IDA and SSNHL was strongest in the younger patients. Among those ≤44 years, the odds ratio was 1.91, and for those aged >66 years, it was no longer significant.

**Conclusions:** Younger patients with a history of IDA are at significantly higher risk for SSNHL.

**Reviewer's Comments:** The authors suggest that when IDA is found in patients with SSNHL that the anemia should be treated aggressively, although they do not have any data to demonstrate that this might improve the hearing. They also point out some potential mechanisms for IDA to cause SSNHL. The obvious one is a disturbance of hemodynamics which leads to vascular compromise. A less obvious mechanism is the disturbance of iron metabolism, which leads to cochlear damage. Although I found this association interesting and there are some plausible mechanisms to describe it, IDA is at best a minor factor contributing to SSNHL as <5% of those with SSNHL actually had IDA, which is only slightly higher than the control population.

(Reviewer-Benjamin T. Crane, MD).

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Keywords: Sudden Sensorineural Hearing Loss, Iron-Deficiency Anemia, Diet

Print Tag: Refer to original journal article
High Coffee Intake May Be a Treatment for Tinnitus

A Prospective Study of Caffeine Intake and Risk of Incident Tinnitus.
Glicksman JT, Curhan SG, Curhan GC:

Am J Med 2014; (March 6): epub ahead of print

High caffeine intake is associated with a decreased incidence of tinnitus.

Background: Tinnitus is a common patient complaint. Decreasing caffeine intake is frequently recommended as a treatment strategy, but the value of this is not proven.

Objective: To assess the correlation between caffeine intake and tinnitus in a large cross-sectional database.

Design/Participants: This prospective study included a cohort of women who participated in the Nurses’ Health Study.

Methods: Caffeine intake was assessed starting in 1991. Participants were asked about several caffeine-containing foods and drinks including soda, coffee, and chocolate and about the number of servings each day or month. Caffeine intake was calculated using average data. For instance, a cup of coffee has 137 mg of caffeine and there are 46 mg per can of soda. Tinnitus was ascertained on the 2009 survey, which asked if participants had experienced tinnitus during the prior 12 months and if so at what age this began. The survey also asked about other factors thought to be associated with tinnitus such as hearing loss, medication use, diabetes, hypertension, multiple sclerosis, high BMI, smoking, and depression.

Results: A total of 65,085 women were included in the analysis. At the baseline, the mean age of the cohort was 36 years, mean body mass index (BMI) was 24.5, and the average caffeine intake was 242 mg/day. The rate of tinnitus increased with age from 104 per 100,000 person-years for patients <40 years of age to 1273 per 100,000 person-years for those aged ≥50 years. With increasing caffeine intake, there were greater odds of smoking, depression, and aspirin use. The majority of caffeine (70%) was from coffee. After adjusting for age, there was a significant inverse association between caffeine intake and tinnitus. The adjusted hazard ratio (HR) of the association between caffeine and tinnitus was 0.89 for caffeine between 450 and 599 mg/day and 0.83 for ≥600 mg/day. Both of these were highly significant, and the 95% CI of both figures remained below unity. When other potentially confounding factors were analyzed, the HR was even lower at 0.85 for the lower level of caffeine intake and 0.79 for rates ≥600 mg/day.

Conclusions: Caffeine intake >450 mg/day is associated with a decreased incidence of tinnitus.

Reviewer’s Comments: Although the authors market this as a prospective study, it really is not because the subjects were asked in 2009 to report if they had tinnitus and when this tinnitus began. Thus, this study could have suffered from recall bias, which is not typically present in prospective studies. The study also does not attempt to determine the relative severity of the tinnitus. Only female nurses were included, so it is unclear how applicable these findings are to the general population. It is a provocative finding, and one that will make me reconsider asking my tinnitus patients to try cutting out caffeine. In fact, this study suggests that the opposite strategy of increasing caffeine intake might be successful. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Tinnitus, Hearing Loss, Caffeine

Print Tag: Refer to original journal article
Middle Ear Implants vs Traditional Hearing Aids

Middle Ear Implants for Rehabilitation of Sensorineural Hearing Loss: A Systematic Review of FDA Approved Devices.

Kahue CN, Carlson ML, et al:

Otol Neurotol 2014; (March 17): epub ahead of print

The middle ear implants are similar to hearing aids when audiometric criteria are considered.

