

# The Impact of Race on the Timing of Pressure Equalization Tube Placement in Pediatric Patients with a Cleft Palate

Lindsey Greenlund, BS<sup>1</sup>, Siva Chinnadurai, MD,MPH<sup>2,3</sup>, Robert Tibesar MD<sup>2</sup>, Noelle Morrell CCC, SLP<sup>2</sup>, Brianne Roby, MD<sup>2,3</sup>

<sup>1</sup>Univ. of Minnesota, Minneapolis, MN, <sup>2</sup>Children's Minnesota, Pediatric ENT and Facial Plastic Surgery, <sup>3</sup>University of Minnesota Dept of Otolaryngology-Head and Neck Surgery



## Introduction

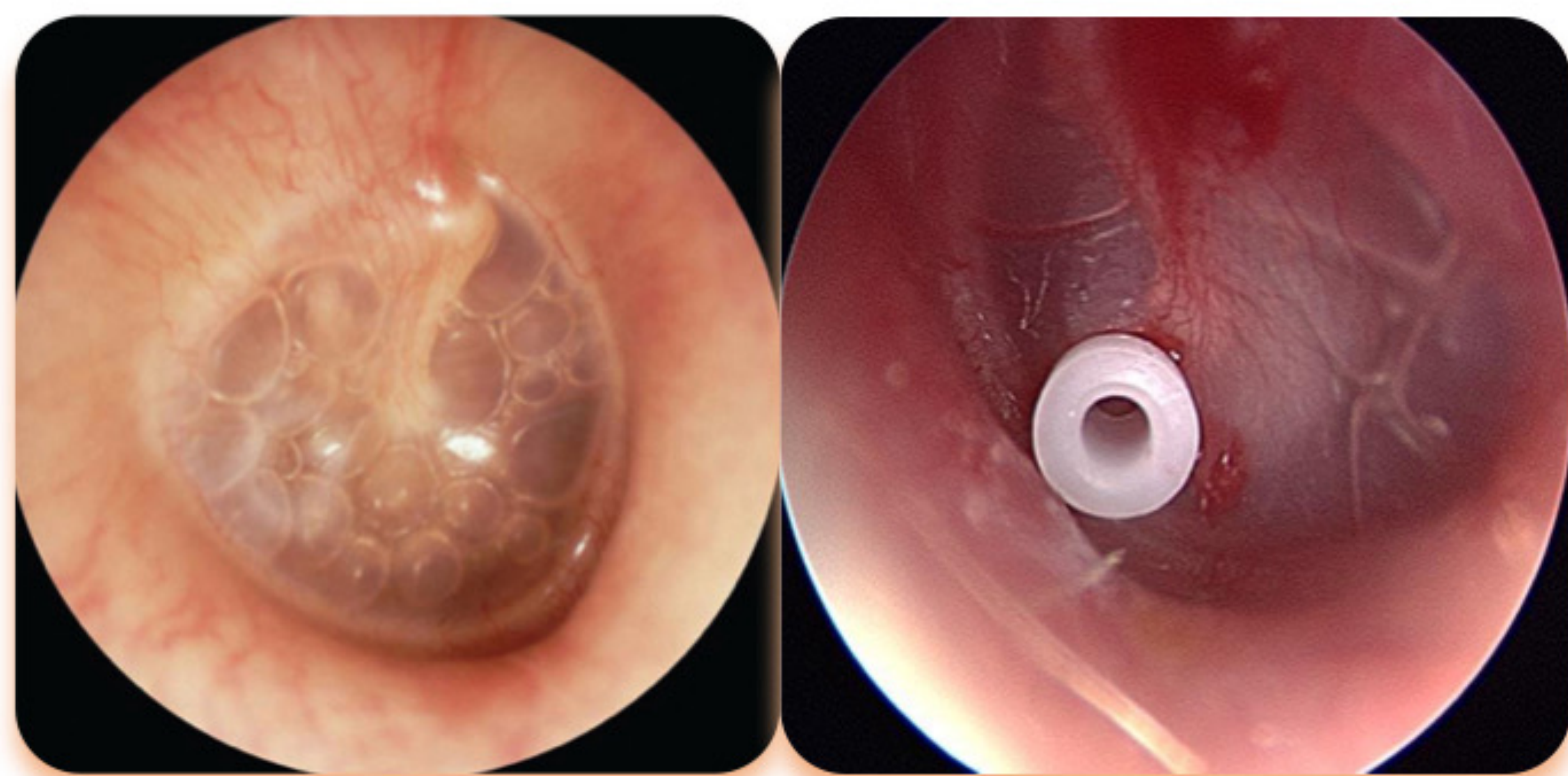
- Children with cleft palates often have associated otitis media and eustachian tube dysfunction that can affect hearing status<sup>1,2</sup>.
- Pressure equalization tubes (PETs) are inserted to relieve fluid build up and improve hearing<sup>3</sup>. These may be placed as early as two-months of age or later in life (e.g. >one-year)<sup>4</sup>.
- It is known that delays in pediatric preventative care vary by race and ethnicity<sup>5</sup>.
- In this study, we explored if the timing of PET placement varied by patient-reported race.
- It was hypothesized that historically underserved patients (American Indian/Alaskan, Black or Hispanic/Latino) patients may receive PETs later than their peers.

