

Treatment of cancer of the rectum

Abdominoperineal resection or electrocoagulation

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A principle of surgical management in past years was to employ one operation for one disease with little regard for variations in manifestations of the disease in different patients. Cancers of the rectum were treated by abdominoperineal resection, regardless of the size of the tumor, its configuration, or its specific location in the rectum. This may have been because most cancers were large and involved the rectum extensively. Today, smaller cancers of the rectum are seen more frequently, and the extent of involvement is less. It is therefore appropriate that a less extensive operation than the traditional abdominoperineal resection be employed for treatment.

For many years at the Cleveland Clinic, electroexcision-electrocoagulation has been used in the treatment of selected patients with cancer of the rectum. During this period of time, abdominoperineal resection has continued to be employed at the same institution for the majority of patients with cancer of the rectum. Dr. George Crile, Jr. of the Department of General Surgery compared the results of these two methods of therapy during the years from 1952 to 1966.¹

Abdominoperineal resection was used for the treatment of 226 patients (220 of whom were available for 5-year follow-up); 62 patients were treated by the local operation (all were available for 5-year follow-up). Forty-six percent of the 220 patients treated by abdominoperineal resection were alive 5 years after the operation, and 68% of the locally treated group were alive after 5 years. Seven of the 220 patients and 5 of the 62 patients were alive with known cancer 5 years after treatment. Operative mortality (immediate and late) was 5% in the group receiving an abdominoperineal operation and zero in the group treated by electrocoagulation.

Of the 62 patients treated by electrocoagulation, 5-year survival was achieved in 93% of the patients with polypoid tumors and in 51% of the patients with ulcerating tumors. Forty-six percent of the patients with ulcerating tumors died of cancer within 5 years of treatment; only 3.5% of the patients with polypoid tumors died. During the next 9 years, 6% of those with ulcerating tumors and 11% with polypoid tumors died of recurrent cancer. Twenty percent of the patients with ulcerating cancers treated initially by electrocoagulation later required an abdominoperineal resection, because of failure of the initial treatment to control the disease. Only 4% of those with polypoid cancers initially treated by electrocoagulation required the major procedure later. Abdominoperineal resection was required in 8 of the 62 patients (12%) initially treated by electrocoagulation, and their survival, morbidity, and mortality response was the same as that of patients who were treated initially by the more extensive operation.

The average age of the patients in each group was 61 and 67 years, the electrocoagulation group being the older average. The average size of the tumors was 4.8 and 3.1 cm, those treated by electrocoagulation being the smaller average size. Whereas the ratio of polypoid to ulcerating tumors treated by electrocoagulation was 27 to 35, the same ratio was 66 to 160 in the abdominoperineal resection group.

Since these figures suggested that the more favorable, smaller tumors tended to be treated by the lesser operation, randomized pairs matched by tumor size were selected by the two groups. Forty-six such pairs were selected and survival data compared. The 5-year survival was 54% in the group treated by abdominoperineal resection, and 67% in the paired group treated by electrocoagulation. Two percent of the group treated by the major operation and 11% of those treated by the smaller operation died with carcinoma more than 5 years following treatment. Apparently cured were 52% of the former and 57% of the latter. Thus it seems that the operative mortality in the patients undergoing abdominoperineal resection for cancer of the rectum counteracts any advantage obtained by the removal of cancer that has spread beyond the reach of locally destructive measures. More patients are alive 5 years after coagulation treatment than after abdominoperineal resection, but more of them in the former group are alive with cancer than are those of the latter group. The percentage of patients apparently cured of cancer is essentially the same for each group.

The method for local removal of cancer of the rectum at the Cleveland

Clinic employs blended electrosurgical cutting and coagulating current to a loop electrode for the removal of all gross tumor, followed by deep and peripheral multiple-site electrocoagulation with a needle electrode to the tumor bed. Because of the 2-cm depth and peripheral margin employed, the cancer must be located distant from pelvic peritoneal surfaces in men and women, and distant from the rectovaginal septum in women. If the local removal of the cancer is to cure the patient, it must not have spread to lymph nodes. If the local treatment is to leave an eventually satisfactorily performing rectum, the cancer must be mobile and small (not more than 3 cm in diameter preferably), and it must not be circumferential. Ideal location would be posterior and below the midrectal valve. With low rectal cancers, lymph node metastasis can be palpated digitally in the presacral plane posterior to the rectum.

A number of special instruments are required to carry out this form of treatment successfully. In addition to the proper electrosurgical equipment, special instruments for achieving adequate exposure are required, such as nonconductive operating proctoscopes, appropriate retractors, suction apparatus, special lighting equipment, an assortment of loop and needle electrodes, irrigating equipment, and various grasping instruments.

With these instruments and with appropriate selection of patients and tumors, the surgeon can match the operation to the individual patient or the individual carcinoma, so that an extensive operation will not be done when a small operation will serve as well.

Reference

1. Crile G Jr, Turnbull RB Jr: The role of electrocoagulation in the treatment of carcinoma of the rectum. *Surg Gynecol Obstet* 135: 391-396, 1972.