Scientific abstracts from the ninth annual ACOMS residents meeting November 14, 2020, virtual presentation format

The Ninth Annual American College of Oral and Maxillofacial Surgeons Residents Meeting convened November 14, 2020, in a virtual presentation format. Special thanks are owed to the scientific chair for the meeting, Dr. Thomas Schlieve.

All attendees were invited to submit scientific abstracts or case reports for oral presentation at the meeting. Twenty-four abstract and case report authors shared their research and all accepted scientific abstracts were eligible for publication. We are pleased to announce the winner of the Resident Abstract Competition.

OUTSTANDING SCIENTIFIC ABSTRACT

TIMING IS EVERYTHING: MEASURING OUTCOMES IN PRIMARY CLEFT RHINOPLASTY

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Purpose: The timing of ideal repair of the cleft nasal deformity has been a contentious topic among craniomaxillofacial surgeons over the last several decades. Several tissues are adversely affected, from bone through the vestibule, cartilage, and external skin. While surgical techniques, paradigms and philosophies have evolved, several important considerations are factored into the clinical decision making to perform a rhinoplasty at the time of cleft repair, such as growth interruption and several craniofacial growth centers, scarring, and the predicted aesthetic result at growth maturity. To this end, we investigated the safety profile, hospitalization characteristics and costs of primary cleft lip repair with and without rhinoplasty.

Methods: A retrospective cohort was designed using the Kids Inpatient Database (KID), which is comprised of databases organized by the Healthcare Cost and Utilization Project. Data were collected from January 2000 to December 2011 and included infants 12 months and younger who underwent complete and incomplete cleft lip repair. Data were excluded if records did not include age at time of cleft lip repair. Predictor variables included extent of the initial cleft surgery, with or without rhinoplasty. Outcome variables included length of stay, total charges, and overall complications. Demographic characteristics included age, gender, race, insurance status, and median household income. Independent *t*-tests and chi-square tests were performed. Multiple linear regression models were used to analyze continuous variables, and a P value of .05 was considered statistically significant.

Results: The study sample included 4559 infants, of whom 1422 (31.2%) underwent primary cleft rhinoplasty. Primary cleft rhinoplasty patients had a significantly shorter length of stay (1.6 vs 2.8 days, $P < .01$) compared to the nonrhinoplasty cohort. However, the hospital charges between both groups were not significantly different, suggesting that the cost of additional rhinoplasty offset the cost savings of the shorter length of stay. There was a significant increase in the inclusion of rhinoplasty with cleft lip repair over time ($P < .01$). A greater proportion of patients with unilateral cleft lip received a rhinoplasty (33.8% vs 26.0%, $P < .01$). Likewise, patients without cardiovascular anomalies (31.6% vs 24.4%, $P = .02$), patients with a cleft palate (33.1% vs 28.6%, $P < .01$), and patients treated in urban settings (72.9% vs 69.1%, $P < .01$) were more likely to undergo primary cleft rhinoplasty. The proportion of African Americans undergoing primary cleft rhinoplasty was less than that of the other cohort (4.6% vs 7.3%, $P < .01$). Similarly, the proportion of patients from the lower income quartile was less in the rhinoplasty cohort compared to that of the nonrhinoplasty cohort (23.3% vs 28.1%, $P < .01$). Patients treated with rhinoplasty were slightly older at the time of admission (4.2 vs 4.0 months, $P = .03$).

Conclusion: Performing primary cleft rhinoplasty is becoming more commonplace among pediatric craniomaxillofacial surgeons. Although concomitant rhinoplasty at the time of primary cleft lip repair is more costly, the length of stay in the hospital setting was shown to be shorter. Future studies should further investigate the safety profile and risk of postoperative complications in the rhinoplasty vs non-rhinoplasty cohort in primary cleft lip repair patients.

EFFECTIVE METHOD OF LOWERING MRSA CARRIAGE RATES ON SURFACES IN A DENTAL SCHOOL–BASED ORAL & MAXILLOFACIAL SURGERY CLINIC

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Purpose: The purpose of this study was to test whether the placement of a standardized cleaning protocol in oral and maxillofacial surgery operatories could effectively reduce MRSA (methicillin-resistant *Staphylococcus aureus*) colonization rates on operatory surfaces.

Methods: Eight operatories were each swabbed at 6 different sites using a moist sterile swab (Amies gel with charcoal). The sites were right light handle, right armrest, headlight band, headlight bulb cover, handpiece buttons, pen from pen pad. Swabs were immediately transported to the microbiology lab and inoculated onto agar media, 3 plates/swab. MRSA colonizations were counted. Rooms were initially swabbed twice approximately 2 months apart, without prior notice being given (experiment 1 and experiment 2, respectively). Following the posting of room cleaning protocols, the rooms were reswabbed following a further 2-month period (post-Standard Operating Procedure).

Results: For those sites resulting in the isolation of MRSA, the total count for all 6 sites was 5 for experiments 1 and 2; hence, the RR (relative risk) for the comparison of experiments 1 and 2 was 1.00 ($P = 1.000$, 95% confidence interval, 0.27-3.72). In the post-SOP period, the total count was 0 for all 6 sites (Figure 1c); thus, the RR for the comparisons of experiment

1 and experiment 2 vs post-SOP was 0.0 ($P = .031$, 95% confidence interval, 0.00-0.82).

