Abstract QS07: Outcomes of Prenatally Identified Congenital Anomalies in a Hospital-Based Consult Service

Alex G. Lambi, MD, PhD[1], Rosemarie Byrd, BS[2], Connor Bradley, BS[2], Ellie Volpicelli, BS[2], James P. Bradley, MD[2]

[1]UCLA Health, Los Angeles, CA, USA, [2]Temple University School of Medicine, Philadelphia, PA, USA

PURPOSE: Osseous genioplasty is a powerful surgical procedure that can correct chin dysmorphology with movements in 6 directions (sagitally, vertically, and horizontally). However, the technique may result in the untoward soft tissue sequellae of "Witch's chin" deformity or chin ptosis. Virtual surgical planning for orthognathic cases or osseous genioplasty allows for precise cutting guides and custom-plate manufacturing and for the use of a *no-degloving* 90-degree plate with lag screw method. We compared the clinical outcomes of the traditional (stair-step plate) method to this new technique for special emphasis on chin ptosis.

METHODS: Patients who underwent osseous genioplasty were randomized for 1) traditional (stair-step plate) method or 2) new no-degloving and studied prospectively (n=76). We recorded degree of advancement, complications, direct and photographic measurements for chin ptosis, and lateral cephalogram analysis. In addition, Face-Q chin assessment was used for patient reported outcomes.

RESULTS: Both comparative groups had similar age, comorbidities, osseous advancement (5.8cm vs 5.6cm), vertical lengthening (2.5cm vs 2.6cm), and a similar complication profile (plate exposure, prolonged paresthesias) except for soft tissue ptosis. Chin ptosis was seen more often with traditional vs *no-degloving* procedure: lateral image measurements (38% vs 4%), lateral cephalogram (41% vs 9%). In addition, greater satisfaction was seen with Chin Face-Q for no degloving = 92.9 + 19 vs traditional = 83.1 + 15.

CONCLUSION: The *no degloving*, pre-milled plate osseous genioplasty was superior to the traditional method with regard to chin ptosis and prevention of "Witch's chin" deformity.

A.G. Lambi: None. **R. Byrd:** None. **C. Bradley:** None. **E. Volpicelli:** None. **J.P. Bradley:** None.

QS06

Comparison Between Oximetry and Polysomnography in Identifying Airway Obstruction in Infants with Robin Sequence

Rafael Galli, MD

McGill University, Montreal, QC, Canada

PURPOSE: Polysomnography is the gold standard for the diagnosis of obstructive apnea in infants with Robin Sequence. However, its routine use is limited by cost and availability. The purpose of our study was to determine whether night-time pulse oximetry (oximetry), an inexpensive and widely available technology, could be used as a surrogate for polysomnography in identifying obstructive apnea in infants with Robin Sequence.

METHODS: We reviewed all polysomnographies done in infants with Robin Sequence treated at the Montreal Children's Hospital. We extracted the following standard data: Central Apnea Index and Mixed Obstructive Apnea Hypopnea Index (MOAHI) from polysomnography data and Desaturation Index (drops≥4%/hour, DI4%) from the oximetry done at the time of polysomnography. Symptoms of obstructive apnea were assessed with a standard questionnaire. A MOAHI≤5 was used to separate infants with no/mild obstruction from those with moderate/severe obstruction (MOAHI>5).

RESULTS: We reviewed 39 polysomnographies (26 infants, age: 12.2 ± 4.8 months). Central apnea with a mild decrease in oxygenation was a frequent occurrence. All infants with a DI4%<7 events/hour (22 studies) and no significant snoring had no or mild obstructive apnea on polysomnography. In patients with DI4%>7 events/hour, 53% had moderate or severe obstruction. In the remaining infants, central events with desaturation predominated.

CONCLUSION: In Robin Sequence, oximetry can identify those infants with no or mild obstructive apnea thereby decreasing the demand for polysomnography. With a DI4%>7 events/hour, polysomnography is required to differentiate between obstructive and central events.

