

Is progression to oral diet initiation following glossectomy with reconstruction subsite-dependent?

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Introduction

- Current standard of care for squamous cell carcinoma of tongue includes radical tumor resection and reconstruction for the purpose of restoring form and function.
- The tongue has a primary role in the safety and efficiency of swallowing; significant impact on deglutition has been documented after glossectomy, restricting oral intake post-operatively.
- Difficulty swallowing has been documented as the strongest driver of decisional regret in oropharyngeal cancer survivors.
- The importance of swallow therapy post-operatively to improve return to total oral diet has been documented, without definition of swallow therapy protocol.
- To better determine post-operative course of functional impact on swallow, this study describes the progression of initiating oral intake following glossectomy, including time from surgery to swallow evaluation and initiation of oral intake across various extents of oral resection and reconstruction.

Methods

- Retrospective chart review of patients who underwent glossectomy and reconstruction at Buffett Cancer Center between January 2017 and May 2019.
- Patients with previous resection or radiation of the oropharynx were excluded.
- Additional oral subsites involved included floor of mouth, marginal mandible, and tongue base.
- One-way MANOVA with Tukey's honestly significant difference (HSD) pairwise comparisons to determine statistical significance between groups and time until diet initiation.
- Fisher's exact test to determine statistical significance between groups and presence of tracheostomy and feeding tube.

<u>Tongue (n = 8)</u>	<u>Tongue + Floor of mouth (n = 4)</u>	<u>Tongue + Multiple (n = 8)</u>
T1 (5)	T1 (1)	T2 (3)
T2 (3)	T2 (3)	T3 (2)
		T4 (3)
Alloderm/STSG (7)	Alloderm/STSG (2)	FAMM (1)
	FAMM (1)	ALT (2)
RFFF (1)	RFFF (1)	RFFF (5)

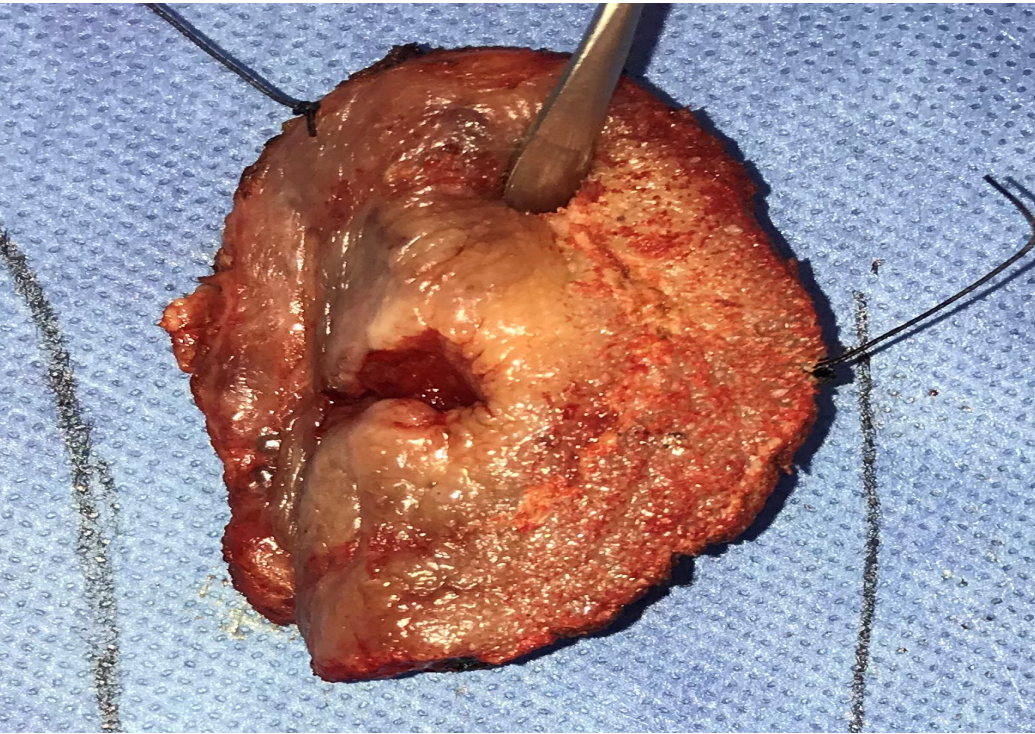
Tumor Size: T1-4, Reconstruction type: Alloderm, Split thickness skin graft (STSG), Facial artery musculomucosal (FAMM), Radial forearm free flap (RFFF), Anterolateral thigh (ALT)

