Scientific Abstracts from the American College of Oral and Maxillofacial Surgeons 40th Annual Scientific Conference & Exhibition

April 7-9, 2019, Santa Fe Community Convention Center, NM

This meeting of the American College of Oral and Maxillofacial Surgeons (ACOMS) took place on April 7–9, 2019, at the Santa Fe Community Convention Center, Santa Fe, New Mexico. We extend a special thank you to the scientific co-chairs for the meeting: Dr. Jeffrey Bennett and Dr. Deepak Krishnan.

The meeting was dedicated to Dr. Steven A. Guttenberg. Dr. Felice O'Ryan received the ACOMS W. Harry Archer Award and presented the Kurt H. Thoma Memorial Lecture. Vice Admiral Jerome M. Adams, the United States Surgeon General, delivered the Keynote Address.

All attendees were invited to submit scientific abstracts for presentation at the conference in poster and oral sessions. Outstanding abstracts from OMS residents were entered in the Resident Abstract Competition and were eligible for cash prizes.

We are pleased to announce the winners of the Resident Abstract Competition:

First Place – Outstanding Oral Scientific Abstract

A multimodal analgesic protocol reduced opioid use/misuse after third molar surgery

Presented by: Matthew Pham, DMD, MD

Co-Authors: Barry Kendell, DDS; Glenn Reside, DDS; Ceib Phillips, PhD, MPH; Raymond White, Jr., DDS, PhD

University of North Carolina

Second Place – Outstanding Oral Scientific Abstract

Do hybrid arch bar screws pose a risk to the dentition?

Presented by: Danielle Wilt, DMD, MD

Co-Authors: Chris Kim, DMD, MSE; Dane St. John, DMD, MD

Louisiana State University

Third Place – Outstanding Scientific Poster

The utilization of in-office 3-D printed anatomic models to assist in reconstruction of orbital trauma

Presented by: Tarik Elmohd, DMD

Co-Author: Ravi Agarwal, DDS

Washington Hospital Center

A MULTIMODAL ANALGESIC PROTOCOL REDUCED OPIOID USE/MISUSE AFTER THIRD MOLAR SURGERY

MATTHEW PHAM, BARRY KENDELL, GLENN RESIDE, CEIB PHILLIPS and RAYMOND WHITE, Jr., University of North Carolina, Chapel Hill, NC, USA

Objective: This institutional review board–approved prospective study was designed to assess the number of opioid doses available to patients from filled prescriptions (Rx) and the opioid doses taken and left over after adoption of a multimodal analgesic protocol to manage pain after surgery in 2018.

Study Design: The inclusion criteria were (1) American Society of Anesthesiologists risk classification I/II, (2) age 18 to 35 years, and (3) at least 2 lower third molars removed. The exclusion criterion was treatment for opioid addiction/abuse. All enrolled, consented subject-patients were treated with the multimodal analgesic protocol. In addition, subject-patients were given 2 Rx for 4 doses of hydrocodone 5 mg or acetaminophen 325 mg each: one Rx dated to be filled on the day of surgery, one Rx dated to be filled on any subsequent day; both Rx could be filled at the patient's discretion. Data were derived from an encounter form completed by the patient at surgery; a 14-day diary by the patient, which tracked opioid drugs taken; and the Rx filled as recorded in the North Carolina RxSentry Prescription Drug Monitoring Program. The primary outcome variable was the number of opioid doses filled by Rx for each subject-patient. The primary predictor variable was the multimodal analgesic protocol. Descriptive statistics were used.

Results: Data from 50 patients were analyzed. Of these patients, 32 (64%) were females. Median age was 22 years (interquartile range [IQR] 19–26 years). Twenty-nine (58%) subject-patients filled no Rx, 9 filled 1 Rx (18%), 12 filled 2 Rx (24%). Within the group that filled 1 Rx, 23 left-over doses out of 36 doses (64%) were not consumed. Within the group that filled 2 Rx, 36 left-over doses out of 96 doses (38%) were not consumed.

Conclusions: Outcomes suggest that implementation of a multimodal analgesic protocol with third molar surgery may be effective in reducing use and misuse of opioid drugs.

DO HYBRID ARCH BAR SCREWS POSE A RISK TO THE DENTITION?

DANIELLE WILT, CHRIS KIM and DANE ST. JOHN, Louisiana State University, Baton Rouge, LA, USA

Objective: Hybrid arch bars have become popular alternatives to traditional Erich arch bars for use in craniomaxillofacial surgery. They offer the benefit of decreased time for application, reduced risk of sharps exposure to healthcare personnel, and decreased risk of compromised periodontal health. However, it has not been established if they pose a significant risk to the dentition. Damage to the teeth, such as violation of the pulpal canal or root fracture, can lead to clinically significant sequelae. The purpose of the study was to examine if the screws contact or violate the tooth structure during placement.

Study Design: A retrospective radiographic review of 50 patients treated with Stryker SMARTLock Hybrid Maxillomandibular fixation system at University Medical Center Hospital in New Orleans, from January 2018 to August 2018, was conducted. Postoperative axial slices of computed tomography

(CT) scans were examined for screw position relative to the adjacent tooth roots. Patients were excluded if they were fully edentulous, were incarcerated, or did not have arch bars applied to both arches. Variables examined were screw violation of the periodontal ligament, gross disruption of tooth root dentin, pulpal violation, and root fracture. The location of the tooth injured with regard to the maxilla versus the mandible and the anterior, premolar, or molar dentition was also examined. Statistical analysis was performed with unpaired *t* test and 1-wayanalysis of variance with Tukey's post hoc test.