Background: Middle ear implants (MEIs) have potential advantages over traditional hearing aids (HAs) including avoidance of acoustic feedback, potentially less distortion, and avoidance of the occlusion effect.

Objective: To systematically review the published literature on the 3 major MEI devices.

Design: This literature review and meta-analysis included 17 studies reporting on results on 503 ears. Average patient age was 58 years, and males accounted for 57% of those studied.

Methods: Following a search of the literature, only articles that included the 3 U.S. Food and Drug Administration (FDA)-approved devices (Envoy Esteem, Otothonix Maxum, and MED-EL Vibrant Soundbridge) were included. Studies had to include purely sensorineural hearing loss, at least 5 implanted ears, and pre- and postoperative data. In cases of studies that reported on the same series of patients, only the most recent study was included.

Results: The Maxum had 3 articles (190 ears), the Envoy Esteem had 5 studies (102 ears), and the Med-EL Vibrant Soundbridge had 9 studies (211 ears). No statistically significant loss in air or bone conduction was reported after surgery except for a single study that reported a 7 dB decline. All studies that compared preoperative unaided hearing with postoperative MEI-aided hearing reported a significant improvement. The average improvement was 25 dB, with a range of 16 to 48 dB. In the studies that compared the best aided preoperative hearing with post-MEI results, 75% of the studies demonstrated a <10 dB difference with the maximum being 13 dB and the average difference being 8 dB. Some studies actually found worse hearing in MEI relative to the best aided condition preoperatively. Only 1 study demonstrated a statistically significant difference between the best aided preoperative hearing and after MEI. The functional gain was similar across manufacturers. When speech recognition was examined, there were often large differences in MEIs relative to the unaided condition with an average improvement of 44%. When the MEI was compared with conventional hearing aids, the difference was only 9.2%. Four studies did find a significant improvement between MEIs and hearing aids, but 1 study found the results were significantly worse with MEIs. To assess subjective benefits of the MEIs, 7 studies used the Abbreviated Profile of Hearing Aid Benefit (APHAB), and these studies reported a benefit with MEIs. Adverse events included device malfunction requiring explantation (11.4%) and permanent facial paralysis (0.8%).

Conclusions: Hearing improvement after MEI is similar to that with HAs, but patient-perceived outcomes may give an advantage to MEIs.

Reviewer's Comments: Although MEIs offer some potential advantages, this paper suggests that real world advantages may be limited. Significant disadvantages include costs 3 to 5 times higher than HAs and the need for a surgical procedure. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Hearing Loss, Hearing Aid, Middle Ear Implant

Print Tag: Refer to original journal article
Can Cochlear Implant Users Tune a Guitar Better Than the Rest of Us?

Accurate Guitar Tuning by Cochlear Implant Musicians.
Lu T, Huang J, Zeng F-G:

PLoS One 2014; 9 (March): e92454

Background: Cochlear implantation (CI) has revolutionized treatment of profound hearing loss. Although many of these patients gain excellent speech discrimination ability, perception of music remains a serious limitation of the technology.

Objective: To describe pitch discrimination during a task in which listeners compare a tone to a reference stimulus similar to what might be done in tuning a musical instrument.

Design: This prospective study included 35-year-old musician CI user with profound bilateral deafness, a 49-year-old musician who used a CI in one ear and had normal hearing in the contralateral ear, and a 40-year-old woman who was not a musician but also had a CI in one ear and normal hearing on the other side.

Methods: Subjects underwent a psychophysical procedure in which computer-generated tones were delivered directly to the CI. The subject manually adjusted the pitch in increments as small as 0.1 Hz until two tones were perceived as the same. These were done at tones that were a minimum of 540 Hz. In hearing subjects, the task was also done using the normal hearing ear.

Results: CI users noticed an audible vibration sensation when the two tones were not matched. These amplitude modulations are commonly referred to as beats. Using this phenomenon, the musician CI user who was deaf in both ears was able to match the pitch of the test stimulus within 0.3 Hz. The musician with a CI in only ear was also able to match frequencies within 0.3 Hz using his CI. But this individual was only able to match the frequencies within 0.9 Hz using his normal hearing ear. This represented significantly better performance with the CI. In the non-musician, by using her CI, she was able to match frequencies within 2 Hz and in her normal hearing ear it was approximately 6 Hz. The reason for this is thought to be due to the CI ears being able to discriminate small changes in amplitude modulation required to identify the beats. A normal ear can detect a 5% to 10% amplitude difference, but a CI user can do better at 1% to 3%.

