The authors concluded that eustachian tube dysfunction leads to cholesteatoma. The risk of cholesteatoma is higher in children who have had multiple tympanostomy tubes.

**Background:** We are taught that cholesteatoma occurs due to tympanic membrane retraction that is usually secondary to eustachian tube dysfunction. Many children with poor eustachian tube dysfunction get tubes, which has been described as an independent cause of cholesteatoma.

**Objective:** To describe the risk factors for cholesteatoma in children with tympanostomy types.

**Design:** Retrospective review.

**Participants:** 45,980 children <15 years of age in Western Australia treated with tympanostomy tubes after 1980.

**Methods:** State records were reviewed to identify all cases of children who had undergone tympanostomy tube placement between January 1, 1980, and December 31, 2004 in Western Australia. Other data collected included age at tube placement, metropolitan or rural location, presence of cleft palate, and race.

**Interventions:** Tympanostomy tube placement.

**Results:** Of the 45,980 children who had at least 1 tympanostomy tube placement during the study period, 460 (approximately 1%) were given a diagnosis of cholesteatoma. The mean age at first tympanostomy tube placement was 3 years, and the mean age at admission to the hospital with cholesteatoma was 8 years. The risk of cholesteatoma development increased with each additional tympanostomy tube placement. For example, children who had ≥4 tubes had a cholesteatoma risk of 5.2%. Children who had multiple tubes placed in quick succession had a lower risk than those whose tubes had a longer temporal separation. Risk factors for cholesteatoma included number of tubes placed, a history of adenoidectomy, cleft palate, and rural residential location. Although those with adenoidectomy had a high risk of cholesteatoma, the risk dropped slightly after the adenoidectomy was performed indicating that adenoidectomy had a protective effect. Several factors were not associated with cholesteatoma risk, including calendar year of first tube placement, race, gender, and type of hospital.

**Conclusions:** Poor eustachian tube function and negative middle ear pressure are major contributing factors to cholesteatoma development.

**Reviewer’s Comments:** I had hoped this study would tell us something about the risk of cholesteatoma being caused by tympanostomy tube placement itself. As it turns out, the study largely just supports the popular theory of cholesteatoma development. This study had several limitations. First, only patients admitted to the hospital were counted, so some cholesteatomas may have been missed. Also, the dataset used did not include in which ear the tube was placed and which side developed a cholesteatoma or the type of tympanostomy tube placed. We also do not know that all of these cholesteatomas were acquired or the incidence of cholesteatoma in children who did not get tympanostomy tubes. Finally, the study does not tell us anything about other known risk factors such as exposure to tobacco smoke. (Reviewer-Benjamin T. Crane, MD).

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**Keywords:** Cholesteatoma, Tympanostomy Tube, Hearing Loss

**Print Tag:** Refer to original journal article
Background: Otosclerosis is a disease that lends itself well to surgical treatment, but we occasionally see patients who are not a candidate for surgery or do not want to have surgery. For these patients, sodium fluoride is one option.

Objective: To review the literature on the effects of sodium fluoride in the treatment of otosclerosis.


Methods: The authors found reviews on this topic using a Medline and PubMed search of the terms “otosclerosis” and “fluorides.”

Results: Sodium fluoride has been shown to have a preventative effect on otosclerosis, but it is most effective when hearing is better than 50 dB. There is some evidence that preventative treatment should be started very early, even before the onset of hearing loss. Such early treatment would require screening of families with otosclerosis to identify those with absent acoustic reflexes. There have been no studies comparing the relative efficacy of sodium fluoride dosages. Some studies have found doses as low as 1.5 mg/day to be effective. In the United Kingdom, drinking water contains fluoride at the level of about 1 mg/L. At least 1 study has correlated otosclerosis symptoms with the amount of fluoride in tap water. Other studies have used doses as high as 75 mg/day. Low-dose fluoride causes few side effects, but at higher doses, it can cause a brown discoloration of the teeth and gastric upset. Studies in animals have not demonstrated any birth defects or increased risk of cancer. The length of time fluoride should be used has also not been rigorously studied, as most previous series had no set end point. In one series that followed 6 patients who stopped using fluoride, minimal hearing deterioration occurred, which suggests prolonged treatment is not required.

Conclusions: Sodium fluoride is effective in preventing the advance of hearing loss with otosclerosis, but the ideal dose is unknown.

Reviewer's Comments: Because sodium fluoride is not a high profit drug, the incidence of otosclerosis is decreasing in most populations, and it is primarily a surgical disease. It is also likely that we will see a large number of future high-quality studies on this topic. Current literature indicates clear evidence for the benefits of sodium fluoride in prevention of otosclerosis-related hearing loss, but the literature gives us few clues as to the proper dose or duration of treatment. I personally rarely use this treatment in my patients because the disease is so effectively treated with surgery; however, patients often ask about nonsurgical options. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Otosclerosis, Stapes, Hearing Loss

Print Tag: Refer to original journal article
The authors report some success with lateral canal plugging, but the vertigo control and hearing preservation rates do not compare favorably with other treatments.

**Background:** Treatment of Ménière's disease is probably one of the most controversial topics in otolaryngology. Lateral semicircular canal plugging is a treatment for Ménière's that has only recently been described.

**Objective:** To report on a prospective study of lateral semicircular canal plugging for treatment of Ménière's disease.

**Participants:** 28 patients with Ménière's disease and a mean age of 48 years were included; 16 patients had ≥2 years of follow-up after the surgery.

**Methods:** Patients had audiometry and caloric responses measured before and after surgery. Patients also had frequency of vertigo and quality of life quantified.

**Interventions:** After performing a mastoidectomy, the horizontal canal was "blue-lined" and a 2-mm fenestra was made in the bone without opening the endosteum. A plug of temporalis fascia and fibrinogen glue was used to compress the endosteum against the posterior bony wall.