Results: Fifty patients were analyzed, for a total of 507 screws in 100 arches with 1340 teeth present. Overall, 31.49% of teeth had contact or injury with the screws, with screw violation of the periodontal ligament (7.39%), dentin (19.78%), and pulp (3.81%) and root fracture (0.45%). There was a significantly higher incidence of root fracture in the mandible (N = 5) versus maxilla (N = 1) ($P < .05$). Maxillary teeth (mean 4.74 ± 1.64) ($P < .05$) were significantly more likely to experience contact or injury with screws compared with the mandibular teeth (mean 3.68 ± 1.63). The occurrence of screw contact or injury to the root, according to location, was as follows: anterior dentition, 13.66%; premolars, 7.99%; and molars, 9.78%. The anterior teeth were significantly more likely to be in contact or sustain injury from a screw compared with the premolar and molar teeth ($P < .05$).

Conclusions: Hybrid arch bars offer many benefits to the surgeon, but there is no risk of the screw contacting or violating the tooth structure. There is an increased risk to the anterior dentition and the maxillary dentition. The mandibular teeth are also more likely to experience root fracture compared with the maxillary teeth. The hybrid arch bars should be applied with consideration to patient anatomy and tooth position to prevent injury to the tooth roots.

MODIFIED ENDONASAL APPROACH FOR PREMAXILLARY REPOSITIONING IN THE PATIENT WITH BILATERAL CLEFT LIP - A REVIEW OF TECHNIQUE

GREGORY SHANK and RAVI AGARWAL, Washington Hospital Center, Washington, DC, USA

Objective: In patients with bilateral cleft lip, the management of the cleft premaxilla can be challenging, because it remains mobile throughout childhood until stabilized with grafting. A small group of patients may have grossly malpositioned premaxillae that cannot be managed with traditional techniques. Concerns about compromised perfusion and scarring have led to attempts to reposition the premaxilla before alveolar grafting while preserving the gingival periosteum. Reported methods include utilizing a lip-split incision (Rahpeyma et al., 2016), conservative transoral approaches (Koh et al., 2016; Steinhauser, 2014), and endonasal approaches (Sierra et al., 2018; Martinez-Plaza, et al., 2018). At our institution, we use a staged approach, in which endonasal osteotomies via a Killian incision are performed to mobilize the cleft premaxilla, and then it is repositioned into a more anatomic position by using orthodontic splinting. Our primary outcome evaluated any adverse vascular compromise.

Study Design: This retrospective analysis catalogs 6 cases of endonasal premaxillary repositioning in patients with bilateral cleft palate since 1999. A chart review identified gender, age, vascular issues, infection, and overall progress for the management of the cleft. Indications for staged repositioning were severe vertical, horizontal, or rotation/torsion malalignments of the premaxilla. We report here our modified technique using an endonasal approach for repositioning an infra-positioned premaxilla.

Results: All cases reviewed had improved anatomic location without any vascular compromise. No infections were noted. The study included 4 females and 2 males (age range was 4−10 years). Four of these patients went on to have alveolar grafting, with 2 currently planned for eventual grafting. Three of the patients have had or are undergoing workup for orthognathic surgery, 1 did not need surgery, and 2 were lost to follow-up.

Conclusions: Endonasal osteotomy is a predictable way to reposition the bilateral cleft premaxilla while maintaining blood supply and preventing gingival scarring. This technique is minimally invasive and aids in anatomic repositioning for the orthodontic management of patients with complex bilateral cleft lip/palate. Further studies are needed to evaluate the stability of this procedure and considerations of simultaneous bone grafting.

IS THERE AN INCREASED RISK OF POSTOPERATIVE ORAL INFECTIONS IN ANTICOAGULATED PATIENTS UNDERGOING DENTAL EXTRACTIONS?

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Objective: Postoperative oral infections in anticoagulated patients undergoing dental extractions are a concern for healthcare professionals because perioperative management often requires a multidisciplinary approach. Postoperative bleeding may lead to complications, such as hematoma formation, which can predispose patients to subsequent infection. To date, there is no analysis of large databases assessing the impact of anticoagulation on oral infection rates after dental extractions. Our objective was to explore the relationship between anticoagulation and oral infections in adults who have undergone dental extractions.

Study Design: The Nationwide Inpatient Sample (NIS) years 2001−2013 was queried for adult patients age 19 years and older undergoing dental extractions, based on *International Classification of Diseases, 9th revision (ICD-9)* procedural codes 23.01, 23.09, 23.11, and 23.19. Anticoagulant therapy was determined by ICD-9 code V58.61. Oral infection was determined by ICD-9 diagnostic code 528.3 (cellulitis and abscess of oral soft tissues). Cases were excluded if patients received antiplatelet therapy (ICD-9 code V58.63). Univariate analysis was conducted with Pearson's χ^2 test to determine if there was a relationship between anticoagulant therapy and oral infection. Multivariate analysis was conducted with binary logistic regression. Results were reported as odds ratio (OR) and 95% confidence interval (95% CI). Significance was defined as $P < .05$.

Results: A weighted total of 334,822 patients (59.7% males, 40.1% females, 0.2% missing information on gender) were included in this analysis after exclusion criteria were applied. Of all patients included in the study, 2.3% were undergoing anticoagulation therapy, and 10.5% of patients had developed an oral infection. A total of 306 patients (0.09%) were undergoing anticoagulation therapy and had developed oral infections. Pearson's χ^2 analysis determined a significant association between anticoagulation and cellulitis and abscess of oral soft tissues. Female patients had an increased likelihood of developing an oral infection (odds ratio [OR] = 1.407). Patients who were undergoing anticoagulation therapy had a decreased risk of developing an oral infection (OR = 0.426). African