Conclusions: CI users can match the frequency of 2 simultaneous tones better.

Reviewer's Comments: This task probably is not very clinically relevant, as few CI users will actually do this. However, I do get a lot of potential CI candidates who have questions about music perception, and I have some patients who have not gotten a CI even though it is probably the best option for them due to fears about music perception being poor. Discussing studies like this with them might help convince them of additional benefits of CI and tip the balance toward getting a CI. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Hearing Loss, Music Perception, Cochlear Implantation, Guitar Tuning

Print Tag: Refer to original journal article
Giant cell tumor is a rare benign but locally aggressive tumor that sometimes involves the skull base. Complete resection is recommended.

**Background:** Giant cell tumors (GCT) of bone are relatively rare with only a few cases reported in the head and neck. This recent series is the largest yet of skull base GCT.

**Objective:** To retrospectively review the author’s experience with GCT of the skull base.

**Design:** Retrospective case series.

**Participants:** Seven patients were encountered (5 males and 2 females, ranging in age from 36 to 57 years).

**Methods:** Cases between 1993 and 2013 were reviewed. All patients were treated surgically. Approaches included the infratemporal fossa approach (ITFA), Fisch types B and D, as well as middle cranial fossa (MCF) approaches.

**Results:** The principle presenting symptoms were hearing loss (86%), tinnitus (71%), and swelling (43%). Audiometry confirmed conductive hearing loss in 71%. Imaging was performed in all patients and demonstrated involvement of the middle ear in 86%, the temporomandibular joint in 57%, and the petrous bone in 28.6%. The most common surgical approach was the ITFA type B, which was used in 71% of the cases. The ITFA type D and MCF approach each had 1 patient. One patient died from the disease (14% of the experience). In this paper, the authors reviewed the details of each of these 7 cases independently. The duration of symptoms at presentation ranged from 2 to 36 months, and size of the lesions ranged from 2.5 to 6 cm. The lesions seen on imaging were generally osteolytic. In 6 of the 7 patients, a total resection was completed. In the resected patients, follow-up was between 15 months and 10 years, and no recurrence was noted in any of these patients. In 1 patient who had a subtotal resection due to possible lower cranial nerve involvement, postoperative radiotherapy was given. After 1 year, there was rapid growth of the tumor with involvement of vital intracranial structures. This patient later had a second stage salvage surgery and further radiotherapy and died 2 years afterwards secondary to brainstem compression.

**Conclusions:** GCTs of the skull base are best treated with complete resection.

**Reviewer’s Comments:** The authors reviewed some prior literature on GCT of the skull base that included 12 papers reporting 15 cases. In these cases, the authors mostly achieved complete tumor removal. Long-term survival is difficult to assess from these case reports, since the follow-up was generally limited and not reported in many of the cases. There is likely to be a strong publication bias toward positive outcomes. Radiation therapy in these patients has been controversial since a 1974 paper reported malignant transformation was possible. However, a later series of 58 patients with GCT treated by radiation reported no malignant transformations. It seems agreed that radiation should be reserved for the incompletely resected on recurrent tumor. (Reviewer-Benjamin T. Crane, MD).

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**Keywords:** Giant Cell Tumor, Conductive Hearing Loss, Radiotherapy

Print Tag: Refer to original journal article
What Is a True Total Thyroidecotomy?

Measuring the Extent of Total Thyroidectomy for Differentiated Thyroid Carcinoma Using Radioactive Iodine Imaging: Relationship With Serum Thyroglobulin and Clinical Outcomes.

Holsinger FC, Ramaswamy U, et al:


A radioactive iodine uptake value <0.2% of administered dose is associated with lower stimulated thyroglobulin levels postoperatively.

Background: One point of controversy in endocrine surgery continues to be the extent of total thyroidectomy for well-differentiated carcinoma. Part of the problem comes from the fact that total thyroidectomy for one surgeon is not the same for another surgeon. The other problem with this issue is whether there is any benefit of performing a clean total thyroidectomy in comparison to near total thyroidectomy since the overall prognosis of patients with well-differentiated thyroid carcinoma (WDTC) is excellent regardless of the extent of surgery. Some endocrine surgeons and endocrinologists would argue that the ease of follow-up after the treatment should push the benefit towards a true total thyroidectomy, but this is still an area of controversy.