**Results:** 28 patients, with a mean age of 48 years, were included; 16 of these patients had ≥2 years of follow-up after the surgery. In 5 cases (18%), there was postoperative deafness. All patients had decreased horizontal canal function by caloric testing after the procedure. The amount of residual canal function varied from a 50% asymmetry to no response. In 11% of these patients, the frequency of vertigo was not altered by the surgery, and these patients went on to a vestibular neurectomy. The remaining 89% had no residual vertigo in the immediate postoperative period. For the 16 patients who had 2 years of follow-up, vertigo control was substantial or better in 75% of patients. Two patients developed drop attacks in the postoperative period; 89% of patients were able to resume their regular activities within the first month after surgery. Patient self-evaluated functional level was improved in all but the 3 immediate failures.

**Conclusions:** Based on these results, the authors believe that lateral canal plugging is a viable option for Ménière's treatment.

**Reviewer’s Comments:** The criteria for what constitutes a diagnosis of Ménière's disease have historically been variable. Standards proposed by the American Academy of Otolaryngology have attempted to standardize this diagnosis. However, in this study it is unclear which criteria were used or what treatment these patients had prior to lateral canal plugging. This procedure seems to be effective in 75% of Ménière's patients. In considering these results, we should be mindful that approximately two-thirds of Ménière's cases will get better without treatment. Additionally this procedure carried an 18% risk of postoperative deafness, a much higher rate than has been reported in most series of intratympanic gentamicin and vestibular nerve section. Ultimately, this procedure will have to compare favorably with other Ménière's treatments if it is to be successful. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Dizziness, Vertigo, Hearing Loss, Ménière's Disease

Print Tag: Refer to original journal article
In acute facial nerve weakness, paralysis has a worse prognosis and longer recovery period than paresis.

**Background:** Several prospective studies have demonstrated the efficacy of steroids in the treatment of acute idiopathic facial nerve paralysis or Bell’s palsy. However, few of these studies recognize the distinction between facial paresis and paralysis.

**Objective:** To describe patients presenting with acute peripheral facial paralysis and paresis.

**Design:** Prospective case series.

**Participants:** 176 cases of acute idiopathic and herpes zoster oticus (HZO) facial nerve palsy seen at the outpatient ENT clinic at the University Hospital in Zurich between 1997 and 1999 were included. The protocol also included patients seen between 2002 and 2005 in another tertiary care clinic.

**Methods:** As appropriate, patients had serologic testing, electrophysiologic testing, and imaging studies such as CT or MRI to rule out other causes. Patients with paralysis were tested with electroneuronography (ENoG), which was repeated every 2 to 3 days until a steady state was reached. The published literature on acute facial paralysis between 1976 and 2009 was reviewed. Facial paralysis was graded using the Fisch score.

**Interventions:** Prednisone given at 100 mg daily for 5 to 7 days and valacyclovir 500 mg twice daily for 7 days.

**Results:** The mean age of the patients was 45 years (range, 12 to 85 years). Bell’s palsy was the most frequent diagnosis (157 patients). Of these, 102 had paresis and 55 had paralysis. Of the paresis patients, 41% returned to normal facial nerve function within 1 month, 77% within 2 months, and 88% within 3 months. All except 1 patient recovered completely by 1 year. The paralysis group had a worse prognosis. Seventy percent achieved normal facial nerve function at 1 year, an additional 24% achieved better than a 76 point recovery, and all patients achieved at least some improvement. The complete paralysis group was also examined in terms of ENoG; 73% had denervation <90%, with the remaining patients have near complete denervation. Of those with denervation <90%, 80% had a complete recovery. However, of those with denervation >90%, only 38% had a complete recovery. The herpes zoster oticus group consisted of only 19 patients, which were about evenly split between paralysis and paresis. All except 1 patient with paresis recovered completely within 100 days, and the remaining patient had a Fisch score of 91. Of the paralysis patients only 2 of 9 had a complete recovery at 1 year. The authors reviewed 250 papers over 30 years, but very few recognized the difference between paresis and paralysis and only 3 met the author’s inclusion criteria.

**Conclusions:** Those with incomplete facial paralysis tend to recover completely within 3 months. With paralysis, the recovery time is on average twice as long and less favorable.

**Reviewer’s Comments:** Should we treat paralysis any different than paresis? This paper does not directly answer this question, but it does raise the issue that for Bell’s palsy, one treatment might not be best for all. (Reviewer-Benjamin T. Crane, MD).
Postmaneuver restrictions have no value in the treatment of BPPV.

**Background:** Benign paroxysmal positional vertigo (BPPV) is the most common cause of vertigo and is usually cured using a repositioning maneuver. Some have recommended postmaneuver restrictions, but do these restrictions have any benefit?

**Objective:** To determine the effect of postmaneuver restrictions in BPPV patients.

**Design:** Meta-analysis.

**Participants:** 523 patients in 6 published series.

**Methods:** A total of 158 manuscripts were initially identified; 152 were excluded because they did not address the issue at hand, had inadequate detail, or did not report the results of the Dix-Hallpike maneuver. Within these studies, 41 patients were excluded from analysis due to bilateral disease, multiple canals affected, or multiple maneuvers performed. After removal of these individuals, patient data were grouped for analysis, and a total of 523 patients are included. The mean age was 54 years (range, 22 to 88 years). Women outnumbered men in the study by approximately 2 to 1, and follow-up time ranged from 3 days to 7 days. Restrictions varied between studies and included postural restrictions, wearing a collar, head elevation, limiting head rotation, and avoiding the affected side.

