Cost Comparison of Facial Artery Musculomucosal Flap vs. Radial Forearm Flap for Glossectomy Defect Reconstruction

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Abstract

Cost comparison data relating facial artery musculomucosal (FAMM) and radial forearm free flap (RFFF) reconstructive techniques remains limited.

We performed a retrospective review of 49 patients who underwent partial glossectomy with FAMM flap or RFFF reconstruction performed by a single surgeon from 2016-2024.

Direct and indirect costs associated with the initial ablative/ reconstructive operation were lower in the FAMM group. Cost associated with FAMM pedicle takedown did not negate the overall cost differences seen.

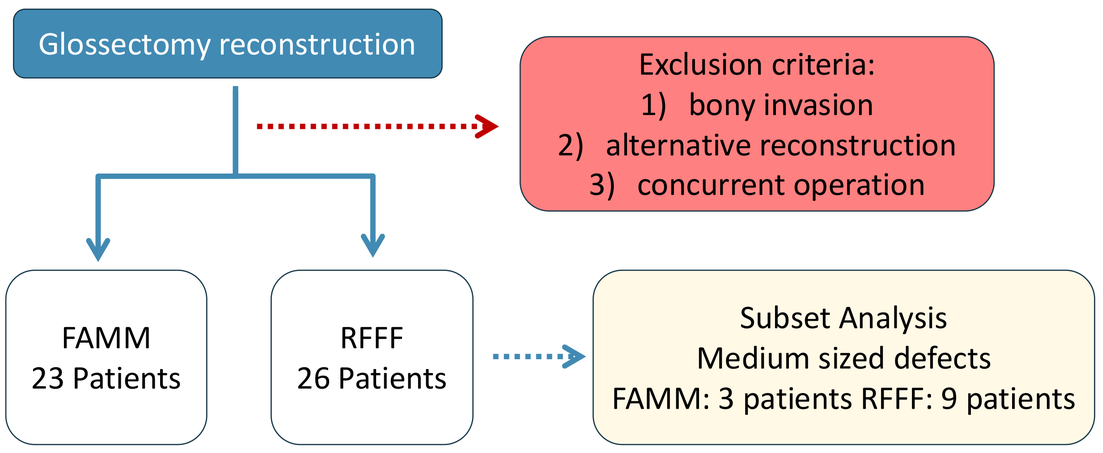
FAMM flap reconstruction in this population was associated with reduced billed surgery costs and decreased postoperative resource utilization.

Introduction

- Surgical resection remains the preferred treatment modality for accessible tumors of the oral cavity.[1,2]
- RFFFs are frequently used for glossectomy reconstruction, however, they requires substantial hospital resources including operating room time and perioperative monitoring.[3,4]
- Regional pedicled flaps, such as the FAMM flap, are an alternative reconstructive method for appropriately sized glossectomy defects and can be associated with lower costs.[5-7]

Methods and Materials

We performed a retrospective review of 49 patients who underwent partial glossectomy with FAMM flap or RFFF reconstruction performed by a single surgeon from 2016-2024.



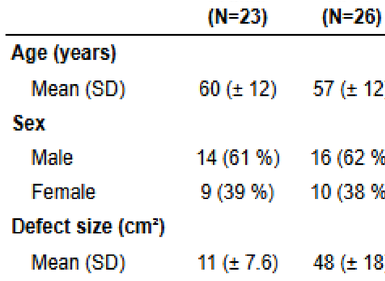
Demographics were similar between groups, however RFFF were preferentially utilized to reconstruct larger defects.

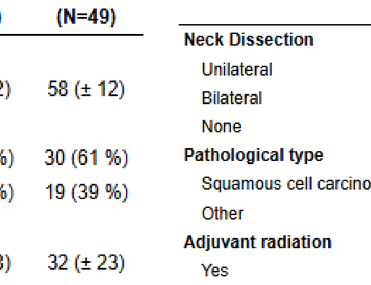
	FAMM (N=23)	RFFF (N=26)	Overall (N=49)
Age (years)			
Mean (SD)	60 (± 12)	57 (± 12)	58 (± 12)
Sex			
Male	14 (61 %)	16 (62 %)	30 (61 %)
Female	9 (39 %)	10 (38 %)	19 (39 %)
Defect size (cm²)			
Mean (SD)	11 (± 7.6)	48 (± 18)	32 (± 23)
Missing	2 (8.7%)	0 (0%)	2 (4.1%)

