Impact of COVID-19 on Cleft Surgical Care

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Background

- Cleft Lip & Palate
  - Orofacial clefts are the most common group of birth defects in the United States affecting approximately 1 in 700 live births.
  - Timing of cleft lip (CL) and cleft palate (CP) varies across institutions; however, our institution generally repair cleft lip (CL) deformities by 4 months of age and cleft palates (CP) by 12 months of age.
  - Alveolar cleft deformities are largely repaired secondarily during the period of mixed dentition as to avoid maxillary growth restriction and subsequent malocclusion.
- COVID-19 and Cleft Care
  - Governmental regulations and pre-operative screening resulted in many cases being rescheduled
  - Similar circumstances were observed at other craniofacial centers; however, no studies have investigated its influence on cleft surgical care.
- The purpose of this study we investigate the effects of COVID-19 on surgical treatment of orofacial clefts.

Methods

- A retrospective study was conducted
  - Study period: April 1st through August 31st 2019 and 2020
  - Cases were stratified into four groups: primary CL repairs, primary CP repairs, ABG procedures, and cleft revision/secondary repair procedures
  - Variables: sex, race, ethnicity, location of residence, age at surgery, type of cleft deformity, scheduling data, surgical procedures performed in conjunction with the cleft surgery, scheduled and actual case start times, time under anesthesia, and procedure length.
- Comparative analysis was performed between the pre-pandemic and pandemic cohorts.

Results

Table 1. Causes of Untimely Cleft Surgical Procedures.

Cause of Untimely Surgery	Cleft Lip and Palate Primary Repair$^{\kappa}$		Alveolar Bone Grafting Procedures	
	2019 (n=17)	2020 (n=20)	2019 (n=4)	2020 (n=9)
Acute Illness	4 (23.5%)	1 (5.0%)	0 (0%)	0 (0%)
Coordination of Care	5 (29.4%)	8 (40.0%)	2 (50.0%)	4 (44.4%)
Complex Pre-existing Condition	7 (41.2%)	6 (30.0%)	0 (0%)	0 (0%)
COVID-19	-	8 (40.0%)	-	1 (11.1%)
Dental Immaturity$^{\Psi}$	-	-	0 (0%)	2 (22.2%)
Unspecified	2 (11.8%)	2 (10.0%)	2 (50.0%)	2 (22.2%)

Ψ = Alveolar bone grafting subgroup only; κ = A total of 5 patients, 1 in 2019 and 4 in 2020, had untimely surgery due to multiple factors.

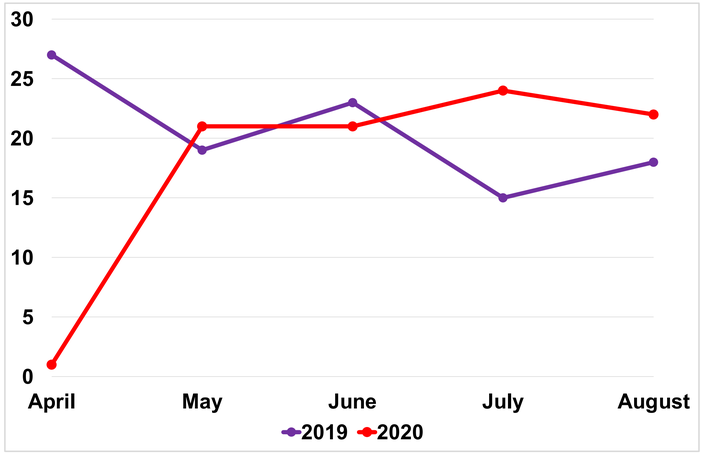

Figure 1. Cleft surgical volume by month in 2019 (purple) and 2020 (red). Note the significant reduction in surgeries in April following the statewide ban in non-urgent surgical procedures from March 22nd to April 22nd.

Results cont.

- A total of 191 cleft surgeries, 102 in 2019 and 89 in 2020, were identified during the study period.
- Thirteen percent reduction in cleft surgical volume from 2019 to 2020. (**Figure 1**)
- No statistically significant differences were observed between the pre-pandemic and pandemic cohorts for all clinical and demographic variables.

Discussion

- Cleft surgical care was largely unaffected by COVID-19 despite high rates of case rescheduling and the addition of supplementary perioperative safety protocols.
- Volume largely recovered in latter months likely due to our newly implemented surgical scheduling processes
- Operational components of the cleft surgical care, such as time under anesthesia and operative length, were largely maintained across the study periods despite supplementary COVID-19 perioperative protocols

References

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