Postoperative outcomes of free flap repair following cancer ablation of the hard and soft palate

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Abstract

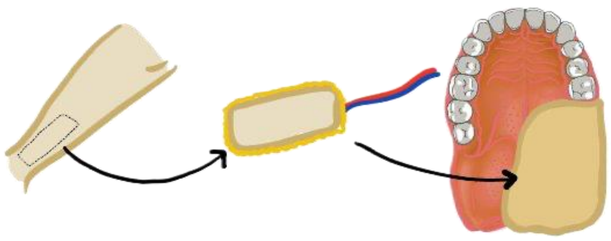
Introduction: Surgical repair of palate cancer defects is complex due to the palate's role in speech and swallowing, often necessitating free flap reconstruction. This study aims to identify risk factors for adverse postoperative outcomes and optimal flap types for palate repair.

Methods: Retrospective chart review of postoperative outcomes in patients who underwent free flap reconstruction of the hard and/or soft palate at Atrium Health Wake Forest Baptist from 2010 to 2020. Independent variables include past medical history and operative characteristics.

Results: 111 patients were included: 40 (36%) female and 71 (64%) male. Free flap types: 48 (43%) radial forearm, 41 (37%) parascapula, 14 (13%) scapula, and 8 (7%) others. 55 (50%) patients demonstrated postoperative complications: 24 (22%) dehiscence, 18 (16%) fistula, and 15 (14%) infection. G-tube dependence was observed in 28 (25%) patients. Free flap revision was required in 21 (19%) cases, and 5 (5%) flaps failed. Alcohol use was associated with a higher rate of all-cause postoperative complication (RR: 1.63, 95% CI: 1.01-2.89, p=0.045), particularly fistula development (RR: 1.29, 95% CI: 1.05-1.77, p=0.018). The risk of postoperative wound dehiscence was 1.4 times higher in stage T4 tumors compared to non-staged tumors (95% CI: 1.10-1.93, p=0.005). A history of cardiopulmonary disease was also linked to increased wound dehiscence. Flap type did not significantly impact postoperative outcomes.

Conclusions: Palate cancer defects can be successfully repaired with multiple free flap types though complication rates remain high. Additional intra-operative precautions should be taken to avoid post-operative dehiscence and fistula development in patients with a history of alcohol use, cardiopulmonary disease, or advanced-stage tumors.

Background



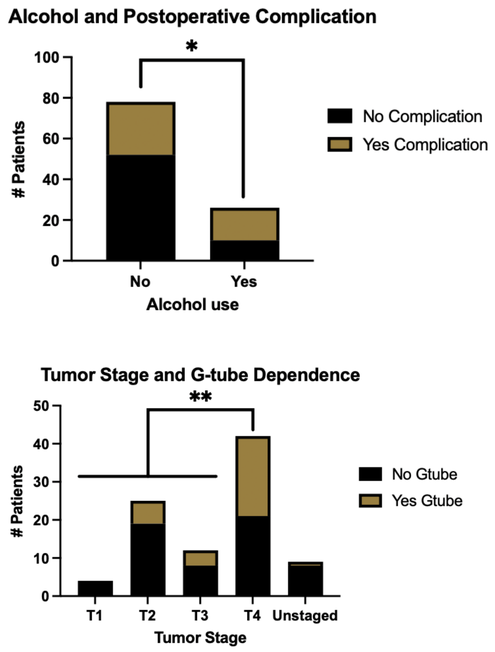
Study Aim

Assess risk factors associated with postoperative complications of multicomponent palatal free flap reconstruction.

Methods

Retrospective chart review of patients who underwent free flap palate reconstruction of the palate at Atrium Health Wake Forest Baptist Hospital between 2010-2020. Patients with involvement of the tongue were excluded from this study. Fisher's exact and multivariate logistic regression tests were utilized to assess significance.

Results



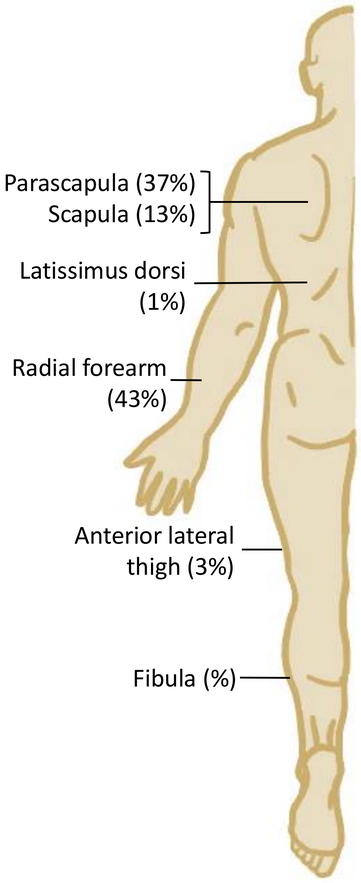


Table 1. Effect of flap type on complication rate

	Flap Type				
Outcomes	Parascapula	Scapula	RFFF	Other	p-value
Fistula, n (%)					0.45
No	31 (82)	11 (79)	43 (90)	6 (75)	
Yes	7 (18)	3 (21)	5 (10)	2 (25)	
Dehiscence, n (%)					0.08
No	28 (74)	9 (64)	43 (90)	7 (88)	
Yes	10 (26)	5 (36)	5 (10)	1 (12)	
Infection, n (%)					0.05
No	29 (76)	14 (100)	44 (92)	6 (75)	
Yes	9 (24)	0 (0)	4 (8)	2 (25)	
Hematoma, n (%)					0.70
No	36 (95)	14 (100)	43 (90)	8 (100)	
Yes	2 (5)	0 (0)	5 (10)	0 (0)	
Revision surgery, n (%)					0.20
No	26 (68)	13 (93)	40 (83)	7 (88)	
Yes	12 (32)	1 (7)	8 (17)	1 (12)	

Functional outcomes

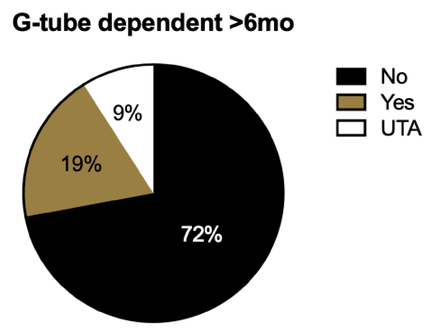


Table 2: SLP assessment

Outcomes	Patients, N=35
Increased secretions, n (%)	17 (49)
Oral phase, n (%)	
Leakage	15 (43)
Spillage	16 (46)
Prolonged	14 (40)
Delayed swallowing, n (%)	13 (37)
Residue, n (%)	
Mild	10 (29)
Moderate	9 (26)
Severe	8 (23)
Nasal reflux, n (%)	6 (17)

35/111 patients were formally evaluated by SLP at 3-6mo:

Conclusions

- Free flap repair of the hard and soft palate can be completed with multiple flap types
- Patients who report active alcohol use should be monitored for postoperative complications
- Resection of large tumors may predispose patients to long-term g-tube dependence

References

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