Quality of Life and Patterns of Recurrence Following Transhiatal Esophagectomy for Cancer: Results of a Prospective Follow-up in 50 Patients

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A prospective follow-up was performed in 50 consecutive patients who had previously undergone transhiatal esophagectomy without thoracotomy (THE) for esophageal carcinoma. The follow-up period ranged from 1 to 5 years (mean, 18.4 months). At each control, a clinical, laboratory, and radiologic examination including barium esophagography and computed tomographic (CT) scan was obtained in order to assess quality of life and to detect tumor recurrence.

Twenty-three patients (46%) developed recurrent carcinoma, all but one within 12 months of surgery. The survival rates were 57% at 1 year, 34% at 2 years, and 23% at 3 years. The median survival time was 15.7 months. Recurrence was initially confined to the mediastinum in 50% of patients, whereas 50% already had systemic metastases when recurrence was first detected.

Radiologic examinations, especially CT, were far more sensitive in detecting tumor recurrence than was the clinical evaluation, thus, offering the chance to initiate an appropriate adjuvant therapy at the earliest possible time. Stage I and stage II tumors as well as differentiated tumors showed a significantly lower recurrence rate than tumors of stages III and IV and low-grade tumors. THE offers good quality of life in virtually all patients and is able to restore a normal food intake in all but a few patients. Due to the high rate of local tumor recurrence, it is suggested that THE should probably be reserved for poor-risk patients whereas good-risk patients with limited disease would profit from a thoracoabdominal esophagectomy with lymph node dissection.

Esophageal carcinoma is usually diagnosed when symptoms of malignant stenosis appear, which implies advanced disease with a poor prognosis [1]. In the majority of patients, the goal of surgery is, therefore, palliation with restoration of normal swallowing and good quality of life in the remaining life span. Transhiatal esophagectomy without thoracotomy has been shown to carry less mortality than the traditional thoracoabdominal esophagectomy, provided that patients are selected properly [2, 3, and see previous article by Barbier et al. in this issue]. Palliative treatment is possible at an acceptable surgical risk without precluding curative resection in limited disease, however, the transhiatal approach does not allow mediastinal lymphadenectomy. Mediastinal tumor recurrence must, thus, be expected to occur frequently after transhiatal esophagectomy.

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The purpose of this prospective study was to assess quality of life following transhiatal esophagectomy, to establish the value of diagnostic tests in detecting tumor recurrence, and to determine the site and time at which recurrence first appears, thus, allowing an early palliative adjuvant therapy. Until today, there is no prospective information available in the literature concerning these points.

Material and Methods

Definitions

1. THE: Transhiatal esophagectomy without thoracotomy with gastric interposition through the posterior mediastinum and cervical esophagogastric anastomosis.
2. Local recurrence: Convincing evidence of recurrence of cancer at the site of the anastomosis, in the interposed stomach, in the region of the primary tumor site and/or in the mediastinal lymph nodes.
3. Systemic recurrence: Evidence of recurrence of cancer as distant (abdominal and cervical) lymph node metastases, peritoneal or systemic (liver, lung, other sites) secondaries.
4. Tumor-free interval: Time between operation and first detection of a tumor recurrence at follow-up.
5. Symptom-free interval: Time between operation and first noted symptoms of recurrent tumor.

The prospective follow-up was started in 1981. The clinical course of 53 patients (46 males and 7 females) between the ages of 41 and 83 years (mean age, 65 years), all of whom had undergone THE for esophageal malignancy, was followed from the time of operation until death or writing this article. The follow-up period ranged from 1 to 5 years (mean, 18.4 months). One patient died intraoperatively from irreversible cardiac arrest (operative mortality 2%). Of the survivors, 2 patients have been lost to follow-up. The remaining 50 patients (94.3%) were included in the study. All tumors were classified according to the TNM classification of malignant tumors of the UICC [4].

The upper thoracic esophagus was involved in 15 cases, the middle thoracic esophagus in 19, and the lower esophagus in 23. Eight tumors were situated in 2 different regions. Histologi-
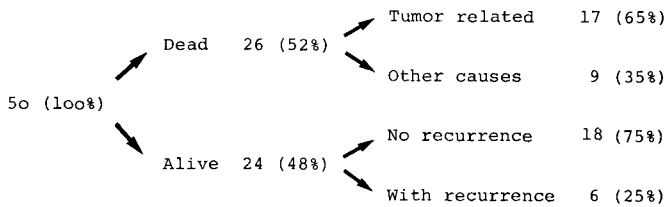
Fig. 1. Complete follow-up of 50 patients after THE (mean observation time, 18.4 months).

