

Ear Disease in Patients with a History of Cleft Palate Requiring Tympanostomy Tube Insertion During the Early COVID-19 Pandemic



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Background

Studies have shown practice pattern changes amidst the COVID-19 pandemic across many medical subspecialties including otolaryngology. A recent survey of pediatric otolaryngologists found that >75% of respondents reported reduced referrals for otitis media with effusion (average decrease: 56.1%) and acute otitis media (average decrease: 62.8%).¹ Changes in referral patterns is especially germane to the cleft palate population as ~75% of children with cleft palate have otitis media with effusion.² The consequences of persistent otitis media with effusion can include acute otitis media, chronic otitis media, and hearing loss. Hearing loss is a concern in children due to the negative repercussions on speech and language development, behavior, and educational attainment.^{2,3}

OBJECTIVE

The purpose of this study was to analyze the course of ear disease in children with cleft palate during the early COVID-19 pandemic.

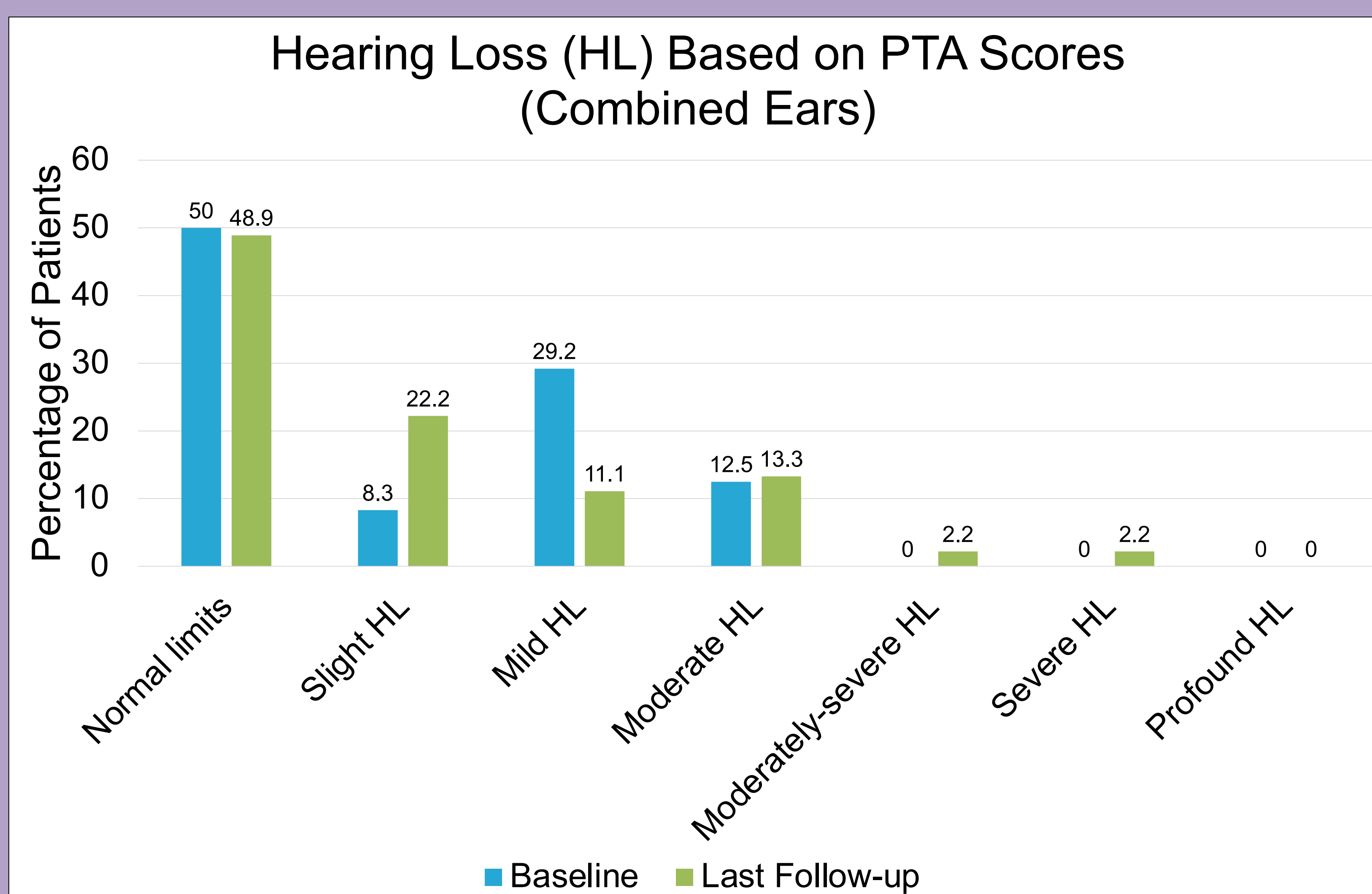
Methods

1. Retrospective case series
 - Pediatric patients with a history of cleft palate receiving otolaryngology consult at a tertiary care academic centre from March 2020-December 2021
2. Primary outcome was the frequency of tympanostomy tube insertions.
3. Descriptive statistics including means, standard deviations and frequencies were conducted. PTA scores between baseline and last follow-up were compared statistically using the paired samples t-test.
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Results

- 47 patient charts were collected with 17 (37.8%) males and 28 (62.2%) females.
- Mean age of presentation was 0.84±0.30 years old with a range of 0.29-1.94 years old.
- The mean age at time of cleft repair was 1.01±0.26 years old.
- Of children with syndromes (16, 34.8%), Pierre Robin sequence was the most common (10, 62.5%).
- Tympanostomy tubes were inserted for 34 (72.3%) of patients, the majority were inserted bilaterally (32, 94.1%). The mean age of tube insertion was 1.20±0.48 years old.
- The average time from initial visit to last follow-up with ENT was 8.5 (4.05) months [range: 2 to 16 months]. Physical exam findings of combined ears were normal for 24 (35.3%) at their first visit and 52 (76.5%) at the last visit.

| PTA score – combined ears | | |
|---------------------------------|-------------------------------|-------------------|
| Baseline: dB, mean (SD) | Last Follow-up: dB, mean (SD) | P value |
| 22.92 (7.20) [11.67 to 53.3] | 7.71 (4.95) [2 to 18] | p <.001 |



| | | Baseline | Last Follow-up |
|-----------------------------|-------------------------|-----------|----------------|
| Tympanogram (Left Ear) | Type A (normal) | 6 (17.6) | 7 (21.2) |
| | Type B | 18 (52.9) | 6 (18.2) |
| | Type C (ET dysfunction) | 8 (23.5) | 3 (9.1) |
| Tympanogram (Right Ear) | Type A (normal) | 9 (26.5) | 6 (18.2) |
| | Type B | 19 (55.9) | 7 (21.2) |
| | Type C (ET dysfunction) | 5 (14.7) | 4 (12.1) |
| Tympanogram (Combined Ears) | Type A (normal) | 15 (23.1) | 13 (39.4) |
| | Type B | 37 (56.9) | 13 (39.4) |
| | Type C (ET dysfunction) | 13 (20.0) | 7 (21.2) |

Conclusion

Despite the pandemic, patients with cleft palate continued to have a high prevalence of ear disease and need for tympanostomy tubes. Contributory factors should be further investigated. However, limitations of the current data include a need to expand the pre-pandemic group to better characterize middle ear disease and tympanostomy tube insertion in this population.

Future Directions: Pre and post-pandemic data will be collected and compared to our current results to better establish a trend in ear disease related to the COVID-19 pandemic.