Quality-of-Life Management of Patients with Colorectal Cancer

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Introduction

During 1997, an estimated 131,200 persons will develop colorectal cancer and an estimated 54,900 will die of the disease. In this article we review the management of these persons after treatment, with the aim of giving practical advice to the family physician. An objective tumor response does not necessarily mean that the patient experiences freedom from distress; wherever possible, our perspective is to place management in the context of measures of quality of life, a rapidly emerging, if unsettled, field.

Quality of life is generally measured by structured questionnaires that can be scored and quantified. Measures of performance, such as the Karnofsky scale, have been widely applied for many years. These products of outcomes research, which often apply linear analogue scoring or category ratings, include not only physical status but also psychological and social well-being. Important variables such as pain, mobility, capacity for sexual relationships, and cost-effectiveness of treatment alternatives may or may not be included. Moreover, patients under stress have an internal adaptive process that often maintains their quality of life at an acceptable level, defies measurement by external criteria, and tends to even out comparisons.

Thus, quality of life has several dimensions, and no definition of the term has been generally accepted. Relatively little work of this kind has been carried out with patients who have colorectal cancer, in which differences in the initial stage, comorbidity, progression of tumor, and introduction of alternative treatments add to the inherent complexity.

The Cured Patient

GENERAL

During recent years, many technical advances have occurred in primary surgery. These advances have improved the quality of life of patients who have had colorectal cancer and also have helped physicians maintain a high cure rate. The goal for all patients should be restoration of optimal physical, social, and sexual function. Although repeated reassurances help restore the patient’s confidence, often time is the best healer. For some patients, group psychoeducational programs may offer benefit. All caring physicians can provide basic information and emotional support to the patient without recourse to behavioral training in coping skills or more advanced psychotherapy.

The patient’s family should be involved in treatment planning. Discharge planning with the patient and family can smooth the course of convalescence. Among other benefits, family members often remember better than the patient what has been said about procedures that the patient should follow. Examples of these include dietary restrictions and scheduling of medications. The
primary care provider should encourage patients to implement healthy lifestyle changes of diet and physical activity, which provide a sense of personal contribution to health and improve well-being.

In our current economic climate, job insecurity, which is common among healthy persons, is aggravated by the stress of a cancer diagnosis. Patients’ concerns about employability and insurability have an enormous impact on their sense of security and well-being.

The health care provider should furnish the necessary documentation to assist the patient with applications for disability or future insurability. Past disability should not preclude reinsurance. Numerous requests for official paperwork and completion of disability or insurance applications tend to depress morale in the professional office, but the importance of this issue for patients and their families cannot be overestimated.

SURVEILLANCE

All potentially cured patients merit subsequent surveillance so that both an early, curable recurrence and a new primary colorectal cancer can be detected. About 5% of all patients with colorectal cancer have a concurrent colorectal cancer elsewhere or will develop another one over time. Scrutiny with endoscopy is also aimed at the detection and removal of colorectal adenomas, precursors of invasive cancer. Women with colorectal cancer are at slightly increased risk of developing breast cancer and, in the setting of familial risk, ovarian and endometrial cancer. If suspicion of familial risk exists, other family members should also be monitored.

Although the intensity of surveillance is disputed, a widely accepted policy is that of examination every 3 months for 2 years, then every 6 months for 3 years, and annually thereafter. Each visit includes a historical review, pertinent physical examination, and measurement of carcinoembryonic antigen (CEA) if the value was elevated preoperatively. For those who had rectal cancer, a direct endoscopic examination is added to the visit. In this setting, measurement of the CEA is more cost-effective than is periodic computed tomography. In other practice settings, abdominal ultrasonography is performed periodically. The apparently cured patient should have an annual chest radiograph and an annual examination of the stool for occult blood. A barium enema radiographic examination or, preferably, colonoscopy is recommended within 1 year after initial treatment; if no disease is found, subsequent studies should be performed at 3-year to 5-year intervals.