Fig. 2. The actuarial survival curve of 50 consecutive patients undergoing THE for cancer (median survival time, 15.7 months).

cally, 24 (48%) lesions were squamous cell carcinomas, 22 (44%) were adenocarcinomas, and 4 (8%) were classified as: 2 undifferentiated carcinoma, 1 verucous carcinoma, and 1 carcinosarcoma.

Adenocarcinoma of the gastroesophageal junction was considered esophageal carcinoma when two-thirds or more of the longitudinal tumor extension was situated in the esophagus. Otherwise, the tumor was considered to be gastric carcinoma, and the patient was excluded from the study. According to the prognostic stages, 11 patients (22%) were stage I and II, 24 (48%) were stage III, and 15 (30%) were stage IV. The tumor cells were classified according to their degree of differentiation in grade: I = well differentiated (23%), grade II = moderately differentiated (30%), and grade III = poorly differentiated (47%). When, in a given lesion, unequal appearances were found, the most grave form was chosen for the tumor grading.

Following discharge from the hospital, patients were seen at 3-month intervals during the first and second years, at 6-month intervals in the third year, and yearly thereafter. At each control, a complete history was taken and a physical examination was carried out by an independent associate, not involved in surgery.

Laboratory determinations included full blood count, liver function tests, electrolytes, serum proteins, and carcinoembryonic antigen (CEA). A chest radiograph, a double contrast barium examination, and a thoracoabdominal CT scan were obtained at each follow-up. Additional studies, including upper gastrointestinal endoscopy, fine-needle aspiration, lymph node excision, or abdominal exploration were ordered as indicated.

Quality of life was assessed at each follow-up using a modified Visick classification [5]. Any complaints, physical performance, resumption of previous work, ability to enjoy leisure activities, nutritional habits, weight loss, dysphagia, regurgitation, and bowel habits were carefully noted. Subjective well-being was assessed by the patient. According to a scoring system, the patients were classified into 4 grades: grade I (excellent result, no symptoms), grade II (good result, mild treatable symptoms), grade III (satisfactory result, mild untreatable symptom), and grade IV (bad result, persistent untreatable symptoms). In patients with recurrent tumor only, the symptom-free interval was considered for the assessment of quality of life. All patients were instructed to return immediately if any degree of cervical dysphagia occurred after discharge. In all these cases, endoscopy with biopsy and dilatation of the anastomosis, if necessary, were performed.

Recurrent local or systemic tumors were documented histologically, whenever possible, or by serial radiologic follow-up. Radiologically, the diagnosis of recurrence was made when there was a new or progressive soft tissue mass in comparison
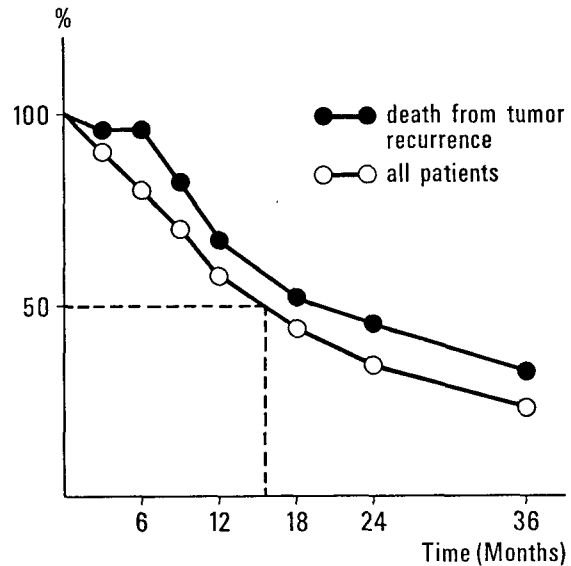
with previous examinations. The tumor-free and symptom-free intervals as well as survival time were documented. In patients with tumor recurrence, a palliative treatment was initiated. In patients with local recurrence of squamous cell carcinoma and adenocarcinoma, radiotherapy (40–52 Gy) was performed. In patients with systemic secondaries of adenocarcinoma, chemotherapy was initiated whereas, in patients with systemic recurrence of squamous cell carcinoma, no palliative measures were performed.

