Commentary

Nuanced Reporting of Fistulas in Laryngectomy Studies

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Abstract

Pharyngocutaneous fistula is an important complication of laryngectomy and can vary significantly in severity. Many authors have advocated for the use of vascularized flaps (eg, pectoralis major) to reduce the risk of fistula. Prevention of small, self-limited fistulas may not be worth the morbidity of a vascularized flap in some cases. More nuanced analysis of fistula outcomes, stratified by severity, may enable better surgeon-patient decision making regarding the use of vascularized flaps in laryngectomy.

Keywords

laryngectomy, pharyngocutaneous fistula, pectoralis, flap, data

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There are a number of studies examining risk factors for laryngectomy¹⁻³ and suggesting methods of prevention.⁴⁻⁷ Use of pectoralis major (and other vascularized flaps) has been associated with a reduction in fistula formation in multiple studies,⁸⁻⁹ including a large multi-institutional retrospective review¹⁰ and a case series reporting on a “performance improvement intervention” that included routine pectoralis flap use for salvage laryngectomy across a range of T stages after radiation or chemoradiation. It seems clear that flap reconstruction decreases the risk of fistula formation. However, consider the following case:

A 67-year-old man underwent a salvage laryngectomy for T3N0 glottic cancer recurrent after radiation. The cancer was endolaryngeal, and sufficient pharyngeal mucosa remained to allow a tension-free primary closure, and no pectoralis flap was used. On his 2-week postoperative visit, a small area of pharyngeal leakage through his drain site was detected during a test swallow. The patient was started on antibiotics and remained nil per os (NPO). We checked him after another week and he was still leaking with test swallow, but less so. After 1 further week of NPO, he was completely healed and started a full oral diet without tube feeding.

Based on current laryngectomy studies, this fistula would represent an adverse outcome to be prevented. But at what cost? There is no doubt that this patient’s fistula was a complication, yet it eventually healed (with some delay) and, importantly, the patient was spared the morbidity of a pectoralis flap. Patients with these flaps can experience impairment in movement of the shoulder and neck and difficulty swallowing due to flap thickness.¹¹⁻¹³ More rare complications such as a pneumoperitoneum and a breast tissue necrosis requiring subtotal mastectomy have been noted.¹⁴ These functional issues are in addition to the cosmetic defect.

To be clear, we are not arguing that flap reconstruction of salvage laryngectomy should be abandoned. To the contrary, it is quite appropriate in many cases. Rather, we are making a plea to future researchers to consider more nuanced reporting of fistulas as a primary outcome. The patient described above had a self-limited fistula that resolved with supportive care. This is a far cry from the large, open, complicated wound that requires surgical intervention, substantially delays and impairs swallowing, and even imperils the patient’s life.

It would be helpful to know which risk factors lead toward each of these disparate outcomes, so that flap reconstruction may be selectively used and better-informed discussions can be had with patients about risks and options for extent of surgery. Some patients may accept an increased risk of a self-limited fistula (and a small risk of reoperation) to avoid donor site morbidity. Others may value a higher chance of rapid return to swallowing.

While some studies already include stratification of fistulas in data tables and analysis,¹⁵,¹⁶ many only include fistula severity in the descriptive text or do not include these data at all. We suggest that future studies of laryngectomy stratify fistulas based on their severity/subsequent outcome (eg, self-limited, resolved with reoperation, and time to resolution/unresolved) in data tables and analysis. This would

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support enhanced data integrity, facilitate meta-analyses, and bolster patient-centered surgical decisions.

This retrospective review of a single patient case is considered “nonresearch” by the Vanderbilt Institutional Review Board.

Author Contributions

Alexander Langerman, composition and revision of manuscript, background literature review; Margaret Mitchell, composition and revision of manuscript, background literature review.

Disclosures

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References