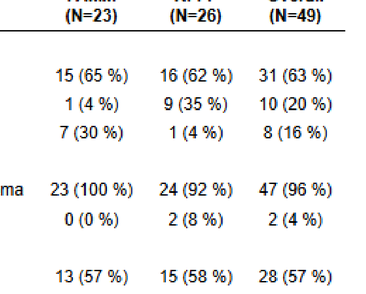
	FAMM (N=23)	RFFF (N=26)	Overall (N=49)
Neck Dissection			
Unilateral	15 (65 %)	16 (62 %)	31 (63 %)
Bilateral	1 (4 %)	9 (35 %)	10 (20 %)
None	7 (30 %)	1 (4 %)	8 (16 %)
Pathological type			
Squamous cell carcinoma	23 (100 %)	24 (92 %)	47 (96 %)
Other	0 (0 %)	2 (8 %)	2 (4 %)
Adjuvant radiation			
Yes	13 (57 %)	15 (58 %)	28 (57 %)
No	10 (43 %)	11 (42 %)	21 (43 %)

Subset Analysis: Medium-Size Defects

A subset analysis was performed of medium-size defects that were reconstructed with both FAMM and RFFF flaps. Average defect size was comparable between groups (FAMM: 28 ± 7.6 RFFF: 30 ± 6.7) and trends remained similar in this smaller cohort.