For statistical analysis, the chi-square test and paired t-test were used with 5% confidence limits. Survival time was assessed according to the actuarial method.

Results

Of the 50 patients, 24 (48%) were alive at the time of writing this article. Eighteen had no evidence of tumor recurrence whereas 6 lived with recurrent tumor. Of the 26 patients (52%) who died in the follow-up period, 17 (65%) succumbed to their tumor disease whereas 9 (35%) died of a tumor-unrelated affection without evidence of tumor recurrence: myocardial infarction, 3; pulmonary embolism, 2; liver failure due to cirrhosis, 2; cerebrovascular accident, 1; and road traffic accident, 1 (Fig. 1). The overall survival curve is shown in Fig. 2. The survival rates are 57% at 1 year, 34% at 2 years, and 23% at 3 years. The median survival time was 15.7 months. Statistically, there were no significant differences in survival among the patients operated on for adenocarcinoma or squamous cell carcinoma.

Late Complications

Table 1 shows that 14 (28%) of 50 patients developed a fibrous anastomotic stenosis, all of them within 3 months postoperatively. In 8 patients (57%), dysphagia could be released definitively by 1–3 dilatations. Four patients (29%) required 4–6 dilatations and only 2 patients (14%) necessitated repeated

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Table 1. Late complications after THE (n = 50 patients).

Complications	No. of patients (%)
Anastomotic stenosis	14 (28)
Postprandial diarrhea	4 (8)
Regurgitation	3 (6)
Herniation through the hiatus	3 (6)

Table 2. Detectability of recurrence in 23 patients by different methods at time of initial diagnosis.

Method	True-positive (%)
Clinical control	7 (32)
Chest radiographs	2 (9)
Barium esophagography	10 (27)
CT scan	18 (82)

Table 3. Site of initial tumor recurrence in 23 patients.

Site of recurrence	No. of patients (%)
Local alone	12 (52)
Local with distant metastases	8 (35)
Distant metastases alone	3 (13)

regular bouginage in order to improve dysphagia and to render possible a normal food intake. Postprandial diarrhea was observed in 4 patients (8%) in the first 5 months after THE, but resolved spontaneously in all of them. Three patients (6%) initially suffered from intermittent regurgitation, especially at night and when bending forward after meals. Aspiration pneumonitis was observed in 1 of these patients. Regurgitation could be released by conservative measures in all cases. In 3 patients (6%), diaphragmatic herniation of the small bowel through the hiatus was detected in the late postoperative period at a routine follow-up of 3, 9, and 12 months postoperatively. No treatment was necessary in these patients.

Tumor Recurrence

A tumor recurrence has been found in 23 patients (46%) and was confirmed histologically in 14 (61%) of 23: endoscopic biopsy, 6; cervical lymph node biopsy, 2; skin biopsy, 1; operation, 1; fine-needle cytology, 1; and autopsy, 3. In the remaining 9 patients (39%), tumor recurrence was assessed by serial radiologic follow-up. The manifestations of recurrence on follow-up examinations are given in Table 2. CT was the most useful test in detecting early neoplastic recurrence. In all but 1 patient (95.7%), tumor recurrence was detected within 12 months of surgery, the minimum follow-up in this study.

In about half of the patients with recurrence, the detected lesions were initially confined to the mediastinum whereas, in the other half, distant metastases were already present when recurrence was first detected (Table 3). In only 3 patients (13%), was recurrence localized in the interposed stomach, resulting in dysphagia by occlusion of the gastric tube in 2 of the 3. In none of the cases was the cervical anastomosis the initial site of neoplastic recurrence. In 2 patients, mediastinal recurrence resulted in secondary neoplastic involvement of the interposed stomach with dysphagia. In one of these patients, an intraluminal tumor mass causing severe obstruction was eradicated by laser photocavitation.