**Interventions:** Repositioning maneuver with and without restrictions afterward.

**Results:** The efficacy rate for patients with restrictions was 88.5% and 83.6% for those without restrictions. The restriction that seemed to demonstrate the largest effect was wearing a soft collar, which increased efficacy from 81% to 91%; however, even this difference was not statistically significant.

**Conclusions:** BPPV is successfully treated in >80% of cases; activity restrictions offer no significant added benefit.

**Reviewer’s Comments:** I have not advised my BPPV patients that restrictions should be followed after performance of the Epley maneuver. However, we have all seen patients who suffer from persistent or recurring symptoms after multiple repositioning maneuvers. Is it possible that postmaneuver restrictions may have a benefit for this more narrow group of patients? To my knowledge, this question has not been examined, but I believe it is possible that it might. (Reviewer-Benjamin T. Crane, MD).

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**Keywords:** Vertigo, BPPV, Restrictions

**Print Tag:** Refer to original journal article
The treatment of large cervicofacial venous malformation often requires a combination of surgical excision, laser coagulation, and sclerotherapy.

**Background:** Venous malformations are congenital low-flow vascular malformations that consist of a collection of aberrant veins that grow with time. They often present in the head and neck area and can cause both functional and cosmetic deformity due to the mass effect.

**Objective:** This study analyzed a group of patients with cervicofacial venous malformations and derived a treatment algorithm based on the clinical outcomes.

**Design:** A retrospective chart review was done on 19 patients with cervicofacial venous malformations, aged 11 months to 17 years, who were treated at a tertiary referral center over a period from 1996 to 2008. Diagnosis was confirmed with MRI. Patient demographics, as well as treatment records and clinical outcomes, were reviewed. A questionnaire was given to the family to assess subjective outcomes.

**Results:** Presenting complaints included progressive growth (100%), disfigurement (63%), pain (58%), respiratory compromise (42%), and dysphagia (32%). The average age at first intervention was 8.5 years. The number of treatments for each patient ranged from 2 to 12, with a mean of 6.7 treatments per patient. Laser treatments were most commonly used, followed by sclerotherapy and then surgical excision. The average time between treatments was 8.9 months. The complication rate was 3.1%. Subjective satisfaction scores were highest for surgical resection, followed by laser therapy and sclerotherapy.

**Conclusions:** The treatment of cervicofacial venous malformation is best achieved with a combination of surgical excision, laser treatments, and sclerotherapy. Multiple treatment sessions are often required for adequate control of symptoms, and complications are usually rare.

**Reviewer’s Comments:** Cervicofacial venous malformations are difficult problems that require a multidisciplinary approach depending on the size and location of the lesion. The authors developed a treatment algorithm from their own treatment experience that employed surgical excision and laser therapy as the primary treatment modality for accessible mucosal/skin and deep lesions, respectively. Sclerotherapy is used for less surgically accessible areas and also as a presurgical adjunct treatment. Complete removal of the venous malformation is often neither feasible nor desirable given the size and location. Partial excision is often adequate with the goal of achieving symptom reduction as well as improved cosmesis as the clinical end point. (Reviewer-Tang Ho, MD).

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Keywords: Venous Malformations, Laser, Sclerotherapy

Print Tag: Refer to original journal article
What Is Best Lower Eyelid Incision to Use in Facial Fx Repair?

The Incidence of Lower Eyelid Malposition After Facial Fracture Repair: A Retrospective Study and Meta-Analysis Comparing Subtarsal, Subciliary, and Transconjunctival Incisions.

Ridgway EB, Chen C, et al:


The risk of ectropion is highest with a subciliary incision, while entropion is only seen with a transconjunctival approach.

**Background:** The lower eyelid incisions commonly utilized in the exposure and treatment of orbital floor and zygomaticomaxillary complex (ZMC) fractures include the subciliary, subtarsal, and transconjunctival approaches. Each type of incision has its associated advantages and complications.

**Objective:** To review the incidence of lower eyelid malposition associated with various eyelid incisions used to treat craniomaxillofacial fractures at a single institution as well as in the literature.

**Methods:** A retrospective review was made of all facial fractures repaired at an academic medical center requiring lower eyelid incisions from 1998 to 2008. The approaches taken, as well as lower eyelid complications, were analyzed. A meta-analysis was also carried out to examine the rate of lower eyelid complications in facial fracture repair.

**Results:** Among the 180 cases in the study, 41% of the patients were treated with a subtarsal incision, 31% with a subciliary incision, and 25% with a transconjunctival incision. The incidence of ectropion was highest with a subciliary incision (n=7; 12.5%; *P*=0.018). Two patients with ectropion required surgical correction. Entropion was seen only with the transconjunctival incision (n=2; 4.4%; *P*=0.108), though both cases of entropion in the study required surgical correction. The meta-analysis included 2,086 patients in 17 studies and showed comparable ectropion risk with a subciliary incision (14%) and entropion risk with a transconjunctival incision (1.5%). The majority of the complications were treated successfully with conservative strategies including eyelid massage and taping.

**Conclusions:** The authors favor a subtarsal incision in approaching ZMC fractures and a transconjunctival approach in the treatment of isolated orbital floor fractures given the higher incidence of complications with a subciliary incision.

**Reviewer’s Comments:** The best lower eyelid incisional approach depends on individual patient characteristics, and also very important is surgeon's comfort level with the specific approach. Of note in this study, all cases of ectropion (except 1) occurred with 1 of 6 surgeons in the study. As noted by the authors, given the multiple surgeons in the study, the operative details were not uniform. Furthermore, the study is based on a single institution’s experience, and its retrospective nature implies all the usual limitations, such as recall and selection bias, apply to this study as well. (Reviewer-Tang Ho, MD).

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Keywords: Facial Fracture, Lower Eyelid Incisions, Complications

Print Tag: Refer to original journal article
Smoking Cessation’s Impact on Skin Flap Survival

Duration of Smoking Cessation and Its Impact on Skin Flap Survival.

