GASTRIC PULL-UP RECONSTRUCTION FOR THE HYPOPHARYNGEAL AND CERVICAL ESOPHAGEAL CARCINOMA IN SMALL THORACIC UNIT

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Abstract

The objective of this article is to review results of one surgical team for gastric pull-up reconstruction for carcinoma of the hypopharynx and cervical esophagus after pharyngolaryngo-esophagectomy in small thoracic unit.

Between July, 2004 and December 2005, four patients underwent pharyngolaryngo-esophagectomy and gastric pull-up reconstruction for carcinoma of hypopharynx and esophagus. There were three female and one male patient with average age at the time of surgery 47 years. The study analyzed complications and mortality in early postoperative period after resections of the carcinoma.

Squamous cell cancer in all patients was confirmed. There was no in-hospital mortality and non-fatal complications were occurred in 3 patients. It was recorded two year survival for two patients.

Pharyngolaryngo-esophagectomy and gastric pull-up reconstruction can be performed for the patients with carcinoma of the hypopharynx and cervical esophagus with an acceptable operative mortality and morbidity rate even in small thoracic unit. Long term survival despite good early postoperative results still remains poor.

KEY WORDS: gastric pull-up, laryngeal cancer, esophageal cancer

Introduction

Carcinoma of the hypopharynx and cervical esophagus is rare but important problem. Although the aggressive surgical approach is followed with low in-hospital mortality this cancer remains one of the most lethal digestive tumors (1). There are many techniques for reconstruction such as local, regional-cutaneous or myocutaneous flap and transposition procedures including gastric pull-up, colon interpositum and free jejunal flap (2). The aim of this study is to review and analyze results of one surgical team for pharyngolaryngo-esophagectomy and gastric pull-up reconstruction for carcinoma of hypopharynx and esophagus.

Materials and Methods

From 2004 to 2005, four patients with proved hypopharyngeal and cervical esophageal cancer, with no evidence of metastatic disease, who were preoperatively evaluated, underwent pharyngolaryngo-esophagectomy and gastric pull-up reconstruction. There were three female and one male patient with 47 years median age of surgery. Preoperative evaluation was including physical examination, hematological and biochemical investigation, chest X-ray Barium pharyngoesophagogastrography, CT-scan, pharyngo-esophagogastroscopy and ultrasound of the neck. Pulmonary function tests and ECG were performed routinely. None of the patients received preoperative chemotherapy and post-operative radiation was done in three cases. In all patients surgical resections was performed using two-team approach. Thoracic team performed abdominal and intra-thoracic part of procedure. The second ENT team approached to the tumor via standard neck collar incision. Tumor resection with nodal removal started via standard collar neck incision. The second team attempted to mobilize the stomach through an upper midline incision. The right gastric and right gastroepiploic vessels were preserved. The stomach was transected at the esophagogastric junction. A pyloroplasty was not performed routinely. During blunt dissection of the esophagus via hiatus route, the proximal esophagus was mobilized away from the membranous part of the trachea. The fundus of the stomach than was brought through the posterior mediastinum into the neck. Pharyngogastric anastomosis was restored using single-layer technique. The nasogastric tube was left in place for stomach decompression for about one weak. Feeding jejunostomy was performed only in one case. After an absence of leakage shown by gastrografin swallowing for 7 days, the nasogastric tube was removed and an oral diet was begun (Figure 1). Patients were advised to swallow a small amount of their meal, and to sit in upright position after the meal about 30 minutes during the early postoperative period. Complications and mortality was recorded. After surgery, patients who did not receive preoperative radiation were treated with adjuvant chemotherapy.

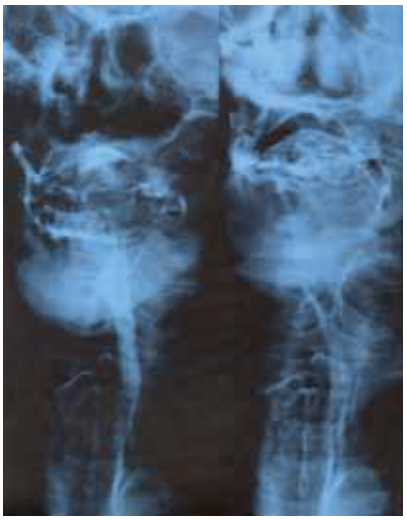

FIGURE 1. Absence of leakage and pharyngo-gastro anastomosis shown on gastrografin swalowing

Results

Four patients underwent pharyngolaryngo-esophagectomy (PLE) between July 2004 and December 2005. All patients underwent PLE with transhiatal esophagectomy and pharyngeal-gastro anastomosis without flap reconstruction. The tumor locations are shown in Table 1.