Tumor recurrence was influenced by the tumor stage and the degree of differentiation of the tumor (Table 4). The recurrence rate of stage I/II tumors was statistically significantly lower than those of stage III and stage IV tumors ($p < 0.05$). Well-differentiated tumors of any stage were followed less frequently by neoplastic recurrence when compared with moderately and poorly differentiated ones ($p < 0.05$). A raise in the CEA levels was detected at follow-up in 12 patients with recurrent tumor (52%). The elevation of the CEA was, however, never the hint that there was a tumor recurrence. Recurrence was detected earlier in all these cases by other follow-up examinations.

Fig. 3 shows the grading of all patients at each 3-month follow-up examination. At 6 months, 43% of patients had excellent results; 41%, good; 16%, satisfactory; and none had

bad results. At 12 months, the percentages were 65%, 19%, 14%, and 5%, respectively. The intercurrent deaths and occurrence of symptoms of recurrent tumor—suspension of grading—account for the fact that the number of patients is decreasing from follow-up to follow-up. This graph indicates that the number of grade I patients (symptom-free group) is continuously increasing.

All but 6 patients (88%) designated their quality of life as being good when compared with the preoperative situation. Ninety-four percent of patients have been able to eat regular, unrestricted diets; however, initially, several meals per day were necessary to achieve adequate nutrition. Comparison of the tumor-free interval and the symptom-free interval revealed that the symptom-free interval exceeds the tumor-free interval in 70% of patients. The tumor-free interval ranged from 3 to 14 months (mean, 5.13 months), the symptom-free interval from 3 to 38 months (mean, 9.83 months; $p < 0.05$). The interval from the onset of symptoms until death was short (mean, 2.1 months).

Discussion

Currently, the only statistics ever reported on the results of surgical treatment of esophageal carcinoma are operative mortality and the duration of survival [1, 6–9] With an overall mortality rate up to 30% and a mean 5-year survival rate not exceeding 15–20%, the prognosis of esophageal cancer remains poor [1, 7, 9]. Radiotherapy has failed to eliminate tumor extensions to vital structures and chemotherapy has failed to control distant metastases [10–13]. In the majority of cases, therefore, surgical treatment of esophageal carcinoma can only be regarded as palliative. To the often palliatively treated patient, however, the quality of survival is of much greater importance than the duration. Attention must, therefore, be focused on the improvement of quality of life following what can only be regarded as palliative surgery in many cases. The aims of every treatment should therefore be: (a) Reduction of the high mortality rate, the complication rate, and the duration of postoperative hospitalization; (b) Relief of dysphagia and restoration of normal swallowing and oral food intake; (c) Ability to remain at home in comfort without major complaints, restoring physical performance, and, ultimately, the opportunity to die with dignity.

Table 4. Correlation between tumor stage/degree of tumor differentiation and tumor recurrence.

| Tumor stage | n | % | Tumor differentiation (%) | | | Recurrence (%) |
			Well	Moderate	Poor	
I/II	11	22	64	9	27	1 (9)
III	24	48	17	37	46	11 (46)
IV	15	30	7	33	60	11 (73)
Total	50	100	23	30	47	23 (46)
Recurrence			25	40	58	

I/II versus III, $p < 0.05$; I/II versus IV, $p < 0.05$; III versus IV, not significant; well versus moderate, $p < 0.05$; well versus poor, $p < 0.05$; moderate versus poor, not significant.
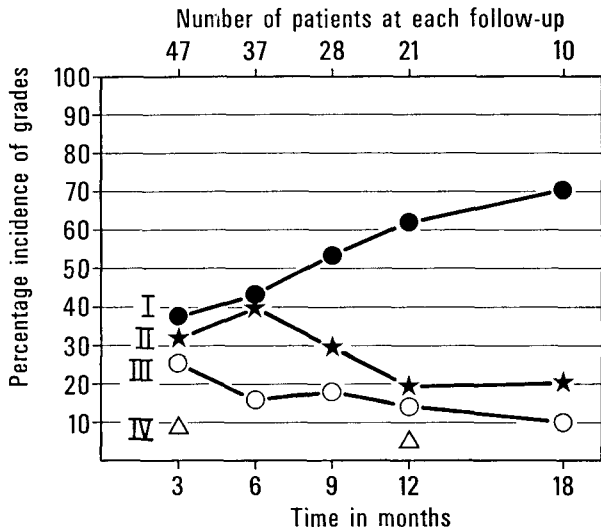
Fig. 3. Grading of patients at follow-up according to their quality of life. Grade I = excellent result, no symptoms; grade II = good result, mild treatable symptoms; grade III = satisfactory result, mild untreatable symptoms; grade IV = bad result, persistent untreatable symptoms.

