

Early piriform sinus cancer - results of treatment with partial vertical pharyngectomy

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Between 1986-1995, 179 patients with hypopharyngeal carcinoma were surgically treated at our department. Among them, 35 had functional partial resection. Out of these, 13 patients had vertical partial pharyngolaryngectomy carried out after ipsilateral neck dissection. The access to the primary tumors was made via lateral pharyngectomy.

Eight out of thirteen patients are disease free two years after the treatment, with well functioning larynx. Some complications occurred, but there were no cases of surgery related death.

The hypopharyngeal cancers are considered as supermalignant tumors. The achieved good functional results and survival rate prove that conservation surgery -partial laryngopharyngectomy - in selected cases of early hypopharynx carcinoma is a good alternative to radical surgery.

Key words: hypopharyngeal neoplasms-surgery; pharyngectomy; partial pharyngolaryngectomy

Introduction

Regardless the modern therapeutic approach used, the piriform sinus cancer remains one of the most aggressive lethal human diseases.¹ Most of these tumors have high grade of malignancy and cause few symptoms at an early stage.

In a great number of cases, clinically positive neck nodes call attention to hypopharyngeal tumors.

This region is characterized by special anatomical and functional conditions contributing to the rapid progression of cancer. The submucosal space is built up of loose connective tissue, rich in lymphatics and blood vessels. Neither caudal nor cranial direction have anatomical barrier against tumor dissemination. That is why the hypopharyngeal cancers can be regarded as a three-dimensional disease.² The irritation and permanently changing pres-

sure caused by swallowing of foods and drinks are important factors in spreading of cancer cells.³

The decision about indication for conservation surgery for hypopharyngeal cancers should be made with responsibility; it requires great experience, good surgical technique, as well as careful examination and selection of patients, because an adequate resection of cancer is imperative.⁴⁻⁵ Despite these facts, in 15-20 per cent of patients the hypopharyngeal cancer can be removed with total or partial preservation of the larynx. A one-stage reconstruction of pharyngeal defects is a very important part of surgery. In the presented paper, authors report on their surgical method for the treatment of early hypopharyngeal carcinoma, with which they preserve the larynx and swallowing function.

Material and methods

In the last ten years, 179 patients with hypopharyngeal tumors were treated surgically in our depart-

ment under the same conditions. After careful selection of patients with respect to their age, cardiorespiratory status, prognostic nutrition index (PNI),⁶ and after examination comprising directoscopy, histology, US,CT,MRI, among the evaluated 148 pyriform sinus cancer cases 35 were considered suitable for organ preserving surgery. Table 1 shows the types of conservation surgery used.

Table 1. Distribution of 35 conservation procedures.

No	Procedure	Access to the primary tumor
16	Horizontal PLP*	Extended supraglottic resection of the larynx
6	Partial resection of posterior wall	Lateral pharyngotomy
13	Vertical PLP*	Lateral pharyngotomy

* PLP: partial pharyngolaryngectomy

In 13 patients vertical partial pharyngectomy was performed. These are subject of the present report. All of them had planocellular carcinoma: 4 patients had grade I, 6 grade II and 3 grade III of the disease.

Table 2 summarizes the distribution of these 13 patients according to the UICC TNM classification.⁷ In 8 of them T1 primary tumors were localized on the upper part of the lateral wall of pyriform fossa.

Table 2. TN distribution - UICC classification.

TN	No	N1	N2b	N2c	All
T1	4	3	1	0	8
T2	1	1	2	1	5
All	5	4	3	1	13
St.I.: 4,	St.II.: 1,	St.III.: 4,	St.IV.: 4		

In five cases T2 tumors also involved a part of the oropharynx. In four cases ipsilateral radical neck dissection (RND), in 6 modified radical neck dissection (MRND) and in one patient ipsilateral radical and contralateral MRND were performed.

The indication and type of functional conservation surgery was tailored to the extent of the primary disease. The access to the tumor was made via lateral pharyngotomy. The upper cornu and a part of thyroid cartilage were removed in T2 tumors together with the hyoid bone process. (Figure 1).

The hypoglossal nerve was mobilized and elevated. Before entering the pharynx, a *videolaryngoscope* was introduced into the cancer infiltrated region, so as to enable the surgeon to judge on a TV screen the right place and distance from the tumor for appropriate access during pharyngotomy.

