

MMA Possible Treatment of OSA

Complications/Adverse Effects of Maxillomandibular Advancement for the Treatment of OSA in Regard to Outcome.

Blumen MB, Buchet I, et al:

Otolaryngol Head Neck Surg 2009; 141 (November): 591-597

In spite of potential local adverse effects and aesthetic changes, maxillomandibular advancement is very effective in treating severe OSAS.

Objective: To look at the postoperative complications, adverse effects, and the surgical response rate of maxillomandibular advancement (MMA) for the treatment of obstructive sleep apnea syndrome (OSAS).

Design: Chart review of a case series.

Participants: 50 patients from a group of 59 who completed a 3-month postoperative polysomnographic evaluation.

Methods: Patients with OSAS were considered for MMA if they had maxillomandibular retrusion on cephalometric analysis, had severe OSA defined by an apnea-hypopnea index (AHI) of ≥ 30 events per hour, and had refused or were unsuccessful with CPAP. Each patient was evaluated clinically, with a cephalometric analysis and polysomnography. MMA was accomplished with sagittal ramus mandibular and maxillary Le Fort I osteotomies with plate and screw rigid fixation. Patients were kept in maxillomandibular fixation for 4 weeks after surgery. No orthodontic treatment was given. Patient records were reviewed retrospectively looking for complications and length of hospital stay. Patients and their families completed a follow-up questionnaire and had a postoperative polysomnography evaluation at least 3 months after the MMA.

Results: 50 of the 59 patients completed the study. The mean time of polysomnography was 11.6 months after surgery. Twenty-one patients had previous surgery for OSAS prior to their MMA. The mean MMA was 7.4 mm in the maxilla and 11.2 mm in the mandible. The mean hospital stay was 8.7 days. There were no postoperative respiratory problems or infections. The mean age of the 49 male patients and 1 female patient was 46.4 years. Functional changes after MMA included TMJ pain in 21%, limited oral opening in 39.4%, gingival problems in 34.2%, and a feeling of dental mobility in 21%. Ninety-four percent of patients had inferior alveolar nerve sensory changes after surgery, but these disappeared in 48% of these patients a few months after surgery. All patients had changes in facial appearance, and 52.6% were happy with that change. All polysomnographic parameters improved significantly except for the percentage of REM sleep. The surgical outcome was judged to be successful overall for 80% of patients. Ninety-four percent of patients would recommend MMA for other OSAS patients.

Conclusions: MMA was successful in 80% of the studied cases in bringing OSAS patients to within normal AHI. Doctors who treat OSAS should not neglect counseling patients on MMA as a primary treatment with good long-term results.

Reviewer's Comments: This is a very positive study evaluating MMA as a definitive treatment for OSAS. The hospitalization times for these patients seemed long. I also had difficulty understanding why mandibular advancement means were greater than those for maxillary advancement. I assume, in the absence of orthodontic treatment, that the occlusion was not changed. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Orthognathic Surgery, OSA, Maxillomandibular Advancement

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Significant Number of Battle Wounds Occur in Maxillofacial Region

Characterization of Craniomaxillofacial Battle Injuries Sustained by United States Service Members in the Current Conflicts of Iraq and Afghanistan.

Lew TA, Walker JA, et al:

J Oral Maxillofac Surg 2010; 68 (January): 3-7

Approximately 26% of today's U.S. battle injuries occur in the craniomaxillofacial region because this area is exposed even when body armor is used.

Objective: To describe the craniomaxillofacial battle field injuries sustained by members of the U.S. Armed Forces in Iraq and Afghanistan.

Design: A review of the Joint Theater Trauma Registry from October 2001 to December 2007 for the characteristics of battle field injuries.

Participants/Methods: In the time period investigated, there were 7770 injured U.S. servicemen from Iraq and Afghanistan. Injuries to the maxillofacial region were evaluated. The type of injury, cause of injury, and location were identified from the registry.

Results: There were 2014 craniomaxillofacial injuries in 7770 injured servicemen. The mean number of injuries per soldier was 2.4. Fifty-eight percent of the injuries were penetrating, and 27% were fractures; 36% of the fractures were in the mandible, and 19% were in the maxilla and zygoma. The leading cause of injury was an explosive device, and only 8% were gunshot wounds.

Conclusions: Because of modern body armor and the use of advanced surgical units close to the site of battle, many patients who would have died in other wars survived their injuries. A significant number of injuries were in the maxillofacial region because this area is exposed even when body armor is used.

Reviewer's Comments: This is an excellent article showing the high incidence of maxillofacial injuries in the current Middle East conflicts. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Trauma, Maxillofacial Injuries, Battle Injuries

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Out-of-Hospital Cardiac Arrest -- Do Drugs Really Help?

Intravenous Drug Administration During Out-of Hospital Cardiac Arrest.

Olasveengen TM, Sunde K, et al:

JAMA 2009; 302 (November 25): 2222-2229

The use of IV drugs along with ACLS provide a slight increase in short-term outcomes but show no significant improvements in survival to discharge or long-term outcomes.

Objective: To compare the outcomes of advanced cardiac life support (ACLS) with and without IV drug administration.

Design: Prospective, randomized, controlled clinical trial.

Participants: 851 patients.

Methods: All patients were treated for nontraumatic induced out-of-hospital cardiac arrest. Patients were then randomized to 1 of 2 groups: ACLS with IV access and administration of drugs or ACLS without IV administration of drugs. The primary outcome measured was survival to discharge. Also measured was survival without significant neurological deficit and 1-year rate of survival.

Results: 418 patients were randomized into the IV access group, and 433 were randomized to the no IV access group. The rate of survival to discharge was 10.5% in the IV drug group and 9.2% in the group without IV access or drug administration. The rate of favorable neurological outcomes was 10% in the IV access group and 8% in the no access group. The short-term rate of survival was 40% in the IV group and 25% in the no access group. In patients with an initial presentation of either ventricular fibrillation or pulseless ventricular tachycardia, no differences were found in either short- or long-term outcomes.

