

BACKGROUND

- Although fistula formation after primary palatoplasty can be used as a metric of the procedure's success, there is little consensus over which factors affect the development of this complication.
- Previous studies have suggested that in addition to the type of palatoplasty procedure, patient-specific characteristics such as Veau cleft type and adoption status also influence the likelihood of post-operative fistula formation.
- The aim of this study was to characterize how the rate of fistula formation varies at our institution based on palatoplasty technique, Veau cleft classification, adoption status, and other potential risk factors.

METHODS

- Retrospective chart review was performed for patients undergoing a primary palatoplasty via either the Furlow or straight line with intravelar veloplasty (IVVP) technique
- Data points collected included age at time of surgery, gender, adoption status, syndromic status, payer status, Veau cleft type, and presence of a post-operative fistula
- Pearson's Chi-squared test and multivariable t tests were used to analyze variables
- Logistic regression was used to control statistically significant variables between study cohorts

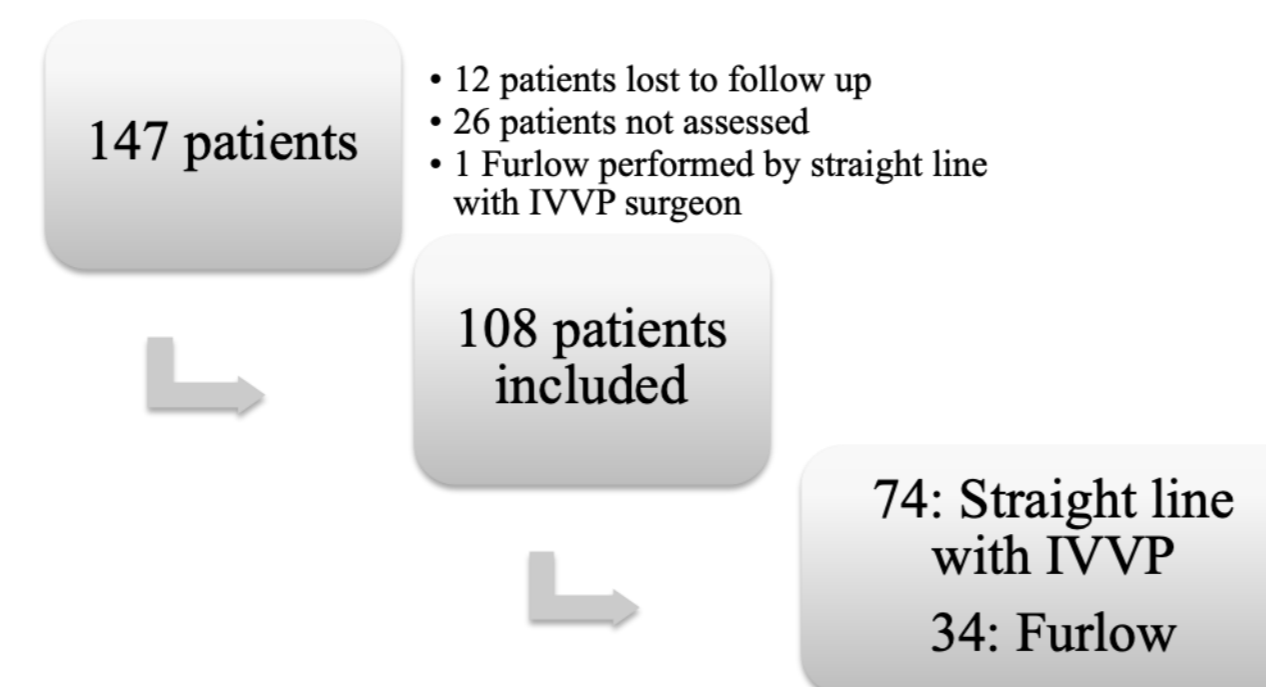


Table 1:
Differences in Demographics and Risk Factors between Patient Populations

	All patients (n = 108)	Furlow (n = 34)	Straight Line with IVVP (n = 74)	p-value
Mean age, years (SD)	1.1 (0.2)	1.1 (0.2)	1.1 (0.3)	0.320
Gender				
Male	51 (47.2%)	13 (38.2%)	38 (51.3%)	0.205
Female	58 (52.8%)	21 (61.8%)	36 (48.7%)	
Payer Status				
Public Insurance	59 (54.6%)	18 (52.9%)	41 (55.4%)	0.811
Private Insurance	49 (45.4%)	16 (47.1%)	33 (44.6%)	
Adoption Status				
Not adopted	103 (95.4%)	33 (97.1%)	70 (94.6%)	0.571
Adopted	5 (4.6%)	1 (2.9%)	4 (5.4%)	
Syndromic Status				
Syndromic	18 (16.7%)	6 (17.6%)	12 (16.2%)	0.853
Isolated	90 (83.3%)	28 (82.4%)	62 (83.8%)	
Veau cleft type				
V1 and V2	51 (47.2%)	21 (61.8%)	30 (40.5%)	0.040
V3 and V4	57 (52.8%)	13 (38.2%)	44 (59.5%)	