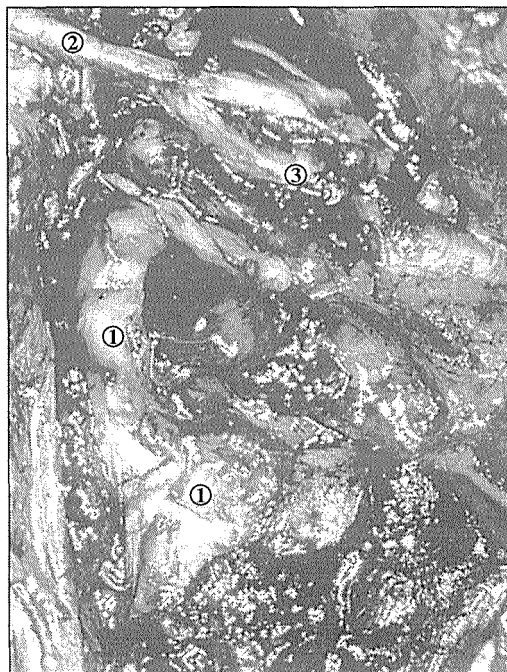


Figure 1. Access into the pharynx. Superior cornu and a piece of thyroid cartilage (1), hypoglossal nerve (2), lingual artery (3).

If the disease was not too extended - most of the early T1 cancers - the mobilized surrounding soft tissue was suitable for covering the defect. (Figures 2-3).

In cases of T2 cancers, a pectoralis maior (PM) myocutaneous flap was used for reconstruction. (Figures 4-5).

Seven patients with pathologically positive neck received postoperative radiotherapy.

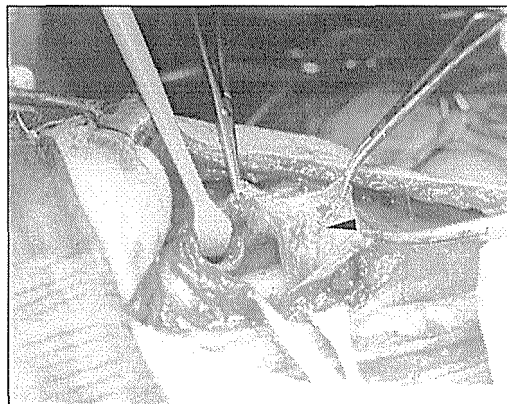


Figure 2. A small tumor of the lateral wall of pyriform sinus.

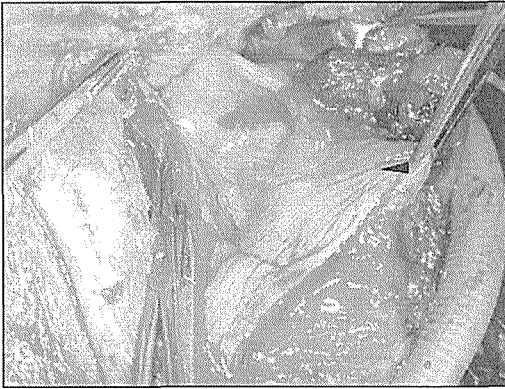


Figure 3. The mobilized pharyngeal mucosa.

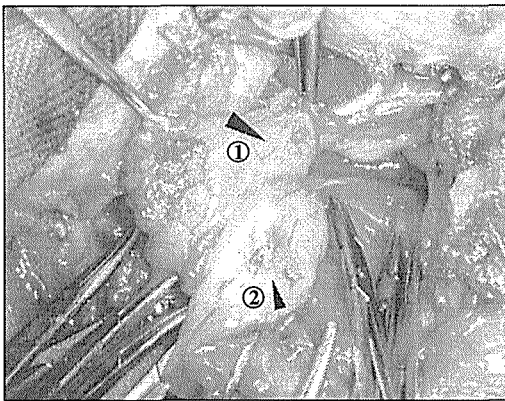


Figure 4. Double tumor: 1. on the pharyngeal wall, 2. on the lateral wall of pyriform fossa.

Results

All thirteen patients have been followed-up until death or for at least 2 years. Within the first two years, 4 patients died, 3 of them from recurrence above the clavicles, and one from an intercurrent disease. Nine patient (69.2%) were alive, 7 of them (53.8%) free of tumor. In one patient, radical surgery was carried out for local recurrence. In one case with no evidence of a primary tumor, occult neck metastases appeared, and RND was performed successfully. Eight of thirteen patients (61.5 %) survived the first two years tumor-free, with well functioning larynx, and one with total laryngectomy. There were no surgery-related deaths among operated patients, however *some complications* occurred in the postoperative period. In 3 cases, partial skin and soft tissue necrosis with pharyngocutaneous fistula developed. Fibrosis with pharyngeal stenosis caused delay in *per os* feeding in 2 cases.