Conclusions: Patients treated with ACLS, IV access, and drug administration had a higher rate of short-term survival, but no statistically significant differences were noted related to survival to discharge or long-term survival. The quality of CPR was similar in both groups.

Reviewer's Comments: This very interesting study appears to show that there is very little evidence to support the administration of intravenous drugs, specifically anti-arrhythmics, during a cardiac arrest. (Reviewer-David M. Grogan, DMD).

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Keywords: Out-of-Hospital Cardiac Arrest, IV Drugs

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Poor Oral Hygiene, Smoking Increase Postoperative Pain

Influence of Oral Hygiene and Smoking on Pain and Swelling After Surgical Extraction of Impacted Mandibular Third Molars.

Larrazábal C, Garcia B, et al:

J Oral Maxillofac Surg 2010; 68 (January): 43-46

After the removal of third molars, smoking and poor oral hygiene increase postoperative pain.

Objective: To evaluate and measure pain and swelling immediately after the removal of a third molar and during the first week postoperatively.

Design: A prospective clinical study of patients undergoing removal of impacted mandibular third molars.

Participants/Methods: 50 patients who were undergoing mandibular third molar surgery were entered in the study. Oral hygiene was measured by the number of times patients reported daily tooth brushing. The presence of calculus and plaque was also measured. Smoking status was categorized as nonsmoking, smoking up to 10 cigarettes a day, smoking 11 to 20 cigarettes a day, or smoking >20 cigarettes a day. Pain and swelling were recorded by each patient at 2, 6, and 12 hours after surgery and each day for 7 days postoperatively. Pain was measured using a visual analog scale, and swelling was categorized into 4 categories according to the amount of swelling present. Swelling and pain were then compared with the behavior of oral hygiene and smoking.

Results: A lower brushing frequency before surgery was associated with greater pain experienced postoperatively. Smoking during the first postoperative week also increased postoperative pain. No correlation was found between the degree of swelling and any of the study variables.

Conclusions: Poor oral hygiene and smoking postoperatively were correlated with increased postoperative pain.

Reviewer's Comments: There were few patients in this study; however, there was a trend correlating smoking postoperatively, poor oral hygiene, and pain experienced in the postoperative period. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Dentoalveolar Surgery, Complications, Smoking

Print Tag: Refer to original journal article

Costs of Treating Alcohol-Impaired Drivers

Emergency Department Charges for Evaluating Minimally Injured Alcohol-Impaired Drivers.

Lee MH, Mello MJ, Reinert S:

Ann Emerg Med 2009; 54 (October): 593-599

The treatment of alcohol-impaired drivers, even if hospital admission is not required, far exceeds the costs of treating non-alcohol-impaired drivers with similar injuries.

Objective: To determine the differences in charges and length of stay in the emergency department (ED) between non-impaired and alcohol-impaired drivers who did not require admission.

Design: Retrospective chart and billing records review.

Participants: 1618 drivers in motor vehicle crashes treated at a Level I trauma center ED who were able to be discharged home without hospital admission.

Methods: Patients included in the study were all vehicle drivers, not passengers. All patients were between the ages of 21 and 65 years. Patients were able to be evaluated, treated, and discharged without admission. Information downloaded from the charts included dates and times of service, demographics, and alcohol status based on breath and serum testing, as well as clear documentation by the treating physician. The study was entirely based on alcohol status. Patients with recent illicit substance abuse were excluded. Patients were divided into alcohol-positive and alcohol-negative groups. Billing data, imaging charges, facility charges, laboratory charges, medication charges, and physician charges for patients in each group were compiled. Length of stay in the ED for each group was also documented.

Results: Not all alcohol-related accident victims had blood alcohol determinations. Patients associated with alcohol use were sometimes placed in this group based on the physician's documentation. For patients who were in the alcohol-related group who had serum determinations, the mean blood alcohol level was 185 mg/dL. Alcohol-related patients were more likely to be male (70%), white (71%), and younger than alcohol-negative patients. Patients who were alcohol positive had higher median charges (\$5884 vs \$1346), higher imaging charges (\$3139 vs \$1374), higher laboratory charges (\$3202 vs \$738), and longer ED stays (5.7 vs 2.4 hours) than alcohol-negative patients. With the exception of ED physician charges, which were the same for both groups, alcohol-related charges were more than alcohol-negative charges in all respects.

Conclusions: When there is evidence of alcohol use in drivers who are injured in car wrecks but are ultimately discharged from the ED without admission, charges and lengths of stay are much higher than when no alcohol is involved.

Reviewer's Comments: Are you surprised? Intoxicated patients are much more difficult to manage and to evaluate physically and radiographically. They also take up considerably more time in the effort. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Trauma

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How to Treat an Implant Displaced Into the Sinus

The Management of Complications Following Displacement of Oral Implants in the Paranasal Sinuses: A Multicenter Clinical Report and Proposed Treatment Protocols.

Chiapasco M, Felisati G, et al:

Int J Oral Maxillofac Surg 2009; 38 (December): 1273-1278

Treatment of a displaced implant into the maxillary sinus with functional endoscopic surgery or in combination with an intraoral approach for the treatment of an oro-antral communication appears to be an effective protocol.

Objective: To present the outcomes of treatment of implant complications involving the paranasal sinuses.

Design: A retrospective clinical investigation.

Participants: 27 patients.