As reported in the literature, THE carries a low rate of mortality of 2–6% and an acceptable complication rate [2, and see previous article by Barbier et al. in this issue]. Although the absolute number of postoperative complications is high, the relative significance of these complications is trifling. The most frequent complications consist of laceration of the mediastinal pleura and minor pleural effusions [2, and see previous article by Barbier et al. in this issue], easily treatable by insertion of a chest tube and physiotherapy, respectively.

The development of a benign cervical anastomotic stenosis is frequent [2]—28% in our series—and is closely correlated with a previous anastomotic leakage ($p < 0.01$); however, outpatient dilatation relieves dysphagia definitively in the vast majority of patients. The ability to swallow normally after surgery far outweighs the minor annoyance of an occasional dilatation. Recurrent dysphagia later than 3 months postoperatively is very suspicious for a malignant obstruction due to compression or infiltration of the interposed stomach and, therefore, requires endoscopic control. Regurgitation was not a major problem following THE and could be easily managed by conservative measures.

The grading of all patients to their complaints and symptoms

at each follow-up was very useful in establishing the value of THE to offer good quality of life. The grading was not performed by the surgeon "because it is impossible to avoid the bias of enthusiasm and some patients fail to declare their symptoms for fear of disappointing their surgeon" [5]. The grading was stopped at the moment when symptoms of the recurrent tumor occurred because advanced and progressive tumor disease resulted in a significant restriction in quality of life in the remaining life span and, therefore, would not have been representative in assessing quality of life following THE. The interval between the occurrence of symptoms of the recurrent tumor and death is, however, short (mean, 2.1 weeks) in contrast to the symptom-free interval (mean, 8.96 month). There is improvement rather than deterioration of results with the passage of time, for the proportion of symptom-free patients increased from 41% at 6 months to 62% at 12 months. The results are not static due to the fact that, at each control, alterations in the grading score have occurred. Concerning quality of life, it is of special interest that the symptom-free interval is significantly longer than the tumor-free interval, thus, offering a further asymptomatic period despite existing progressive disease.

Radiological examinations, especially CT, were far more sensitive in detecting tumor recurrence than clinical parameters. Laboratory determinations, including CEA levels, were of little help in diagnosing tumor recurrence.

In only 4 of 23 patients, recurrent tumor finally resulted in impaired swallowing due to infiltration or compression of the interposed stomach by neoplastic tissue. It is noteworthy that, of the 20 patients with mediastinal tumor recurrence, a subsequent obstruction of the interposed stomach was observed in only 2. To prevent an obstruction of the interposed mediastinal stomach by the local recurrent tumor, it was recommended in the literature to choose the retrosternal route for stomach interposition [14], however, a true compression of the interposed stomach could be observed in only few patients. The majority of patients died of advanced widespread tumor disease long before the large-capacity stomach could be so compressed by the local tumor progression that obstruction occurred. The general use of the retrosternal route for stomach interposition, therefore, does not seem to be justified.

The disadvantage of THE is the lack of a formal lymph node dissection in the mediastinum. The reported survival rates, however, correspond to the data of other series of standard or even "radical" esophagectomy in non-Oriental patients [6, 7, 9]. The rate of local tumor recurrence following THE is high (87% of all recurrences), probably due to neoplastic tissue left

behind in the mediastinum. Esophagectomy with formal lymph node dissection would possibly have prevented some of the local recurrences, however, a more radical approach increases the operative mortality and, therefore, decreases the number of patients who would have survived THE and would have enjoyed a further life span without complaints. In contrast, it is doubtful whether patients with systemic secondaries would have been treatable curatively, even by radical esophagectomy.

Conclusions

THE offers good quality of life in all but a few patients with a low operative mortality rate and an acceptable morbidity rate. The late complications consist mainly of an anastomotic stenosis that is easily controlled by outpatient dilatation. In contrast to some apprehensions reported in the literature, THE is not exclusively a palliative operation but offers cure in patients with limited disease.