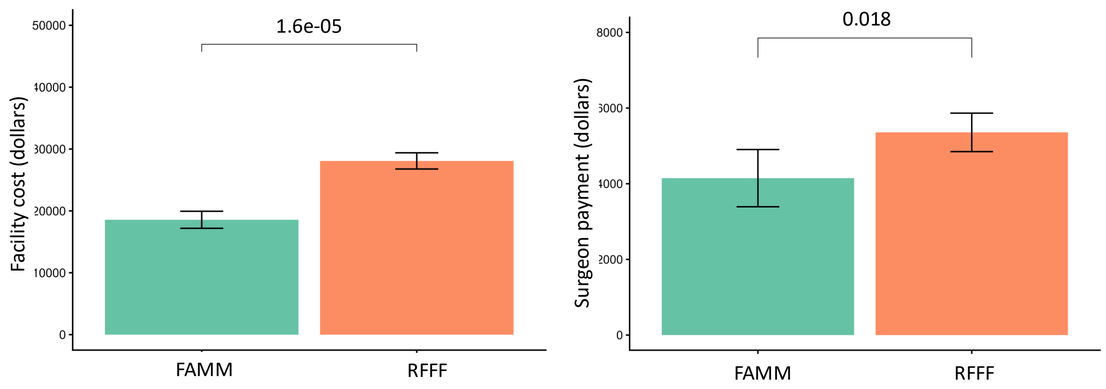




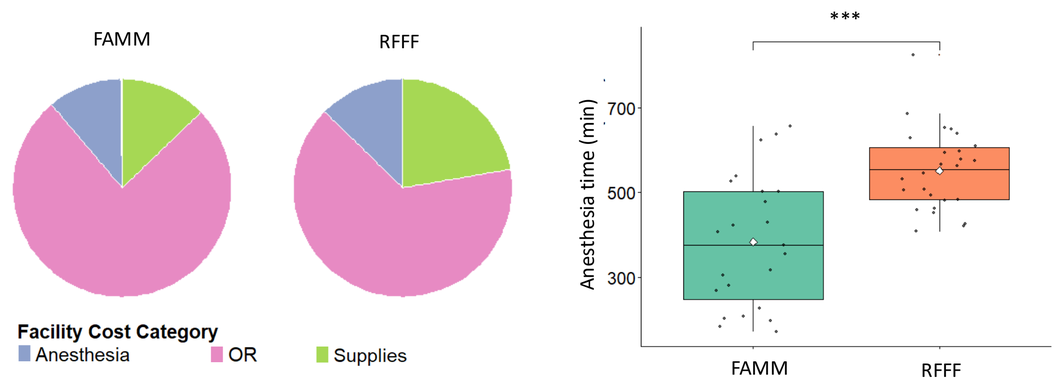


Results

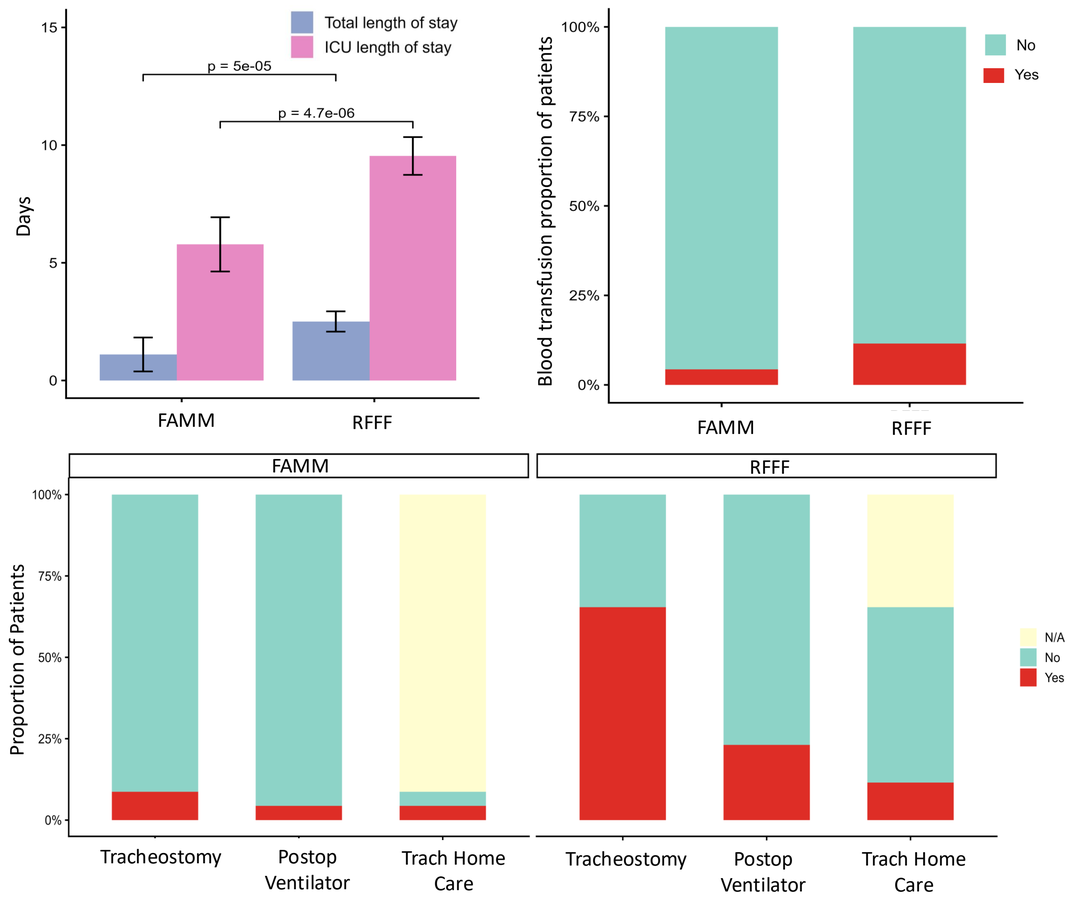
Costs associated with initial ablative/reconstructive surgery were higher in the RFFF group including Facility cost and Surgeon fees.



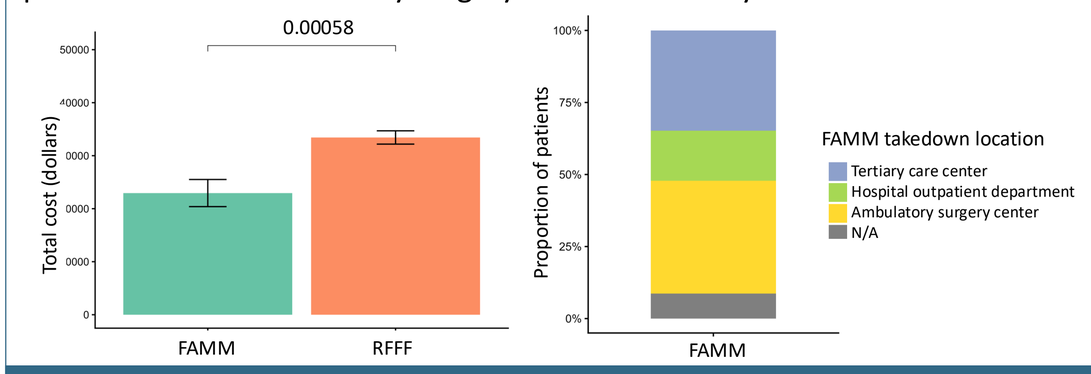
Facility cost can be subdivided into anesthesia, OR, and supplies costs. The RFFF group had an increase in each domain, with a higher percentage devoted to supplies cost. Anesthesia time was significantly increased in the RFFF group.



Postoperative resource utilization after initial surgery was higher in the RFFF group.



Cost of FAMM pedicle takedown did not negate overall cost differences seen with initial ablative/reconstructive surgery. Takedown procedure was frequently performed at an ambulatory surgery center or tertiary care center.



Conclusions

FAMM flap reconstruction provides an alternative reconstructive option of appropriately sized partial glossectomy defects with reduced billed surgery costs and decreased postoperative hospital resource utilization. Further work is required to separate out the costs related to ablative portion of the procedure and increase the power analysis of medium sized defects.

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