Acta Med. Nagasaki 34 : 24－27

Experience with pharyngo-laryngo-esophagectomy for carcinoma of the esophagus

Masao TOMITA, Hiroyoshi AYABE, Katsunobu KAWAHARA
Takao TAKAHASHI and Ken HAYASHIDA

First Department of Surgery
Nagasaki University School of Medicine

Received for publication, December 26, 1987

ABSTRACT : Pharyngo-esophagectomy was clinically evaluated in 6 cases
1) Advanced cancer patients are included in this series, reflecting the delayed diagnosis.
2) The surgical indication of transplantation with free jejunum graft with vascular anastomosis is limited to localized cancer-bearing patients in cervical esopohagus.
3) In advanced cancer patients complete cervical node dissection in combination with potent chemotherapy is recommended for prevention of recurrence.

Surgical outcome of the treatment for carcinoma of the esophagus has been improved more and more with advances in pre-and postoperative cares and surgical techniques. However, there are many problems confronting reconstruction following pharyngo-esophagectomy. To define this issue associated with surgical treatment of cervical esophageal carcinoma, this study was made on the basis of a result of our clinical experience.

PATIENTS

During a 10-year period from January 1977 to December 1986, 7 patients with carcinoma in the pharyngoesophageal region were treated. Males were predominant in a ratio of 6 : 1. The age was between 49 to 70 with 61.6 as an average tumors surgically resected in 6, or 85.7 % of the resection rate. The suffering period of time ranged from one month to 2 years with an average of 10.2 months. Histologic stages were classified into stage I in one and stage III and IV in 5. Clinical signs were dysphagia in 6 and hoarseness in one respectively. One with a symptom of hoarseness was excluded from an indication for surgical treatment on the basis of the fact that cancer lesion was widely extended from pharynx to the middle portion of thoracic esophagus in addition to poor general condition.

The surgical operations performed on the 7 patients were shown in Table 1, Pharyngo-laryngo-esophagectomy was applied in 2 and thyroidectomy was performed in 3. The depth of cancer invasion was A_3 in 1, A_2 in 2 and A_0 in 3 respectively.

The reconstruction methods after resection of the tumor-bearing esophagus were listed in Table 2, transplantation of free jejunum graft in 3, grastric tube in 2 and pedicled colon in 1, respectively.

Vascular anastomosis for transplantation with free jejunum graft was performed with the use of the carotid artery and jugular vein in 2, and a transversa colli and internal jugular vein in 1. No one had the ischemic jejunum graft with circulation failure.

Table 1. Operation method for carcinoma in the pharyngo-esophageal region

Case age sex	location	OP finding	modes of resection	Larngectomy	thyroidectomy
49 M	Ce	AONO	subtotal esophagect.	−	−
52 M	phCe	A2N2	laryngo-esophagect.	+	−
70 M	pHCe	A2N1	lasyngo-cervical esophagect.	+	−
69 F	Ce	AON3	〃	−	+
61 M	Ceph	AONO	〃	+	+
65 M	Ce	A3N1	subtotal esophagect.	+	+

Table 2. Reconstruction following pharyngo-esophagectomy

Modes of reconstruction	Case
free jejunum graft with vascular anastomosis	3
gastric tube	2
pedicled colon (retrosternal route)	1

As a rule, bilateral neck dissection was made by means of a modified method dissecting out below a point of the omohyoid muscle, inside and outside of the neck, above the supraclavicular portion.

Nodal involment was shown in Table 3. Involved nodes were 33% in cervical paraesophageal and deep cervical nodes (# 101, # 102), 17% in thoracic paratracheal nodes (# 106)

Table 3. Nodal involvement

involved node-	metastatic rate
# 100	
101	2 / 6 (33%)
102	2 / 6 (33%)
103	
104	
105	
106	1 / 6 (17%)

Postoperative complications were shown in Table 4. Anastomotic constriction is successfully widened by bouge therapy. One suffered from regurgitation to the nose.

Table 4. Postoperative complication

Postoperative complication	Cases
constriction at anastmosis	2
dysphagia	1
invagination	1

Postperative adjuvant therapy was combined with radiation and chemotherapy as shown in Table 5.

