

Can Nasal Swabs Help Prevent *S. aureus* Postsurgical Infection?

Preventing Surgical-Site Infections in Nasal Carriers of Staphylococcus aureus.

Bode LGM, Kluytmans JA, et al:

N Engl J Med 2010; 362 (January 7): 9-17

Rapid real-time PCR assay of nasal swabs for *Staphylococcus aureus* identification followed by decolonization with nasal mupirocin ointment and chlorhexidine gluconate soap before surgery reduces surgical-site *S. aureus* infection.

Objective: To determine if rapid identification of *Staphylococcus aureus* nasal carriers by means of a real-time polymerase-chain-reaction (PCR) assay, followed by treatment with mupirocin nasal ointment and chlorhexidine soap, reduces the risk of hospital-associated *S. aureus* infection.

Design: Randomized, double-blind, placebo-controlled multicenter trial.

Participants: 6771 patients who had screening for *S. aureus* with nasal swabs on hospital admission.

Methods: In the 5 participating hospitals, patients were admitted to the departments of surgery and internal medicine. The studies' primary outcome was the cumulative incidence of hospital-associated *S. aureus* infections. Secondary outcome measures evaluated included in-hospital mortality, duration of hospitalization, and the time from admission to the onset of an associated *S. aureus* infection. Patients identified on admission to have *S. aureus*-positive nasal swabs were randomly assigned to a decolonization protocol of either mupirocin ointment and chlorhexidine soap or to a placebo group. The swab screenings were done immediately on admission or during a week before admission. For patients with positive swabs, decolonization was started immediately. For study patients, the 2% mupirocin ointment was applied to the nares twice daily, and the chlorhexidine soap was used for a total body wash daily for 5 days. Patients were followed up for a potential development of *S. aureus* infection for 6 weeks after discharge. For surgery patients, standard presurgical prophylactic antibiotics were used according to local guidelines.

Results: When nasal swab samples processed for *S. aureus* were positive, the bacteria were cultured onto agar plates to allow nasal strains to be compared to strains found in any subsequent *S. aureus* infection. Of the 6771 patients having screening swabs, 1270 (18.8%) positive samples were obtained from 1251 patients; 917 of these patients underwent randomization into the study. Of these, 49 patients developed hospital-acquired *S. aureus* infections, 17 in the study group and 32 in the placebo group, with no significant differences between surgical and nonsurgical patients. Forty-nine *S. aureus* strains were cultured from hospital-acquired infections, and all were susceptible to methicillin and mupirocin. Deep surgical-site infections were the most common. Time to infection after admission was significantly shorter in the placebo group, and the duration of hospitalization was much longer. In-hospital mortality did not differ between groups.

Conclusions: Identification and prophylactic intervention as described in this paper of patients admitted with nasal swabs positive for *S. aureus* did not protect them from all hospital-acquired *S. aureus* infections. Hospital-acquired *S. aureus* infections, especially in surgical patients, can usually be prevented by rapid screening procedures and decolonization treatment of those identified as nasal carriers.

Reviewer's Comments: This very interesting study had better results than I have read in other similar studies done on trauma admissions. Nasal swabs for admissions to our institution are now routine. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Infection, *Staphylococcus aureus*, Surgery

Print Tag: Refer to original journal article

TMJ Disc Surgery -- Results Still Good After 20 Years

20-Year Follow-Up Study of Disc Repositioning Surgery for Temporomandibular Joint Internal Derangement.

Abramowicz S, Dolwick MF:

J Oral Maxillofac Surg 2010; 68 (February): 239-242

Twenty years after TMJ disc repositioning surgery, patients are still doing very well.

Objective: To assess the outcomes of TMJ disc repositioning surgery for TMJ internal derangement.

Design: A retrospective review of medical records of patients who had repositioning disc surgery 20 years before this study was undertaken.

Participants/Methods: The charts of patients who had disc repositioning surgery from 18 to 22 years before the study started were reviewed; 153 patients were identified in this category, but only 18 actually participated. The study was performed by mailing a questionnaire to the patients regarding the status of their lifestyle, mandibular function, and pain level. A history of subsequent surgeries on the joint was also elicited. The data from the questionnaire were compared with data from the same questionnaire that was given to patients before surgery. The data from the preoperative questionnaire and the 20-year follow-up questionnaire were statistically compared.

Results: The results showed a significant reduction in pain that held up over the 20 years, as well as improvement in joint function; 94% of patients reported an improvement in quality of life. One patient showed no improvement, and no patients were worse.

Conclusions: Disc repositioning surgery is a successful treatment for internal derangement of the TMJ, and the results hold up over a long-term follow-up of at least 20 years.

Reviewer's Comments: This study involved only a small percentage of a larger group of patients who had been treated 20 years previously with disc repositioning surgery. The results show that, at least in this group, there was an excellent long-term result, which held up for an average of 20 years. Although this surgery has been, for the most part, replaced by arthroscopic management, it shows that, in selected cases, open reduction with disc repositioning is a viable treatment for internal derangement of the TMJ. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: TMJ, Surgery

Print Tag: Refer to original journal article

Deep Space Neck Infections -- Second-Generation Cephalosporins vs Benzylpenicillins

Microbiology of Odontogenic Infections in Deep Neck Spaces: A Retrospective Study.

Al-Qamachi LH, Aga H, et al:

Br J Oral Maxillofac Surg 2010; 48 (January): 37-39

Penicillins remain effective against major bacterial isolates obtained from deep neck space infections; however, broad-spectrum second-generation cephalosporins are an alternative that will provide a broader spectrum of coverage.

Objective: To evaluate second-generation cephalosporins against benzylpenicillin as a first-line treatment for deep neck space odontogenic infections.

Design: Retrospective clinical record review.

Participants: 75 patients presenting for evaluation and management of deep neck space infections of odontogenic origin.

Methods: All patients presenting with the need for surgical intervention in the hospital in order to manage a deep neck space infection were empirically started on cefuroxime and metronidazole upon admission. Specimens of pus were obtained from the involved spaces in the operating room at the time of incision and drainage, and were processed using standard techniques for identification and susceptibilities. Intravenous antibiotic therapy was continued until the patients demonstrated clinical improvement and drains were removed. Patients were discharged to home after a 24-hour period without fever. Oral antibiotics were provided for 5 days after discharge and consisted of cefuroxime and metronidazole. For those with inadequate clinical response, specimens were again obtained, imaging was utilized to identify collections of pus, and further interventions were provided.