Figure 1:
Veau Cleft Type Classification System

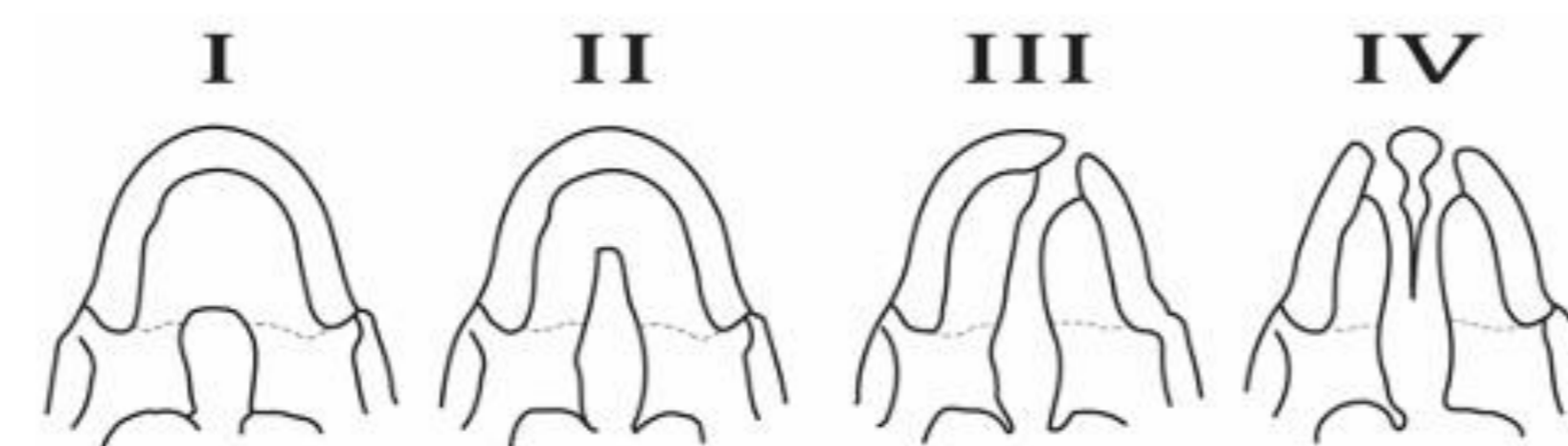


Table 2.
Association between rate of fistula formation and palatoplasty technique

	All patients	Furlow	Straight line with IVVP	p-value
Total operations performed	108	34	74	
Fistula	9	1 (2.9%)	8 (10.8%)	0.169
No Fistula	99	33 (97.1%)	66 (89.2%)	

Table 3.
Correlation between demographics and risk factors and fistula formation

	All patients (n = 108)	Fistula (n = 9)	No Fistula (n = 99)	p-value
Mean age, years (SD)	1.1 (0.2)	1.2 (0.4)	1.1 (0.2)	0.292
Gender				
Male	51 (47.2%)	6 (66.7%)	45 (45.5%)	0.222
Female	57 (52.8%)	3 (33.3%)	54 (54.5%)	
Payer Status				
Public Insurance	59 (54.6%)	4 (44.4%)	55 (55.6%)	0.521
Private Insurance	49 (45.4%)	5 (55.6%)	44 (44.4%)	
Adoption Status				
Not adopted	104	7 (77.8%)	97 (97.0%)	0.009
Adopted	5	2 (22.2%)	3 (3.0%)	
Syndromic Status				
Syndromic	18 (16.7%)	9 (100.0%)	18 (18.2%)	0.161
Isolated	90 (83.3%)	0 (0.0%)	81 (81.8%)	
Veau cleft type				
V1 and V2	52 (48.1%)	0 (0.0%)	52 (52.5%)	0.003
V3 and V4	56 (51.9%)	9 (100.0%)	47 (47.5%)	

Table 4.
Fistula formation based on Veau cleft type

Veau cleft type	V1	V2	V3	V4	Total
Fistula	0	0	4	5	9
No Fistula	21	31	34	13	99

RESULTS

- Of the 108 patients included, 34 underwent the Furlow procedure and 74 underwent the straight line procedure with IVVP
- There were no significant differences between the two surgical groups except for Veau cleft type ($p=0.040$), which was controlled for
- Post-operative fistulae developed in 9 patients: 1/34 (2.9%) in the Furlow group and 8/74 (10.8%) in the straight line with IVVP group—this difference was not significant ($p=0.169$)
- A significant correlation was found between fistula formation and both adoption status ($p=0.009$) and Veau cleft type ($p=0.003$)
- Only patients with more severe cleft classifications (V3 and V4) formed a post-operative fistula
- Statistical analysis found no significant association between fistula formation and gender, payer status, and syndromic status

DISCUSSION

- This longitudinal, single institution study found that the rate of post-operative fistula formation is not significantly different in patients undergoing Furlow vs straight line with IVVP palatoplasty operations, supporting previous findings.
- Veau cleft classification and adoption status are more closely associated with the formation of post-operative fistulae.

REFERENCES

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