

CASE REPORT

Extensive Hypopharyngeal carcinoma Treated by Total Laryngo-Pharyngo-Esophagectomy with Gastric Pull-Up at PNS Shifa Hospital

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ABSTRACT:

Reconstruction of the defect created after total laryngo-pharyngo-esophagectomy has been one of the challenging task for the head and neck surgeons. There is a lot of debate among the different workers regarding the best method for such reconstruction. Many believe that gastric pull up is still one of the best option in such cases. We are presenting a case of 50 years old lady with extensive squamous cell carcinoma of the hypopharynx which was also involving the larynx and the cervical esophagus. Total laryngo-pharyngo-esophagectomy was done as a primary treatment. For reconstruction of the defect gastric pull up operation was done. Post-operative recovery was uneventful with no major complication. Adjuvant radiation therapy was also given post-operatively. During the follow up period of 6 months, patient was completely alright with almost normal oral feeding and no recurrence of the disease.

Key words: Hypopharyngeal carcinoma, Pharyngo-laryngectomy, Stomach pull-up, Esophagectomy.

INTRODUCTION:

Surgical treatment of advanced cancer of the hypopharynx remains a dismal disease that poses a therapeutic challenge to the treating physician, with an extremely high incidence of morbidity and distant metastasis. Hypopharynx extends from 4th to 6th cervical vertebrae and is interposed between the oropharynx and the upper end of esophagus with the larynx located anteriorly. It includes posterior pharyngeal wall, pyriform fossae and the post cricoid area. The incidence of hypopharyngeal cancer is approximately 1 in 80,000, with a poor prognosis having 5 year survival rate only up to 22%¹.

Carcinoma of the hypopharynx involves unavoidable impact on deglutition, respiration and phonation functions as the anatomical structure is located at the crossing point between airway and digestive tract². The degree of impairment is directly proportional to the extent of resection. Ablative surgery for stage III and IV malignancy usually result in complex defects with loss of function and continuity in the upper digestive tract and soft tissue deficiency. The method used for reconstruction should establish the integrity of the digestive tract and cover the

cervical defect with healthy and well vascularized tissue^{3,4}.

We are presenting a case of extensive carcinoma of the hypopharynx, also involving the larynx and cervical esophagus which was treated by total laryngo-pharyngo esophagectomy with reconstruction by gastric pull-up operation.

CASE REPORT:

A 50 year old lady, resident of urban area of Sindh, presented through outpatient clinic in P.N.S Shifa Hospital, Karachi, in March 2014 with the complaint of dysphagia for last six months. It was progressive in nature, initially for liquids and later on progressed for solid food as well. She also complained of pain in throat which radiated to ear as well. She was progressively losing weight which was assessed by family members by her loose clothes. According to the patient her mother also died with same complaints but she could not provide any documented evidence. She belonged to a lower socioeconomic group. On general physical examination she was found to be anemic.

On indirect laryngoscopy, Chavellier Jackson sign was positive i.e. pooling of saliva in both the pyriform fossae. Upon neck examination laryngeal crepitus was absent (Trotter's sign) but the cervical lymph nodes were not palpable. On fiberoptic direct laryngoscopy, extensive growth was seen at the apex of left pyriform fossa extending medially to involve posterior pharyngeal wall and post-cricoid area. Lower limit was not possible to assess on FODL. Vocal cord mobility was impaired on both the sides. CT scan with contrast was done which showed extensive growth going downwards to involve the upper part of the esophagus as well (Figure 1). Pan-endoscopy under general anesthesia was done, biopsy taken for histopathology which showed poorly differentiated squamous cell carcinoma.

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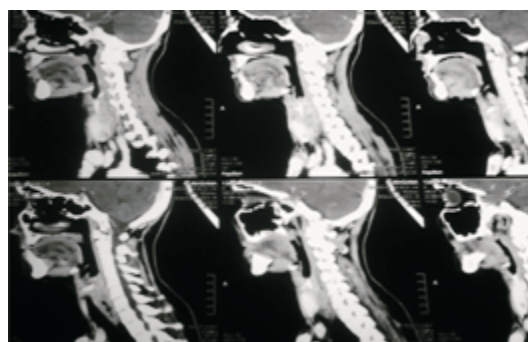
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Figure 1

CT scan with contrast of the neck (Sagittal view) showing extensive growth involving the hypopharynx, larynx and cervical esophagus



Case was discussed in detail with the patient and her family members and after taking informed and written consent, she was planned for total laryngo-pharyngo-esophagectomy with gastric pull-up operation. Case was also discussed with the multidisciplinary team, nutritional status was built up by guidance of dietician and anemia was corrected by blood transfusion.

Two surgical teams, one of ENT surgeons and one of general surgeon were involved. Total laryngo-pharyngo-esophagectomy with stomach pull up was done (Figure 2a, 2b and 2c).

Figure 2a

Per-operative photograph of the neck after removal of the larynx, hypopharynx and the esophagus



Figure 2b

Surgical specimen of the whole larynx, hypopharynx and esophagus after removal.



Figure 2c

Per-operative photograph of the patient showing the stomach ready for anastomosis in the neck



A gastro-jejunostomy tube was inserted at the time of harvest to allow for early postoperative feeding and simultaneous gastric decompression. Later on patient was sent for post-operative adjuvant radiation therapy. Post-operative follow-up was done regularly and till date patient is doing well. There was no recurrence of the disease during this period and patient is taking normal oral feeding.