Results: Pathogenic bacteria were cultured in 30 of 75 patients (40%). Species isolated included *Streptococcus milleri*, mixed anaerobes, *Actinomyces* species, *Staphylococcus aureus*, *Escherichia coli*, and other normal flora. *S. milleri*, grown in 19 of 30 patients, was sensitive to penicillin. Metronidazole was effective in all cases with mixed anaerobes.

Conclusions: This study corroborates previous trials looking at the susceptibility of microorganisms found in deep neck space infections. *Strep viridans* and anaerobic organisms were the most common isolates; these were effectively treated clinically with a second-generation cephalosporin, cefuroxime, in combination with metronidazole. The laboratory isolates from this group of patients revealed that all organisms susceptible to penicillins were also susceptible to cefuroxime. All mixed anaerobes were successfully treated with metronidazole, and this was substantiated by sensitivity and resistance testing in the microbiology lab.

Reviewer's Comments: The substitution of second-generation cephalosporins for benzylpenicillin is a reasonable, first-line empiric alternative for deep space neck infections. In vitro studies have shown cephalosporins to provide broader coverage, resistance to beta lactamase-producing organisms, and higher microbial susceptibility. Clinical discernment must be utilized in the face of methicillin-resistant staphylococcus attributed to the use of cephalosporins, with evidence of their role in the molecular initiation of resistance. (Reviewer-Michael L. Ellis, DDS).

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Keywords: Odontogenic Deep Space Neck Infections, Isolates, Antibiotic Therapy

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ONJ Can Occur When Taking Oral Bisphosphonates

Prevalence of Osteonecrosis of the Jaw in Patients With Oral Bisphosphonate Exposure.

Lo JC, O'Ryan FS, et al:

J Oral Maxillofac Surg 2010; 68 (February): 243-253

Osteonecrosis of the jaws occurs in about 1 in 1000 patients taking oral bisphosphonates.

Objective: To assess and examine the prevalence of osteonecrosis of the jaw (ONJ) in patients receiving chronic oral bisphosphonate therapy.

Design: A retrospective longitudinal study of a large population of patients being treated in the Kaiser Permanente Medical Group at multiple centers who had a history of exposure to oral bisphosphonates.

Participants/Methods: The medical records and pharmacy records of patients being treated by a large group medical practice in northern California were searched for exposure to oral bisphosphonates. A total of 13,946 patients who had received chronic oral bisphosphonates were mailed a survey questionnaire. Patients who reported osteonecrosis of the jaws or any exposed bone or other suspicious dental conditions were invited to report for examination at one of the test sites or to have their dental records reviewed. ONJ was defined as exposed bone for >8 weeks in the absence of any radiotherapy.

Results: 8572 patients responded to the survey. Twenty-five percent of these reported significant dental symptoms; 1005 of these patients were examined, and another 536 provided dental records. There were 9 cases of ONJ identified, which represented 0.1% incidence in this study group. This is approximately 1 patient in 1000. Five of the cases occurred spontaneously, and 4 occurred in previous extraction sites.

Conclusions: The incidence of osteonecrosis of the jaws in this population of patients receiving chronic oral bisphosphonates is approximately 1 in 1000.

Reviewer's Comments: This is a classic study of a very large number of patients. These results provide an accurate representation of the incidence of ONJ in patients receiving oral bisphosphonate. This is the largest published study to date. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Bone, ONJ, Bisphosphonates

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Penetrating Trauma -- Significance of Need for Airway Management

Airway Management for Victims of Penetrating Trauma: Analysis of 50,000 Cases.

Rajani RR, Ball CG, et al:

Am J Surg 2009; 198 (December): 863-867

A need for airway management in penetrating trauma patients at the scene results in a mortality rate of almost 70%.

Objective: To determine if the need for field intubation of trauma patients affects the ultimate mortality rate.

Design: Retrospective review of the National Trauma Data Bank (NTDB) of adult victims of penetrating trauma.

Participants: 56,094 penetrating trauma patients over a 5-year period were included.

Methods: The NTDB was reviewed for a 5-year period to identify patients aged ≥ 17 years who were victims of penetrating trauma. The NTDB includes all patients who died in the emergency department or who were admitted to the hospital. Victims were divided into 3 groups: (1) those who had prehospital intubation or cricothyroidotomy; (2) those who needed in-hospital intubation or cricothyroidotomy; and (3) those who did not require placement of an airway. The NTDB did not distinguish between patients intubated because of airway distress from those who were intubated semi-electively for a surgical procedure. Data collected included demographics, initial vital signs upon arrival at the hospital, length of stay, ICU length of stay, and mortality.

Results: Of the 56,094 adult penetrating trauma victims, the average injury severity score (ISS) was 11.3 ± 12.7 with an overall mortality rate of 14.1%. Most of the victims were young males, and 24.8% of the victims were intubated or needed a cricothyroidotomy at some point. A total 1925 (13.9%) of those who had an ISS of 24.3 ± 19.7 had a need for pre-hospital airway placement. These victims had a mortality rate of 69.2%. Patients (11,973) with an ISS of 20.3 ± 15.5 needed intubation or other forms of airway placement after arriving at the hospital and had a mortality rate of 35.9%. Of interest, patients who were intubated in the field (1858 with an ISS of 24.7 ± 19.9) had a mortality rate of 70.9%. Patients who had a cricothyroidotomy in the field (67 with an ISS of 14.1 ± 12.4) had a lower mortality rate at 23.9%. The need for advanced airway control in the field was associated with a 2-fold increase in mortality rates over those who are controlled in the hospital and a 5-fold increase in mortality over those who never require intubation or a surgical airway.

Conclusions: Penetrating trauma victims with a need for invasive pre-hospital airway control have a high mortality rate of approximately 70%.

Reviewer's Comments: This paper has an excellent discussion. Study limitations included no information about anatomic locations of injuries, indications for airway control in the field, and locations of the penetrating wounds. Victims requiring this kind of airway management in the field are likely in extremis or have an injury that directly affects the airway. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Trauma, Airway Management

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Primary vs Secondary Wound Closure After Third Molars Removal

Influence of Primary and Secondary Closure of Surgical Wound After Impacted Mandibular Third Molar Removal on Postoperative Pain and Swelling—A Comparative and Split Mouth Study.

Danda AK, Tatiparthi MK, et al:

J Oral Maxillofac Surg 2010; 68 (February): 309-312

Primary closure after the removal of impacted third molars results in more pain and swelling than does secondary closure.

Objective: To compare primary and secondary closure of the surgical wound on pain and swelling after the removal of impacted mandibular third molars.