Objective: To examine what constituted a true total thyroidectomy with respect to the radioactive iodine (RAI) uptake after the surgery.

Methods: The authors correlated the RAI uptake value with stimulated thyroglobulin uptake measurements from the serum after the surgery.

Results: The authors selected non-T4 WDTC after total thyroidectomy and measured their RAI uptake measurements. They defined negative uptake post-surgery at 0.2% of total administered activity. They correlated these data with stimulated thyroglobulin levels. Among the 245 patients enrolled in the study, 43% had a negative RAI scan, while 57% had measurable thyroid tissue on RAI, most of which was in the thyroid bed. Interestingly, for those with positive RAI scans, 65% had measurable stimulated thyroglobulin levels, while for those with negative RAI scans, only 25% had thyroglobulin levels.

Conclusions: RAI uptake values of <0.2% of administered activity may signify unmeasurable stimulated thyroglobulin levels.

Reviewer's Comments: What this studied showed was that RAI uptake values less than 0.2% of administered activity was associated with lower stimulated thyroglobulin level. But, the numbers provided may not help the clinicians taking care of thyroid cancer patients. According to the report, if 25% of those with negative scans still had biochemical evidence of thyroid cells, does this mean that RAI treatment will be offered to those with negative scans as well as those with positive scans? If this is the case, what is the use of differentiating those with negative and positive scans? The clinical implications from these results are still unclear. (Reviewer-Young J. Kim, MD).

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Keywords: Total Thyroidectomy, Radioactive Iodine Imaging

Print Tag: Refer to original journal article
Adult tonsillectomy is safe with low complication rates of 1.2%.

**Background:** Although there is a vast amount of clinical data on pediatric tonsillectomy, comparable data on adult tonsillectomy are surprisingly lacking in the U.S. for the past several decades. For the pediatric population, the mortality associated with tonsillectomy is 1 death per 20,000 procedures, and the rate of reoperation ranges from 0.5% to 2.1%. In comparison to the pediatric population, adult tonsillectomy has been associated with higher risk of hemorrhage and reoperation for this. However, most of these data come from single institution studies.

**Objective:** To review a national database to examine the question of complications from adult tonsillectomy.

**Methods:** The authors used the American College of Surgeon's National Surgical Quality Improvement Program database to identify adult patients (≥18 years of age) who underwent either tonsillectomy or adenotonsillectomy without other surgeries from 2005 through 2011. Perioperative clinical parameters and complications were obtained and analyzed.

**Results:** Nearly 6000 tonsillectomy cases were analyzed, and most of these were for chronic tonsillitis or adenoiditis. There were twice as many women than men included in this study. From this population, 189 required reoperation for bleeding. The rate of reoperation was 3.2% overall. The clinical parameters significantly associated with reoperation were male gender, white race, inpatient status, and the presence of complications. These parameters had higher odds ratio in a multivariate analysis. This population study also showed that the mortality at 30 days was 0.03%, and the total complication rate was only 1.2%. Among the complications, the most common were pneumonia (27%), urinary tract infection (UTI) (27%), and wound infection (16%).

**Conclusions:** Adult tonsillectomy is safe with low mortality rates and acceptable complications rates.

**Reviewer's Comments:** The reoperation rates reported here of 3.2% fall in line with other series, so this is not surprising. The authors also looked at whether surgeries done by residents were associated with higher rates of rebleeding, and this was not found to be the case. This report also shows both very low mortality and low complication rates. In terms of the different types of infectious complications, however, it is unclear whether pneumonia and UTIs are truly representative of the more common infectious complications in adults who undergo tonsillectomy. (Reviewer-Young J. Kim, MD).

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Keywords: Adult Tonsillectomy, Safety

Print Tag: Refer to original journal article
What's the Best Surgical Treatment for Tracheocutaneous Fistula?

Comparison of 2 Techniques of Tracheocutaneous Fistula Closure: Analysis of Outcomes and Health Care Use.

Wine TM, Simons JP, Mehta DK:


Excision without closure for tracheocutaneous fistula may offer a more efficient surgical management.