Methods: Patients presented with displaced or migrated implants into the paranasal sinuses. All patients underwent both a panoramic and CT analysis to determine the existence of sinus pathology and the location of the dental implant. Twenty-six patients had implants displaced into the maxillary sinuses, and 1 patient had a displaced implant migrate to the sphenoid sinus. Thirteen patients presented with classic clinical signs and symptoms of chronic sinusitis, and 19 presented with a patent oro-antral communication. All patients underwent either functional endoscopic sinus surgery, an intraoral approach to the sinus, or a combination of both methods. Patients were followed up for at least 1 year with both clinical and radiographic examinations.

Results: All patients treated initially with endoscopic surgery underwent a second endoscopic surgery at 6 to 12 months postoperatively to evaluate the recovery of the sinus. Of the 27 patients, 26 had complete resolution of their symptoms. One patient treated with both endoscopic surgery and an intraoral approach to close an oro-antral communication presented 2 years postoperatively with an acute sinusitis and underwent a second endoscopic procedure.

Conclusions: Utilizing a combination of both an endoscopic procedure and an intraoral approach for an implant displaced into the sinus resulted in a 100% success rate. The key factor for recovery is the re-creation of an adequately patent maxillary ostium.

Reviewer's Comments: This is very nice retrospective report. With the increased utilization of dental implants, one can assume that the incidence of implants displaced into the maxillary sinus will increase. This paper establishes an effective protocol for treatment. (Reviewer-David M. Grogan, DMD).

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Keywords: Implant Displacement, Complications, Management

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Complex Orthognathic Surgery Rarely Requires Blood Transfusion

Blood Replacement Practices for Complex Orthognathic Surgery: A Single Surgeon's Experience.

Posnick JC, Rabinovich A, Richardson DT:

J Oral Maxillofac Surg 2010; 68 (January): 54-59

Donation of autologous blood prior to complex orthognathic surgery is rarely indicated since the need for blood transfusion during surgery is rare.

Objective: To review the blood replacement practices in a consecutive series of a single surgeon's experience with complex orthognathic surgery.

Design: Record review.

Participants/Methods: 34 patients who had bimaxillary orthognathic surgery were given the opportunity to donate autologous blood preoperatively. Twenty-six of the 34 patients (76%) elected to donate blood in advance of the surgery. Patient records were reviewed for a minimum of 3 months postoperatively for any complications, and the use of blood during or after surgery was recorded.

Results: Only one of the patients who donated blood before surgery received the blood back. One other patient received one unit of banked blood. There was no clear indication of why these 2 patients received a blood transfusion since their hematocrit was not low enough to clearly indicate the need for blood.

Conclusions: Because 28 of the 29 units that were donated were alternately discarded and because of the high cost of collecting autologous blood, the data in this study indicate that the practice of routinely collecting blood prior to complex orthognathic surgery is not warranted.

Reviewer's Comments: This interesting article shows that, in fact, the use of blood after complex orthognathic surgery is very rare. Other published articles have shown that it is not uncommon for the blood to be given back to the patient at the time of surgery even if it is not necessary. This, of course, leads to the chance of errors and complications. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Orthognathic Surgery, Transfusion, Autologous Blood

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Does Keratinized Alveolar Mucosa Affect Peri-Implant Soft-Tissue Health?

Five-Year Evaluation of the Influence of Keratinized Mucosa on Peri-Implant Soft-Tissue Health and Stability Around Implants Supporting Full-Arch Mandibular Fixed Protheses.

Schrott AR, Jimenez M, et al:

Clin Oral Implants Res 2009; 20 (October): 1170-1177

Implants with <2 mm of surrounding keratinized mucosa are prone to more plaque accumulation and gingival recession than those with more surrounding fixed keratinized mucosa.

Objective: To evaluate the long-term peri-implant soft-tissue health over a 5-year period as affected by the keratinized mucosa around the implants.

Design: 5-year, prospective, multicenter clinical trial.

Participants: 73 completely edentulous patients were consecutively enrolled in the study. All patients were totally edentulous and wanted restoration with a fixed mandibular prosthesis. Mean patient age was 58 years.

Methods: 386 ITI solid screw implants with a TPS surface were placed using a non-submerged technique and restored with full-arch screw-retained hybrid protheses. During follow-up visits at prosthesis delivery and 2, 6, 12, 18, 24, 36, 48, and 60 months later, plaque accumulation, gingival bleeding, location of the gingival margin in relation to the implant shoulder, and the width of the peri-implant keratinized mucosa were evaluated.

Results: Over the 5-year follow-up, 21% of patients were lost to follow-up. Ultimately, 58 patients with 307 implants were able to be followed up the full 5 years. Plaque accumulation and gingival bleeding were not significantly different on the buccal surfaces of teeth with <2 mm or \geq 2 mm of keratinized mucosa, but both were significantly associated with <2 mm keratinized mucosa on the lingual surface of the implants. Significantly more buccal gingival recession was found throughout the course of the study when the original amount of peri-implant keratinized mucosa was <2 mm. Sites with less keratinized mucosa usually had greater amounts of buccal gingival recession. In sites with \geq 2 mm keratinized mucosa, the gingival margins tended to remain stable. Recession usually was evident during the first 12 months after prosthesis insertion.

Conclusions: Having \geq 2 mm keratinized mucosa around implants is beneficial in reducing plaque accumulation and gingival bleeding. In addition, there is less peri-implant gingival recession over time when good keratinized mucosa is present.

Reviewer's Comments: We all know that attached keratinized mucosa of good quality and quantity is important in maintaining periodontal health, around implants as well as around natural teeth. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Implants, Keratinized Mucosa, Long-Term Effects

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Where Does That Fracture Really Go?

3D Evaluation of the Lingual Fracture Line After a Bilateral Sagittal Split Osteotomy of the Mandible.

