Predictive Clinical Exam Findings in Post-Tonsillectomy Hemorrhage

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BACKGROUND

- Pediatric tonsillectomy and adenotonsillectomy are common procedures in otolaryngology, with over 530,000 performed annually in the U.S. in children under 15 years of age.[1]
- Postoperative tonsillectomy hemorrhage (PTH) is a potentially serious complication occurring in about 4% of cases.[2,3,4]
- It is not uncommon for patients to present to the emergency department following tonsillectomy with reports of minor bleeding that has since stopped by the time of presentation.[5]
- Literature providing evidence-based guidelines for the management of PTH, particularly in those patients who present following a resolved episode of bleeding, is limited.[6]

OBJECTIVES

1. Examine the postoperative course of patients presenting to St. Christopher's Hospital for Children (SCHC) with PTH
2. Compare patients with and without a blood clot visualized in the tonsillar fossa at time of presentation to determine if outcomes regarding return to the operating room differ
3. Compare different techniques for tonsillectomy, including BiZact and coblator, and their outcomes regarding PTH

METHODS

- We conducted a retrospective review of patients 0-20 years of age who were operated on at SCHC and presented with PTH from January 1, 2017 to March 20, 2020.
- Patient demographics, indication for surgery, method of tonsillectomy and control of bleeding, postoperative day presented, presence of blood clot in tonsillar fossa on presentation, and return to the operating room were recorded.
- Using IBM SPSS Statistics® (Armonk, NY), demographic data was analyzed using descriptive statistics. Chi2 test and Fishers exact test were used to analyze categorical data and ANOVA was used to analyze quantitative data.

RESULTS

Table 1. Baseline Characteristics of Patient Cohort

Number of patients	55
Median age (years)	8 (1.5-19)
Gender, n [%]	
Female	23 (41.8%)
Male	32 (58.2%)
Ethnicity, n [%]	
White	13 (23.6%)
African American	9 (16.4%)
Hispanic	17 (30.9%)
Asian	2 (3.6%)
Multiracial / Other	14 (25.5%)
Indication, n [%]	
Sleep disordered breathing	21 (38.2%)
Obstructive sleep apnea	22 (40.0%)
Chronic tonsillitis	10 (18.2%)
Other	2 (3.6%)
Average POD Presented	6.67 days

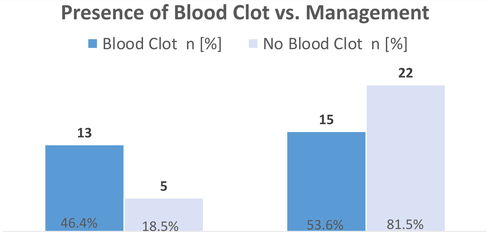

Table 2. Patients presenting with a resolved PTH with a blood clot are significantly more likely to require a return to the operating room. (p=.027)

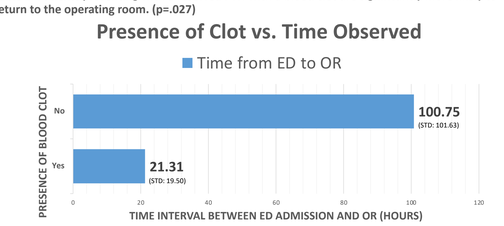

Table 3. Patients with a blood clot present were statistically more likely to require OR sooner than those without a blood clot present. (p=.012)

Blood Clot Present?	Time from ED to DC Hours (STD)
Yes	25.46 (13.63)
No	32.26 (32.67)

Table 4. Average time of observation between presentation to OR and discharge. There was statistically significant difference between patients with and without blood clots (p=.316)

RESULTS

	Blood Clot Seen		
	Yes	No	P-Value
Gender			
M	16	16	p=.874
F	12	11	
Age (Average)	8.23	8.30	p=.963
Ethnicity			
White	8	5	p=.065
African American	5	4	
Hispanic	4	13	
Asian	1	1	
Multiracial/Other	10	4	
Technique			
BiZact	0	4	p=.668
Coblator	27	22	
Indication			
SDB	11	10	p=.822
OSA	12	10	
Chronic Tonsillitis	4	6	
Other	1	0	

Table 5. There were no significant differences in characteristics between the patients who presented with and without a blood clot.

	Return to OR		
	Yes	No	P-Value
Gender			
M	10	22	p=.783
F	8	15	
Age (Average)	7.14	8.81	p=.587
Ethnicity			
White	8	5	p=.816
African American	2	7	
Hispanic	5	12	
Asian	1	1	
Multiracial/Other	5	9	
Technique			
BiZact	0	4	p=.287
Coblator	18	31	
Indication			
SDB	9	12	p=.364
OSA	6	16	
Chronic Tonsillitis	2	8	
Other	1	0	

Table 6. There were no significant differences in characteristics between the patients who required OR and did not require OR.

CONCLUSIONS

- Patients who present with a resolved post tonsillar hemorrhage with a blood clot present on exam required return to OR 46.4% of the time while those without a blood clot required return to the OR only 18.5% of the time.
- While previously controversial we feel that this shows that a 24-hour observation of a patient with a clot on exam is reasonable.
- Patients with a blood clot on exam who required the OR, did so significantly sooner than patients who did not have a blood clot, indicating that if they do re-bleed, it usually happens within the first 24 hours.
- This data calls to question the practice of a 24 hours observation of a patients with a resolved PTH since only 18.5% of patient re-bleed, and those that do so, are not usually within the 1st 24 hours.
- The type of instrument used, presence of blood-tinged secretions and hematemesis did not account for a significant difference in return to OR.

FUTURE WORK

We plan to conduct a multivariate analyses of our data regarding patients who had multiple admissions to see if the significance of a clot presence persists in patients with multiple admissions.

Additionally, we plan to look at the coagulation profile of our patients in order to determine whether hematologic profile had any correlation with presence of clot or return to the operating room.

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