DISCUSSION:

Tumors of the hypopharynx are usually diagnosed at an advanced stage and are associated with a poor prognosis⁵. Squamous cell carcinoma of the hypopharynx has a particular trait of invasiveness through the sub-mucosa to induce distant lesions known as skip lesions⁶. That is why total laryngo-pharyngectomy is widely utilized to treat such carcinoma with or without adjuvant radiation therapy⁷. Reconstruction of the hypopharynx after total pharyngectomy represents a challenge for the surgeon. Even though the hypopharynx is a tubular duct but actually it is a complex arrangement of constrictive forces regulated by the sensory input during the pharyngeal phase of deglutition. It is for this reason that total pharyngectomy damages this sensory-motor mechanism and impairs deglutition and protection to the lower respiratory tract.

Workers have proposed methods for classification of the defects after total laryngo-pharyngectomy and reconstructive strategies. If a flap is required to reconstruct the defect, its choice must be made taking into account the anatomical and functional characteristics of the tissue removed, the characteristics of the recipient and the donor site, the patient's general condition and the experience of the surgeon. Several reconstructive methods are available for pharyngeal and esophageal defects after pharyngo-esophagectomy operations. These include pectoralis major myo-cutaneous flap, gastric pull-up, jejunal free flap, radial forearm and antero-lateral thigh fascio-cutaneous flaps⁸.

Free jejunal flap is considered as a very good flap for reconstruction of the defect after total pharyngectomy and cervical esophagectomy because it is naturally tubular,

visceral tissue is similar to hypopharynx and possesses intrinsic peristaltic movement². The disadvantage of this flap is that two surgical teams are required and high risk of thrombosis of the vascular pedicle with subsequent flap necrosis. Pedicled pectoralis major myo-cutaneous flap should be considered as a second choice to repair such defects but the results in terms of recovery of swallowing are controversial. The radial forearm flap is also very popular for reconstruction of the hypopharyngeal defect but there is significant donor site morbidity including large scar and wrist joint stiffness. Gastro-omental free flap is another method for reconstruction of the hypopharynx. Reconstruction by transferred gastric mucosa and the capacity of the omentum to protect the anastomosis of the vessels represents good indications of using this flap in complex irradiated defects⁹. In spite of all these methods, some workers still believe that gastric pull-up is very effective and it should be regarded as the method of choice in hypopharyngeal reconstruction^{10,11,12}. The use of stomach as a method of hypopharyngeal reconstruction was first described by Turner in the year 1936. Overall morbidity and mortality in using this procedure is very less, hospital stay is less and there is rapid return to successful oral feeding. Our experience with this procedure is also very encouraging. No peri or post operative complication occurred in this patient and patient is well in follow up of more than six months.

REFERENCES:

1. Wahlberg PC, Anderson KE, Biorklund AT, Moller TR. Carcinoma of the hypopharynx: Analysis of incidence and survival in Sweden over a 30 year period. *Head and Neck*. 1998; 20: 714-9
2. Mura F., Bertino G., Occhini A., Mevio N., Scelsi D, Benazzo M. Advanced carcinoma of the hypopharynx: functional results after circumferential pharyngolaryngectomy with flap reconstruction. *Acta Otorhinolaryngol. Italica*. 2012; 32: 154-7.
3. Panje WR, Little AG, Fergusson MK, Moran WJ, Scher N. Immediate gastro-omental reconstruction of mouth and throat. *Ann Otol Rhinol Laryngol*. 1987; 96:15-21
4. Panje WR, Pitcock JK, Vargish T. Free Omental flap reconstruction of complicated head and neck wounds. *Otolaryngol Head Neck Surg*. 1989; 100(6); 588-93.
5. Eckel HE, Staar S, Volling P. Surgical treatment for hypopharynx carcinoma: feasibility, mortality and results. *Otolaryngol Head Neck Surg*. 2001; 124: 561-9.
6. Bradley PJ: Multidisciplinary clinical approach to the management of head and neck cancer. *Eur Arch Otorhinolaryngol*. 2012; 269:2451-4.
7. Disa JJ, Pusic AL, Hidalgo DA. Microvascular reconstruction of the hypopharynx: defect classification, treatment algorithm and functional outcome based on 165 consecutive cases. *Plast Reconstr Surg*. 2003; 111: 652-60.
8. Chen F, Liu J, Wang L, Lv D, Zhu Y, Wu Q, Li G, Zheng H, Tao X. Free posterior tibial flap reconstruction for hypopharyngeal squamous cell carcinoma. *World Journal of Surgical Oncology*, 2014; 12:163-9.
9. Antohi N, Tibirna G, Suharski I, Huian C, Nae S, Stan V, Bodog F. Gastro-omental free flap in oropharyngeal reconstruction after enlarged ablative surgery for advanced stage cancer. *Chirurgia*, 2013; 108: 503-8.
10. Sreehariprasad AV, Krishnappa R, Chikaraddi BS, Veerendrakumar K. Gastric pull up reconstruction after pharyngo-laryngo-esophagectomy for advanced hypopharyngeal cancer. *Indian J Surg Oncol.*, 2012; 3 (1): 4-7.
11. Hadi A, Latif S. Management of carcinoma of Hypopharynx by Laryngopharyngo-Esophagectomy with stomach pull-up. *Proceeding Shaikh Zayed Postgrad Med Inst.*, 2003; 17 (1):31-7.
12. Nabi MS, Bilal A, Shah SA, Ahmad Z, Khan MU, Farooq K, Hassan S. Gastric Pull-Up reconstruction for Laryngo-pharyngo-esophagectomy. *Ann King Edward Med Uni*. 2003; 9 (2):108-10.