**Background:** For otolaryngologists who deal with tracheostomy wounds, we are frequently faced with tracheocutaneous fistulas that require operative interventions. In the pediatric population, these tracheocutaneous fistulas can be managed by one of two ways if it is not amenable to simple cauterization at the bedside. Some have espoused excision followed by closure. There are some who recommend muscle interpositional tissue between the trachea and the skin. On the other hand, there are others who recommend excision of the tract and letting the fistula heal by secondary intention. Both methods have been found to be successful in the pediatric population.

**Objective:** To perform a head-to-head comparison between the 2 methods.

**Design:** Surgical cohort trial between the two methods of closing tracheocutaneous fistula.

**Methods:** The authors compared excision with primary closure versus excision alone. Operating room (OR) time, complication rates, and success of closure rates were measured. Thirty patients who had excision and closure and 20 patients who only had excision were included. The cohorts did not have differences in terms of age, age at tracheostomy, duration of tracheostomy, and duration between decannulation and repair. The mean OR time for excision alone was 9.7 minutes and 37.4 minutes for the excision and closure group. The excision alone group had fewer hospitalization days and shorter ICU stays. In terms of overall success rates, both groups had near complete success rates, with no significant differences noted between groups.

**Conclusions:** Based on their study, the authors recommend excision alone for tracheocutaneous fistula given that it has less use of hospital resources.

**Reviewer's Comments:** One limitation in this study is that the two methods are equivalent with operating on 30 and 20 patients in each cohort. The number in each group is still too small to validate equivalent success rates. The study was somewhat biased in the sense that the excision alone group is naturally quicker in the OR, and they typically do not require hospitalization or ICU stays. Given the inherent differences in the two procedures, it does not seem to be a fair cohort study to conclude that one method is more efficient use of hospital resources. A simple retrospective analysis should have sufficed in these scenarios. They also do not account for the quality of life for those healing by secondary intention versus those with complete closure, particularly in the pediatric population. (Reviewer-Young J. Kim, MD).

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Keywords: Tracheocutaneous Fistula, Surgical Management

Print Tag: Refer to original journal article
The incidence of oropharyngeal squamous cell carcinoma is still rising among the younger population.

**Background:** Oropharyngeal squamous cell carcinoma (OPSCC) has now become an epidemic in America despite the significant decrease in smoking. HPV-associated oropharyngeal tumors are now reshaping the current head and neck practice. These patients are typically nonsmokers and younger. There are clear epidemiological data that show high-risk sexual activity is associated with these HPV-related OPSCCs.

**Objective/Methods:** To examine population trends for these oropharyngeal tumors, the authors sought out the Surveillance Epidemiology End Results (SEER) 9 database and focused their attention on those <45 years of age from 1973 to 2009. The treatment patterns and the clinical parameters in this selected population were analyzed. It should be noted that HPV or p16 status are not found in the SEER database, so they used higher tumor grade as a surrogate marker for HPV.

**Results:** The authors screened >1600 patients, and found that there was a rise in incidence from 0.79 to 1.39 per 100,000 patients. There was a significant trend towards higher grade of tumor from 1973 to 2009. Interestingly, the rise occurred in the white race, while there was a decline in the African-American population. This rise in overall incidence was also associated with a rise in incidence in white men and not in white women. The authors also noted a higher or worse grade of the tumor, which probably reflects the HPV positivity of these tumors. The overall 5-year survival was 54% in this cohort, and African Americans had worse survival compared to whites. In terms of treatment, those who had combined surgery and radiation treatment had the best survival outcomes in this population study.

**Conclusions:** The authors found an alarming increase in the incidence of OPSCC among 36- to 44-year-olds.

**Reviewer's Comments:** One interesting finding in this report is the fact that the increase in OPSCC may not be related to the sexual revolution of the 1960s. Assuming that the latency of the viral infection is around 20 to 30 years, if sexual practice of the 1960s was primarily responsible for the HPV-associated OPSCC, there should have been a stabilization of the incidence in the younger population who had not been born yet. However, this was not the case. This is assuming there have been no changes in sexual practices since the 1960s. The authors speculate that their findings may also be explained by either shorter latency before development of disease, more virulent form of HPV, or changes in transmission patterns. Overall, this was an interesting paper. (Reviewer-Young J. Kim, MD).

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Keywords: Oropharyngeal Squamous Cell Carcinoma, Incidence

Print Tag: Refer to original journal article
What Is the Best Method for Topical Anesthesia for Flexible Laryngoscopy?

