Assessment of Long-Term Speech Outcomes in Children with Pierre Robin Sequence

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Background

- Pierre Robin Sequence (PRS) is characterized by glossoptosis, micrognathia, and upper airway obstruction
- Despite cleft repair, 20-30% of children with PRS will develop velopharyngeal insufficiency
- This can lead to stigmatizing hypernasal speech, which often necessitates the need for secondary surgery

Aim: To compare long-term speech outcomes in patients with Pierre Robin Sequence (PRS) after primary palatoplasty compared to patients without PRS who underwent primary palatoplasty.

Secondary Aim: To determine the impact of prior surgical airway intervention on long-term speech outcomes in patients with PRS.

Methods

Inclusion Criteria
- Patients diagnosed with PRS who underwent primary cleft palate repair between 2011-2019

Control group
- Patients without Pierre Robin Sequence with Veau I or Veau II cleft palate

Outcomes
- Speech evaluations- Pittsburgh Weighted Speech Scores (PWSS)
- Rate of secondary speech surgery

Results

Demographics N=200	Pierre Robin Sequence (n=106)	Non-PRS (n=94)
	Male: 42.5%	Male: 50.0%
	Female: 58.5%	Female: 50.0%

Results cont.

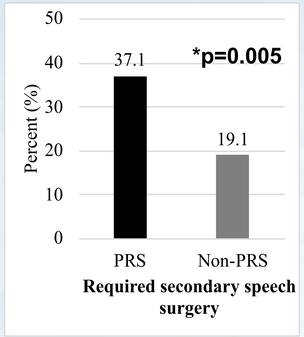
Table 1. Speech outcomes

	Pierre Robin Sequence	Non-PRS	P value
Median at primary palatoplasty	1.2 (IQR 0.8)	1.1 (IQR 1.1)	0.11
Furlow palatoplasty	71.7%	82.4%	0.08
Age at most recent speech evaluation	8.7 (SD 3.9)	7.0 (SD 2.6)	**<0.001***
Mean Pittsburgh Weighted Speech Score	4.0 (IQR 3.4)	4.0 (IQR 1.9)	0.59
Velopharyngeal insufficiency	10.9%	4.2%	0.11

Table 2. Speech outcomes stratified by airway intervention

	Surgical airway	No surgical airway	p
Number of people per group	47	58	
Rate of secondary speech surgery	20 (42.6%)	19 (32.8)	0.318
Most recent Pittsburgh Weighted Speech Score	5.0 ± 4.6	3.6 ± 1.9	0.037*

Figure 1. Rate of secondary speech surgery



Conclusion

- Patients with PRS had significantly higher rates of secondary speech surgery for persistent velopharyngeal insufficiency
- However, they had comparable long-term speech outcomes to patients without PRS undergoing cleft repair
- This study may provide some prognostic utility in counseling patients and their families who are undergoing surgery and subsequent speech therapy regarding long-term expectations.