

Near Total Pharyngolaryngectomy and Reconstruction with Interpositional Tubed Pectoralis Major Myocutaneous Flap

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ABSTRACT

Near total laryngectomy can be safely combined with partial or subtotal pharyngectomies when the disease is lateralized rendering the interarytenoid joint and the contralateral cricoarytenoid joint free of tumor. A case of post radiotherapy recurrent carcinoma of the posterior pharyngeal wall which could be salvaged by a circumferential pharyngectomy combined with a near total laryngectomy is reported with a discussion about its potential advantages.

Keywords: Near total laryngectomy, Circumferential pharyngectomy, Tubed pectoralis major myocutaneous flap.

How to cite this article: Varghese BT, Sebastian P. Near Total Pharyngolaryngectomy and Reconstruction with Interpositional Tubed Pectoralis Major Myocutaneous Flap. *Int J Phonosurg Laryngol* 2013;3(1):15-17.

Source of support: Nil

Conflict of interest: None declared

INTRODUCTION

A case of recurrent extensive carcinoma of the posterior pharyngeal wall which was surgically salvaged by a near total excision of the pharynx and larynx and reconstructed by a tubed interpositional pectoralis major myocutaneous (PMMC) flap is presented. The current literature on salvage near total laryngopharyngectomy (NTLP) is reviewed and advantages of the procedure are discussed.¹

CASE REPORT

A 70 years old man was referred to us for a recurrent carcinoma of the posterior pharyngeal wall. Further enquiry revealed that he was irradiated 11 years ago elsewhere for a T₂N₀M₀ disease of the hypopharynx and was disease free till 24th April, 2003 when he underwent a direct laryngoscopy (DLS) and biopsy for odynophagia. Endoscopically he was found to have an ulceroproliferative growth involving the entire posterior pharyngeal wall and adjacent lateral wall of left pyriform sinus. The histopathological report (HPR) was that of a moderately differentiated squamous cell carcinoma (SCC).

Clinical examination revealed a normal laryngeal framework with normal mobility and presence of laryngeal crepitus. A video laryngoscopy confirmed the site of the lesion which had extension to the left pyriform fossa (PF) and minimal encroachment to the right PF. The size of the

growth was 4.5 × 3.5 cm, the left vocal cord (VC) showed restricted movements and right was mobile. Computed tomographic (CT) scan ruled out any prevertebral muscle invasion. The recurrence was therefore staged according to tumor node metastasis (TNM) staging as T₃N₀M₀.

Surgical salvage was planned and consent for total laryngopharyngectomy was taken. However, it was also explained to the patient that an attempt would be made to preserve speech. On 23rd Jan, 2004, a near total laryngectomy with near total excision of the hypopharynx (Fig. 1) was done. A chondromyomucosal shunt was fashioned and the pharyngeal defect (Figs 2 and 3) was reconstructed with an interpositional tubed PMMC flap.

Surgical Procedure

The entire posterior pharyngeal wall and the left pyriform sinus mucosa from the level of hyoid to the postcricoid region was removed along with the lateral wall of the right PF leaving behind the cricopharyngeal sphincter. The entire left half of the larynx with the epiglottis and pre-epiglottic space was resected along with the anterior half of the right true and false vocal cords leaving behind the entire tracheal rings and a hemicricoid with an intact innervated (functional) cricoarytenoid joint. With these available laryngeal remnants a dynamic chondromyomucosal shunt was fashioned between a side tracheostomy and the pharyngoesophageal discontinuity which in turn was reconstructed with a tubed PMMC flap. The PMMC flap



