

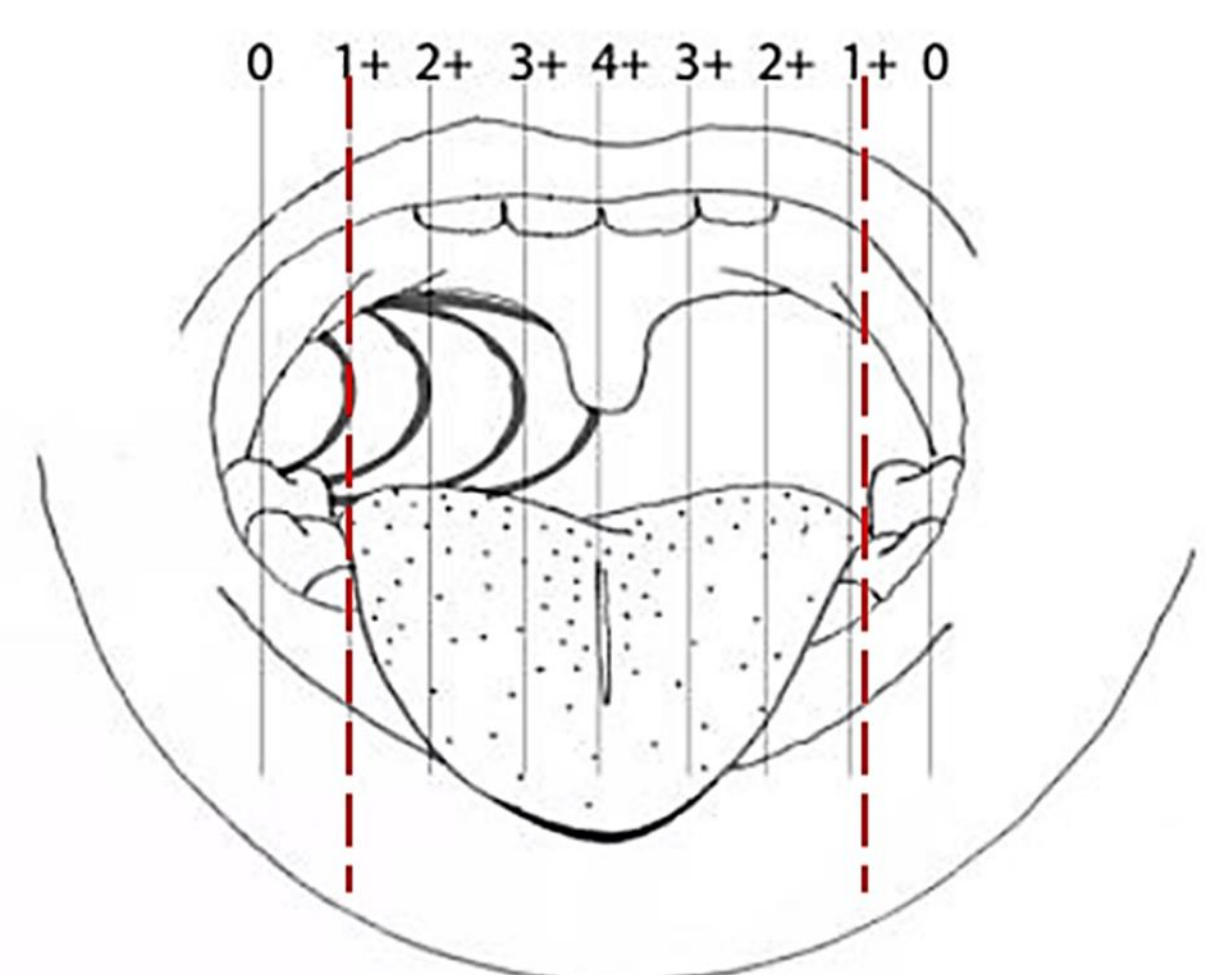
Evaluating the Pediatric Oropharyngeal Airway

L Idelchik², S Chussid², C Lumsden¹

Divisions of Foundational Sciences¹ and Pediatric Dentistry², College of Dental Medicine, Columbia University, New York, New York