Design: A prospective split-mouth design of patients requiring the removal of 2 impacted mandibular third molars. Pain and postoperative swelling were compared statistically for 7 days after surgery.

Participants/Methods: 93 patients requiring the removal of 2 impacted mandibular third molars were entered into the study. The teeth were removed under local anesthesia at the same appointment. On one side, the surgical flap was closed tightly with multiple sutures. On the other side, a wedge of tissue was removed posterior to the second molar, and the flap was sutured, leaving a space open for drainage. The patient was given a questionnaire with a visual analog scale to measure pain and swelling over a period of 7 days on each side. The data on pain and swelling between the 2 surgical sites were statistically compared.

Results: There was significantly less pain and swelling in the secondary site than in the primary closure site.

Conclusions: Primary closure of a surgical wound after the removal of mandibular impacted third molars results in significantly more pain and swelling than does secondary closure.

Reviewer's Comments: This is an excellent study with good clinical consequences that is of value to the practicing oral and maxillofacial surgeon. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Surgical Wound, Closure

Print Tag: Refer to original journal article

Sinus Augmentation -- Tissue-Engineered Bone vs Iliac Crest

Bone Regeneration in Sinus Lifts: Comparing Tissue-Engineered Bone and Iliac Bone.

Voss P, Sauerbier S, et al:

Br J Oral Maxillofac Surg 2010; 48 (March): 121-126

Autologous bone remains the gold standard for jaw reconstruction to include sinus lifts.

Objective: To evaluate sinus lift augmentation and implant success using tissue-engineered bone as a transplant.

Design: Non-randomized clinical study of tissue-engineered bone measured against a conventional autologous graft group as a control.

Participants: 35 patients aged 35 to 69 years were included in the tissue-engineered (study) group in which 118 implants were placed. An autologous bone (control) group of 41 patients aged 38 to 73 years had 183 implants placed.

Methods: 35 patients had 1 cm x 1 cm biopsies of periosteum harvested 8 weeks before sinus grafting. Osteoprogenitor periosteal cells were cultivated from these biopsies, proved vital by standard methods, and transferred to polymer fleeces before being transplanted as a cell-matrix construct via sinus lift at 8 weeks' post-harvest. The control group of 41 patients had cancellous bone harvested with a trephine from the iliac crest. When implant site residual host bone measured at least 4 to 5 mm vertically and afforded primary stability of an implant in either group, a 1-stage simultaneous graft and implant procedure was performed. Of 118 implants, 54 were placed in a 1-stage procedure in the study group, whereas 48 of 183 implants in the control group were placed simultaneously with the grafting procedure. In patients with insufficient residual bone, the implants were placed at 15 weeks; in selected cases, bone biopsy specimens were obtained for histologic study. No membranes were utilized, and the mucosa was closed primarily in both groups. Radiographs were obtained at specific intervals throughout the study and were evaluated by dental radiologists. Stable implants devoid of clinical or radiographic inflammation were considered successful. Implant failure intervals were noted, representing the time between placement and removal.

Results: Biopsy specimens from the engineered tissue group, taken in the 2-stage protocol, revealed mineralized trabecular bone, osteocytes in lacunae, and remnants of the cell-matrix construct. Of the 35 study patients, 24 had success at 3 months, 17 of whom had a 1-stage protocol. Ten study grafts resembled connective tissue, 7 of which were infected. Sixteen sinuses in 11 augmentations in the study group were deemed a failure. After 8 months, 11 implants (9%) in the study group were lost after various methods of prosthetic reconstruction. No patients in the control group required re-operation; however, 1 patient reported a slight sinusitis. One implant failed in the control group, although 15 had not been used prosthodontically.

Conclusions: Sinus augmentation with autologous bone demonstrated a distinctly higher success rate than tissue-engineered bone. Tissue-engineered bone performed better in a 1-stage technique.

Reviewer's Comments: Potential morbidities and costs associated with iliac harvest will continue to encourage alternative strategies for jaw reconstruction. For now, autologous bone remains the standard by which all bone grafting techniques are measured. (Reviewer-Michael L. Ellis, DDS).

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Keywords: Tissue-Engineered Bone, Iliac Crest, Sinus Lifts

Print Tag: Refer to original journal article

Sinus Lifts Made Easier

Nasal Suction Technique for Maxillary Sinus Floor Elevation: A Report of 24 Consecutive Patients.

Ucer C:

Int J Oral Maxillofac Implants 2009; 24 (November-December): 1138-1143

In this series of patients, sinus lifting was completed with assistance from nasal suction. No sinus membrane perforations occurred.

Objective: To evaluate a nasal suction technique that uses negative antral pressure to make sinus membrane elevation easier and reduce the risk of perforation.

Design: Clinical evaluation.

Participants: 24 consecutive patients having sinus lifts.

Methods: The usual approach for lateral wall sinus floor elevation procedures was performed in 21 patients. For 3 patients, an osteotome sinus floor elevation (Summers) was performed. In each instance, as soon as the osseous window to the sinus had been completed with a round bur, a piezoelectric device, or an osteotome, nasal suction was applied through the ipsilateral nostril. This was done using either a Yankauer suction or a nasopharyngeal airway inserted into the nostril and attached to a standard surgical suction device. The contralateral nostril was occluded during this maneuver. The effect of the negative air pressure within the sinus allows inversion and inward displacement of the sinus membrane and facilitates elevation with standard instruments. Grafting materials were placed, and implants were inserted 8 months later.

Results: In 3 subjects, simultaneous implant placement was possible. Use of the described technique made the sinus membrane elevation easier and less prone to perforation. In some patients, the negative pressure alone, without other manipulation, accomplished the membrane elevation. Pockets of 10 to 15 mm in height for graft placement were created. The authors found a nasopharyngeal airway was easier to use for this purpose than a Yankauer suction. The airway did a better job of occluding the nares, especially when the nostrils were pinched together.

Conclusions: The nasal suction technique is a simple, highly useful aid for sinus membrane elevation. Simplified and less extensive instrumentation while doing a sinus lift lowers the risk of membrane perforation.

Reviewer's Comments: This works! Membrane perforation during a sinus lift complicates the procedure, compromises coverage of the bone graft, and increases the risk of graft failure. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Nasal Suction, Maxillary Sinus Floor Elevation

Print Tag: Refer to original journal article

Erupted Third Molars May Herald Periodontal Disease in Other Teeth

Third Molars and Periodontal Pathology in American Adolescents and Young Adults: A Prevalence Study.