Fig. 1: Excised specimen of NTL with NTP

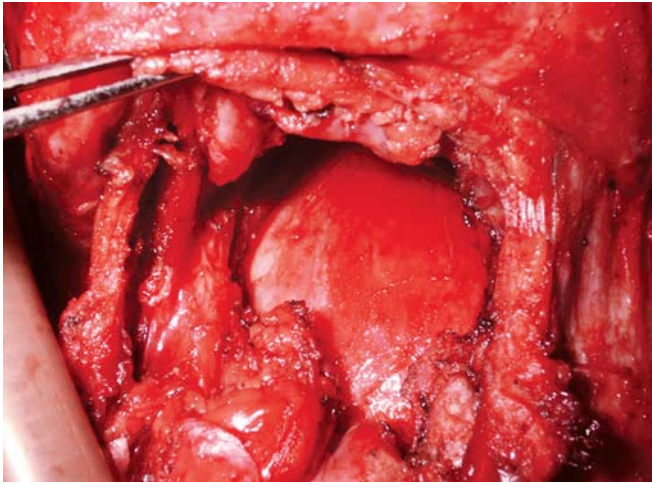


Fig. 2: Pharyngeal defect with remnant larynx

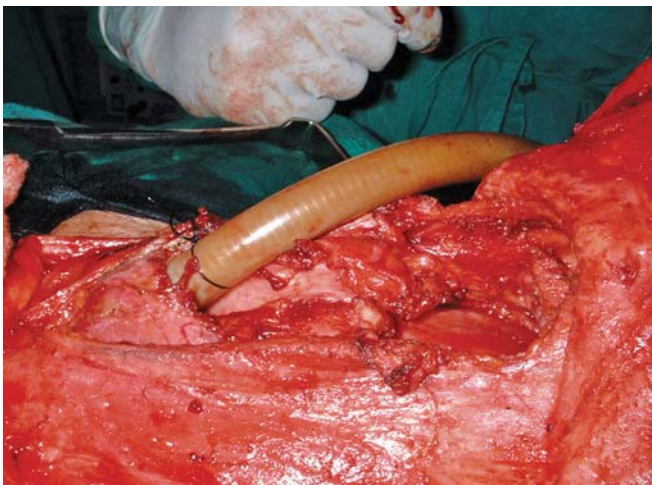


Fig. 3: Chondromyomucosal shunt being fashioned



Fig. 4: Postoperative photograph

with a skin island of size 6×5 cm was harvested from the left chest inferomedial to the nipple.

Patient was discharged after an uneventful postoperative period on the 10th day. Ryles tube was removed as the 14th day and oral feeds started. The HPR of the operated

specimen was SCC extending close to deep margin. Hence, postoperative RT was given to a dose of 40 Gy in view of previous RT. He is disease free with good shunt speech and aspiration free swallowing after 5 years of follow-up (Fig. 4).

DISCUSSION

Surgical management of extensive posterior pharyngeal wall carcinoma are generally difficult. In large tumor involving the entire posterior pharyngeal wall it is almost impossible to preserve a functioning larynx even when the voice is normal. Although lasers can be used in certain situations they are not recommended for advanced salvage cases, and hence a total laryngopharyngectomy and reconstruction becomes mandatory. Gastric transposition, free jejunum, radial forearm flap or a tubed pectoralis major myocutaneous flap are the usually available reconstructive options in such situations.²⁻⁶

Although surgery is generally the preferred modality in management of hypopharynx cancers⁶ a large proportion of posterior pharyngeal wall lesions are treated by radical radiotherapy due to the technical difficulty in surgery. Small (T_1) lesion can be endoscopically excised by lasers or split skin grafted after wide excision by an anterior pharyngotomy or lateral pharyngotomy approach.⁶ Larger (T_2) lesion may require flap lining for which a free radial forearm is the most suitable option.^{4,6} Preservation of the entire larynx or partial laryngectomy along with total or near total excision of posterior pharyngeal wall (T_3/T_4 disease) is often unsuccessful due to intractable aspiration as the pharynx becomes insensitive. Hence, the only rationale in the conventional removal of the larynx in such cases is the resultant loss of function of the larynx after the oncologic clearance. Although in T_3 lesions, it is not possible to obtain a normal airway, free of aspiration, it is technically possible to preserve the speech mechanism to a certain extent as illustrated in the case. This we believe is an innovation as far as total pharyngectomy is concerned. We have experience with about 20 tubed PMMCs in such situations and we have noted a high incidence of late stricture formation at the lower anastomotic site which required repeated dilatations. In contrast to this, the present patient who is disease free till date and on follow-up here has excellent swallowing and good speech. We believe that the interpositioning of the shunt opening at the lower anastomotic area might have prevented late stricture formation. However, proper case selection and oncologic clearance has to be ensured before embarking on a decision to proceed with this option. We do a routine preoperative rigid endoscopy in almost all our cases and strongly recommend this.

PMMC flap is often regarded as the workhorse in head and neck reconstruction. We use it routinely for augmenting pharyngeal closure in laryngopharyngectomy when the available mucosa is less than 50%. The pedicle of the flap has an added advantage of protecting the carotid artery when a concomitant neck dissection also has to be done. It is easy to harvest and it is ideal in a low resource setup with a heavy inflow of patients as in our center.²

The present case is being reported to highlight a technically demanding oncologically sound voice preservation procedure which yielded good functional and oncological result. Review of current literature did not show any similar reports.

CONCLUSION

Near total pharyngolaryngectomy with interpositional pectoralis major myocutaneous flap is a viable option, far superior to total laryngopharyngectomy and reconstruction in advanced tumors of PPW without laryngeal invasion or with minimal unilateral laryngeal invasion. It is oncologically safe when cases are judiciously selected and provides a reasonably good maintenance free speech, only at the expense of normal airway.

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