It is difficult to justify the cost-effectiveness of these standard policies of surveillance after treatment of colorectal cancer. During long-term follow-up of 505 patients who underwent resection for cure, only 3.6% of all patients had recurrent cancer detected during follow-up, were subjected to reoperation, and were apparently cured. The gains of a few were submerged within the program costs of all. Yet restoration of even this small group to normal life expectancy seems to vindicate screening policies while recognizing that follow-up will not benefit the extremely elderly and those who are incapable of withstanding, or unwilling to undergo, another operation.

LIVING WITH A STOMA

As a result of earlier diagnosis and improved technology, fewer patients require either a temporary or a permanent stoma. For those who do require a stoma, enterostomal therapists provide preoperative support, postoperative education, and state-of-the-art supplies; their assistance should be maintained during home care and recovery. Most patients who have a left-sided or sigmoid colostomy learn to perform habitual stomal irrigation. Small security pads or pouches are available for use between irrigations. Stomal irrigation is avoided if ponderous obesity, poor vision, inanition, or another
disabling factor limits or precludes personal stomal management.

Thin-walled ostomy pouches that are lucent or opaque should adhere well and be secure, comfortable, odor-proof, non-irritating, and inconspicuous. The pouch adheres to the skin by means of an attached or separate base plate that should be individualized to fit snugly around the stoma. Additionally, to ensure proper sealing on cicatricial skin, the strategic application of skin barrier paste and powder (such as Stomahesive) is useful. Proper management techniques can reduce irritation of surrounding skin by forming a protective barrier against excoriating discharge. Charcoal and other products to reduce the release of malodorous gas are widely available. It is important that the patient manage the stoma with reasonable efficiency because Medicare reimbursement is restricted and provision of these supplies is limited. A new patient who attends a local ostomy support group can gain valuable advice about techniques for stomal management.

SIDE EFFECTS OF RECTAL SURGERY

Restorative rectal surgery preserves gastrointestinal function while reducing the need for a permanent stoma. Persons with a rectal tumor should approach their treatment with confidence that a colostomy will probably not be necessary and that they will return to normal function. When patients who had an abdominal perineal resection were compared with those who had a low anterior resection, the latter group had less depression, better sexual function, and better social adaptation.7

Although patients without a stoma generally fare better than do those with a stoma, the former also suffer from physical impairments of bowel and genitourinary function induced by sphincter-saving procedures.8 These impairments may become more prevalent as ultra-low anastomoses are used more frequently. With a low rectal anastomosis, irregular bowel movements are usual for weeks or even months after the operation. Irregularity appears to result from disrupted peristalsis and poor compliance in the remaining rectal ampulla but also can be related to a narrowed anastomosis. Pelvic radiation therapy and temporary fecal diversion may contribute to a narrowed anastomosis, especially if the anastomosis is stapled. Ordinarily these symptoms resolve over time, but a narrowed anastomosis may require dilatation. Bulk in the diet with added dietary fiber or with a psyllium hydrophilic mucilloid (such as Metamucil) contributes to stability of bowel movements.

An extensive rectal resection may of necessity interrupt the hypogastric sympathetic nerves or the pelvic parasympathetic sacral splanchnic plexus and introduce bladder and sexual dysfunctions. Permanent bladder dysfunction after rectal resection is rare except when a lateral pelvic lymphadenectomy has been performed. In one study, anterior resection of the midrectum was associated with cessation of sexual relationships in 20% of male study patients, absence of erection in 25%, impossible penetration in 45%, and absence of ejaculation in 5%.9 In another recent study of men younger than 60 years who had a low anterior resection, 86% were able to engage in intercourse, although some had a less rigid erection and more had a retrograde ejaculation.10 Retrograde ejaculation and failure of erection may improve over time.

Sexual dysfunction is more difficult to assess in women. However, after surgery, many women experience dyspareunia, pain interfering with sexual pleasure, and fear of stool leakage, all of which limit sexual activity.11 Vaginal dryness, which requires lubricants and estrogen creams, regularly follows pelvic radiation therapy and may result from rectal resection.