Results

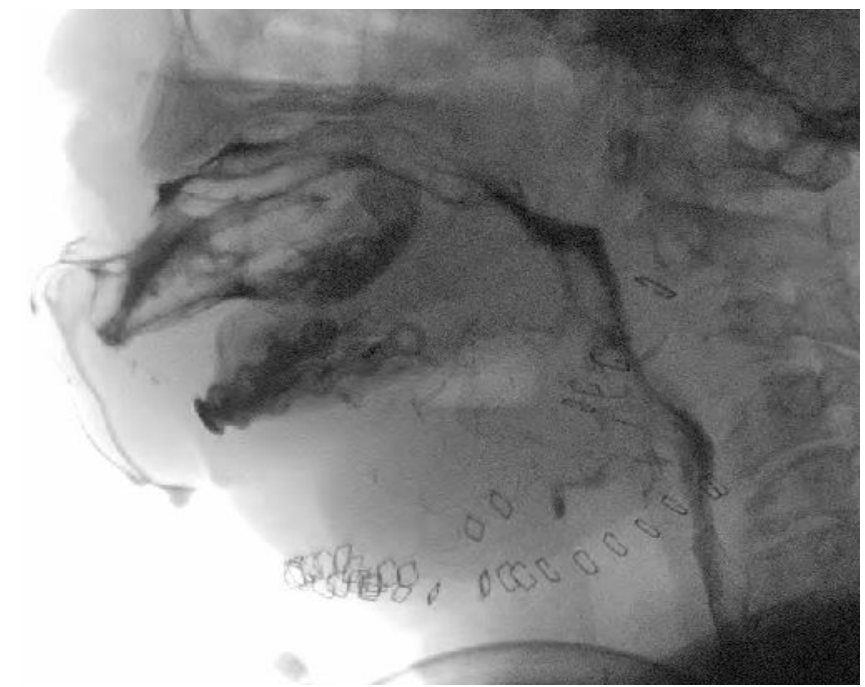
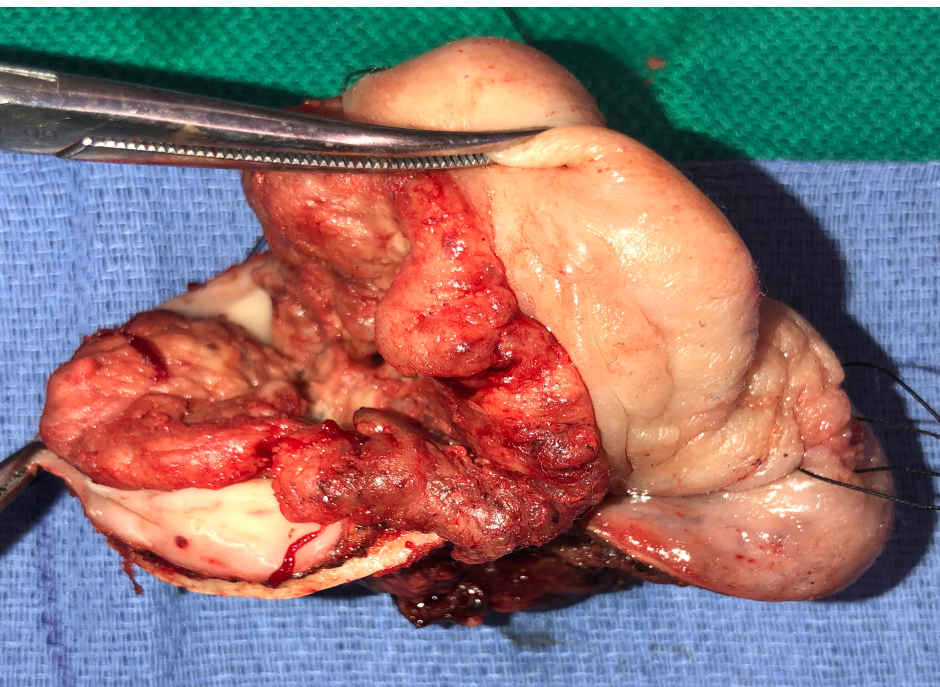
- Twenty patients met inclusion criteria. Subsite involvement was categorized by glossectomy in isolation (40% of cohort), glossectomy + floor of mouth (20%), glossectomy + multiple oral subsites (40%).

Group	Mean Days until Evaluation	Mean Days until Diet
Tongue	1.5	1.5
Tongue + FOM	7.5	9
Tongue + Multiple	16	26.2

- Omnibus MANOVA was statistically significant ($F[4,31] = 6.045, p = .001$) with follow-up one-way ANOVAs indicating a significant difference for days to swallow evaluation ($F[2,17] = 12.126, p = .001$) and days to diet ($F[2,17] = 12.934, p < .001$).
- Planned post-hoc analyses revealed significant differences for days until swallow evaluation between tongue and tongue + multiple subsites ($M_{diff} = 14.5; p < 0.001$) and for days until diet initiation between tongue and tongue + multiple subsites ($M_{diff} = 24.62; p < .001$), and tongue + FOM and tongue + multiple subsites ($M_{diff} = 17.12; p = .023$).