Plooi J, Naphausen M, et al:

Int J Oral Maxillofac Surg 2009; 38 (December): 1244-1249

There is a statistical correlation between the position of the lingual corticotomy and the pattern of lingual fracture. When the cut extends anterior to the foramen, one-third of cases split through the mandibular canal.

Objective: To determine the efficacy of cone beam CT in analyzing the lingual fracture line after bilateral sagittal split osteotomies.

Design/Participants: Prospective clinical investigation involving 40 patients. The mean age of the patients was 34 years (range, 17 to 61 years).

Methods: All patients presented for surgical correction of mandibular hypoplasia via sagittal split osteotomies. None of the patients presented with maxillary deformities. All splits were performed in a routine fashion, and the segments were stabilized with miniplates. All patients were scanned on the first postoperative day. A lingual split scale was developed to determine the path of the lingual fracture. An attempt was made to develop a correlation between the end of the lingual horizontal cut and the path of the lingual split.

Results: In 51.3% of splits, the fracture line ran through or behind the mandibular foramen down toward the inferior border, as described by Hunsuck. In 32.5% of cases, the fracture line ran through the mandibular foramen, and the mandibular canal ran down toward the inferior border. In 13.8% of cases, the fracture ran posteriorly toward the posterior border of the mandible before extending to the inferior border. In 66% of cuts, the end of the lingual cut ended in front of the anterior border of the mandibular foramen. In these patients, the fracture ran as per Hunsuck (45%) or through the mandibular foramen (43%). In the 34% of cuts in which the lingual cut extended posterior to the mandibular foramen, 63% ran as described by Hunsuck, distal to the foramen and extending inferiorly to the inferior border.

Conclusions: The lingual split pattern was influenced by the length of the medial horizontal osteotomy. Only 51% of fractures ran distal to the foramen and extended to the inferior border, and 33% ran through the mandibular canal.

Reviewer's Comments: Even though split patterns have been very well described in the past, this technology lets us visually evaluate the variability in the lingual fracture patterns. It is interesting to note that, in all cases, the intent was to extend the lingual cut distal to the foramen, but 66% of cases ended up anterior to the foramen. (Reviewer-David M. Grogan, DMD).

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Keywords: Lingual Fracture Line, Bilateral Sagittal Split Osteotomy

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Topical Anesthetic Gel Is Effective in Relieving Pain of Dry Socket

The Efficacy of a Topical Anesthetic Gel in the Relief of Pain Associated With Localized Alveolar Osteitis.

Burgoyne CC, Giglio JA, et al:

J Oral Maxillofac Surg 2010; 68 (January): 144-148

A gel incorporating a topical anesthetic is effective in reducing the pain of alveolar osteitis.

Objective: To investigate the use of a topical anesthetic combination that forms a gel when placed in the socket and, therefore, does not require a carrier and to compare it with eugenol on a gauze carrier for the reduction of pain of a dry socket.

Methods: Patients who had teeth extracted and reported to the clinic 2 to 3 days after extraction with increasing pain fitting the diagnosis of alveolar osteitis were included in the study. They were placed into 2 groups, a control group and an experimental group, by a randomized table. Twenty patients were in the control group and 15 patients were in the experimental group. Those in the control group were treated with a dressing of eugenol on a plain gauze strip placed in the socket, and the experimental group had a gel containing prilocaine, lidocaine, and a thermosetting agent dripped into the tooth socket from a syringe. All patients were then given a diary containing a series of visual analog scales and asked to initially assess their pain at 5, 10, and 15 minutes after treatment. They were also asked to fill out the diary for 48 hours following the insertion of the dressing.

Results: Both treatment groups had significant reduction in pain at the 15-minute period. There was no significant difference in this reduction between the 2 groups. There was a trend toward more pain reduction with the gel than with the eugenol strip; however, this difference did not reach statistical significance. The primary comparison of pain at the 24- and 48-hour interval was not significantly different.

Conclusions: There was significant pain relief in both the control and the experimental groups. While there was no statistically significant difference between the 2 groups, the gel group did show certain advantages, one of which was that the gel does not need to be removed and there is an antibacterial effect that may shorten the duration of the alveolar osteitis.

Reviewer's Comments: This paper compares eugenol on a gauze strip with a gel containing a topical anesthetic. There is, in fact, a trend toward pain relief with the gel, however, the number of patients in this study was small and significance may have been shown with a larger patient population. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Dentoalveolar Surgery, Complications, Alveolar Osteitis, Pain

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There's More -- The Debate Continues

Resident Work Hour Restrictions Impact Chief Resident Operative Experience.

Christmas AB, Brintzenhoff RA, et al:

Am Surg 2009; 75 (November): 1065-1068

ACGME mandated house staff work hour restrictions appear to have reduced residents' surgical experiences, especially those of chief residents.

Objective: To review the effects of the 80-hour work week restriction on a general surgery residency program 5 years after the implementation of the Accreditation Council for Graduate Medical Education (ACGME) mandated regulation.

Design: Retrospective review of surgery case logs for graduating chief residents at the authors' institution compared to those of chief residents who graduated prior to implementation of the restrictions.

Participants: Chief residents, 6 who graduated prior to 2003 and 16 who graduated in the 5 years thereafter, were included.

Methods: The surgical logs of the 22 residents were separated into pre- and post-initiation of the 80-hour work week restriction. Before imposition of the restrictions, the estimated chief resident duty hours were 100 per week. The retrospective review examined 4 different case log categories: total major cases; total trauma operative cases; total chief cases; and total teaching assistant cases. The comparisons were then discussed by the authors, about their potential or perceived effects of the regulations on resident training.

Results: After implementation of the work hour restrictions, the mean number of chief resident major cases decreased from 1061 ± 176 to 964 ± 237 . The number of trauma operative cases reduced from 52 ± 22 to 47 ± 17 . The mean number of teaching assistant cases increased from 67 ± 55 to 91 ± 55 . None of these findings were statistically significant. There was, however, a significant decrease in the mean number of documented chief cases from 494 ± 116 to just 333 ± 116 .

