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Letter to the editor

Bilateral infrahyoid muscle, myofascial and myoperichondrial flaps in laryngectomy

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ABSTRACT

Background: Protection of suture line of neopharynx after a laryngectomy or near total laryngectomy with vascularized tissues is of utmost importance in preventing a wound related complication.
Method: A simple technique of harvesting bilateral pedicled infrahyoid muscle myofascial or myoperichondrial flap to protect the fashioned neopharynx in a Total or Near Total laryngectomy is described.
Conclusion: Pedicled infrahyoid muscle, myofascial or myoperichondrial flap is a simple quick and reliable option to protect the fashioned neopharynx in a Total or Near Total laryngectomy against major wound complications like pharyngocutaneous leaks and fistula formation.

Reconstituting the pharynx after a Total (TL) or a Near Total Laryngectomy (NTL) for cancers of larynx or hypopharynx poses a major challenge in a salvage setting. Availability of well vascularized pharyngeal remnant depends upon the extend of the residual/recurrent disease, the collateral damage incurred on the adjacent structures during the initial radiotherapy or chemoradiotherapy and the duration of disease free interval after initial treatment. Besides this, concomitant neck dissections done and the presence of a previous temporary tracheostomy may also affect the perioperative integrity of the fashioned neopharynx.

Several authors have endorsed my view of prophylactic usage of muscle or myocutaneous flaps to protect the primary suture line or to supplement the deficiency in the mucosal lining in salvage situations [1,2]. On a personal basis currently I do this more or less on a routine basis banking additionally on an algorithmic approach to achieve a tailored and optimized resection which ensures the presence of a well perfused remnant pharyngeal mucosa i.e. to resort to an NTL if the inter arytenoid area is free and the disease is lateralized, TL with closed stapling [3] if the lesion is purely endolaryngeal, hand sewn standard closure and pharyngeal resurfacing with appropriate skin flaps like pectoralis major myocutanoues or supraclavicular island flap [4–6].

In all these situations a decision to add a protective layer of vascularized muscle or myocutaneous flap (uni or bipaddled) is taken on the operating table on the basis on the highest index of suspicion about integrity of the suture line and the perfusion of the tissues constituting it (as observed by its color), the presence of a defect in the overlying skin and an initial failure of a leak test with saline. Leak test is done with a catheter placed thro the nose to inflate the sutured neopharynx with saline and any leaking spot is carefully repaired with inverted sutures.

Most recently I have been using the paired infrahyoid muscles with its superior thyroid vasculature for this purpose. The anterior belly of the omohyoid muscle along with the sternothyroid and sternohyoid flap mobilized from its origin and insertion without disrupting the muscular offshoots from the main vasculature is raised from the laryngeal skeleton with or without the perichondrium of the thyroid cartilage, depending on the disease status, after the superior pedicle of the thyroid gland and the superior laryngeal vessels are ligated and severed. Wherever possible anterior jugular vein is included in the flap with its continuity upwards with the suprahyoid veins or the internal jugular veins retained (Figs. 1, 2a and 2b).

The current technique to the best of my belief and experience ensures a leak free result in all salvage cases done with close adherence to the algorithmic approach described in this article.

Summary

- Use of well designed pedicled flaps based on robust blood supply can prevent post laryngectomy pharyngocutaneous fistula.
- Pedicled Infrahyoid muscle, myofascial or myoperichondrial is a quick, simple and reliable choice for neopharygeal augmentation in salvage laryngectomies.

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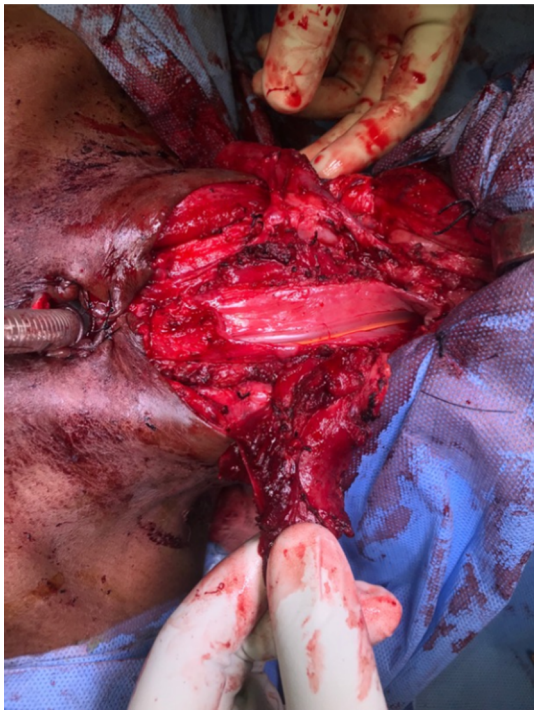

Fig. 1. Flap harvested bilaterally.

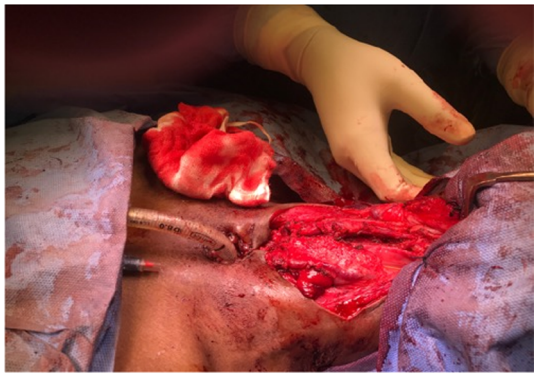

Fig. 2a. Flaps placed on the suture line of the neopharynx after a salvage total laryngectomy.

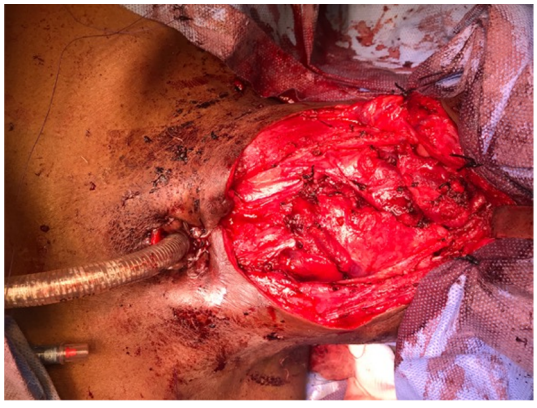

Fig. 2b. Flaps on both sides further sutured to each other in a criss cross fashion and to the suprahyoid and remnant pharyngeal musculature.

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