## Methods and Materials

- Chart review was performed of children who underwent cleft palate reconstructive surgeries at Children's Minnesota between 2016-2021.
- Information regarding demographics, type of cleft reconstruction, newborn hearing screenings, comorbidities, subsequent hearing screenings was collected.
- Statistical analysis was then conducted after separating data based on patient-reported race.

## Results

- 790 charts were reviewed; 562 patients received PETs and had adequate data for inclusion in analysis.
- The majority of patients in our cohort received PETs between 7-12 months of age (31%) or at 4-6 months of age (29%).
- When analyzing data based upon PET placement window, all time windows followed expected trends based on the overall percent of patients in each patient-reported race category (correlating Table 1 and Table 2).
- Black/African American patients (making up 7.7% of the overall patient cohort) accounted for 20% of patients receiving PETs at less than or equal to three months of age.
- Hispanic/Latino patients (making up 3.2% of the overall cohort) accounted for 8.0% of patients receiving PETs at greater than 12 months of age.
- There were no statistically significant differences in the timing of PETs based on patient-reported race in patients with cleft palate (p=0.23).



<http://drozcanozturk.com/en/fluid-accumulation-in-the-middle-ear-otitis-media-with-effusion-and-tube-insertion-in-the-eardrum/>

**Figure 1.** (left) Example of otitis media with effusion (left) demonstrating resolution following the placement of PET (right).

**Table 1. Demographics**

Gender	Result (n=562)
Female	297 (53%)
Male	265 (47%)
<b>Patient-reported Patient Race</b>	
American Indian/Alaskan	10 (1.8%)
Asian	77 (14%)
Black/African American	43 (7.7%)
Hispanic/Latino	18 (3.2%)
Multi-Race	30 (5.3%)
White/Caucasian	357 (63%)
Unknown/Declined	25 (4.4%)
<b>PET Placement Window</b>	
≤3 months	84 (15%)
4-6 months	164 (29%)
7-12 months	177 (31%)
>12 months	137 (25%)

**Table 1.** (above) Gender and patient-reported race of patients included in study analysis.

**Table 2. PET Timing by Race**

Patient-reported Race	≤3 months	4-6 months	7-12 months	>12 months
American/Indian/Alaskan	2 (2.4%)	3 (1.8%)	2 (1.1%)	3 (2.2%)
Asian	9 (11%)	11 (6.7%)	33 (19%)	24 (18%)
Black/African American	17 (20%)	6 (3.7%)	10 (5.7%)	10 (7.3%)
Hispanic/Latino	1 (1.2%)	5 (3.1%)	1 (0.6%)	11 (8.0%)
Multi-race	4 (4.7%)	11 (6.7%)	8 (4.5%)	7 (5.1%)
White/Caucasian	47 (56%)	121 (74%)	114 (64%)	75 (55%)

**Table 2.** (above) Number of patients of each patient-reported race receiving PETs in each age window. The 4.4% of patients with unreported race were not included.

## Conclusions

- This study demonstrated no significant differences in timing of PET placement in pediatric patients with cleft palate based on patient-reported race in this cohort.
- Our hypothesis was rejected in favor of the null as there were no statistically significant differences in the the timing of PET placement based on patient-reported race.
- A limitation of this study is our predominantly white patient population; future studies should aim to assess how patient-reported race affects patient outcomes such as passed hearing screenings.
- It is essential to continue to advocate for equity in healthcare.

## References:

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