Conclusions: The conclusions were obvious from the study. Graduating chief residents have less surgical experience overall than they did prior to implementation of ACGME restrictions - at least in this program.

Reviewer's Comments: Oral and maxillofacial surgery residency programs, at least those that are hospital based, should be in compliance with these work hour restrictions. Do they affect us like they have other surgery programs? Current opinions differ, and conflicting information has been presented from different surgery programs. Residents feel their quality of life has been improved, while attending physicians feel their work load has increased and their quality of life has suffered. There is little evidence that medical errors in judgment have been reduced by the restrictions. An increasing number of cases may be going uncovered by residents. Credentialed surgeons may, as a result, become reluctant educators. Will resident education ultimately be compromised? The full effects of the 80-hour work week have yet to be determined. The authors acknowledge that their findings have not been compared with the national trend, but cite in their interesting discussion many papers that weigh-in on the topic. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Residents, Weekly Work Hour Restrictions, Impact

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Diagnosing and Managing Lingual Thyroglossal Duct Cysts

Update on Endoscopic Management of Lingual Thyroglossal Duct Cysts.

Burkart CM, Richter GT, et al:

Laryngoscope 2009; 119 (October): 2055-2060

An endoscopic technique can be successfully used to surgically remove lingual thyroglossal duct cysts after determining there is a normal thyroid gland.

Objective: To review the incidence, clinical features, and management of lingual thyroglossal duct cysts, which are, “uncommon congenital midline neck masses arising from tubal remnants of embryologic thyroid descent.”

Design: Retrospective chart review.

Participants: 189 total patients with thyroglossal duct cysts, 16 of whom had a lingual thyroglossal duct cyst alone, were included.

Design/Methods: This retrospective chart, radiograph, and treatment review of all 16 patients treated for a lingual thyroglossal duct cyst was conducted to try to determine a reliable protocol for managing these cysts. Data compiled included patient age at presentation, sex, symptom severity, location and size of the lingual thyroglossal duct cyst, surgery performed, years of follow-up, recurrence rate, and complications. The surgical technique included complete airway endoscopy to evaluate the extent of the disease at the tongue base and the airway for other possible anomalies. A suspension laryngoscope is used to expose the entire tongue base for excision of the cyst with tracheal intubation included, if indicated. The cyst itself is removed using electrocautery, electrocautery and cold dissection, or with microdebridement with electrocautery lesion base ablation. The surgical site is left open to heal secondarily. Discharge criteria for the patient include the ability to eat, good room air oxygen saturation, and no evidence of sleep apnea. Before the procedure, the presence of a normal thyroid gland is confirmed.

Results: 16 of the 189 patients with thyroglossal duct cysts had isolated cysts in the tongue base. The average patient age was 30.1 years. Three of the patients had symptoms of labored breathing, 2 had a history of apnea and cyanosis, and others had obstructive sleep apnea or failure to thrive; several also had odynophagia. After surgery, the patients had a small residual cavity in the tongue base that healed by secondary intention. Twelve of the 16 patients were kept intubated overnight, but all were able to be discharged the day after surgery. Average follow-up time for the patients was 3.77 years with no recurrence of the lingual thyroglossal duct cyst. The authors' surgical approach, using a suspension operating laryngoscope with a spontaneously breathing patient, either nonintubated or intubated with the smallest possible endotracheal tube, provided excellent access with minimal morbidity.

Conclusions: Transoral endoscopic excision of lingual thyroglossal duct cysts that may cause threatening airway obstruction allows complete excision with minimal risk of recurrence or complications.

Reviewer's Comments: This interesting paper has a good discussion about the incidence, differential diagnosis, and presurgical work-up for all patients with thyroglossal duct cysts. The illustrations are excellent. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Pathology, Immunology, Lingual Thyroglossal Duct Cysts

Print Tag: Refer to original journal article

Importance of the Internal Morphology of Ameloblastomas

Internal Morphology of Ameloblastomas: A Study of 24 Resected Specimens.

Ngwenya SP, Raubenheimer EJ, et al:

Oral Surg Oral Med Oral Path Oral Radiol Endod 2009; 108 (November): 754-762

Surgeons should not treat unilocular ameloblastoma different than multilocular lesions. The best treatment for all ameloblastomas is removal, with a wide margin of normal tissue.

Objective: To look at the internal macroscopic architecture of resected ameloblastomas and correlate those findings with microscopic and radiographic features.

Design: Comparative evaluation of resection specimens macroscopically, microscopically, and radiographically. **Materials:** Jaw resection specimens from 24 patients.

Methods: Materials available from each of the surgical cases included the resected specimens for macroscopic evaluation, the 2-dimensional preoperative radiographs and tissue samples taken from areas of the resected specimens that were macroscopically distinctive for microscopic examination. The resection specimens were hemisected, and then each hemisection further divided in 1-cm slices. The macroscopic appearance of the specimens was recorded photographically and compared with the preoperative radiographs. Comparisons were then made of the solid and cystic portions of the tumor with what was interpreted on the radiographs. From multiple areas of the tumor, macroscopically different areas were sampled for microscopic examination.

Results: Radiographs were generally unreliable in predicting the solid or hollow cyst-like areas of the ameloblastomas that were visible macroscopically. In >50% of the cases, nodular and/or papillary proliferations into cystic lumens were observed that could have been missed with an incisional biopsy. Two of the 24 ameloblastomas had foci that were diagnosed as odontogenic carcinoma in situ. Intraluminal areas of what often appeared to be unicystic lesions frequently had significant microscopic changes. Thus, conventional 2-dimensional radiographs were inadequate for showing macroscopic changes (ie, solid vs cystic lesion areas), which grossly would not appear unicystic as they did on radiographs.