ADJUVANT CHEMOTHERAPY

In the patient cured by surgery alone, quality-of-life issues are not likely to
dominate. Another dimension is introduced by adjuvant treatments, which are, by definition, for patients without symptoms and without evident cancer in whom the main criteria of effectiveness are relapse-free survival and long-term survival. Adjuvant treatment with fluorouracil (5-FU) and levamisole or leucovorin for those with colon cancer and regional lymph node metastasis (Dukes stage C) has resulted in a notable increase in survival and is routinely recommended for eligible patients.\(^1\)\(^2\) The benefits of such treatment appear to outweigh the side effects of the chemotherapy.

Antineoplastic agents may be associated with anemia, neutropenia, diarrhea, nausea, vomiting, and anorexia. Rarely, other life-threatening side effects occur that may delay or prevent adjuvant treatment. Delay of chemotherapy may adversely affect survival. Erythropoietin and filgrastim are useful when anemia is present or white blood cell counts are depressed. Erythropoietin is a glycoprotein that stimulates red blood cell production, and filgrastim is a granulocyte colony-stimulating factor shown to decrease the incidence of infection as evidenced by febrile neutropenia. The upper gastrointestinal side effects of adjuvant 5-FU are usually mild and are controlled by trimethobenzamide, prochlorperazine, or lorazepam (Table 1).

### Table 1

**Drugs for Control of Nausea and Vomiting**

| Product               | Common Adult Dosage                                                                 |
|-----------------------|-------------------------------------------------------------------------------------|
| **Mild Symptoms**     |                                                                                     |
| Trimethobenzamide     | *Capsule:* 250 mg, tid or qid, orally                                                |
|                       | *Suppository:* 200 mg, tid or qid, rectally                                         |
| Prochlorperazine      | *Capsule:* 5–10 mg, tid or qid, orally                                               |
|                       | *Suppository:* 25 mg, bid, rectally                                                 |
| Lorazepam             | *Tablet:* 2 mg, bid or tid, orally                                                  |
| **Severe Symptoms**   |                                                                                     |
| Granisetron           | *Intravenous:* 10 g/kg infused over 5 min beginning 30 min before initiation of     |
|                       | chemotherapy                                                                        |
| Ondansetron           | *Tablet:* 8 mg 30 min before chemotherapy, then every 8 hours for two more doses,   |
|                       | orally *Intravenous:* 0.15 mg/kg over 15 min beginning 30 min before initiation of   |
|                       | chemotherapy, then 0.15 mg/kg 4 and 8 hours after first dose                          |
| **Gastric Stasis**    |                                                                                     |
| Metoclopramide        | *Tablet:* 10–15 mg, qid, ac and hs, orally                                           |
| Cisapride             | *Tablet:* 10 mg, qid, 15 min ac and hs, orally                                       |

ac = before meals; bid = twice a day; hs = at bedtime; min = minutes; qid = four times a day; tid = three times a day.
ADJUVANT RADIATION THERAPY
For those with rectal cancer and local full-thickness invasion or lymph node metastasis (Dukes stage B or C), both adjuvant chemotherapy and radiation therapy are recommended; such combined treatment has shown survival benefit. The side effects of pelvic radiation therapy include tenesmus, diarrhea, and dysuria during the course of radiation therapy; the addition of chemotherapy may have a cumulative effect on toxicity. These symptoms ordinarily are managed by simple antidiarrheal medications and usually cease when radiation therapy is completed (Table 2). About 3% to 5% of all patients who receive therapeutic levels of radiation to the pelvic area develop a complication that requires hospitalization and often operative treatment. A radiation-induced perianal dermatitis can be particularly annoying to the patient (Table 3).

Complications of radiation therapy include proctitis, intestinal obstruction, stricture, and fistula, often occurring long after completion of therapy. The morbidity of combined adjuvant treatment of rectal cancer is considerable, much greater than that seen after adjuvant chemotherapy for colon cancer. In a study of patients with rectal cancer, Gelber et al applied quality-of-life measures to compare adjuvant combined radiation therapy and chemotherapy with radiation therapy alone. They concluded that combined treatment was better, but no adjuvant treatment, the customary clinical alternative, was not scrutinized.

The Patient with Persistent or Recurrent Cancer
Palliation
Palliation is defined better by quality than by quantity of remaining life. Quality of life surely includes freedom from pain but depends strongly on the patient’s interpretation. The distress of a patient with advanced colorectal cancer is invariably compounded by fear, anxiety, depression, anger, and loneliness. Palliative care must address not only pain control but also the psychological, social, and spiritual pain burdening the patient.