Manchio JV, Litchfield CR, et al:

Plast Reconstr Surg 2009; 124 (October): 1105-1117

The data from this experimental animal model study suggests that in skin flaps with a combination of axial and random blood supply, 4 weeks of smoking cessation are needed prior to witnessing a significant decrease in skin flap necrosis.

**Background:** An abundance of empirical data exists regarding the negative impact of smoking on the survival of skin flaps. However, the ideal duration of smoking cessation necessary to minimize skin flap postoperative complications remains unclear.

**Objective:** To examine the effects of various durations of smoking cessation on the survival of skin flaps in a rat model.

**Methods:** 40 male rats were exposed to cigarette smoke for 1 month in a smoking chamber. The rats were then divided into 4 groups of smoking cessation at 0 days, 2 weeks, 4 weeks, and 8 weeks. A control group of 10 rats not exposed to smoke acted as the controls. All animals in the study had a combination of axial and random skin flaps created surgically. The amount of skin flap loss was assessed 2 weeks after the procedure.

**Results:** In pure axial pattern skin flaps no additional skin flap necrosis was seen in rats exposed to smoking compared to controls. For the skin flaps with a combination of axial and random pattern blood supply, the mean amount of skin flap necrosis was 11.1% (controls), 31.1% (0-day cessation), 36.0% (2-week cessation), 21.7% (4-week cessation), and 19.1% (8-week cessation). For skin flaps with a pure random blood supply, the mean amount of skin flap necrosis was 16.6% (controls), 30.3% (0-day cessation), 27.6% (2-week cessation), 27.1% (4-week cessation), and 29.7% (8-week cessation).

**Conclusions:** For skin flaps with a pure random pattern blood supply, an increased risk of skin flap necrosis can be seen even with 2 months of smoking cessation. In skin flaps with a combination of axial and random pattern of blood supply, a statistically significant decrease in risk of skin flap necrosis is seen with at least 4 weeks of smoking cessation. No change in survival of skin flap with axial pattern blood supply is seen with smoking cessation.

**Reviewer's Comments:** Despite the limitations, this study provides some interesting experimental evidence in advising patients how long one should quit smoking before elective surgery. For an axial flap with random component, the experimental data support a cessation period between 4 and 8 weeks. The data from purely random pattern skin flaps suggests that smoking either irreversibly increases the risk of skin flap necrosis in a skin flap based on random pattern blood supply or a smoking cessation period of >8 weeks is needed to significantly decrease the risk of skin flap necrosis. However, it is difficult to say how applicable the rat model is to humans; therefore, it is unknown how the duration of smoke exposure or smoking cessation in a rat correlates with that of humans. (Reviewer-Tang Ho, MD).

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Keywords: Skin Flap, Smoking Cessation, Complications

Print Tag: Refer to original journal article
Robotic Surgery May Be Wave of the Future

Functional Outcomes After Transoral Robotic Surgery for Head and Neck Cancer.

Iseli TA, Kulbersh BD, et al:


TORS may provide an alternative to organ preservation approaches to maximize functional outcomes.

Objective: To evaluate outcomes after transoral robotic surgery (TORS) for head and neck malignancies.

Design: Prospective series.

Participants: 54 individuals undergoing TORS over an 18-month period.

Methods: Patients deemed appropriate candidates underwent TORS for head and neck cancers. Neck dissections were completed concurrently if the risk of through-and-through defect was low. If there was concern for such defects, neck dissection was performed 4 weeks post-TORS. Patients were seen every 6 to 8 weeks for the first year and every 3 months during the second year. Patient demographics, clinical diagnosis, previous treatment details, tumor characteristics, surgical details, pathology, postoperative course, and clinical outcomes were documented. The primary functional outcomes recorded were M.D. Anderson Dysphagia Inventory (MDADI) scores, retention of feeding tube, and duration of intubation/tracheostomy.

Results: The most common tumor site was the oropharynx (61%) followed by the larynx (22%). Most tumors were staged as T1-T2 (80%). Preoperative radiotherapy had been completed in 22% of subjects and postoperative radiotherapy was required for 40% of participants. Complications were observed in 31% of subjects, with the most common concern being airway compromise (20%). Three patients had extension of hospital stay >1 week (2 due to aspiration pneumonia and 1 due to a salivary fistula). Sixty-eight percent of the patients resumed oral intake prior to discharge from the hospital. Mean MDADI scores decreased following surgery and poorer scores were associated with retained feeding tube, age >60 years, higher T stage, laryngeal primary, and postoperative complications.

Conclusions: Based on the data provided, the authors conclude that TORS provides an alternative to nonsurgical organ preservation with adequate functional outcomes and low morbidity.

Reviewer’s Comments: The use of TORS in head and neck oncology is an emerging and exciting trend. It is suspected that this treatment option may allow for more complete resections than traditional surgery due to improved line of sight during surgery. Such resections may negate the need for further radiation and/or chemotherapy, or at the very least, assist in de-escalation of doses in order to preserve function. In this series, 63% of subjects underwent radiation (22% before surgery and 41% after). While it is encouraging that 37% of subjects did not need adjuvant therapies, we do not know whether these individuals would have required adjuvant therapy after standard surgical procedures. Likewise, we do not have data regarding whether TORS resulted in deintensification of radiation doses or elimination of chemotherapy. The functional outcomes regarding swallowing appear favorable, with most patients maintaining an oral diet after TORS. The factors associated with swallowing dysfunction included those with pre-treatment feeding tubes, higher T stage, oropharynx or larynx primary, and recurrent tumor. These associations suggest the particular importance of post-treatment swallowing assessments to ensure positive functional status. Future studies would benefit from delineating which procedures result in specific deficits. (Reviewer-Heather Starmer, MA, CCC-SLP).