Conclusions: The authors feel radiographic descriptions of ameloblastomas should read "unilocular or multilocular" as opposed to "unicystic or multicystic." The latter description applies to examination of the gross specimen. Further, a diagnosis of ameloblastoma on a random sample from an incisional biopsy does nothing to describe details of the entire lesion. Unilocular ameloblastomas need to be treated the same as multilocular ameloblastomas with adequate margins of surgical resection.

Reviewer's Comments: Clearly, nomenclature is an issue with the authors, and they are correct. The real emphasis in the paper is on the importance of gross evaluation of the entire resection specimen to identify isolated areas that need microscopic examination. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Ameloblastomas, Pathology, Immunology

Print Tag: Refer to original journal article

Reattachment of the Masseter Muscle After Surgery

Masseter Muscle Reattachment After Mandibular Angle Surgery.

Thomas MA, Yaremchuk MJ:

Aesthet Surg J 2009; 29 (November-December): 473-476

Contour deformities of the masseter muscle after surgery can be corrected or avoided by reattaching the muscle to the inferior border of the mandible.

Objective: To describe masseter muscle detachment resulting from surgery, with a possible complication of a soft-tissue deformity and to review a technique for its repair.

Design: Records review.

Participants: 60 patients who had been treated with surgery at the mandibular angle, 9 of whom had clinical signs of disruption of the pterygomasseteric sling and masseter muscle detachment.

Methods: 60 patients were treated by the authors for alloplastic augmentation of the mandibular angle (86 sides), 44 were as primary procedures and the other 14 were referred for revision of previous surgeries of the same type. Two of the authors' patients and 7 of the revision referral patients had clinical findings of masseter muscle disinsertion, 5 of whom had clinical signs of complete disruption of the pterygomasseteric sling. Six of the 9 patients had 2 previous surgical procedures. Eight of the patients' previous surgeries had been for mandibular angle esthetic augmentations, 1 for an angle reduction. The clinical deformities consisted of a soft tissue depression over the mandibular angle and an overlying muscle bulge on the ramus of the mandible that became more pronounced with contraction of the muscle. Surgical repair consisted of a Risdon approach to the angle and ramus, subperiosteal dissection of the masseter, identification and mobilization of the inferior margin of the muscle, and its reattachment to the inferior border of the mandible using nonresorbable sutures securing the lower margin of the muscle to drill holes in the inferior border. If an augmentation implant is present, the muscle is sutured to the lower margin of the implant. The above procedure was performed for 2 of the patients with one nicely illustrated case.

Results: The incidence of masseter muscle detachment in the 60 patients treated by the authors was just 2.3%. Disruption of the pterygomasseteric sling, repeated surgeries after unacceptable augmentation or reduction procedures, and failure to reapproximate the pterygomasseteric sling adequately at surgery are the potential causes of this problem.

Conclusions: Disruption of the pterygomaxillary sling with an inadequate repair during surgery can allow the masseter muscle to retract superiorly creating a soft tissue deformity that is usually subtle, but may be significant. The deformity is enhanced with contraction of the muscle. The deformity is correctable with reattachment of the muscle to the inferior border of the mandible.

Reviewer's Comments: This is an interesting paper authored by plastic surgeons who have significant experience with mandibular angle augmentation procedures and the complications that may be encountered. In a way, I am surprised we do not see this kind of problem more frequently. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Orthognathic Surgery, Mandibular Angle Surgery, Masseter Muscle

Print Tag: Refer to original journal article

Do Tooth Roots "Heal" After Injury by Miniscrews?

Root and Pulp Response After Intentional Injury From Miniscrew Placement.

Renjen R, Maganzini AL, et al:

Am J Orthod Dentofacial Orthop 2009; 136 (November): 708-714

Even when miniscrews abrade or even enter the roots of teeth, permanent damage to the pulp and supporting tissues does not usually occur.

Objective: To determine the effects on the pulp and the periodontal supportive tissues when miniscrews severely damage the tooth root.

Design: Prospective histologic study.

Methods: 3 beagle dogs (age not provided) were the subjects in this study. The titanium miniscrews used were all 2 mm in diameter and 10 mm in length. In the posterior maxillae, miniscrews were placed from the first premolar to the second molar. In the posterior mandible, miniscrews were placed from the first premolar to the first molar. For the procedure, the dogs were placed under general anesthesia, and screws were placed through buccal-attached gingiva without gingival or osseous preparation. Full radiographic series were taken before and after miniscrew placement. Twelve weeks after the miniscrew placement, radiographs were again taken, and the dogs were sacrificed. Ten maxillary and 10 mandibular sites were selected for histologic evaluation. Microcomputed tomograms were used to orient the formalin-prepared specimens for sectioning. After preparation, each site was microscopically evaluated for pulpal changes, and the periodontal attachment areas of roots injured by a miniscrew were evaluated for evidence of ankylosis, external resorption, or cementum repair.

Results: 16 of the 20 sites examined showed significant root injuries. In 4 sites, just cementum had been abraded. In 7 sites, dentin had been penetrated to a depth ≤ 1 mm. In 5 instances, the miniscrews had penetrated the root into the pulp with root fragmentation and ankylosis. In every case, there was histologic evidence of cementum repair on the injured root surface. Only when there was severe root injury with fragmentation was there evidence of ankylosis. No external root resorption was noted in response to root injury, nor was there any evidence of necrosis or inflammatory infiltrate in the areas of root injury. Where radiographs had indicated probable root injuries, this could be confirmed in the histologic sections although the extent of the injury could not be determined by the radiographs alone.