Radiologic examinations, especially CT, are far more sensitive in detecting tumor recurrence than clinical examination, thus, offering the chance to initiate palliative treatment at the earliest possible time. Tumor recurrence is most frequently seen in the form of local mediastinal tumor recurrence, however, a compression of the interposed stomach is rarely a problem. The symptom-free interval is significantly longer than the tumor-free interval, thus, allowing the patients to stay asymptomatic for further months despite recurrent progressive tumor.

The controversy whether THE or thoracoabdominal esophagectomy with lymph node dissection is appropriate should be the subject of further prospective studies. It is suggested that good-risk patients might profit from a more radical operation that probably offers better long-term survival by diminishing local tumor recurrence whereas poor-risk patients could be treated by THE, which is physically less insulting.

Résumé

Une étude prospective du suivi d'une série de 50 malades qui avaient subi une oesophagectomie par voie trans-hiatale pour cancer de l'oesophage a été conduite. La durée de la période post-opératoire étudiée est allée de 1 an à 5 ans (moyenne, 18.4 mois). A chaque contrôle un examen clinique, biologique, radiologique comprenant une oesophagogastrophie barytée et une tomodensitométrie a été pratiquée pour apprécier la qualité de la vie et déceler une récidive tumorale.

Chez 23 opérés (46%) une récidive néoplasique s'est développée au cours de la première année (exception de 1 cas). Les taux de survie ont été de 57% à 1 an, de 34% à 2 ans, et de 23% à 3 ans. La médiane du temps de survie a été de 15.7 mois. Chez 50% des malades la récidive concernait seulement le médiastin mais chez 50% elle s'accompagnait de métastases diffuses.

L'exploration radiologique, en particulier la tomodensitométrie, a été plus efficace dans la découverte de la récidive que la clinique, la méthode permettant ainsi d'entreprendre au plus tôt un traitement complémentaire. Les tumeurs de stade I et de stade II ainsi que les tumeurs bien différenciées ont été affectées d'un taux de récidive plus bas que celui des tumeurs de stade III et de stade IV et des tumeurs peu différenciées. L'oesophagectomie par voie hiatale offre une bonne qualité de vie chez presque tous les opérés et permet la reprise de l'alimentation chez la majorité d'entre eux; cependant le taux élevé des récidives implique qu'elle doive être réservée aux malades à haut risque alors que les sujets à bon risque atteint d'une lésion limitée doivent bénéficier d'une oesophagectomie par voie thoraco-abdominale qui permet la dissection lymphatique.

Resumen

Se realizó un seguimiento prospectivo en 50 pacientes consecutivos que habían sido previamente sometidos a esofagectomía transhiatal sin toracotomía (ETH) por carcinoma esofágico. El período de siguimiento osciló entre 1 y 5 años (promedio 18.4 meses). En cada visita de control se realizó un examen clínico, de laboratorio, y radiológico, incluyendo esofagografía con bario y tomografía computadorizada, con el fín de determinar la calidad de la vida y detectar recurrencia tumoral.

Veintitrés pacientes (46%) desarrollaron carcinoma recurrente, todos menos 1 en los 12 meses siguientes a la cirugía. Las tasas de supervivencia fueron 57% a un año, 34% a 2 años, y 23% a 3 años. El tiempo medio de supervivencia fué 15.7 meses. La recurrencia tumoral fué inicialmente confinada al mediastino en 50% de los pacientes, en tanto que 50% tenían ya metástasis sistémicas cuando la recurrencia fué detectada.

Los examenes radiológicos, especialmente la tomografía computadorizada, fueron bastante más sensitivos en la detección de la recurrencia tumoral que la evaluación clínica, con lo cual se facilitó la iniciación de terapia adyuvante apropiada en el menor tiempo posible. Los tumores en estados I y II, así como los tumores bien diferenciados, exhibieron una tasa de recurrencia significativamente menor que las de los tumores en estados III y IV y los tumores de bajo grado. La ETH provee una buena calidad de vida en virtualmente la totalidad de los pacientes y logra la restauración de la ingesta normal de alimentos en casi todos los pacientes. Teniendo en cuenta la elevada tasa de recurrencia tumoral local se sugiere que la ETH probablemente debe ser reservada para pacientes de mal riesgo y que los pacientes de buen riesgo y con enfermedad limitada se benefician con una esofagectomía toracoabdominal con disección ganglionar.