Comparison of Tolerance and Cost-Effectiveness of Two Nasal Anesthesia Techniques for Transnasal Flexible Laryngoscopy.

Young VN, Smith LJ, Rosen CA:

Otolaryngol Head Neck Surg 2014; 150 (April): 582-586

Syringe method of topical anesthesia may be effective for flexible laryngoscopy.

Background: Since transnasal flexible laryngoscopy is such a vital aspect of the otolaryngologist's practice, methods of local anesthesia for endoscopy are an important consideration. Some do not use any anesthetic, while most centers have adopted aerosolized anesthesia. Historically, atomizers were used to deliver sprays, but recently, studies have demonstrated possible contamination in these atomizers. To counter this, our center has adopted disposable tips, but there is a cost consideration to these disposable tips. Others have used a simple 1-cc syringe method of delivering topical anesthetics using a simple disposable 1-cc syringe without the needle.

Objective: To compare the two methods of topical anesthetics with regard to patient tolerance, patient comfort level, and cost.

Methods: The authors used 1:1 equivalent doses of neosynephrine and 4% lidocaine administered by either disposable spray tips or with syringes.

Results: The syringe method was for 51 patients and the spray method was used for 62 patients. Patient tolerance was similar between the spray versus syringe method. Approximately 6.5% in both groups had poor tolerance. Interestingly, the cost difference between the groups was notable in that the spray group was more expensive by $1.32 per unit in comparison to the syringe group. This amounted to $1300 per year per 1000 patients.

Conclusions: A 1-cc syringe is effective for providing topical nasal anesthesia for transnasal flexible laryngoscopy and may offer and cost reduction.

Reviewer's Comments: An important arm not included in this study was a group that received no anesthetics. Many otolaryngologists perform flexible laryngoscopy without the use of anesthetics for simple endoscopies, and this arm may have provided what the baseline is for patient tolerance. I personally do not use anesthetics for these procedures, and >90% of my patients tolerate this procedure. Of course, it would be difficult to randomize this group, but including this arm in future studies would be useful. This would provide the cheapest method of local anesthesia for flexible laryngoscopy, hands down. (Reviewer-Young J. Kim, MD).

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Keywords: Laryngoscopy, Topical Anesthesia, Cost-Effectiveness

Print Tag: Refer to original journal article
Management of Swallowing Disorders in the Ambulatory Medical Setting

Swallowing Disorders in the Ambulatory Medical Setting.
Mahboubi H, Verma SP:

Otolaryngology may be underused in the management of ambulatory complaints of dysphagia.

**Background:** The symptom of dysphagia is rather common, and otolaryngologists are frequently consulted to evaluate these patients. We see these patients from the perspective of upper digestive tract disorder, while gastroenterologists evaluate the lower digestive tracts.

**Objective:** In order to assess the demographics of patients with dysphagia and how they are managed differently by other specialists, the authors performed a cross-sectional analysis using the National Ambulatory Medical Care Survey (NAMCS).

**Methods:** The NAMCS is a national survey from the National Center for Health Statistics that was formed to gather clinical information and utilization of services of the ambulatory medical care system in United States. The NAMCS was tapped to gather clinical comorbidities, specialists seen, procedures performed related to dysphagia, and medications prescribed for this condition. Clinical information data sets were obtained from 2007 to 2010 and merged. From the extrapolated office visits, 1.88 million visits were for dysphagia, which amounted to 0.2% of the total office visits. Only 1.55% of the visits to otolaryngologists were due to dysphagia. Approximately 44% of these patients were managed by primary medical doctors (PMDs), while 16% of dysphagia patients were seen by otolaryngologists, and 40% were seen by other specialists. Otolaryngologists and other specialists ordered imaging studies at a rate of 23% and 24%, respectively, while PMDs ordered imaging studies only 10% of the time. Not surprisingly, PMDs ordered procedures only 4% of the time, while otolaryngologists performed procedures at a rate of 21%. Other specialists performed procedures at a rate of 36%.

**Conclusions:** While otolaryngologists are involved in the care of these patients, otolaryngologists constitute only a minority of health care providers that are managing these dysphagia patients in comparison to PMDs and other specialists. These data also document that the office visits for dysphagia are far lower than the best estimated prevalence of dysphagia in the United States.