When the diagnosis of disseminated colorectal cancer is first established, it may not be possible to predict the rate of tumor growth. Counseling should be conservative, predictions of remaining life span avoided, and hope provided to the patient. Patients with numerous liver or lung metastases may live for several years without specific treatment.

RESECTION
In general, the patient with demonstrable metastases and incurability merits a limited resection of the primary cancer of the colon or upper rectum to abort anemia from gastrointestinal blood loss, to prevent large bowel obstruction from expansion of the tumor, and to anticipate potential bleeding from subsequent chemotherapy.

Medical factors may alter palliative management of patients with incurable colorectal cancer. If life expectancy from associated medical disease is short and the patient is asymptomatic, palliative procedures may be inappropriate. For example, in a patient who is blind or has severe cerebrovascular disease and is unable to care for a colostomy, efforts should be directed toward conservative measures that will delay or avoid colostomy.

Patients with incurable distal rectal cancer often have persistent bleeding, and the risks and morbidity of a palliative abdomino-perineal resection may outweigh any benefits. A distal rectal cancer rarely obstructs. Diathermy of the rectal tumor and radiation therapy to the pelvis can control bleeding for an extended period and postpone or eliminate the need for a palliative colostomy.

If disease recurs in the lumen of the bowel or within the liver or lung, operative excision may present an opportunity for recovery. Resection of suture line re-
currence in the colon is associated with a satisfactory cure rate; the cure rate is less satisfactory for suture line recurrence in the rectum, which is usually the result of inward extension of persistent cancer in the pelvic side wall.

A partial hepatectomy or lung resection may provide the patient with an opportunity for cure. About one-third of patients who have a partial hepatectomy for recurrent cancer are long-term survivors. For those with unresectable liver metastases, survival can be prolonged with normal quality of life by hepatic artery infusion of floxuridine. In the setting of pelvic recurrence, quality of life was improved by exenteration in 88% of selected patients.

Table 2
Drugs for Control of Diarrhea*

| Product                                         | Common Adult Dosage                                                                 |
|------------------------------------------------|-------------------------------------------------------------------------------------|
| Attapulgite (Kaopectate)                        | Capsule: 30 ml or 4 tablets orally at first sign of diarrhea; repeat after each subsequent bowel movement to a maximum of 7 doses in 24 hours |
| Psyllium hydrophilic mucilloid                  | Powder: 1–3 tsp in 8 ounces of water one to three times per day                      |
| Phenobarbital, hyoscyamine, atropine sulfate, and scopolamine | Capsule: 1 or 2, tid or qid, orally                                                     |
| Loperamide                                      | Capsule: 4 mg orally followed by 2 mg after each unformed stool to a maximum daily dosage of 16 mg |
| Diphenoxylate hydrochloride with sulfate         | Tablets: 2 orally qid until control is atropine achieved                               |

*Usually start with attapulgite and use smaller dosage; progress down the list until control is achieved. qid = four times a day; tid = three times a day.

Table 3
Skin Care After Radiation Therapy

- Use hydrophilic lubricants (such as Eucerin, Aquaphor, or Lubriderm) two or three times a day to irradiated areas
- Use ointments (such as those with vitamins A and D or zinc oxide) to protect anal area if patient has diarrhea
- Cleanse the perianal area with tepid water and pat dry after each bowel movement
- Avoid use of perfumed bath gels or foams in tub baths
- Advise patient to wear cotton underpants to reduce moisture build-up by allowing adequate air exchange

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CHEMOTHERAPY AND RADIATION THERAPY

Quality of life considerations become far more prominent in the setting of palliative treatments. Treatment response, toxicity of treatments, and duration of remission are important indicators of the treatment’s impact on the quality of the patient’s life. Are the side effects of treatment outweighed by the effectiveness of that treatment? The question is not easily answered. A randomized trial compared 5-FU alone with a regimen of sequential 5-FU-methotrexate with leucovorin rescue for advanced symptomatic colorectal cancer. Survival, objective and subjective measures of response, Karnofsky performance status, and quality-of-life measures were superior with combined treatment. However, in another study that compared the same single and combined agents in equitoxic doses, no difference in survival or measures of quality of life was found.

