Palliative Procedures for the Treatment of Carcinoma of the Esophagus

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Not too many years ago, it was predicted that the esophagus would never yield to surgical attack. Development of improved technics in thoracic surgery and related specialties has made possible the resection of the esophagus with decreasing rates of mortality and morbidity. A state of optimism then arose in association with treatment of cancer of the esophagus. Surgeons have been developing more extensive procedures for managing the more advanced forms of cancer. Longer lengths of the esophagus can be resected successfully now. The structures within the mediastinum are involved by carcinoma early; although the esophagus may be resected, the related structures cannot be.

Surgical technics now make possible the resection of any portion of the esophagus and the re-establishment of continuity at any level in the thorax or cervical region by anastomosing either the mobilized stomach, jejunum, or colon to the proximal esophageal segment. The reconstructed esophagus may be placed in either the old esophageal bed, the right or left pleural cavity, the anterior mediastinum, or in the subcutaneous tissue of the chest.

Results in the treatment of carcinoma of the esophagus by surgery and by other means have been discouraging. However, there have been enough cures or long-term survivals to give hope to the patient and doctor. When the esophageal growth appears resectable and the patient's physical condition adequate, the patient should be offered surgical therapy. This does not mean though that the surgeon is to make an heroic effort to resect a non-resectable lesion or to do a more extensive procedure than the physical status of the patient can tolerate or the end result can justify.

In a few patients at the time of the clinical work-up, and in many patients at the time of exploration, it is discovered that the lesion in its entirety cannot be resected. For this clinical group many surgeons yet will advocate resective surgery with removal of as much of the tumor as possible. For a large percentage of these cases, there are indications that the same results can be obtained with procedures of lesser surgical magnitude. Also, there are many patients who, because of unrelated diseases in other organs, are unable to tolerate major degrees of surgical trauma.

In any case, the surgeon is confronted with the responsibility of re-establishing or maintaining the oral intake of food and water. There are today palliative technics of varying degrees of surgical magnitude

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for restoring or preserving the patency of the esophagus. There is little excuse for refusing a patient one of these latter procedures which have a comparatively low incidence of mortality and morbidity.

These procedures can be used as a final therapeutic agent or as a preliminary stage of a more radical approach:

1. Gastrostomy or Jejunostomy:
   Used as a palliative measure in a patient with a non-resectable esophageal lesion, gastrostomy or jejunostomy prevents starvation only. There is a relatively high postoperative mortality associated with these procedures. Obstruction is not relieved; the source of pain is not removed, nor is prevented the accumulation of the troublesome pharyngoesophageal secretions which continue to be aspirated into the tracheobronchial tree, preventing comfort or sleep. Gastrostomy feedings have a demoralizing effect upon the patient. There is an indication for a gastrostomy or jejunostomy only in the patient who cannot tolerate a more extensive surgical procedure and at the same time has such a severe curvature of the spine that endoscopy cannot be carried out.

   As a pre-resective measure, gastrostomy or jejunostomy cannot be considered effective procedures for getting a patient in better nutritional status.

   In conjunction with retrograde dilatations with Tucker bougies during and following deep therapy, there may be an indication for a Spivack gastrostomy. In post-irradiation patients, it is possible that the lumen could be maintained by this method in a large percentage of the cases of the more stenosing, fibrous lesions.

II. Endoscopy and Dilatations:

   Esophagoscopy and gentle, careful dilation of the obstructed lesions with one of the various types of dilators can produce immediate relief. This procedure has less associated risk than a resection, particularly a high resection in an emaciated, dehydrated patient. Vinson reports a perforation rate of only 1 per cent.

   It seems unfortunate that many thoracic surgeons, for various reasons, themselves do not perform esophagogoscopies or dilate carcinomatous lesions. It would seem that the same surgeon, at the time of esophagoscopy or at the time of thoracotomy, weighing the indications for the procedures and the risks of mortality, would rather accurately evaluate the situation into which he would be placing himself.

   Dilatations should be used more often for the purpose of getting a patient with an obstruction in good physical condition for surgery. If a repeat esophagoscopy is necessary, a catheter may be passed into the stomach for feeding purposes. Gastrostomies can be avoided except in rare cases.