Blakey GH, Gelesko S, et al:

J Oral Maxillofac Surg 2010; 68 (February): 325-329

The presence of erupted third molars may be a reservoir for the beginning of generalized periodontal disease.

Objective: To study the association between erupted third molars and the prevalence of periodontal inflammatory disease in other parts of the mouth.

Design: A retrospective study comparing the presence of erupted third molars with the incidence of periodontal disease in other teeth. The study used data gathered from the longitudinal AAOMS study on the relationship between third molars and periodontal disease.

Participants/Methods: The data of 411 young adults with 4 third molars were evaluated. All patients had x-rays and probing depths on all teeth present in the mouth. Those entered into this study had 4 third molars with adjacent second molars and were young adults between the ages of 14 and 45 years. These subjects were divided into 2 groups. One group had no visible third molars, and the other had at least one third molar visible in the mouth. The 2 groups were compared with the number of probing depths in other parts of the mouth ≥ 4 mm.

Results: A statistically significant increase was found in the number of probing depths ≥ 4 mm in non-third molar sites in patients who had visible third molars compared to patients with no visible third molars.

Conclusions: The data in this study suggest that the presence of visible third molars may be a risk marker for periodontal inflammatory disease in non-third molar teeth.

Reviewer's Comments: This paper adds significant evidence to the hypothesis that the presence of erupted third molars in the oral cavity may be the herald to periodontal disease in the rest of the dentition. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Dentoalveolar Surgery, Diagnosis

Print Tag: Refer to original journal article

How Can Bullet From Facial Wound End Up in Pulmonary Artery?

Bullet Embolus to the Pulmonary Artery After Gunshot Wound to the Face: Case Report and Review of Literature.

Jo C, Steed MB, Perciaccante VJ:

J Oral Maxillofac Surg 2010; 68 (March): 504-507

A bullet shot into the face may enter the jugular vein and end up in the pulmonary artery.

Objective: To describe how a bullet shot into the mandible can enter the jugular vein, go through the heart, and end up in the pulmonary artery.

Design: A case presentation along with a diagnostic algorithm. **Case Report:** A 57-year-old man with a mandibular bullet wound is described in this article. On examination, the patient had an entrance wound in the lower lip and a comminuted fracture of the mandible but no exit wound. Careful examination of the head and neck along with facial films showed no bullet in the area. A plain film of the chest showed a bullet in the thoracic cavity. Bronchoscopy revealed the absence of a bullet in the right bronchi. CT angiography revealed that the bullet was, in fact, in the right pulmonary artery. The patient was treated for his mandibular fracture and was discharged from the hospital without symptoms. He later decided to have the bullet removed, which was done through a thoracotomy. **Discussion:** Although there is some controversy about whether a bullet embolus should be removed from the lung field, it is the belief of the authors that the right thing to do to avoid further problems is to remove the bullet since it may not be stable in its current position.

Results: The patient recovered from his wound without complications after removal of the bullet from the right pulmonary artery.

Conclusions: A diagnostic algorithm is presented. If an exit wound is not found and plain film radiographs do not localize the missile in the local tissue, then aspiration, ingestion, and embolization should be suspected. Chest and abdominal films may localize the missile above or below the diaphragm. If the bullet is seen below the diaphragm in the gastric air bubble, then ingestion is suspected. If it is above the diaphragm, aspiration or embolization is suspected. Bronchoscopy will rule out aspiration and a CT angiogram will confirm bullet embolization.

Reviewer's Comments: A most interesting paper of a rare complication of a bullet wound to the maxillofacial region, which should be considered in any patient in whom there is an entrance wound, no exit wound, and no bullet in the tissue in the maxillofacial region. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Trauma, Gunshot Wounds, Bullet Embolus, Face

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How Do You Treat an Oroantral Communication?

The Closure of Oroantral Communications With Resorbable PLGA-Coated β -TCP Root Analogs, Hemostatic Gauze, or Buccal Flaps: A Prospective Study.

Gacic B, Todorovic L, et al:

Oral Surg Oral Med Oral Path Oral Radiol Endod 2009; 108 (December): 844-850

Use of resorbable PLGA-coated β -TCP root analogs or hemostatic gauze is thought to be an effective, minimally invasive treatment of oroantral communications.

Objective: To evaluate treatment of oroantral communications with bioresorbable root analogs of polylactide/polyglycolide acid (PLGA)-coated β -tricalcium phosphate (β -TCP), hemostatic gauze, or a buccal flap technique.

Design: Prospective clinical study.

Participants: 30 patients with oroantral communications at the time of tooth removal.

Methods: In this group of 30 patients with extraction-related sinus communications, the patients were randomly divided into 3 groups. The perforations were obturated with the biodegradable root form analogs, with hemostatic biodegradable gauze, or closed with buccal mucosal flap advancement. The sinus communications were diagnosed at the time of tooth removal by having the patient obstruct his nares and blow. The defect was then probed with 1-, 3-, or 5-mm diameter probes to determine the dimension of the area of communication. For sites to receive the root-form analog, the tooth root from the site was impressed in a mold that could be heated. The root was removed from the formed mold and granules of the biodegradable PLGA were used to fill the mold, then heated to fuse them together in the shape of the root. The extraction sites were curetted to induce bleeding, and the root form inserted. For closure with hemostatic gauze, the gauze was compressed and then placed into the site. Buccal mucosal flap closure, when utilized, was performed in a standard manner. Patients were followed 7 days, as well as 1, 3 and 6 months later. Closure of the defect was verified at each follow-up visit by nose blowing.

Results: 70% of the communications occurred with removal of maxillary first molars. Closure was successful in all 30 patients. At least 1 implant was placed in an area obturated with a PLGA analog 6 months after placement. A core was harvested from the area for histologic analysis, which showed no neurotic areas or inflammation and mature lamellar bone with ongoing osteogenesis.

Conclusions: Closure of oroantral communications resulting from tooth removal with hemostatic biodegradable gauze, biodegradable PLGA root form analogs, or buccal flap advancement is usually successful. The authors believe that the socket obturation gives equivalent results to buccal flap closure without a loss of vestibular depth that can be seen with buccal flap advancement.

Reviewer's Comments: I was taught, and still believe, that most postextraction oroantral communications, if small, will heal spontaneously if a clot is allowed to form and is protected. Larger communications need to be closed, and I have usually preferred buccal fat flap advancement as a procedure of choice. Use of the PLGA root form analog is appealing, especially if the closure is successful and new bone is formed. I wish the authors had done a better job of documenting this result. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Oroantral Communications, Treatment Methods

Print Tag: Refer to original journal article

Performance, Survival of Rough- vs Smooth-Surface Implants

A Retrospective Study of the Survival of Smooth- and Rough-Surface Dental Implants.