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Keywords: Transoral Robotic Surgery

Print Tag: Refer to original journal article
Background: One national campaign that is being waged throughout the medical field is the issue of safety, and in the surgical fields, the issue of wound infection has always been a primary concern for surgeons.

Objective: In this setting, the authors performed a head-to-head comparison between 2 common skin preparations that are used throughout the country.

Design: Prospective, randomized, clinical trial from 2004 to 2008 at 6 U.S. hospitals.

Methods: Adults undergoing clean-contaminated surgeries without unusual contaminations were included. Excluded were those with allergy to the skin preparations and those with active infection at or near the operative site. Enrolled patients were randomized at 1:1, and they either received 2%/70% chlorhexidine/alcohol scrub (ChloraPrep) or scrub and paint with 10% povidone/iodine (Scrub Care Skin Prep Tray). The subjects were followed for 30 days after the surgery to look for any surgical-site infection within 30 days.

Results: 1003 patients were screened, but only 897 patients were randomized in roughly a 1:1 ratio. All received systemic IV antibiotics prior to skin incision. The average length of surgery for both groups was 3 hours. About 70% of the procedures were abdominal surgeries, 10% were thoracic procedures, 10% were gynecologic, and 7% were urologic procedures. Twenty-seven percent of the patients received preoperative antiseptic showers. The overall rate of surgical site infection was 9.5% in the chlorhexidine–alcohol group versus 16.1% in the povidone–iodine group. These numbers were statistically significant. When examined for superficial versus deep skin infections, the chlorhexidine–alcohol group also had a more protective effect in comparison to the povidone–iodine group. However, there were no differences in organ space infection and sepsis between the 2 groups.

Conclusions: Preoperative skin preparation with chlorhexidine–alcohol is superior to povidone–iodine in preventing skin infections from surgery.

Reviewer's Comments: Overall, these studies were convincing in demonstrating that chlorhexidine preparation was more effective in preventing skin infections in clean contaminated surgeries. The authors analyzed that the estimated number of patients needed to be prepped with chlorhexidine–alcohol to prevent 1 skin infection was 17, which is remarkably effective. The critical caveat is that this study focused on primarily abdominal, thoracic, and gynecologic surgeries. For otolaryngologists who operate in the face and neck regions, it is unclear whether these findings are applicable in their practice. Skin infections for neck and face surgeries are less common than other anatomic sites, so head and neck surgeons may not need to jump to chlorhexidine skin preparations as of yet. Perhaps these findings may be more applicable to otolaryngologists harvesting tissue from the chest, arms, or legs for reconstruction. (Reviewer-Young J. Kim, MD).

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Keywords: Skin Infection, Skin Prep

Print Tag: Refer to original journal article
The contribution of chin to a balanced facial profile needs to be routinely assessed in the preoperative planning for rhinoplasty.

**Background/Objective:** In the evaluation of a rhinoplasty patient candidate, the chin is an important component in the determination of a balanced aesthetic facial profile. Microgenia may accentuate the apparent size of the nose after rhinoplasty. This study examined a series of patients who were evaluated for posttraumatic and functional rhinoplasty to determine who might benefit from an adjunctive chin augmentation procedure.

**Participants/Methods:** The preoperative pictures of 100 consecutive rhinoplasty patients were examined, and 94 pictures fit the selection criteria; 58 men and 36 women were included in the study. Four methods of assessment for chin position were used: Silver, Legan, Merrifield, and Gonzales-Ulloa. The pictures were analyzed on imaging software by 2 otolaryngologists.

**Results:** Depending on the method of analysis, the proportion of patients with apparent horizontal microgenia ranged from 17% to 62% for men and 42% to 81% for women. Silver’s method produced the highest number of patients with apparent microgenia, while Legan’s analysis produced the lowest number. A total of 21% of males and 58% of females were positive for microgenia on ≥3 evaluation methods.

**Conclusions:** The need for chin augmentation should be considered in rhinoplasty candidates. This appears to be particularly true for women in the study.

**Reviewer’s Comments:** Many different methods of assessing chin position profile exist, and the incidence of microgenia varies greatly depending on the method of analysis. More than one method of analysis should be used in validating surgical chin augmentation. However, based on this study, the anecdotally quoted prevalence of microgenia of 15% to 20% in the rhinoplasty population may be an underestimate, at least for women. The exact extent of augmentation will still depend largely on the surgeon’s aesthetic sense and the patient’s desires. This can generally be achieved by either alloplastic implant or a genioplasty procedure. Preoperative image analysis is useful in this regard. (Reviewer-Tang Ho, MD).
Periosteum of the zygomatic root provides the strongest anchoring point for suspension of facial soft tissues.

**Objective:** To determine the amount of force necessary to cause tissue tear along various anchoring points commonly used in facelift and facial suspension surgeries.

**Methods:** Anatomical study utilizing 4 human cadavers of subjects aged 60 to 70 years for a total of 8 sides. Single 0 Prolene suture was placed through various common anchoring points in facelift. Three regions of the face were tested with 2 anchoring points in each region. Upper face anchoring points included temporalis muscle fascia and periosteum of the zygoma. Midface anchoring points included infralobular tissue and superficial musculoaponeurotic system (SMAS). Lower face anchoring points included the sternocleidomastoid (SCM) fascia and mastoid fascia. Force was applied perpendicular to the face and measured with a digital hanging scale. The amount of force needed to cause suture to tear through the tissue was recorded, averaged, and compared.

**Results:** For the upper face, the periosteum of the zygoma was significantly more durable than the temporalis fascia. Sutures are less likely to tear through tissue if they are placed perpendicular to the grains of the fascia. For the midface, the infralobular tissue was significantly more durable than the SMAS. For the lower face, the mastoid fascia was significantly more durable than the SCM fascia.