R. Galli: None.

QS07

Outcomes of Prenatally Identified Congenital Anomalies in a Hospital-Based Consult Service

Emily J. Ji, BA[1,2], Nikhil Sobti, BS[1], Karen M. Parsons, RN[1], Chien-Wei Liao, MD PhD[1]

[1]Massachusetts General Hospital, Boston, MA, USA, [2]Harvard Medical School, Boston, MA, USA

PURPOSE: Improvements in imaging and genetic testing technologies such as next generation sequencing have allowed for most birth defects to be identified prenatally. There is a lack of available literature describing the current outcomes of fetuses where prenatal structural anomalies have been detected.

METHODS: We conducted a retrospective cohort chart review of malformations identified by a Fetal Care Consult (FCC) team at a tertiary care academic institution from 2016–2017. Outcome endpoints of treatment, maternal characteristics, primary and secondary identification methods, genetic testing, and decision to terminate, were recorded. Consults received by the FCC service were included in the study. Exclusion criteria include consults that were ongoing pregnancies at the time of analysis, did not result in a malformation diagnosis, or were lost to follow-up. Student's t-test and Pearson chi-square test were applied for data analysis.

RESULTS: Of the 112 cases identified, 92.9% of the congenital anomalies were first identified by ultrasound, 28.6% underwent genetic testing, and 14.3% resulted in elective termination of the fetus. Congenital abnormalities were stratified by severity, in accordance with a scale reported by Thomas *et al*, Birth Defects Research Part A, 2016. These results showed that fetal morbidity is associated with greater rate of elective termination. A subgroup analysis was done to evaluate patient characteristics between pregnancies that were continued compared with those that were terminated. Termination was associated with shorter gestation at the time of FCC (p=.002) and prior therapeutic terminations (p=.016) by Student's t-test. Rates of genetic testing were collinear with severity of prenatal condition. Pearson chi-square test suggests genetic testing did not predispose termination, although there is a trend towards significance (p=0.077). Cleft lip and palate were observed in 6.25% of cases. Within this group, there were no terminations, 71.4% underwent prenatal MRI, and 57% had genetic testing.

CONCLUSION: This study describes the current practices of a prenatal consultation service at an academic tertiary care hospital. In concordance with previous studies, more severe anomalies are more likely to be terminated. Almost all antenatal diagnoses of congenital malformations were identified by first trimester ultrasonography screen. The decision to pursue genetic testing is correlated with anomaly morbidity but greater sample size is necessary to determine the role of genetic testing in the decision to terminate. In the case of clefts where there can be a clear genetic cause, 57.0% compared to the overall rate of 28.6% opted for genetic testing. Continued monitoring of the role of genetic testing in prenatal diagnosis of congenital anomalies is needed in the era of personalized medicine.

E.J. Ji: None. **N. Sobti:** None. **K.M. Parsons:** None. **C. Liao:** None.

QS08

The Impact of Preoperative Antibiotic Use in Primary Palatoplasty. An Outcome Study Utilizing the Pediatric Health Information System (PHIS) Database

Diana Jodeh, MD[1], James J. Cray, PhD[2], S. Alex Rottgers, MD[1]

[1]John Hopkins All Children's Hospital, St.Petersburg, FL, USA, [2]Medical University of South Carolina, Charleston, SC, USA

PURPOSE: Previous attempts to study the effect of prophylactic antibiotics on the outcomes of cleft palate surgery have been hampered by the need for a very large sample size to provide adequate power to discern a potentially small therapeutic effect. This limitation can be overcome by querying large databases created by healthcare governing bodies or healthcare alliances.

METHODS: We queried the ***Pediatric Health Information System*** (PHIS) database for de-identified billing records. This meta-dataset was accumulated from 47 participating children's hospitals. We identified patients within the PHIS database who had undergone primary palatoplasty, ICD-9 code 749.21, between 2007 and 2012. Patients between 6–18 months old at the time of surgery were included. We determined how many of these patients had undergone repair of an oronasal fistula, ICD-9 procedure code 21.82, between 2007 and 2015. Pharmacy billing records for each patient were queried for charges for antibiotic administration. Our primary analysis consisted of two groups. Group 1 received no preoperative antibiotics. Group 2 received a dose of preoperative antibiotics. Our secondary analysis also consisted of 2 groups. Group 1 received no antibiotics.