Balshe AA, Assad DA, et al:

Int J Oral Maxillofac Implants 2009; 24 (November-December): 1113-1118

Anatomic location and implant length are associated with potential failure of smooth-surface implants but not with rough-surface fixtures.

Objective: To compare cumulative survival rates of smooth-surface implants and rough-surface implants.

Design: Retrospective chart review.

Participants: A total 1498 patients, 593 who received smooth-surface implants (2,182) and 905 who received rough-surface implants (2425).

Methods: The smooth-surface implants were placed until 1996 and the rough-surface implants in the study were placed between 2001 and 2005. All demographic data were extracted from patients' medical and dental records. All implants included in the study were observed at least once a year. All smooth-surface implants were Brånemark System, Nobel Biocare fixtures. All rough-surface implants were TiUnite, Nobel Biocare fixtures. Implants were not included in the study if they had been placed in patients with a history of head and neck radiation therapy. All the implants were restored after 3 and 6 months of healing in the mandible and maxilla, respectively.

Results: 111 of the 2,182 smooth-surface implants failed in 65 of the 593 patients. The median time to implant failure was 196 days. The median follow-up time of the remaining smooth-surface implants was 3.6 years. For the smooth-surface implants, the survival rates were 95.9%, 95.1%, and 94% at 1, 3, and 5 years, respectively after placement. Eighty-five of the 2,425 rough surface implants failed in 64 patients. The median time to failure of these implants was 174 days. For rough-surface implants, the survival rates were 96.6%, 95.4%, and 94.5% at 1, 3, and 5 years, respectively, following placement. Both smooth- and rough-surface implants had comparable results after 5 years, with no significant differences in survival rates. Anatomic location of the implants affected the failure rates of smooth-surface implants. Implant length ≤ 10 mm was also associated with loss of smooth-surface implants.

Conclusions: There was no significant difference between the time-dependent survival rates of smooth- or rough-surface dental implants. Anatomic location and implant lengths ≤ 10 were found to affect failure rates of smooth- but not rough-surfaced implants.

Reviewer's Comments: By now, I think we are all convinced that osseointegration early after implant placement is better with rough-surface as compared to smooth-surface fixtures. After integration and restoration, both types of fixtures seem to perform equally well. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Implants, Smooth Surface, Rough Surface, Survival

Print Tag: Refer to original journal article

Coronectomy Reduces Inferior Alveolar Nerve Neurosensory Disturbance

Safety of Coronectomy Versus Excision of Wisdom Teeth: A Randomized Controlled Trial.

Leung YY, Cheung LK:

Oral Surg Oral Med Oral Path Oral Radiol Endod 2009; 108 (December): 821-827

Coronectomy results in fewer problems with the inferior alveolar nerve, less postoperative pain, and fewer incidences of localized osteitis than conventional removal of third molars approximating the mandibular canal.

Objective: To evaluate coronectomy as opposed to total excision of lower third molar teeth in close proximity to the inferior alveolar nerve for surgical complications and neurosensory disturbance.

Design: Randomized, controlled clinical trial.

Participants: 231 patients for removal of 349 mandibular third molars whose roots touched or overlapped the superior cortical line of the mandibular canal on radiographs.

Methods: A computerized randomization table was used to assign patients to have either a coronectomy or total removal of their tooth or teeth. The allocation sequence was kept by a nurse informing the patient and surgeon of the procedure to be performed. The coronectomy procedure consisted of removal of the tooth crown at the cemento-enamel junction with a fissure bur and trimming of the root stumps to 3 to 4 mm below the osseous margin. The pulp was not instrumented. The remaining roots were checked for mobility. If the roots were mobile, they were removed. In the control patients, the teeth were sectioned and totally removed in a standard manner. The primary study outcome was the neurosensory evaluation 1 week after surgery. Other complications were also recorded. Follow-up panoramic radiographs were taken for coronectomy patients at 1 week and at 3, 6, 12, and 24 months later to look for root migration.

Results: 171 teeth were treated with a coronectomy and 178 were totally removed. The roots of 16 teeth were mobile after coronectomy and were removed. Patient age, sex, root shape, and type or depth of the impaction was not found to be significant risk factors for failure of coronectomy. Mean follow-up times for coronectomies, failed coronectomies, and control group patients were 10.6, 11.4, and 7.7 months, respectively. An inferior alveolar nerve neurosensory deficit was seen with only 1 of the 171 coronectomy teeth (0.65%) and in 9 (5.1%) of the totally removed teeth. In addition, there was 1 of the 16 failed coronectomy patients with a neurosensory deficit. Patients having a coronectomy had less postoperative pain 1 week after surgery. There were no differences in postoperative infection rates, which were near 6% in both groups. The neurosensory deficit in the single coronectomy patient had resolved after 12 months. Root migration after coronectomy was a mean 3.06 mm (range, 0 to 6 mm) after 24 months, with most of the migration occurring in the first 3 months. Roots became exposed in 2 patients and were removed without complications.

Conclusions: Coronectomy can significantly reduce the incidence of inferior alveolar nerve neurosensory disturbance compared to total removal of selected teeth.

Reviewer's Comments: A well-done study, an interesting paper, and a thorough discussion. The paper is nicely illustrated. I have not done many coronectomies, but have been satisfied with the results, as have my colleagues. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Dentoalveolar Surgery, Coronectomy, Excision

Print Tag: Refer to original journal article

Mandibulotomy Affords Good Surgical Access With Low Complication Rate

The Mandibulotomy: Friend or Foe? Safety Outcomes and Literature Review.

Dziegielewski PT, Mlynarek AM, et al:

Laryngoscope 2009; 119 (December): 2369-2375

Complications of mandibulotomy as described in this paper are around 10%, with the most common complication being exposure of stabilizing hardware.

Objective: To evaluate the safety and outcomes of the authors' unique mandibulotomy technique for access to the deep anatomy of the posterior oral cavity and oropharynx.

Design: Retrospective records review.

Participants: 214 consecutive lip-splitting mandibulotomy cases.