   There is an indication for dilatation also in those patients who are considered candidates for irradiation therapy. Adequate roentgen therapy in poor risk patients has an associated high mortality. The use of a catheter for a few days following dilatation will prevent re-obstruction
by the tumor or by temporary congestion and edema which could be expected to take place at the site of irradiation. In the case of partial obstruction, a thread can be left in the lumen at the time of dilatation to act as a guide for subsequent dilatations should deep therapy produce post-irradiation swelling.

Esophagoscopy with dilatation often can maintain an opening in a post-irradiation case. I have used the Hurst mercury bougie for this in some cases, and, in others, the esophagoscope with Jackson dilators. The method of anchoring a silk thread in the intestine and passing threaded dilators along this guide has been used by Vinson. Dilatation therapy for lesions immediately adjacent to the left bronchus or the aortic arch should not be used, because of the possibility of producing bronchial or aortic fistula. Palmer cautions against using a larger dilator than the number 18 French bougie, while Vinson has used a number 40 French bougie.

III. Intubation:

Carter Symonds was the first to intubate the esophagus, using a gum-elastic tube. In 1927, Souttar reported an improved tube for this purpose which consists of a close spiral of German silver wire. The proximal end of this tube has a collar which tends to prevent its onward passage. Its flexibility enables it to conform to the lumen of the esophagus. Allison and Borrie, who re-evaluated this method in 1949, considered the Souttar tube still of usefulness in selected cases. In 1949, Brown reported on the use of a silver tube which he had inserted orally into the esophagus. Ravitch has reported a case in which, following an exploration of a non-resectable lesion, a plastic tube was inserted orally through the stricture before the chest was closed. In selected cases intubation can afford many months of relief for the patient before distant metastasis or complications prove fatal.

IV. Local Excision of the Obstructive Growth and Bridging of the Defect with a Prosthesis:

In 1922, Neuhof and Ziegler performed in experimental animals a two-stage procedure which consisted, in the first step, of packing off a local area of the esophagus to produce a granulation tissue barrier. At a second stage, the esophagus was resected and the defect bridged with a rubber tube. Berman, since that time, has modified this work by performing a local excision of the esophagus and immediately bridging the defect by using a flanged, flexible polyethylene tube. This technic has been used in a small group of patients with favorable results.

It would seem that indications for this procedure could be found in the following instances: at the time of exploration, when the lesion is found to be non-resectable; in the case of the patient with low surgical reserve; and, during surgery, should situations arise that make it unlikely that the patient can withstand a continuation of extensive resection.

V. Shunting Techniques:

Non-resectable lesions of the lower esophagus can be by-passed readily by severing the esophagus above the lesion and carefully closing the distal
end. The proximal end can then be anastomosed, less often to a loop of the jejunum, and more often to a Roux-Y segment, which can be brought up through the diaphragm and lateral to the esophageal opening. Non-resectable lesions at higher levels can be treated similarly by primary anastomosis with a longer Roux-Y segment. An alternative is Yudin’s technic of bringing the jejunum through a subcutaneous tunnel to the cervical esophagus and performing the anastomosis at a second stage.

VI. **Irradiation Therapy:**

Irradiation therapy can be given by radium bougie, direct implantation of radioactive material, or deep irradiation using various voltages and technics. Discouraging surgical results, particularly in the experience with the high thoracic and cervical lesions, are forcing a re-evaluation of irradiation therapy. There are two facts concerning irradiation that are worth remembering: 1) Following therapy many patients rapidly recover ability to swallow. This recovery often remains for the duration of the illness, although death occurs from extension of the tumor. 2) Following therapy death frequently occurs from perforation of the esophagus either into the mediastinum, pleural cavity or aorta. Autopsy in such cases has revealed no evidence of residual carcinoma. These facts suggest certain therapeutic possibilities:

Used as a preoperative measure, short periods of deep therapy will relieve obstruction and clear up much of the sloughing, ulcerating and infected tumor. Having had a period in which there could be normal oral intake of food and fluids, a patient could come to surgery in good nutritional and mental balance. I have had two patients who received preoperative irradiation therapy. Both underwent palliative intrathoracic esophagogastrostomy. There is no question that their preoperative condition was greatly improved by irradiation, and I do not believe that the dissection was more difficult because of it.