**Conclusions:** Tissue tearing force is variable depending on the location of the anchoring points as well as suture orientation in relation to the grain of the fascia.

**Reviewer's Comments:** There is a paucity of quantitative data that exist regarding the relative strength of tissue at various anchoring points for facelift. Although given that this is a cadaver study and the actual tearing force at the anchoring points is unknown, the study does provide useful information in regard to the relative tissue strength at various anchoring points. In clinical practice, it would be important to achieve complete release of tissues and facial ligaments to maximize the results and decrease the overall force placed on the suspension sutures to minimize the risk of sutures tearing through tissues. (Reviewer-Tang Ho, MD).

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Keywords: Rhytidectomy, Anchoring Points

Print Tag: Refer to original journal article
Gorham-Stout disease is a rare osteolytic disorder that can occasionally involve the skull base and temporal bone.

**Background:** Gorham-Stout disease is a rare disorder of unclear etiology that is also known as massive osteolysis. Bone is usually replaced with fibrovascular tissue. Fewer than 200 cases have been reported, and most of these cases involved the long bones of the extremities. The head and neck are involved in <20% of patients. Temporal bone involvement is rare.

**Objective:** To report a case of Gorham-Stout (GS) disease with temporal bone involvement. **Case Report:** A 29-year-old woman was diagnosed with GS at age 9, and a CT scan was performed. Prior treatment included fusion of the cervical spine and tracheostomy.

**Results:** The patient presented with complaints of intermittent aural fullness and egophony, which appeared or worsened on tapping on the left occipital bone. She also had bilateral tinnitus but no hearing loss. CT imaging demonstrated erosion of the bone of the skull base and left posterior fossa including the dorsal clivus, dens, occipital condyles, jugular foramen, and mastoid air cells. Bone lesions can be treated with radiation or stabilization depending on the region and the symptoms. In this case, no treatment of the temporal bone disease was required.

**Conclusions:** GS is a rare cause of common otologic symptoms.

**Reviewer's Comments:** I selected this paper because it brought light to a disease that I was not previously aware of but one that otolaryngologists are called on to treat. This patient required a tracheostomy and also had auditory complaints that many of us see often—aural fullness, egophony, and tinnitus. Although these symptoms are frequently encountered it is often difficult to find a definitive cause for them. The appearance of the CT scan in this patient is very unusual, and something we should be aware of. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Egophony, Tinnitus, Osteolysis

Print Tag: Refer to original journal article
Background/Objective: Upper airway obstruction due to subglottic stenosis is a difficult condition that requires multiple surgeries, sometimes without any benefit. Although uncommon, medical treatments for these patients are limited short of using systemic steroids. Antibacterial antibiotics are currently being used to treat Wegener's disease, but their use for airway stenosis is limited. The authors hypothesized that hydroxychloroquine, an antimalarial antibiotic, reduces the inflammatory process that can ultimately result in airway obstruction. Hydroxychloroquine has been used for autoimmune disease such as lupus and rheumatoid arthritis. Case Report: An elderly man with intubation-induced 4 mm subglottic airway was initially treated with steroids for months. No surgical interventions were used for the management of this disease during follow-up. Steroid withdrawal was not tolerated by the patient, so hydroxychloroquine was used at 2 mg/kg per day without steroids for 5 months.

Results: Post-treatment laryngoscopy showed complete resolution of the stenosis.

Conclusions: Hydroxychloroquine may reduce the inflammatory pathophysiology of the subglottic stenosis in patients and warrants further preclinical and clinical studies.

Reviewer's Comments: This is a case series of only one patient, so this report stimulates more questions than it answers. The most obvious one is whether this observation can be repeated. Having at least 3 patients in a series would have provided more credibility. The result in this patient was remarkable, but will hydroxychloroquine work for only steroid-treated patients, or can it work for those with steroid-naïve stenosis? Will it work for only iatrogenic stenosis, or can it work for airway obstructions induced by autoimmune disease? This is an intriguing report that deserves some follow-up. (Reviewer-Young J. Kim, MD).

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Keywords: Subglottic Stenosis, Stridor, Antimalarial

Print Tag: Refer to original journal article
Background/Objective: Neck dissection after radiation or chemoradiation treatment of head and neck carcinoma was justified when several studies showed significant occult cancer in the neck for N2 disease patients. Other trials cite the rate of neck failures >10% for N2 disease as justification for post-treatment neck dissections. However, these planned neck dissections have been questioned with the use of concurrent chemoradiation treatment and novel use of radiographic analysis of neck disease. Many major cancer centers do not treat the neck if there is no clinical or radiographic evidence of neck disease. The authors, therefore, raised the question of whether planned neck dissections are necessary for neck disease that has responded to chemoradiation.

Design/Methods: The authors reviewed 50 papers from 1986 to 2008. These papers examined the need for planned neck dissection after nonsurgical treatments of advanced head and neck carcinoma with N2 disease.

Results: After their review of the papers, the authors note that is there is no clear clinical evidence to justify planned neck dissection after concurrent chemoradiation therapy for N2-3 disease. Conclusion: Planned neck dissection for N2 disease for those with no disease assessed clinically and radiographically is not warranted.

Reviewer's Comments: The authors have established a cogent argument against the use of planned neck dissection for advanced head and neck squamous cell carcinoma patients who initially presented with N2-3 disease and were treated with concurrent chemoradiation therapy. However, several issues need to be addressed before these arguments can be accepted. First, this is not a meta-analysis that provides some quantifiable data. Such assessments may not be feasible, but the method used to establish their conclusion is to review the papers written on the topic. The only thing that provides credibility to this method is that the authors are all well-established and world-renowned clinicians who treat these patients. Also, their conclusions are based on their assumption that radiographic evidence of neck failures is sufficient. This is still somewhat controversial. Lastly, the review does not stratify the different sub-sites and different types of squamous cell carcinoma. There may be non–HPV-associated tumor that is biologically different that may not fall in this categorization of typical head and neck carcinoma. Overall, however, this review should provide sound arguments that planned neck dissections are not necessary for patients with no evidence of neck disease. (Reviewer-Young J. Kim, MD).