Methods: Outpatient clinic and hospital records were reviewed focusing attention on operative and pathology reports and progress notes. Radiologic reports and panoramic films were reviewed when they were available. Data collected included demographics, diagnosis, tumor site, stage and margins, use of radiation therapy and/or chemotherapy, and the timing, treatment, and follow-up of any mandibulotomy-related complications. Complications were early during the first 4 to 6 weeks after surgery or before patients started radiation treatment. Late complications were those that occurred during or after radiation treatment. Complications included hardware exposure, orocutaneous fistula formation, malunion or nonunion, fracture, and hardware failure. The mandibulotomy procedure utilized was a paramedian, stair-step osteotomy through an incisor extraction site, if the patient was dentate, avoiding cutting through the genioglossus/geniohyoid muscle complex. The osteotomy was ultimately reapproximated with 2 parallel superior osseous wires and a lower border 2-mm thick, 4-hole titanium mini-compression bone plate with bicortical screw anchorage. The procedure is well described and nicely illustrated in the text. Follow-up times were a minimum of 6 months, with an average follow-up of 34.5 months.

Results: 76.2% of the patients were males, and the average patient age was 58 years. A total of 220 mandibulotomies (6 patients had 2 with 3 to 8 months between procedures) were analyzed. Almost all lesions were malignant, and all tumor margins were negative. Just 23 complications (10.5%) were identified, 7 of these early and 16 late, all in patients with malignancies. Most of the complications were hardware exposure, fistula formation, malunion, or nonunion. The mandibulotomy procedure, in all cases, allowed comfortable exposure, resection, and reconstruction for lesions otherwise inaccessible for adequate treatment. Statistical analysis failed to implicate any variables as predictive factors for complications.

Conclusions: The mandibulotomy procedure described provided good surgical access with a low complication rate.

Reviewer's Comments: The wire fixation to reapproximate the segmented mandible was initially placed followed by the application of the minicompression bone plate to the reapproximated mandible, closing the osteotomy gap. The authors concede that this could put dentate patients in malocclusion, which they feel "was not clinically relevant." The authors emphasize the importance of a layered mentalis muscle area closure in avoiding complications. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Orthognathic Surgery, Mandibulotomy, Safety, Outcomes

Print Tag: Refer to original journal article

Another Use for Short Extraoral Implants

The Use of Extraoral Implants for Distal-Extension Removable Dentures: A Clinical Evaluation Up to 8 Years.

Minoretti R, Triaca A, Saulacic N:

Int J Oral Maxillofac Implants 2009; 24 (November-December): 1129-1137

Short implants designed for extraoral use may be useful in providing distal support for mandibular removable dentures in badly resorbed posterior alveolar ridges.

Objective: To evaluate clinical outcomes following placement of extraoral, short implants in severely resorbed posterior ridges to support distal-extension removable partial dentures.

Design: Retrospective evaluation.

Participants/Methods: All 29 patients were either totally or partially edentulous with atrophic posterior alveolar ridges and claimed insufficient stability and retention problems with their prostheses. All had panoramic radiographs, diagnostic setups, and wax-ups. Available bone height in the posterior alveolar areas was between 3.5 and 6 mm. Straumann extraoral implants with self-cutting threads and a large-grit sandblasted acid-etched intraosseous surface either 3.5- or 5-mm wide with a shoulder were used. Available implant lengths were 2.5, 3.5, 4, and 5 mm. They were inserted with a 1-mm safety margin above the floor of the sinus or superior surface of the mandibular canal. The implants were placed using a 2-stage surgical procedure and uncovered 4 to 6 months later. They were loaded with retentive ball anchors, magnetic impression caps, or Dolder bars. Follow-up visits were completed 2 weeks and 3, 6, and 12 months after prosthesis delivery.

Results: The group of subjects included 29 patients (average age, 61 years) with removable overdentures (6 with some remaining anterior teeth). Fifty-four extraoral implants were placed in the molar regions, and all achieved primary stability. In the final analysis, 47 extraoral implants were able to be included. Two of the extraoral implants were lost at the second-stage surgery. After abutment connection, there were no other extraoral implant failures. The implants were usually placed in second molar areas and had a mean length of 3.5 mm. Prosthetic treatment plans were successful for all patients and no abutment or framework fractures occurred. Prosthetic complications with implant components or anchorage devices did occur in 4 patients. The short implants responded well to the compressive forces of removable prostheses.

Conclusions: Placement of single, short, extraoral implants to support the distal extension of removable prostheses can help establish a more stable posterior occlusion and prevent additional alveolar bone resorption.

Reviewer's Comments: In extraoral sites, these implants are easily placed and engage primarily cortical bone. Their use, as described in this study, could help eliminate the combination syndrome-like bone loss we frequently see with removable prostheses supported only by anterior teeth or implants that allow prosthesis rotation. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Dentures, Extraoral Implants

Print Tag: Refer to original journal article

Do Impacted Third Molars Decrease Risk of Mandibular Condyle Fractures?

Impact of Impacted Mandibular Third Molars in Mandibular Angle and Condylar Fractures.

Thangavelu A, Yoganandha R, Vaidhyathan A:

Int J Oral Maxillofac Surg 2010; 39 (February): 136-139

Impacted mandibular third molars may increase the risk of fracture at the angle, but this appears to be protective to the condyle.

Objective: To define relationships between both present or absent third molars and the risk for angle and condyle fractures with regard to position and pattern.

Design: Retrospective review of hospital records and panoramic radiographs.

Participants: 460 patients from a group of 600 presenting for treatment of mandibular trauma over a consecutive 8-year period were included. Excluded were 72 patients ≤ 16 years of age, as well as 72 patients with inadequate follow-up.

Methods: 460 hospital records with panoramic radiographs were analyzed for predictor variables identifying the presence or absence of impacted mandibular third molars, and classifying the angulation and horizontal and vertical position of impacted teeth using well-known classification systems. The number of visible roots was also counted. The predictor variables were then measured against outcome variables to include the incidence of mandibular angle and condyle fractures.

Results: 870 fractures in 460 patients were reviewed, and the most common fracture pattern involved the presence of 2 fractures. Overall, 200 patients (43%) representing 442 fractures did not have impacted third molars, while 260 (57%) patients representing 428 fractures did have impacted third molars. There was no significant difference between the absence and presence of impacted third molars with regard to overall fracture incidence. There were significant differences noted between the 2 groups when evaluating the incidence of angle and condyle fractures between these groups. Angle fractures were present in 75% of patients with impacted mandibular third molars and only 25% of those without impacted mandibular third molars. Condyle fractures were present in 85% of patients without impacted mandibular third molars and only 35% of those with impacted mandibular third molars. With regard to tooth position, the majority of angle fractures occurred with Pell & Gregory Class II B position, representing those teeth with inadequate horizontal space for eruption and vertically positioned with the crown between the cemento-enamel junction and occlusal plane of the adjacent second molar. Mesioangular impactions correlated highly with angle fractures, while distoangular impactions were associated with condylar fractures.