Background

- Sedation is an approach to dental treatment for young children who are unable to cope with treatment due to acute situational anxiety and pain
- For patient safety, airway patency must be assessed
- One way is via Brodsky classification of tonsil size (oropharyngeal airway occupied by the tonsil)
- Grades determined by the linear distance between the two anterior tonsillar pillars: Grade 0 – tonsils within the tonsillar fossa; Grade 1 – tonsils occupy ≤25% of the oropharyngeal width; Grade 2 – tonsils occupy 26-50% of the oropharyngeal width; Grade 3 – tonsils occupy 51-75% of the oropharyngeal width; and Grade 4 – tonsils occupy >75% of the oropharyngeal width



- The AAPD is vague in how to assess the airway
- Purpose: to evaluate Faculty and trainees' ability to interpret and assess the pediatric oropharyngeal airway using the Brodsky classification compared to grade as determined by imaging software

Methods

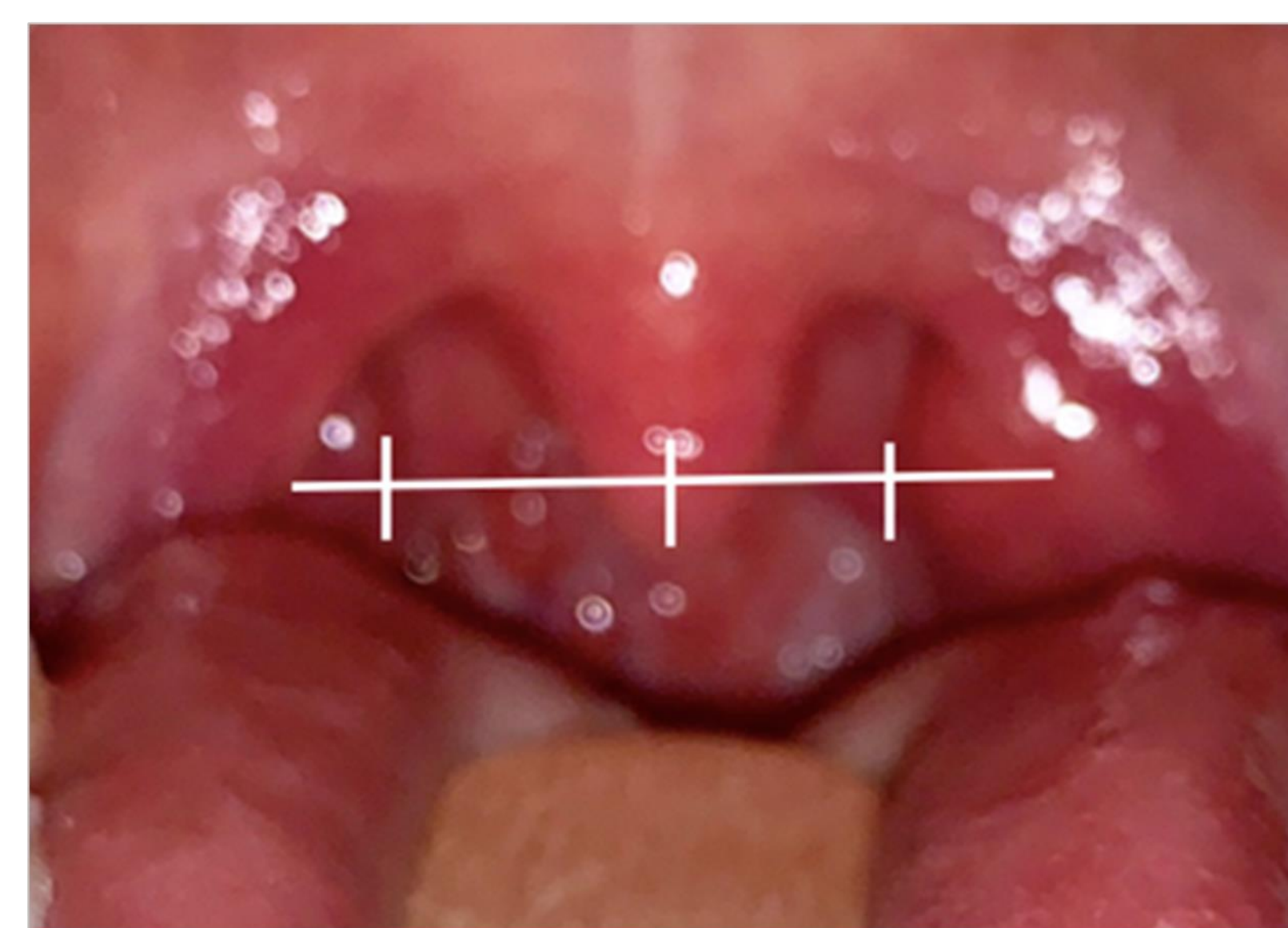
- Participants were recruited to complete an anonymous online survey via email between October 1 and November 1, 2019
- 23 total: Faculty, PGY-1 and PGY-2 residents
- Survey link was emailed with a description of key study details to inform participants of the research purpose, measures in place to protect anonymity and confidentiality, and to ensure participants were aware of their right to voluntarily complete the survey or opt out entirely or partially
- 3-item survey included participants' experience level and Brodsky classification (Grade 0-4) assessment of a pediatric oropharyngeal airway color photograph from a patient of record without identifiers
- Assessment compared to size of the oropharyngeal tonsillar tissue, measured digitally, to determine accuracy
- Due to the small sample, Fisher's exact test was utilized to evaluate associations between experience level and measurement