Conclusions: When roots were injured by miniscrew placement, reparative cementum formation was noted in the area of injury with no necrosis or identifiable inflammatory infiltrate in the dental pulp or adjacent to the root surfaces after 12 weeks. Manually placed miniscrews can injure root surfaces or even penetrate roots, but in this study, some areas of ankylosis seemed to be the most significant, potentially adverse finding.

Reviewer's Comments: Would the maturity of the dogs make a difference in the findings? Can we make the assumption that the reparative responses in humans would be similar? (Reviewer-Sterling R. Schow, DMD).

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Keywords: Implants, Miniscrew Placement, Intentional Injury

Print Tag: Refer to original journal article

Inferior Alveolar Nerve Block Produces Greatest Percentage of Needle Breaks

Broken Local Anesthetic Needles: A Case Series of 16 Patients, With Recommendations.

Pogrel MA:

J Am Dent Assoc 2009; 140 (December): 1517-1522

Needle breakage is more commonly associated with inferior alveolar nerve blocks in which 30-gauge needles are used, and the needles are bent prior to insertion.

Objective: To review a series of patients presenting with a broken dental needle to a single institution over a 25-year period.

Design: Retrospective investigation.

Participants/Methods: A chart review was performed on 16 cases of patients presenting to a single oral surgery department with a fractured dental needle. The chart review extended over a 25-year period from 1983 to 2008.

Results: During the study period, 15 patients presented from the surrounding dental community, and 1 patient was referred from the institutions' dental clinic. The 16 cases came from 15 general dental practitioners and 1 dental student. Fifteen of the fractures occurred during an inferior alveolar nerve block and 1 occurred during a posterior superior alveolar block. In 13 (81%) of the cases, the fractured needle was a 30 gauge. Personal interview of the referring dentists revealed that they had bent the needle in 9 cases and many stated that the patient suddenly moved at the time of injection. In all cases, the needle had broken at the hub. In all 15 patients, the needles were removed utilizing various imaging modalities and triangulating techniques.

Conclusions: The majority of needle fractures are associated with performing an inferior alveolar nerve block in younger patients who moved suddenly or violently during the injection. The majority of the fractured needles were 30-gauge, short needles.

Reviewer's Comments: This is a very nice article on a relatively large sample size. Most of us have had the opportunity to remove broken dental needles and, thank goodness, that it is not a frequent occurrence. The author performed a rough estimation of the frequency of needle fractures in his geographical region and estimated an incidence of 1 needle fracture per 14 million inferior alveolar nerve blocks. (Reviewer-David M. Grogan, DMD).

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Keywords: Anesthetic Needles, Breaks, Recommendations

Print Tag: Refer to original journal article

Bronchoscopy, Gastroscopy Are Justifiable Examinations for Staging

The Role of Bronchoscopy and Gastroscopy in Intraoral Minor Salivary Gland Carcinomas at Initial Staging.

Mücke T, Kesting MR, et al:

Br J Oral Maxillofac Surg 2009; 47 (December): 608-611

There appears to be a high rate of simultaneous pathology detected with endoscopic examinations in patients presenting with minor salivary gland carcinomas.

Objective: To determine the value of bronchoscopy and gastroscopy in the staging of minor salivary gland cancers.

Design: Retrospective clinical investigation.

Participants/Methods: The authors reviewed the medical records of 95 patients presenting to a specific institution over a 14-year period with minor salivary gland cancers. All histological samples were once again reviewed and classified. The following tests were reviewed to determine their efficacy; CT; skeletal scintigraphic surveys; bronchoscopy; gastroscopy; and thoracic radiographic studies.

Results: All patients had undergone both bronchoscopy and gastroscopy. Bronchoscopy revealed 31 lesions identified by either direct inspection or biopsy. Six malignancies were identified; 2 were metastases of the primary salivary gland cancer and 4 were synchronous carcinomas of the lung. Three of the patients with synchronous carcinomas and the patient with metastatic disease were treated with chemotherapy. Gastroscopy revealed 44 lesions; 1 esophageal cancer and 3 benign neoplasms. The esophageal cancer was not treated surgically.

Conclusions: There appears to be a high rate of simultaneous pathology detected with endoscopic examinations in patients presenting with minor salivary gland carcinomas. CT of the lung remains the gold standard for evaluating pulmonary metastasis. Bronchoscopy and gastroscopy seem to be justified due to the high rate of additional abnormalities diagnosed.

Reviewer's Comments: It appears that these endoscopic examinations revealed a significant number of pathological entities that had a significant impact on the management and prognosis of the initial malignancy. Therefore, they appear to be justifiable examinations during the time of staging. (Reviewer-David M. Grogan, DMD).

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Keywords: Salivary Gland Carcinomas, Staging, Bronchoscopy, Gastroscopy

Print Tag: Refer to original journal article

Endoscopic Transillumination Aids Transcutaneous Stone Removal

Minimal Surgery for Parotid Stones: A 7-Year Endoscopic Experience.

Karavidas K, Nahlieli O, et al:

Int J Oral Maxillofac Surg 2010; 39 (January): 1-4

Endoscopic-assisted stone removal from the parotid duct appears to be an effective alternative to parotidectomy, with long-term complications being minimal.

Objective: To present the outcomes of endoscopic assisted parotid surgery for the removal of parotid stones.

Design: A retrospective clinical investigation.

Participants/Methods: 70 patients, who had failed lithotripsy, basket, or endoscopic retrieval, presented for the removal of a parotid stone. All patients were then assessed with MRI, plain films, or sialography. If the stone was located in the proximal third of the duct or hilum, the stone was removed with a standard preauricular incision. If the stone was in the mid portion of the duct, it was removed with endoscopic assistance and a transcutaneous incision over the stone. The endoscope was inserted until the stone was identified. The light of the endoscope then marked the exact location for the transcutaneous incision. The duct was dissected, and the stone was removed. A parotid duct stent was then placed, and the duct was sutured. Patients were followed for a mean of 25 months (range, 2 to 81 months).

