**METHODS:** A retrospective case series of patients who underwent customized alloplastic TMJ reconstruction concurrent with virtual surgical planning-guided orthognathic surgery (2014–2017) was completed. Anatomic, functional, and complication outcomes were documented.

**RESULTS:** Five TMJs in 4 patients (1 bilateral, 3 unilateral) were reconstructed. Causes of TMJ absence included Goldenhar Syndrome (2), idiopathic bilateral condylar resorption (1), and post-oncologic in a patient with Gorlin Syndrome (1). The two patients with Goldenhar Syndrome had previous attempts at reconstructive surgery with poor results (distraction, bone grafting, alloplastic implants). All patients were skeletally mature at the time of surgery, had virtual surgical planning and had concomitant maxillomandibular orthognathic surgery at the time of TMJ reconstruction. All patients had improved post-operative occlusal results. Three of 4 patients had >30 millimeters post-operative maximal incisal opening. Complications included revision of implant position (1), ear canal perforation (1), and frontal branch of facial nerve injury requiring secondary brow lift (1). There were no infections or other implant-related complications. Mean follow up was 1.32 years (range, 0.46–2.74 years).

**CONCLUSION:** We present a growing series of patients with congenital mandibular defects who underwent successful custom alloplastic TMJ reconstruction with preoperative virtual surgical planning. Such reconstruction at the time of skeletal maturity for patients with congenital mandibular TMJ defects may present an alternative to existing treatment options, such as mandibular distraction, bone grafting, and prosthesis completed during skeletal immaturity.2,4,5

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**Prolonged Antibiotic Duration Does Not Affect Surgical Site Infection Rates in Traumatic Mandible Fracture**

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**INTRODUCTION:** The appropriate duration of antibiotic (Abx) therapy for surgical site infection (SSI) prevention in traumatic mandibular fracture repair is unknown. Data regarding the appropriate duration of therapy are lacking in this patient population and practices vary significantly. The objective of this study was to characterize antibiotic duration and outcomes following surgical repair of traumatic mandibular fracture.

**METHODS:** A single-center, retrospective analysis of all adult patients from January 2014- December 2016 with a mandible fracture who underwent surgical repair was performed. Patients were identified from the Trauma Division Registry using ICD-9 and ICD-10 codes. Standard Centers for Disease Control and Prevention (CDC) definitions were used to categorize SSIs. Abx, SSI, and culture data were manually collected from the medical record. Operative service was categorized between Otolaryngology service (ES), Plastic and Reconstructive service (PS), and Oral maxillofacial service (OS). Other indications for giving Abx were identified (including sinus fractures, non-Head and Neck infections such as intraabdominal infections, urinary tract infections, and pulmonary infections). Post-operative outcomes were defined as hospital Length of Stay (LOS), intensive care unit (ICU) LOS,
SSI, and operative complications (including osteomyelitis, nonunion, malocclusion, and hardware infections). Post-Abx complications included Clostridium Difficile colitis, urinary tract infections, pulmonary infections, nervous system infections, bloodstream infections and multidrug resistance identified on re-admission. Difference between groups were analyzed by running ANOVA test for continuous variables and Pearson Chi-squared test for categorical variables.

RESULTS: A total of 75 patients were included in the analysis; 33 (44.0%), 26 (34.7%), and 16 (21.3%) were managed under PS, ES, and OS, respectively. Median age was 30.0 years (IQR: 22.0 – 45.0). Median Injury Severity Score (ISS) was 4.0 (IQR: 1.0 – 9.0). There were no significant differences among baseline demographics or ISS within the three groups. Median total duration for PS: 8.5 days, IQR: 6.3 – 10.0; ES: 8.8 days, 6.8 – 10.5; and OS: 1.8 days, IQR: 0.1–7.8. There was no significant difference in hospital LOS (p=0.44), ICU LOS (p=0.53), or post-op complications (p=0.15). None of our patients had SSI or post-Abx complications. While the total inpatient duration of Abx was not significantly different among services (p=0.37), there were significant differences in outpatient duration of Abx (p=0.007) and total duration of Abx (p=0.003).

CONCLUSION: Outpatient duration of Abx is not associated with post-operative complications including SSI. Given that the duration varies among services, there appear to be no benefit of prolonging Abx prophylaxis. Further studies are needed to study the complications of prolonged Abx use and to explore the benefit of short course Abx in mandibular fractures.

Predictors of Adverse Outcomes in the Management of Mandibular Fractures: An Analysis of 953 Cases

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PURPOSE: Mandibular fractures are the most common isolated facial fractures in the United States and often require surgical treatment with open reduction and internal fixation to prevent infection and promote adequate bone healing. Various clinical risk factors have been associated with increased rates of postoperative complications, including smoking, substance abuse, and surgical approach. However, national outcomes reports are limited, and data are conflicting. Using a national multi-institutional database, we sought to analyze 30-day outcomes after mandibular fracture repair and determine risk factors for complications, readmission, and reoperation.

METHODS: Retrospective review of the American College of Surgeons National Surgical Quality Improvement (ACS-NSQIP) database was performed to identify patients undergoing surgical treatment of mandibular fractures between 2010 and 2015. Case distribution was based on available CPT codes and included open treatment of mandible fracture with external fixation (21454), open treatment of mandible fracture with and without interdental fixation (21462, 21461), and open treatment of complex fractures involving multiple approaches (21470). Preoperative demographic data and postoperative outcomes were analyzed. Primary outcomes included: wound complications (superficial surgical site infection (SSI), deep SSI, and wound dehiscence), overall complications (wound complications and/or medical complications), as well as 30-day readmission and reoperation rates. For risk factors significant on univariate analysis, multivariate analysis was performed to control for confounders.

RESULTS: Review of the database identified 953 eligible patients who underwent surgical treatment of mandibular fractures. Mean age was 34.5 years and 84% of the cohort was male. Fifty percent of patients were active smokers. Wound complications occurred in 38 patients (4.0%) and the overall complication rate was 7.9%. The 30-day reoperation and readmission rates were 2.2% and 3.3%, respectively. Multivariate analysis demonstrated age to be a significant risk factor for 30-day readmission (OR = 1.06, p=0.01) and reoperation (OR = 1.05, p=0.01), as well as overall complications (OR = 1.03, p=0.02). Additionally, active smoking was a significant risk factor for 30-day reoperation (OR = 4.86, p=0.03). The odds of readmission for smokers was more than 3 times higher than non-smokers (OR=3.25; 95% CI 0.93–11.43); however, this approached but failed to reach our threshold for statistical significance (p=0.07).

CONCLUSION: Our analysis demonstrates that surgical treatment of mandibular fractures can be performed safely...