Conclusions: This study suggests that the absence of impacted mandibular third molars allows more force propagation to the condyle region in a trauma event, and, therefore, an increased incidence of fractures in this region. Conversely, an interruption of force in the area of the external oblique ridge secondary to the presence of impacted teeth leads to an increased incidence of mandibular angle fractures that may then "spare" the condyle in a traumatic event.

Reviewer's Comments: The implication that the removal of mandibular third molars predisposes a patient to condylar fractures by strengthening the angle region is an interesting concept, but it should be only a minor consideration in the decision-making process for routine third molar surgery. (Reviewer-Michael L. Ellis, DDS).

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Keywords: Third Molars, Angle & Condyle Fractures

Print Tag: Refer to original journal article

Factors Affecting Prognosis of Salivary Gland Tumors

Prognostic Factors in Malignant Tumours of the Salivary Glands.

Speight PM, Barrett AW:

Br J Oral Maxillofac Surg 2009; 47 (December): 587-593

Tumors <4 cm (T1 or T2) seem to do well postoperatively in spite of histologic type or grade. Radiotherapy helps for tumors >4 cm, but is not helpful for those <4 cm in size.

Objective: To consider factors influencing the prognosis of epithelial salivary gland malignancies.

Design: Comprehensive literature review with specific attention to tumor staging, histological type and grade, nerve invasion, site, age, gender, and surgical margins.

Participants: Specific case types across multiple studies were reviewed to include the usual suspects most likely to be encountered in clinical practice: mucoepidermoid carcinoma; adenoid cystic carcinoma; carcinoma in pleomorphic adenoma; acinic cell carcinoma; and polymorphous low-grade adenocarcinoma.

Methods: Stage compared with tumor grade, specific tumor type grading, and perineural invasion were all considered with respect to prognosis across multiple publications. Additionally, other prognostic indicators were reviewed and conclusions were offered regarding the relative importance of clinical findings.

Results: Tumors <4 cm, by definition a T1 or T2 grade in the TNM system without soft tissue or nerve invasion, respond well, but do not benefit from, radiation no matter the histologic type or grade. For example, even high-grade tumors do well when <4 cm. Tumors >4 cm respond well to adjuvant radiation, in contrast to those <4 cm where radiation offers no distinct improvement in survival. Tumor size, rather than histologic grading, has been defined as the critical factor with regard to clinical outcome. Stage III or IV tumors, with or without nodal involvement or extension, will do poorly no matter the histological grade. In 1 study citing 231 parotid malignancies regarding the development of a prognostic index for parotid cancer, age was relatively unimportant except in the case of adenoid cystic carcinoma, but size and nodal involvement were important, along with the presence of pain and invasion of skin. Paralysis of the facial nerve carried the heaviest index, indicating its perceived importance and negative connotation with regard to survival. Other variables to include tumor grade, site, gender, and extension did not improve the power of the prognostic system. Grading specific salivary gland cancers is subjective, and based on clinical experience with the behavior of the tumors and their histologic features of aggression or cystic formation, although attempts have been made to objectively score histologic features. Issues of local recurrence or regional metastasis with specific low-grade tumors confuse the issue among many published reports.

Conclusions: Citing several publications, stage, tumor size, and nodal involvement are more important predictors of clinical behavior than histologic features that are graded. Though the data are equivocal, perineural invasion may be present in any malignant neoplasm and generally lends a poor prognosis.

Reviewer's Comments: This very informative review paper outlines the basic tenets of salivary gland behavior as predicted by various prognostic indicators. Staging and evidence of nerve involvement indicated by paralysis, deafness, diplopia, or neurosensory changes should be heavily weighted considerations. (Reviewer-Michael L. Ellis, DDS).

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Keywords: Salivary Glands, Malignancy, Prognostic Factors

Print Tag: Refer to original journal article

TMJ Ankylosis Correction With an Intraoral Approach

Intraoral Approach for Arthroplasty for Correction of TMJ Ankylosis.

Ko EC, Chen MY, et al:

Int J Oral Maxillofac Surg 2009; 38 (December): 1256-1262

Ipsilateral coronoidectomy will enhance postoperative mouth-opening exercises. The key to successful surgical treatment is predicated by aggressive physiotherapy.

Objective: To evaluate the intraoral approach for management of TMJ ankylosis.

Design/Participants: This technique review article features 16 intraoral arthroplasties performed on 14 patients with TMJ ankylosis by 4 surgeons. One patient exhibited bilateral TMJ ankylosis and 1 patient was operated on a second time due to inadequate postoperative physiotherapy. Seven male and 7 female patients from 10 to 61 years of age (average age of ankylosis onset, 18.2 years) were included. The child, aged 10, exhibited type I fibrous ankylosis, while all remaining patients had Sawhney's type IV TMJ ankylosis.

Methods: 4-cm incisions were made at the mandibular buccal shelf near the junction of the external oblique ridge and the anterior border of the ramus and extended superiorly no higher than 5 mm above the occlusal plane to spare the buccal nerve. Full-thickness mucoperiosteal soft tissue was elevated from the medial and lateral ramus and mandibular angle, then extended superiorly to allow introduction of a coronoid retractor. The medial and lateral soft tissues were respectively retracted with a malleable retractor and a channel retractor. Holes drilled superior and inferior to the intended reciprocating saw osteotomy of the coronoid process allowed for wire passage to facilitate either later reduction of this osteotomy or stripping and removal of the coronoid process. The ankylosed area was visualized following coronoidotomy, and reflection of scar tissue was then accomplished. A malleable retractor then protected the anatomy medial to the ramus and condylar neck as the channel retractor advanced upward to better access the ankylosis. Gap arthroplasty with rotary burs or chisels then reduced the ankylosis via an osteotomy just superior to the sigmoid notch. Costochondral graft fixated with wire for the pediatric patient (or rib cartilage for all others) was then utilized as an interpositional material and securely lodged into place prior to meticulous closure of this pseudo joint. Mouth-opening exercises and aggressive physiotherapy began at day 3, with rigorous and specific exercise and follow-up expectations.

Results: Mouth opening increased in the range of 10 to 43 mm (mean increase, 24 mm) following this procedure. The average postoperative maximal incisal opening in this study population was 33.7 mm.

Conclusions: This surgical approach, though compromised by limited surgical access and thus limited selection of interpositional materials, lends distinct advantages to include decreased risk of damage to the facial nerve, no facial scarring or potential sialocele, and simultaneous exposure for coronoidotomy or coronoidectomy.