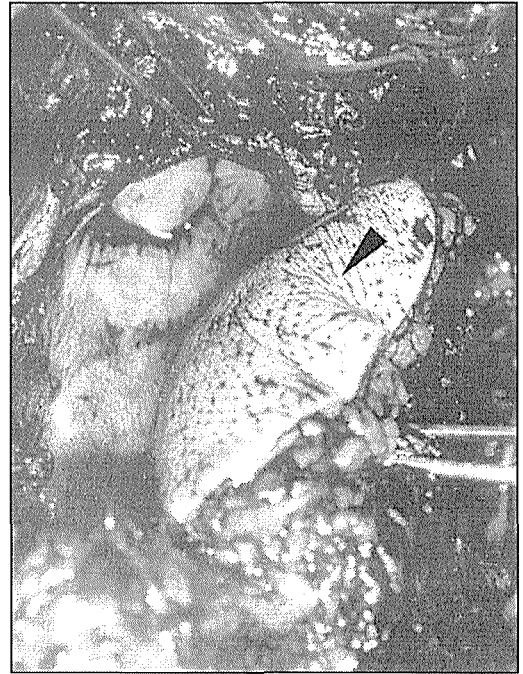


Figure 5. Reconstruction of a pharyngeal defect with a myocutaneous flap.

Bronchopneumonia in 1 patient caused postoperative difficulties. Two of our patients received preoperative radiotherapy (60 Gy) in some other institute. The surgical salvage was done after radiotherapy failure. Both of them had postoperative complications but have recovered within 4-5 weeks.

Discussion and conclusions

The hypopharyngeal tumors represent a specific entity of head and neck cancers. In this region there are no morphological barriers against the spread of disease. Because of the lack of symptoms at early stages of the disease, most cases are recognized as an advanced disease. In view of these facts, the indications for conservation surgery in cases of pyriform sinus tumors should be a very responsible decision, requiring careful examination and selection of patients, great experience and good surgical technique.

During a ten-year period, 179 patients with hypopharyngeal carcinoma were surgically treated at our department, but only 35 of them met the criteria for conservation surgery. Among them, in 13 cases vertical PLP was carried out. Eight patients sur-

vived the first two years free of disease. In one patient successful salvage surgery - total pharyngolaryngectomy - was carried out for local recurrence. 3 patients died from locoregional recurrences within the first two years.

In reviewing reliable reports - Fletcher, Jesse,⁸ Harrison,² Kirchner,⁹ Ogura et al.⁴ - two year cut-off period was chosen for analyzing the results, since in hypopharyngeal cancers a two-year interval seems to be sufficient for the evaluation of treatment effect.

The prerequisites for improving the survival rates and quality of life are as follows: early diagnosis, careful examination, - TNM staging, tailored and proper surgical procedures, reliable one-stage reconstruction, planned combined treatment with postoperative irradiation. We prefer surgery as primary treatment, because it reduces the rate of complications. Patients treated for hypopharyngeal cancer need a careful and long-term follow-up. In the first and second postoperative years, frequent endoscopic examinations are necessary for recognizing any residual or recurrent tumors. Preoperative radiotherapy does not represent a contraindication to later functional surgery.

According to the results presented by Leroux-Roberts,¹⁰ Marks et al.,¹¹ Ogura et al.,⁴ and according to our own experience, the conservation surgery for selected hypopharyngeal tumor patients is an effective procedure which ensures voice preservation and a better quality of life.

References

1. Marks SC, Lolachi CM, Shamsa F, Robinson K, Aref A. Outcome of pyriform sinus cancer. *Laryngoscope* 1996; **106**: 27-31.
2. Harrison DFN. Pathology of hypopharyngeal cancer in relation to surgical management. *J Laryngol Otol* 1970; **84**: 137-53.
3. Élő J, Balatoni Zs, Bártfai R. Prognostic features and therapy of hypopharyngeal carcinoma. *Otolaryngol (Prague)* 1995; **44**: 224-7.
4. Ogura JH, Marks JE, Freeman RB. Results of conservation surgery for cancers of the supraglottis and pyriform sinus. *Laryngoscope* 1980; **90**: 591-600.
5. Kleinsasser O. Tumoren des Larynx und der Hypopharynx. *Georg Thieme Verlag* 1988; Stuttgart-New-York.
6. Hooly R, Levine H, Flores TC., Wheeler T, Steiger E. Complications and prognostic index (PNI) in patients with stage III or stage IV disease. *Arch Otolaryngol* 1983; **109**: 83-5.
7. *TNM classification of malignant tumors*. Fourth edition, Berlin: Springer Verlag, 1987.
8. Fletcher GH, Jesse RH. The place of irradiation in the management of the primary lesion in head and neck cancers. *Cancer* 1977; **39**: 862-77.
9. Kirchner JA, Owen JR. Five hundred cancers of larynx and pyriform sinus. Results of treatment by radiation and surgery. *Laryngoscope* 1977; **87**: 1288-303.
10. Leroux-Robert J. Indication for radical surgery, partial surgery, radiotherapy and combined surgery and radiotherapy for cancer of the larynx and hypopharynx. *Ann Otol Rhinol and Laryngol* 1956; **65**: 137-53.
11. Marks JE, Kurnik B, Powers WE, Ogura JH. Carcinoma of the pyriform sinus. *Cancer* 1978; **41**: 1008-15.