**Reviewer’s Comments:** Studies based on large database are as good as the database that was mined. In this case, the database has not been validated by independent reviewers. The other limitation to these numbers is whether these rates of otolaryngological evaluations are appropriate or not. Regardless, these data point toward the idea that otolaryngologists may not be fully utilized in the management of these patients in the ambulatory setting. (Reviewer-Young J. Kim, MD).

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Keywords: Dysphagia, Incidence, Medical Specialists

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What Is the Epidemiology of TVC Paralysis After Thyroidectomy?

Epidemiology of Vocal Fold Paralyses After Total Thyroidectomy for Well-Differentiated Thyroid Cancer in a Medicare Population.

Francis DO, Pearce EC, et al:


Nerve monitoring for thyroidectomy did not change the complications rates in the U.S. for vocal cord paralysis.

**Background:** Thyroid carcinoma rates have tripled over the past 30 years, and more thyroid surgeries are being performed. With regard to the surgery, the most feared complication is injury to the recurrent laryngeal nerve. The rates of unilateral vocal cord paralysis and bilateral vocal cord paralysis range from 0.35% to 3.5%, depending on the series. Unfortunately, these numbers are derived from a single institution's series, and there are no population-based numbers for these complications rates.

**Objective:** To tap into the SEER database and examine the vocal cord paralysis rates from thyroid surgeries.

**Methods:** The authors looked at Medicare patients in the SEER database from 1991 to 2009 who underwent total thyroidectomy for well-differentiated thyroid carcinoma (WDTC). Complication rates and clinical parameters associated with vocal cord paralysis were determined. Both univariate and multivariate methods were used to correlate clinical parameters with the vocal cord paralysis.

**Results:** A total of 5670 surgical cases were analyzed, of which, 9.5% were noted to have vocal cord paralysis. Broken down into types, 8.2% had unilateral vocal cord paralysis and 1.3% had bilateral vocal cord paralysis. One interesting finding was that the rates of these complications decreased from 1991 to 2009, but the reason for this was unclear. Several clinical parameters were associated with unilateral vocal cord paralysis under multivariate analysis including age, non-Caucasian race, histology, stage, and certain geographic regions in the United States.

**Conclusions:** With respect to bilateral true vocal cord paralysis, only histology and stage were associated with complications. They also looked at whether the use of intraoperative nerve monitoring was associated with this complication and did not find any association. Approximately 22% of these patients with paralysis required surgical intervention.

**Reviewer's Comments:** This report has some very interesting findings that should be noted by all thyroid surgeons. First is that the overall rates of true vocal cord paralysis are higher than reported. Most previous reports are from single tertiary institutions, while the current reported rates are from a population-based base study. Because of this, these population-based rates may offer a baseline to gauge one's own complication rate. Predictable parameters associated with paralysis were noted, such as advanced stage and histology types. This was particularly true of bilateral vocal cord paralysis. Another interesting finding was that paralysis was associated geographically. Those in the Western and Southwestern regions had higher rates of complications. Lastly, no correlation was found between the use of nerve monitoring devices and paralysis. They intentionally initiated the study in 2009 when intraoperative nerve monitoring gained traction in the United States. Overall, this was a great study. (Reviewer-Young J. Kim, MD).

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Keywords: Thyroidectomy, Vocal Fold Cord Paralysis, Complications, Epidemiology

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No Clear Clinical Parameters Distinguish Bacterial vs Viral Rhinosinusitis

No Evidence for Distinguishing Bacterial From Viral Acute Rhinosinusitis Using Symptom Duration and Purulent Rhinorrhea: A Systematic Review of the Evidence Base.

van den Broek MFM, Gudden C, et al:

Otolaryngol Head Neck Surg 2014; 150 (April): 533-537

There are no clear clinical parameters that are associated with viral versus bacterial acute rhinosinusitis.

**Background:** Acute rhinosinusitis is a common problem that affects many Westerners, including Americans, and otolaryngologists are frequently asked to manage these patients. In our approach to this common clinical problem, we have to decide whether an antibiotic is warranted, but for this, we need to judge whether this is a viral sinusitis or a bacterial sinusitis.

**Objective:** To review the literature to evaluate whether clinical information can predict whether the acute rhinosinusitis is a viral versus a bacterial infection.