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Keywords: Planned Neck Dissection, Squamous Cell Carcinoma, Occult Neck Disease, Neck Failure

Print Tag: Refer to original journal article
Background: Surgical treatment of advanced head and neck carcinoma frequently requires free flap reconstruction. Free flap failures are uncommon, but the reasons for their failures are not clear. Because of this, there is no clear standardization of free flap procedures.

Objective: To review the current literature regarding factors associated with free flap failure.

Design/Methods: This is a literature review of published reports on head and neck free flap reconstruction from 1995 to present. The authors rated the clinical evidence level of these reports and sought out any consensus or consistent risk factors associated with free flap failures. Results of 38 articles were analyzed.

Results: Excessive intraoperative fluid (>7 L), prolonged operative time, use of nitrates and bronchodilators, use of irradiated recipient site, and involvement of multiple reconstructive surgeons are associated with free flap complications. The authors noted no evidence that age, diabetes, smoking history, intraoperative hypotension, and the use of pressor, colloids, anticoagulants, and nitrous gas were associated with free flap complications. Conclusion: Despite the number of reports, the authors conclude that there is still a significant lack of sound clinical evidence that delineates the risk factors for free flap failures.

Reviewer's Comments: Fortunately, free flap failures are uncommon, and their utilization is vital in the management of head and neck cancer. This review demonstrates that there are still a significant amount of "unknowns" in head and neck reconstructive surgery. Perhaps the fact that free flap failures are rare occurrences is the reason for the lack of good data for analysis. Given that most series of free flap failures are single institutional studies, a meta-analysis of the literature may have been useful. Regardless, there appear to be 2 variables that can be minimized to reduce the failure rates of free flap: intraoperative fluid and intraoperative time. (Reviewer-Young J. Kim, MD).

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Keywords: Free Flap Reconstruction, Free Flap Failure, Head & Neck Cancer

Print Tag: Refer to original journal article
Gabapentin Useful for Mucositis Pain During RT

Gabapentin for the Treatment of Pain Related to Radiation-Induced Mucositis in Patients With Head and Neck Tumors Treated With Intensity-Modulated Radiation Therapy.

Bar Ad V, Weinstein G, et al:

Head Neck 2010; 32 (February): 173-177

For head and neck cancer patients experiencing pain from mucositis, the use gabapentin may decrease the need for narcotics.

Background/Objective: Radiotherapy is utilized in head and neck cancer patients, and they all invariably experience mucositis. Pain associated with mucositis is debilitating, and narcotics are used to control the pain. The authors hypothesized that gabapentin can be used for the neuropathic pain associated with mucositis.

Methods: This is a case series of 30 head and neck cancer patients who received surgery and radiation treatment for their cancer. All patients received gabapentin as well as narcotics for pain control during radiation. There were no control groups. Gabapentin was started in week 2 of radiation therapy and was increased to 2700 mg/day during the course of radiation. No concurrent or induction chemotherapy was used. Narcotic use was measured, and intensity-modulated radiation therapy (IMRT) was used for all patients.

Results: During weeks 3 and 4 of IMRT, only 10% of patients required narcotic use for breakthrough pain. Grade 2 and 3 mucositis was present in 56% of patients during the third week and in 76% during the fourth week. During the last week of IMRT, >80% had grade 2 or 3 mucositis, and only 35% required narcotics. The authors report no adverse events related to gabapentin. Conclusion: Gabapentin may be useful for mucositis-related pain during radiotherapy.

Reviewer's Comments: Gabapentin has been well recognized as a neuropathic pain analgesic, and the authors claim that it may work safely for pain associated with severe mucositis. One important point is that the patients in this population received no chemotherapy. Since gabapentin is metabolized in the kidney, we do not know how it may affect renal function when given concomitantly with platinum or 5-FU drugs. Since many of the head and neck cancer patients receive concomitant chemoradiation therapy, this case series, in which the patients received only IMRT, may not be applicable to those with cancer of the oropharynx or larynx. Of course, this is a case series, so there is no comparison to a control group of patients who did not receive gabapentin. (Reviewer-Young J. Kim, MD).

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Keywords: Head & Neck Cancer, Radiation-Induced Mucositis, Gabapentin

Print Tag: Refer to original journal article
Can CI Programming Be Done Over Internet?

McElveen JT Jr, Blackburn EL, et al:
Otol Neurotol 2010; February 9 (): epub ahead of print

According to this study, cochlear implant programming can be performed remotely.

**Background:** Cochlear implants (CI) are now routinely used to restore functional hearing in patients whose hearing loss is too severe to be significantly improved with hearing aids. The success of this technology often depends on postoperative follow-up. For some patients, especially those in rural areas or with transportation issues, it can be difficult to get to a center where there is appropriate expertise for CI programming.

**Objective:** To determine if remote programming of CI can be a reasonable option.

**Design:** Retrospective review.

**Participants:** 7 post-lingually deaf patients who underwent CI remote programming were compared with 7 patients who underwent CI programming in person.

**Methods:** The authors’ institution established a remote satellite CI program >250 miles away. Technology was implemented that allowed CIs to be programmed remotely over the Internet. Programming was performed at postoperative months 1, 3, 6, and 12. Hearing in noise testing (HINT) as well as consonant-nucleus-consonant (CNC) testing was performed. An audiologist was available at the remote site.