Table 5. postoperative combined therapy

Casl age sex	chemotherapy	radiation
49 M	MMC	+
52 M	CDDP PEP	+
70 Mm	UFT	+
69 F	CDDP PEP	−
61 M	CDDP PEP	−
65 M	CDDP PEP	−

As the anticancer agents, MMC, VFT CDDP PMC were administered. The prognosis was indicated in Table 6. Recurrence was present as the mode of node metastasis in 4 and distant metastasis into the lung and liver in 2. The survival periods ranged from 4 years and 5 months in stage I patient, from 5 months to 1 years and 1 month in stage III and IV patients. The deaths in all were due to recurrence.

Table 6. Prognosis for carcinoma in the pharyngoesophageal region

Case age sex	Histologic stage a	n0	stage	outcome
49 M	a0	n0	I	4yrs5M local neck meta
52 M	a2	n2	III	5M local neck meta
70 M	a2	n1	III	10M lung meta
69 F	a0	n3	IV	1y1M local neck meta
61 M	a2	n0	III	1y1M local meta
65 M	a3	n0	IV	7M liver meta

DISCUSSION

Radiation therapy predominates for the treatment of carcinoma of the cervical esophagus. It is because radiation is effective in eliminating the tumor size, and surgical treatment is not so easy, in particular, for reconstruction must be done and hypofunction of swallowing caused by surgical insult is a demerit.

However, according to advances in surgical technique and improvement of surgical result, the indication for surgical treatment has become widened.

Reconstruction by using free jejunum graft with vascular anastomosis following cervical esophagectomy was first made by Seidenberg[1] in 1959. NAKAYAMA[2] and INOKUCHI[3] also reported the same operative method regarding reconstruction for defect after cervical esophagectomy. Microsurgical technique has become applied for vascular anastomosis of free jejunum graft for reconstruction of the defect of the esophagus. This method is now prevalent in reconstructive surgery for the esophagus. The stomach and intestine had been used as a skin material.

One-stage operation combined of resection with reconstruction is of great benefit to enable early oral intake of food.

And also the stomach and the colon have become widely used as a reconstruction organ[3]. The stomach has a good blood perfusion suitable for healing at anastomosis. On the other hand, it is possible for the colon to be cleaned up preoperatively by improved antibiotics which prevent postoperative infection adequately[4].

We selectively used the free jejunum graft when a defect of the esophagus is limited. When free jejunum graft is used, a complaint of regurgitation to the nose sometimes occurs as cited by MATSUI[5]. It seems to be mainly due to edema of the graft and temporarily exaggerated peristasis. Most are improved within 1 to 2 months after surgery. KATO[6] reported that his all 11 patients complained of regurgitation to the nose in the early postoperative stage.

HESTER[7] reported that 5-year survival in patients with carcinoma of pharyngoesophagus is 20 to 30%. One-stage reconstruction procedure contributes to facilitate early postoperative radiation and enhancement of good quality of life.

In this series, it is defined that rccurrence should be well controlled by means of complete lymph node dissection during surgery to improve the surgical result. Furthermore, it is recommended that interposition with free jejunum graft with vascular anastomosis should not be indicated in stage III and IV because the extent of resection as well as nodal dissection is to be limited.

REFERENCES

1) SEIDENBERG B, ROSENAK SS, HURWITT ES and SOM ML : Immediate reconstruction of the cervical esophagus by a revascularized isolated jejunal segment. *Ann. Surg.* **149** : 162-168, 1959.

2) NAKAYAMA,K., YAMAMOTO K, TAMIYA T *et al* : *Esperience with free autografts of the bowel with a new venous anastomosis apparatus Surgery* **55** : 796, 1964.

3) NAKAMURA T. INOKUCHI K and SUGIMACHI K : Use of revascularize jejunum as a free graft for cervical esophagus. *Jpn J. Surg.* **5** : 92-98, 1975.

4) ONG GB, WONG J : Jejunal replacemet after pharyngo-laryngo-esophagectomy for carcinoma of hypopharynx. *World J. Surg.* **3** : 381-386,1976.

5) METSUI,H : Studies on replacement for the cervical and upper thoracic esophageal defects by free transplantation of a gastric or intestinal segment. *Arch. Jpn chir.* **37** : 817-823, 1968.

6) KATO,H IIZAKA T, WATANABE H *et al* : *Reconstruction of the esophagus by microvascular surgery Jpn J. Clin. Oncol.* **14** : 379-384, 1984.

7) HESTER TR *et al* : Reconstruction of cervical esophagus, hypopharynx and oral cavity using free jejunal transfer *Am. J. Surg.* **140** : 487-491, 1980.