Findings

- 14 surveys were completed with a response rate of 82.4%
- 35.5% of respondents identified as Faculty (n=5); 35.5 % of the respondents identified as PGY-1 (n=5); 29% identified as PGY-2 (n=4)
- 2 respondents graduated from residency 25-30 years ago; 1 graduated 20-25 years ago, and the remainder unknown.

Clinical Photograph with Measured with Software 'True' Brodsky Score

- Grade 2: tonsils occupying 25%-50% of space between anterior pillars and demonstrating percentage of oropharyngeal airway occupied by the two tonsils
- Oropharyngeal airway denoted by the linear distance between the 2 anterior tonsillar pillars
- Total airway space: 3.5 inches; space of both tonsils: 1.1 inches; percentage of airway occupied by tonsils: 31.4%.



- From answers received from PYG-1 residents, 100% gave a score of Brodsky 2 for the clinical photo (45.45% of Brodsky Score 2 scores were graded by PGY-1's)
- From answers received from the PGY-2's, 25% chose a score of Brodsky 1 (50% of the Brodsky 1 scores were graded by PGY-2's) and 75% chose a Brodsky Score of 2 (27.27% of the Brodsky 2 scores were graded by PGY-2's)
- From answers received from the Faculty, 20% chose a score of Brodsky 1 (50% of the Brodsky 1 scores were graded by Faculty), 60% of Faculty chose a Brodsky Score of 2 (27.27% of the Brodsky 2 scores were graded by Faculty) and 20% chose a score of Brodsky 3 (100% of the Brodsky 3 scores were graded by Faculty)
- Correct score based on the measurement was a Brodsky 2
- Correct score was chosen by 78.6% of participants, including all residents and Faculty combined
- Out of PGY-2 and Faculty participants, 27.7% correctly identified
- PGY-1 residents (100%) correctly identified
- No statistically significant correlation between the level of experience and accuracy of measurement

Findings (continued)

Accuracy of Measurement by Experience Level

*Fisher's exact test: to test association between experience level and accuracy of measurement (p=0.54)

Experience Level	Brodsky 1	Brodsky 2	Brodsky 3	Total
PGY-1	0	5	0	5
	0	100	0	
	0	45.45	0	
PGY-2	1	3	0	4
	25	75	0	
	50	27.27	0	
Faculty	1	3	1	5
	20	60	20	
	50	27.27	100	
Total	2	11	1	14

Limitations

- Limited sample size, findings must be interpreted with caution
- Measured one comparison variable, provider experience
- Further study to evaluate additional variables such as sex, previous other specialty or general practice experience, location of postdoctoral program completed, if the provider needs corrective lenses, clinical setting, etc.

Conclusions

- No significant difference between provider experience and airway assessment utilizing the Brodsky classification for tonsil size
- Inconsistency in scoring across sample suggest little standardization in assessment of airway and use of Brodsky classification
- A possible conclusion could be that dentists should obtain additional training or CE on the use of scoring method