**Design:** Comprehensive systemic review of the literature.

**Methods:** The authors tapped into PubMed, EMBASE, and Cochrane library to obtain 4173 unique publications. Excluded were those with immunocompromised patients, abnormal anatomy, animal studies, case reports, and other reviews. They included reports that had adults with acute infections with at least 1 determinant of clinical findings to predict viral versus bacterial infection. Initial screening whittled the count to 53, but even this was decreased to 6 studies that allowed the authors questions to be answered. With this group, the authors evaluated directness of evidence and risk of bias, and when this was done, only 1 article remained for data extraction and analysis. In short, this was a review of 1 article from 2002.

**Results:** The 1 article used was by Lacroix et al and included 265 patients. There was clear documentation of clinical parameters as well as clear culture results to extract clinical results on duration of symptoms and purulence on exam to correlate with type of sinusitis. The duration of symptoms was found to have an odds ratio of 1.01 with positive bacterial culture, and purulence of exam had an odds ratio of 2.69. In this one report, the authors found that purulence is associated with bacterial sinusitis.

**Conclusions:** However, the authors noted that even this study had a moderate risk of bias, so they concluded that there is no evidence from the literature that there are clear clinical parameters that would distinguish acute bacterial rhinosinusitis from an acute viral rhinosinusitis.

**Reviewer's Comments:** The authors here asked an important question, but they found no evidence that clinical history and findings direct the prescription of antibiotics. They culled out those studies with high risk of bias and low directness of evidence, but this screening method essentially screened out almost all of the studies on this topic. They could have altered their screening method in their systematic review, but this was not done. Interestingly, the authors concluded what most otolaryngologists have known all along, which is that sound empiric treatment may work best for acute rhinosinusitis. (Reviewer-Young J. Kim, MD).

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Keywords: Acute Rhinosinusitis, Viral vs Bacterial Rhinosinusitis

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Cosmesis May Be Only Benefit to Robotic Thyroidectomy

Systematic Review and Meta-Analysis of Robotic vs Conventional Thyroidectomy Approaches for Thyroid Disease.

Sun GH, Peress L, Pynnonen MA:

Otolaryngol Head Neck Surg 2014; 150 (April): 520-532

Quality-of-life measurements are still uneven in terms of long-term results for robot-assisted thyroidectomy.

Background: The introduction of the robot for most surgical specialties has provided a new method to approach different parts of the anatomy. For head and neck surgeons, the robot has allowed the ability to operate in the central compartment from a very lateral incision. The last several years have seen the introduction of robotic-assisted thyroidectomy and multiple reports demonstrating its safety in comparison to the standard open thyroidectomy.

Objective: To evaluate the literature on the other benefits of robotic-assisted thyroidectomy.

Methods: The authors performed a meta-analysis on this topic. They started with 670 references and culled this down to 277 reports. Included were controlled trials, either randomized or nonrandomized, and cohort studies. They also included endoscopic thyroidectomy controlled or cohort studies. They extracted clinical parameters such as type of pathology, postoperative complications, conversion rates, operating room (OR) times, hospitalization days, and quality-of-life (QOL) measurements between the robotic-assisted and standard open thyroidectomy.

Results: Eleven reports were included in the meta-analysis. Cumulatively, this amounted to 1931 patients, 726 with robotic surgery and 1205 for open surgery. Interestingly, the robotic surgery had increased OR time by 77 minutes. In terms of hospitalization days and postoperative complication rates, there appeared to be no difference between the approaches. QOL measurements for some of those who did have these parameters showed no difference between the approaches. Voice, swallowing, and pain QOL measurements showed no differences between the two approaches. The robotic approach had improved cosmesis, but the QOL measurements were obtained only 3 months postoperative.

Conclusions: This meta-analysis showed no differences in complications rates between the approaches, but the robotic surgery had longer OR time and improved short-term cosmesis QOL outcomes.

Reviewer's Comments: Three salient features were notable in this study. All the cosmesis measurements were performed only 3 months after surgery. Given that the strength of robotic surgery is in this QOL measurement, it is quite surprising that long-term cosmesis comparisons have not been done. The standard incision will not mature till 6 months or more, so this issue is vital for endocrine surgeons. There were no differences in complications between the robotic and the open approaches, which is reassuring. Lastly, the higher OR time for the robotic surgery is concerning, as well as the obvious higher cost in the use of the robot. In short, the real benefit of the robot is still unclear at this point in time. (Reviewer-Young J. Kim, MD).

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Keywords: Conventional Thyroidectomy, Robotic-Assisted Thyroidectomy, Quality of Life

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