Results: 85 stones were successfully removed from 69 patients. The stones ranged in size from 3 to 15 mm, with an average size of 7.2 mm. Five percent of the patients had an intraoperative complication (perforated duct, macerated ductal wall, and stricture), all of which were of no significant postoperative consequence. In the postoperative period, 2 patients presented with acute parotitis successfully treated with antibiotics. Three patients presented with persistent postoperative problems (stricture, visible scar, and retained stone fragments). There were no cases of sialocele formation or facial nerve weakness.

Conclusions: Endoscopic transillumination of the parotid duct assists in transcutaneous stone removal with minimal postoperative complications. There was a 5% rate of long-term complications, but no facial nerve injuries.

Reviewer's Comments: Endoscopic-assisted stone removal appears to be an acceptable alternative to parotidectomy for the removal of parotid stones that fail conventional treatments. The transillumination appears to aid in determining the exact location of the stone and duct. (Reviewer-David M. Grogan, DMD).

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Keywords: Parotid Stones, Endoscopic-Assisted Surgery

Print Tag: Refer to original journal article

Midazolam + Fentanyl Associated With Reduction in Emergency Agitation

*Complications of Sevoflurane-Fentanyl Versus Midazolam-Fentanyl Anesthesia in Pediatric Cleft Lip and Palate Surgery:
A Randomized Comparison Study.*

Milic M, Goranovic T, Knežević P:

Int J Oral Maxillofac Surg 2010; 39 (January): 5-9

The use of a combination of sevoflurane and fentanyl to maintain a general anesthetic in children is associated with an increased incidence of emergence agitation when compared to a midazolam-fentanyl technique.

Objective: To compare the outcomes of 2 different anesthetic techniques utilized in pediatric anesthesia.

Design: Retrospective clinical investigation.

Participants: 140 patients from 3 months to 10 years of age.

Methods: All patients were scheduled for elective cleft lip/palate repair. All children were premedicated with midazolam (0.05 mg/kg) orally 30 minutes prior to the procedure, and preinduced with sevoflurane to aid in obtaining intravenous access. The sevoflurane was terminated, and the children were then assigned to 1 of 2 groups: midazolam-fentanyl maintained general anesthetic or sevoflurane-fentanyl. Routine intraoperative monitoring was utilized, and the patients were observed during their 2-hour stay in the postanesthetic recovery room.

Results: Oxygenation was satisfactory throughout the procedures in both groups. Thirty-five complications were documented in the entire study group. There were no differences in the incidence of complications during the intraoperative period between the 2 groups. During the postoperative period, significant differences were noted; the sevoflurane-fentanyl group had a significantly higher incidence of emergence agitation. No differences were noted between groups as it related to nausea and vomiting.

Conclusions: The use of a combination of midazolam and fentanyl to maintain a general anesthetic is associated with a significant reduction in the incidence of emergence agitation when compared to a sevoflurane-fentanyl anesthetic. There were no differences noted between groups as it related to intraoperative complications.

Reviewer's Comments: It appears that the use of midazolam with its sedative and anxiolytic actions produces a much smoother emergence. There is also some literature that implicates sevoflurane induction and maintenance with an increased incidence in seizure activity, which may also be responsible for the agitation upon emergence. (Reviewer-David M. Grogan, DMD).

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Keywords: Pediatric Anesthesia, Cleft Lip/Palate Surgery, Sevoflurane-Fentanyl

Print Tag: Refer to original journal article

Finding the Effective Concentration of Ropivacaine

Maxillary Infiltration Anaesthesia by Ropivacaine for Upper Third Molar Surgery.

Brkovic BMB, Zlatkovic M, et al:

Int J Oral Maxillofac Surg 2010; 39 (January): 36-41

One percent and 0.75% solutions of ropivacaine appear to produce satisfactory and safe anesthesia following maxillary infiltration.

Objective: To determine the clinical efficacy and the hemodynamic characteristics of ropivacaine when utilized for infiltration anesthesia.

Design: Randomized, double-blind controlled investigation.

Participants: 66 adult patients.

Methods: All patients were American Society of Anesthesiologists I presenting for the removal of maxillary third molars. Patients were randomized to receive 2.5 cc of 0.5%, 0.75%, or 1% ropivacaine for maxillary buccal and palatal infiltration. Pinprick testing was utilized to determine the time of onset and duration of anesthesia. A visual analog scale was used to evaluate a patient's postoperative pain. Routine vital signs were monitored, and plasma concentrations were analyzed on 5 patients.

Results: Maxillary infiltration was effective in 60% of cases in which 0.5% was utilized and in 90% in which 0.75% and 1% solutions were utilized. A significant difference was noted between 0.5% and both 0.75% and 1%. Both time of onset and duration were concentration-dependent. Among patients treated with 0.5% ropivacaine, 64% of patients experienced intraoperative pain compared to 25% of patients infiltrated with 1%. Thirty minutes after infiltration with 1% ropivacaine, there was a significant decrease in systolic, diastolic, and mean arterial pressures. Heart rate was not significantly altered with any of the concentrations.

Conclusions: 1% and 0.75% concentrations of ropivacaine appear to produce adequate anesthesia following maxillary infiltration for the removal of maxillary wisdom teeth. These concentrations do not seem to produce significant postextraction pain control.

Reviewer's Comments: Ropivacaine is a local anesthetic that has pharmacokinetic and clinical properties similar to bupivacaine that is widely used for spinal and regional anesthesia, but has not found a market as of yet in dentistry. (Reviewer-David M. Grogan, DMD).

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Keywords: Ropivacaine, Molar Surgery, Infiltration Anesthesia

Print Tag: Refer to original journal article