**Results:** The Internet connection was effective in being able to be reliable enough to permit CI programming in every case. The postoperative pure-tone averages were significantly better in patients who underwent remote programming ($P <0.001$). However, there were no other significant differences between these groups in terms of HINT or CNC scores at 3 or 6 months. There was also no significant difference in time commitment with programming at the remote versus local sites.

**Conclusions:** Remote CI programming can be a viable alternative for patients at remote sites.

**Reviewer’s Comments:** "Telemedicine" is a popular buzz word. Many of the concepts that have been proposed in this field such as using robots to allow surgeons to remotely operate on patients on the other side of the world, although sexy, currently lack viability. This study demonstrates that remote CI programming is viable. This option may allow us to extend this technology to patients who live far from CI centers. However, the remote center still needs to have a significant amount of equipment and an audiologist, which may make it more practical for patients to travel to the home center. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Hearing Loss, Cochlear Implant, Telemedicine

Print Tag: Refer to original journal article
The authors found a significant correlation between falling levels of common air pollutants and decreasing incidence of ear infections in children.

**Background:** Otitis media is a very common problem in children, and one that is often associated with eustachian tube dysfunction, which is frequently related to allergies and nasal irritation. The incidence of these problems may be related to environmental factors such as pollution.

**Objective:** To see if there is a relationship between air quality and pediatric ear infection.

**Design:** Case-control study.

**Participants:** 126,060 children included in the National Health Interview Survey (NHIS) between 1997 and 2006 were included in the current analysis. Their mean age was 8.6 years.

**Methods:** The NHIS dataset was reviewed for frequent ear infections (FEI, ≥3 in prior year), respiratory allergy, and seizures. Using the website of the Environmental Protection Agency, historical data were reviewed for air quality parameters including carbon monoxide, particulate matter, nitrogen dioxide, and sulfur dioxide.

**Results:** The 1-year prevalence for FEI was 6.6%; respiratory allergies were more frequent at 11.8% and seizures were 0.7%. During the period studied, air quality steadily improved, and the incidence of FEI decreased with a statistically significant ($P<0.001$) regression coefficient for each of the pollutants studied. The regression coefficients ranged from 0.007 for particulate matter to 11.2 for sulfur dioxide. There was no significant correlation between pollutant levels and respiratory allergies or seizures.

**Conclusions:** This study finds that improvements in air quality over a 9-year period correlated with a lower prevalence of frequent pediatric ear infections.

**Reviewer’s Comments:** There are a lot of factors associated with frequent ear infections in children, including daycare attendance, number of siblings, tobacco smoke exposure, absence of breast feeding, poverty, and now air pollution. A lot of changes occurred during the period of study; in addition to the changes in air pollutant levels that the authors studied, it is possible that the rate of breast feeding increased, the standard of living improved, parents smoked less and that other factors that could have had an influence also changed. The authors of this paper also recently published a paper that correlated global warming with otolaryngology-related respiratory disease. We also do not have any information on the severity of illness in these patients, and the determination of illness was made by patients and parents rather than health-care providers. However, several other studies have also shown a correlation between air pollutants and childhood illness, so the effect is likely real. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Otitis Media, Pediatrics, Air Pollution

Print Tag: Refer to original journal article
Websites With Tinnitus Information -- Proceed With Caution

A Critical Evaluation of Web Sites Offering Patient Information on Tinnitus.

Kieran SM, Skinner LJ, et al:

Ear Nose Throat J 2010; 89 (January): E11-E144

Commercial websites provide lower quality information on tinnitus than noncommercial websites.

**Background:** Patients now get a significant amount of information from the Internet. Although there are good sources of information available, the Internet can also be a source of questionable information as well as some things that are downright false. Tinnitus is a symptom that is both common and often incompletely treated by traditional medicine, and thus, many patients turn to the Internet for tinnitus information and possible treatment strategies.

**Objective:** To evaluate the quality of tinnitus information available on the Internet.

**Design:** Review of web-based information.

**Methods:** 39 websites that dispensed tinnitus information were found. The 3 most popular search engines were queried using the search term "tinnitus." A database of 90 English language websites was created from this search using the top 30 hits from each site. Removal of redundant and inappropriate sites reduced the number of sites to 39. These sites were analyzed using 2 scoring systems. First, they were scored on a 7-point accountability scale based on the presence of authorship information, attribution, disclosure, and timeliness. A 10-point tinnitus information value (TIV) that awarded points for tinnitus definition, differential diagnosis, discussion of testing such as audiometry, treatment options, and disclaimers, was also developed.

**Interventions:** Websites were evaluated using these 2 scales.

**Results:** No author was identified in 69% of sites, 10% were authored by an otolaryngologist, and 5% were authored by other physicians. Over one-half of the websites were commercially oriented. The noncommercial sites had a significantly higher TIV when compared with the commercial sites, although the accountability scores were not significantly different between these 2 source types. Based on these scoring systems, the authors ranked the top 10 tinnitus websites.

**Conclusions:** Websites on tinnitus have variable quality, and sites with a commercial interest tend to have lower quality information than noncommercial sites.

**Reviewer's Comments:** I would agree with the author's finding that the information on tinnitus available on the Web is variable in quality. The rating system described here is based on the presence of several factors, but never attempts to directly evaluate the accuracy of the information itself. Another problem with this paper is that although it was published in January of 2010, the search was performed 4 years ago. The information available on the Web can change quickly and a current search of the Web revealed several sites that were not included in this study. The current top 5 Google results included excellent sites at the National Institutes of Health, Mayo Clinic, American Tinnitus Association, and Wikipedia, all of which I feel provide good quality information on tinnitus. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Tinnitus, Hearing Loss, World Wide Web, Internet, Patient Education

Print Tag: Refer to original journal article