Patient	Location of tumor
I	Hypopharynx and esophagus
II	Hypopharynx and cardia
III	Cervical esophagus
IV	Hypopharynx

TABLE 1. Tumor location

In most cases the primary location of the tumor could not be determined due to extensive involvement. In one patient pathological report found out second primary tumor of cardia. Tumor staging was recorded from operative findings and the final pathological specimen. TNM staging are shown in Table 2.

Patient	TNM staging
I	pT4 N1 M0
II	pT2 N0 M0
III	pT3 N1 M0
IV	pT3 N1 M0

TABLE 2. Pathological staging of tumor (Classified by International Union Against Cancer Classification) (3)

There was no 30-days postoperative mortality. Postoperative complications are shown in Table 3. Anastomotic leakage was clinically detected in one case. After water-soluble study and conservative treatment the leakage ceased spontaneously. In two cases stenosis of the anastomosis were periodically dilated. Two years survival rate was 50%.

Patient	Complication
I	Cutaneous fistula and wound infection
II	Stomal stenosis
III	Stomal stenosis
IV	No

TABLE 3. In-hospital postoperative complications

Discussion

Cancer of the hypopharynx and cervical esophagus usually presents in an advanced stage. Treatment is therefore aggressive and involves a combination of surgery and radiotherapy. Pharyngolaryngo-esophagectomy, gastric pull-up and Pharyngogastric anastomosis has become the method of choice for extensive tumors in the past decade (4). Four patients underwent PLE in our small thoracic unit. Preoperative endoscopic or computed tomography (CT) is effective assessment procedures. PLE can be performed safely if the upper resection margin is not too far from the lower pole of the tonsils. Tumor involved mainly hypopharynx and cervical esophagus. Intra-thoracic esophagectomy, mediastinal dissection and transhiatal esophagectomy was performed without injuries to the vital organs. Extreme care was taken in region of trachea and especially the carina to avoid lesion to the membranous trachea. In this study there was not intra-operative bleeding and blowout of the carotid artery in postoperative period. In this study, there was no in-hospital mortality although in different studies is high (8-30%), (5, 6, 7, 8, 9). In some studies, authors reported that the in-hospital mortality has fallen from 11 per cent to seven per cent (10). Non-fatal complications occurred in three patients in this study, and it is in accordance with results of other authors (9, 11,). Although we had acceptable postoperative results, the prognosis of advanced cancer of the hypopharynx and cervical esophagus is still poor. Reported mortality varies from 5% to 30% (9) and overall complications from 29%- 55% (12). The overall mortality in literature is 1-100 months (12). A review of the literature showed the encouraging results in reduction mortality and morbidity following these resections. Cahow and Sasaki (12) reported 5% postoperative mortality, Goldberg at al. (13) referred 4,9% and these results represent reduction in comparison with results from Spiro et al. (14) (10,8%) and Harrison and Thomson (15) (10,95%). Complete resection of esophagus showed advantage because some patients had multiple or second primary cancer. Our two cases that reconstructed with free jejunum graft had inadequate blood supply leading to the necrosis of the anastomosis and grafts. This was one of the reasons we preferred gastric pull-up reconstruction. The other reason was avoiding two anastomoses in reconstruction with jejunum or colon instead one in gastric pull-up procedure. We did not try colon interposition. All procedures were performed in small thoracic and ENT departments by young surgeons without supervision from great regional medical centers.

Conclusion

Gastric pull-up reconstruction for proper selected patients with hypopharyngeal and cervical esophageal carcinoma is followed with low early postoperative mortality and morbidity and should be done even in small thoracic department by educated surgical team.

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