Reviewer's Comments: Adequate mouth opening is a requirement for a medial approach to the condyle, and this should be considered when developing a surgical plan for treatment of the ankylosed TMJ. There is an increased possibility for injury to the inferior alveolar nerve with any medial approach to the ramus. (Reviewer-Michael L. Ellis, DDS).

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Keywords: TMJ Ankylosis, Arthroplasty, Intraoral Approach

Print Tag: Refer to original journal article

What Causes Ocular Motility Defects After Orbital Trauma?

Blow-Out Fractures: Patterns of Ocular Motility and Effect of Surgical Repair.

Gosse EM, Ferguson AW, et al:

Br J Oral Maxillofac Surg 2010; 48 (January): 40-43

Many ocular motility problems resolve spontaneously following orbital trauma, and dysfunctional orbital tissues are rarely due to entrapment in adults.

Objective: To document the incidence and disturbance patterns of ocular motility after blow-out fractures involving internal walls of the orbit and explore rates and timing of resolution with and without surgery.

Design: 10-Year retrospective review of eye trauma patients referred to the eye department of a Scottish hospital for evaluation and management.

Participants: 141 patients, with identification and limitation to 70 cases of pure orbital blow-out fractures, (60 males, 10 females; mean age, 41 years) were included in this study; however, only 53 had sufficient follow-up data.

Methods: Orbital surgery was performed in all cases of eye motility deficit if the disorder remained 10 to 14 days after the injury, unless improvement was noted and the remaining deficit was minor. Etiology of injury included assaults, falls, sporting injuries, traffic accidents, or combinations of causes. Patterns of the ocular motility defect were noted and measured against pattern defects to include elevation defects (most common), elevation and depression defects, horizontal defects, and others. Rates of early and late spontaneous recovery with and without surgery were followed, along with persistent, postsurgical motility problems that either resolved or required extraocular muscle surgery.

Results: 59 (84%) of the original 70 cases of pure blow-out presented with an ocular motility deficit. Of those, 31 (44%) with a decrease in motility exhibited diplopia in primary gaze, 14 (20%) had enophthalmos, and 19 (27%) had paresthesia in the distribution of the infraorbital nerve. Of the 53 patients with adequate follow-up for this study, 17 (32%) spontaneously resolved within 2 weeks, and 34 (64%) had persistent motility deficits. Of these 34 patients, 21 proceeded to surgery, with immediate postsurgical resolution of motility issues in only 10 patients. The remaining 11 patients (52% of the surgical population) exhibited symptomatic motility issues postoperatively. The 13 patients with motility deficits after 2 weeks did not require surgery due to the mild nature of the deficit that was treated orthoptically; additionally, patients with significant visual defects or those lacking binocular vision were not operated. Eight patients required extraocular muscle surgery, with 5 achieving resolution of motility.

Conclusions: Acutely, the majority of blow-out fractures exhibit motility problems, and one-third resolve spontaneously in the first 2 weeks. Surgical recovery of ocular motility, in this retrospective study, was <50% successful, and in several of these cases, the recovery took several months. Treatment by observation also led to recovery of ocular motility. There was no correlation between patterns of motility disturbance and the etiology of the deficit.

Reviewer's Comments: The authors imply that ocular motility deficits secondary to muscle entrapment are rare in adults. It is important to consider additional etiologies to include tissue edema, hemorrhage, and nerve or blood supply compromise. (Reviewer-Michael L. Ellis, DDS).

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Keywords: Blow-Out Fractures, Motility, Surgical Repair Outcomes

Print Tag: Refer to original journal article

Do Journals Enforce Adherence to Instructions Regarding HSP, COI?

An Analysis of Studies on Piezoelectric Surgery in the Oral and Craniomaxillofacial Region With Regard to Human Subject Protection and Financial Conflicts.

Pitak-Arnnp P, Hemprich A, et al:

Int J Oral Maxillofac Surg 2009; 38 (October): 1011-1013

Published studies that do not follow the recommendations of the International Committee of Medical Journal Editors to include disclosure of possible financial conflicts or basic human subject protections should be carefully considered for bias.

Objective: To determine the adherence of published piezoelectric surgery studies to human subject protections and financial conflict disclosure requirements of the International Committee of Medical Journal Editors (ICMJE) and the Declaration of Helsinki (DoH).

Design: Retrospective, observational, literature-based review of publications related to specific term search. Terms including "piezoelectric surgery" were searched on PUBMED/Medline for human subject, full-length articles in multiple languages and cross-referenced with "clinical study" to generate 2 searches to create the database for this review. All citations in each study were analyzed and included if they were clinical studies related to this topic of interest.

Methods: All articles were screened for specific information regarding ethical approval by a local research ethical committee (REC) to assure human subject protection (HSP), including whether informed consent was obtained from study subjects, and disclosure of potential financial conflicts. If ethical approval by an REC was provided and informed consent was obtained from study subjects, a screened article was deemed to be appropriate with regard to requirements by ICMJE and DoH. Inadequate or absent documentation within a screened article with regard to required disclosure of potential financial conflicts/conflicts of interest (COI) was deemed not to be within established guidelines of acceptability. The data were reviewed, summarized, and subjected to descriptive statistics.

Results: 29 articles in 18 journals produced 100% intra-examiner agreement for reliability of article assessment. Most of the articles were classified as case series, and funding sources could not be correlated with outcomes. Four out of 18 journals lacked policy for the statement of HSP and COI within the body of an article submitted for publication. Ethical approval was documented in only 2 articles and patient consent in only 4 articles. Financial conflict issues were denied in 4 articles, but all others did not specify a funding source. Twenty-one of the articles (72%) did not report HSP or COI.

Conclusions: In this retrospective review of articles about piezoelectric surgery, it was clear that adherence to ICMJE regulations and DoH recommendations regarding disclosures and patient protections was very low. In spite of specific journal instructions to authors, the journals chose to publish the articles in deference to printed, established guidelines for human studies. As a result, lack of adherence to standardization and disclosure weakens the validity of published studies and risks inherent bias.

Reviewer's Comments: This review article, while in this instance specific to piezoelectric surgery, focuses our attention to an overall lack of diligence by not only submitting authors, but also to publication practices by journal editors. ICMJE regulations regarding financial disclosures, review committees, and patient protections are important factors for the integrity and validity of scientific knowledge. (Reviewer-Michael L. Ellis, DDS).

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Keywords: Study Bias, Financial Conflict, Human Subject Protections

Print Tag: Refer to original journal article