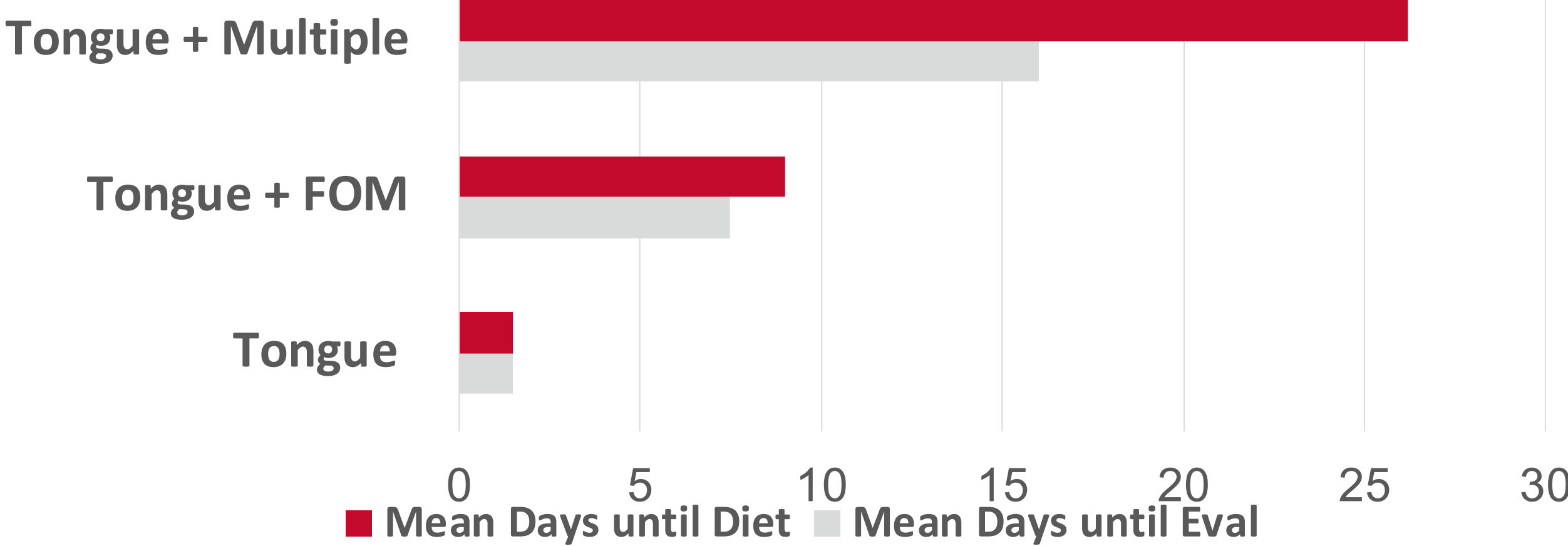


Tongue + FOM, during and after the swallow, 15 days post-op: Reduced lingual propulsion, reduced base of tongue retraction, reduced hyolaryngeal excursion → oral residue, laryngeal penetration → Pureed with thin liquids



Tongue + FOM + Marginal Mandible, during and after the swallow, 16 days post-op: poor labial seal, reduced lingual propulsion, reduced base of tongue contraction, reduced hyolaryngeal excursion → anterior spill, oral residue, vallecular and piriform residue, active and passive aspiration → NPO

Days until Evaluation and Diet



- Difference was statistically significant in tracheostomy placement between tongue and tongue + multiple subsites ($p < 0.001$), and tongue + FOM and tongue + multiple subsites ($p = 0.0$).
- Difference was statistically 2significant in feeding tube at discharge between tongue and tongue + multiple subsites ($p = 0.01$).

Group (n)	Percentage with Trach (n)	Percentage with TFs at Discharge (n)
Tongue (8)	0% (0)	12.5% (1)
Tongue + FOM (4)	25% (1)	75% (3)
Tongue + Multiple Subsites (8)	100% (8)	87.5% (7)

Conclusion

- All patients suffered a period of inability to eat or drink (*nil per os*, or NPO) following glossectomy with reconstruction.
- This post-operative duration of NPO status following glossectomy increased when the additional oral subsites were involved.
- Involvement of multiple oral subsites influenced the presence of tracheostomy and feeding tube placement.

References

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Additional references available upon request.