Conclusion: Posting a standardized cleaning protocol in oral and maxillofacial surgery operatories is a simple and effective way to reduce MRSA colonization on operatory surfaces. In our study, multiple colonies of MRSA were isolated from operatory surfaces in 2 independent samplings before the posting of a cleaning protocol, but no colonies were isolated after its posting. There are essentially no costs associated with placement of this protocol, and there are potentially tremendous savings to the patient and health care system if infections can be prevented by this method.

INVESTIGATING THE PREVALENCE AND RISK FACTORS ASSOCIATED WITH SARS-COV-2 INFECTION AMONG ORAL & MAXILLOFACIAL (OMS) RESIDENTS IN THE UNITED STATES

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Purpose: The coronavirus disease 2019 (COVID-19) pandemic caused by SARS-CoV-2 (severe acute respiratory disorder 2) has emerged as the primary global health concern of 2020. Oral and maxillofacial surgery (OMS) residents, like other health care personnel, have been on the front line providing care to SARS-CoV-2-negative and SARS-CoV-2-positive patients across the United States. As surgeons of the head and neck, OMS residents may be at an increased risk of infection; however, little is known about the prevalence of SARS-CoV-2 infection among OMS residents across the United States. This research study sought to elucidate the prevalence of SARS-CoV-2 infection among OMS residents and explore the risk factors that are associated with infection.

Methods: Institutional review board approval for the study was obtained via NYU School of Medicine. The study was performed via the dissemination of a secure electronic survey to OMS residents in accredited training programs across the United States. The survey elicited information regarding residency training, demographic characteristics, health characteristics, and SARS-CoV-2 testing. Survey data were collected between August 20, 2020, and September 21, 2020, and the data were subsequently exported to SAS 9.4 for statistical analysis. Prevalence with 95% confidence intervals was calculated with the exact binomial technique. Categorical variables were compared using Fisher's exact test, and continuous variables were compared with the Mann Whitney *U* test.

Results: One hundred twenty-nine survey respondents initiated the survey, and 84 respondents completed the survey. Respondents who failed to complete the survey were excluded from the study. Of the 84 respondents who completed the survey, 47 respondents indicated that they had received a SARS-CoV-2 PCR (polymerase chain reaction), antigen, or serology test. Five of the 47 respondents reported a positive result, which revealed a prevalence of 10.64 (95% confidence interval, 3.55-23.1). The presence of symptoms was significantly associated with a report of a positive test result. Respondents who reported symptoms were 20 times more likely to report a positive test result than respondents who reported no symptoms ($P = .008$).

Conclusion: In conclusion, this study found that the prevalence of SARS-CoV-2 infection among OMS residents across the United States is approximately 10.64% and the presence of symptoms is associated with a positive test result. Even though the United States has been managing the COVID-19 pandemic for close to 1 year, it is important that OMS residents continue to adhere to infection control measures and self-monitor for the presence of symptoms consistent with SARS-CoV-2 infection.

DOES THE USE OF A WRAP IN THREE-DIMENSIONAL SURGICAL PLANNING INFLUENCE THE BONY MARGIN STATUS OF BENIGN AND MALIGNANT NEOPLASMS OF THE ORAL, HEAD AND NECK REGION? AN INITIAL INVESTIGATION

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Purpose: Three-dimensional surgical planning (3-DSP) is becoming commonplace in the management of benign and malignant disease for oral and maxillofacial surgery practice within the last decade.[1] In pathologic resections of the head and neck cysts and tumors in particular, a virtual wrap is used to delineate the tumor resection margin. However, there has yet to be a study in regard to the accuracy of this wrap and its effect on bony margin status. This study aims to discuss our experiences with the use of wraps created with 3-DSP and explore the accuracy of the wrap for margin status. We hypothesize that the use of a wrap is a predictable method to obtain negative bony margins. Furthermore, we explore the emerging challenges in the use of this technology specific to pathologic resection margins.

Methods: This is a retrospective chart review. The study included patients over the age of 18 (range, 18-99) treated at 2 centers, John Peter Smith Health Network Oral and Maxillofacial Surgery and Parkland/UTSW Oral and Maxillofacial Surgery. We included patients who obtained a 3-DSP for pathology of the head and neck involving the bone and who also obtained a virtual wrap for bony margins. There were no specific exclusion criteria. There were no exclusions due to racial, ethnic, or gender groups. Data accessed ranged from July 1, 2017, to May 1, 2020. Patient data were collected for processing via multilevel protected electronic health record system (Epic). Once the data were gathered, the identifiable link was destroyed and data were anonymized. Analysis was completed via Excel.

Results: There were 39 cases, but we excluded 1 that required intraoperative adjustment and thus did not follow preplanned case. One out of the 38 cases involved a bony margin (2.6%; 95% confidence interval, 0.1%, 13.8%). Table 1 defines the pathology. We classified SCC (squamous cell carcinoma) and low-grade osteosarcoma as malignant cases and the rest as benign. There were 16 malignant cases (42%) and 22 benign cases (58%). When stratified by pathology, 1 out of the 16 malignant cases (6.3%; 95% confidence interval, 0.2%, 30%) and 0 out of the 22 benign cases (95% confidence interval, 0%, 15.4%) had a positive margin.

Conclusion: Three-dimensional surgical planning with wrap margins is a predictable method to obtain negative bony margins in benign and malignant disease of the maxillofacial complex. The surgeon must be prudent to ensure accurate margin delineation by engineers before simulated wrap creation or resection.

References

1. Roser SM, Ramachandra S, Blair H. et al. The accuracy of virtual surgical planning in free fibula mandibular reconstruction: comparison of planned and final results. *Oral Maxillofac Surg*. 2010; 68: 2824.