The idea of resection and postoperative deep therapy has been suggested by others, and a controlled series should be evaluated.

As a curative or palliative method, several technics for administering irradiation have been suggested:

In Denmark, where little esophageal surgery is done, Neilson advocates the technic by which the patient is placed on a special stool and rotated with the esophagus as the axis of rotation. Rotation takes place at right angles to the field of irradiation, in order that the maximum dosage is delivered to the tumor with a minimal dosage to the skin. Twenty-five per cent of his cases were alive at the end of one year, and 15 per cent, at the end of two years. Sweet’s surgical series, which may be more selective, reveals 42 per cent alive at one year, and 34 per cent, at two years.

In this country the multiple-port method for irradiating esophageal lesions has produced comparative results.

Negus has used a local irradiation technic. Using the esophagoscope, he gently dilates the lesion with a bougie and measures the exact length of the tumor mass. Radium or radon seeds are secured at one-centimeter intervals along a small rubber or plastic tube that projects one centimeter...
beyond either end of the growth. Three to four of these tubes are inserted and left for a period of approximately 10 days. It would be interesting to see a series of cases treated by this method in conjunction with external irradiation.

SUMMARY

The importance of careful selection of the therapeutic plan for a given case of esophageal carcinoma is emphasized. There must be on the part of the physician and surgeon a willingness and ability to modify a given plan should unfavorable situations exist or arise. There will continue to be many cases in which major curative or palliative resections cannot be done, either because of the general physical condition of the patient or because of the non-resectability of the esophageal growth. In these cases, other procedures of lesser magnitude than a resection can and should be used.

Longer survival and more comfort to a greater number of patients can result from making proper choices of the curative and palliative technics now available for treatment of carcinoma of the esophagus. The patient who is discharged from the hospital with a gastrostomy, who either has been refused esophageal therapy or has been given an exploratory operation without having deglutition re-established, has not been afforded the best medical care.

RESUMEN

Se recalca a importancia de una selección del plan terapéutico en un caso dado de carcinoma del esófago. Debe haber por parte del cirujano y del médico una buena voluntad y disposición para modificar un plan cuando existen desfavorables situaciones o estas aparecen. Habrá continuamente muchos casos en los que las resecciones mayores curativas o paliativas, no puedan hacerse ya sea por mal estado general, o por imposibilidad quirúrgica.

En estos casos deben usarse otros procedimientos de menos magnitud que la resección deben llevarse a cabo.

Se obtendrá una más larga sobrevida y comodidad para mayor número de enfermos como resultado de la selección adecuada de as técnicas curativas y paliativas ahora asequibles para el tratamiento del carcinoma del esófago. El enfermo que es dado de alta con una gastrostomía ya sea porque haya rehusado la terapia del esófago o bien porque se haya hecho una exploración sin restablecimiento de la deglución, no ha obtenido del mejor cuidado médico.

RESUME

L'auteur insiste sur l'importance d'une mise au point prudente du plan thérapeutique dans un cas déterminé de cancer oesopahgien. Il doit exister de la part du médecin et du chirurgien la bonne volonté et la possibilité de modifier le plan déterminé dès que 'on constate ou qu'il se produit des faits qui semblent défavorables. On doit compter encore avec un nombre important de cas pour lesquels la résection majeure, soit curative, soit palliative, ne peut avoir lieu. Elle sera empêchée ou bien par l'état gén-
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Voir du sujet, ou à cause de l'impossibilité de sectionner la tumeur oesophagienne. Dans ce cas, des procédés qui n'ont pas l'importance de la résection peuvent et doivent être utilisés.

Un choix meilleur des possibilités techniques actuelles pour le traitement curatif ou palliatif du cancer de l'oesophage peut permettre une plus longue survie et des conditions plus faciles à supporter pour un assez grand nombre de malades. Le malade qui quitte l'hôpital avec une gastrostomie soit que le traitement oesophagien n'ait pu être réalisé, ou bien que l'intervention exploratrice n'ait pas permis le rétablissement de la déglutition, n'a pas bénéficié du maximum des possibilités médicales.

BIBLIOGRAPHY