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Invited Commentary

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The main purpose of the prospective study presented by Barbier and associates was to assess quality of life following transhiatal esophagectomy (THE) in patients with esophageal cancer; however, they have made a very important contribution to the results of surgical treatment of this severe disease.

Surgical treatment of esophageal cancer still comprises many controversies. The decision made by the surgeon concerning the choice of the technique for each particular patient depends basically on the preoperative staging of the disease and the surgical risk of the patient.

During the last decade, the use of THE was received with enthusiasm by surgeons, including our group [1], because of the disappointing immediate and late results obtained with conventional surgical treatment. It should be mentioned, however, that the results recently reported by various surgeons are not in complete agreement regarding morbidity and mortality or radicality of THE [2–5, and see previous article by Barbier et al. in this issue].

Barbier and co-workers stress the fact that, after THE, the incidence of local tumor recurrence is high (40%). This is due to tumor tissue remaining in the mediastinum as a consequence of the technique used. They recognize that some of these recurrences should have been avoided by using esophagectomy together with radical lymphadenectomy via a transpleural approach, however, they argue that radical resection has a higher operative mortality, hence, a greater number of operated patients would be prevented from enjoying a longer life span.

Until now, it remained to be seen if the late survival rate after THE for cancer of the esophagus would be similar to the rates obtained by supposedly radical resection via a transpleural approach. This attaches even more relevance to Barbier and co-workers' report, for they followed up 50 patients for a period ranging from 1 to 5 years (mean, 18.4 months).

Skinner [6], attempting to improve the late results of surgical management of cancer of the intrathoracic esophagus, described the "en bloc" radical transpleural esophagectomy (RTE). According to Skinner and co-workers [7], "en bloc" resection would be adequate for those patients with cancer of the esophagus expected to have longer survival. The mortality rate associated with this procedure was 10% [7]. Considering that the 30 cases managed by Skinner and co-workers [7]

employing RTE had preoperative staging similar to the patients in this report by Barbier et al., survival of patients operated on by RTE was, however, clearly superior to those reported by Barbier and co-workers submitted to THE (Table 1). Otherwise, considering patients in stage I and II, the 5-year survival rates following RTE were almost 60% and 35%, respectively [7]. Based on the referred results [7], one can conclude that, in cases of limited disease, wider resection and more extensive lymphadenectomy play an important role in the improvement of survival rate.

Until now, the data in the literature and those of the present article by Barbier and associates have apparently discouraged the use of THE for treatment of esophageal cancer, except for palliation. Studies including a large number of patients and, therefore, probably being multicenter studies, would contribute to the definition of morbidity, mortality, and survival rates resulting from the use of different surgical procedures. Trials should be performed with comparable groups of patients regarding histologic type, staging, and clinical characteristics of the disease in order to establish more precise criteria so that the future choice of surgical management could be more adequate for each particular case of esophageal cancer.

One of the purposes of the present report of Barbier et al. was to show the value of diagnostic tests in detecting tumor recurrence, resulting in beginning adjuvant therapy earlier. Their objective was brilliantly attained, particularly due to computed tomography—a method of great value in the preoperatory staging of esophageal cancer as well [7, 8]. It was possible for Barbier and co-workers to prove recurrence within a mean interval of 8.9 months before the appearance of symptoms, however, this had no real influence on the final result. The introduction of additional therapy did not alter the fact that, 15.7 months postoperatively, about 50% of the patients had already succumbed; the 3-year survival rate was 23%. In this aspect, the results of Barbier and co-workers reinforce the reports that adjuvant chemo- and/or radiotherapy have not

Table 1. Surgical treatment of esophageal cancer. Results of 2 techniques: With and without thoracotomy.

Technique	Operative mortality (%)	Complications (%)	Median survival time (mo)	Survival rate at 3 years (%)
THE (50 cases)	2	60	15.7	23
RTE (30 cases)	10	43	20	28

THE: Transhiatal esophagectomy (see 2 articles in this issue by Barbier et al.), RTE: Radical "en bloc" transpleural esophagectomy (Skinner and co-workers, 1986).