In general, radiation therapy is the appropriate treatment for accessible, localized, symptomatic recurrent colorectal cancer. Radiation therapy should be administered to patients with symptomatic metastases in the bone, brain, or presacral space. Presacral and sacral invasion may be associated with severe and unrelenting pain. Although radiation therapy is the initial treatment of choice, management of persistent sacral pain is frustrating and difficult.

PAIN CONTROL

Quality of life for the patient with recurrent colorectal cancer hinges on control of pain. Several basic principles should be recognized. Remedial causes of pain, such as infection, should be excluded. Radiation therapy should be the primary treatment for symptomatic pelvic and bone recurrence. Orthopedic stabilization may be warranted for impending pathologic fractures. The need for analgesics should be apparent; for example, anticholinergics are preferable for gastrointestinal spasm and corticosteroids are useful for pain caused by nerve compression. The kind of analgesic may vary; for example, nonsteroidal antiinflammatory drugs are often more effective for bone pain than are opioids.

Policies for the control of acute pain are not the same as those for the control of chronic malignant pain (Table 4). For severe malignant pain, the standard is morphine, which should be administered without fear of causing addiction. The oral route is preferred for administration of opioids. Steroids and antidepressants have added benefit. Oral administration enables patients to control their care. Stepwise increments of opioids without an upper limit are given by the clock, not as needed, until pain is controlled. At the same time, a supplement of morphine is provided for breakthrough pain. Complementary use of nonsteroidal antiinflammatory drugs has an opioid dose-sparing effect. Although patient-controlled analgesia (PCA) is useful, neither it nor transdermal fentanyl patches should be applied to titrate patients to pain relief. With the use of these measures, pain can be controlled in more than 90% of patients without resort to invasive procedures.

Opioids inhibit gastrointestinal motility and cause constipation; such impaction can be more troublesome to the patient than cancer pain. An empty rectum does not exclude a fecal impaction, and patients with impaction may have overflow diarrhea. Preventive management consists of simultaneous administration of stimulant laxatives such as bisacodyl or senna concentrate, not stool softeners.

OTHER SYMPTOMS

Nausea, which should not occur after colorectal surgery, merits investigation. The surgery-related risk is small bowel obstruction, but nausea also may be related to uremia, biliary tract disease, increased intracranial pressure, or other causes. Distention, constipation, and high-pitched
bowel sounds are findings associated with intestinal obstruction. An external hernia or other remedial causes should be excluded. If associated tenderness is present, the need for surgery may be urgent. Often, extensive metastatic implants are responsible for intestinal obstruction. Operative management of mechanical small bowel obstruction in this setting is infrequently successful. An initial exploratory laparotomy is generally warranted; re-intervention for subsequent obstruction is rarely beneficial.

Frequently, nausea originates from narcotics, chemotherapy, or other pharmacologic agents. The choice of an antiemetic is influenced by the underlying cause. Aggressive palliative chemotherapy can lead to more nausea and vomiting than is observed during adjuvant treatment. Preferred antiemetic drugs are the 5-hydroxytryptamine3 (HT3) receptor antagonists ondansetron and granisetron20 (Table 1). Large-volume vomiting without bile suggests gastric stasis, for which prokinetic agents such as metoclopramide and cisapride may be beneficial.

Many reasons exist for anorexia and weight loss in this population. If oral nutrition fails in a patient with an intact gut, percutaneous endoscopic gastrostomy is preferred to a surgically constructed gastrostomy or jejunostomy.

Diarrhea is uncommon in patients with advanced colorectal cancer. It is usually the consequence of extended colonic resection, chemotherapy, radiation therapy, or antibiotic use. Lactose intolerance, aggravated by stress, responds to lactose-free products and the avoidance of cheese and other milk-containing nutrients. Bulk-forming products such as psyllium hydrophilic mucilloid stabilize fecal consistency by adsorbing fecal water (Table 2). Pharmacologic management should be initiated with loperamide before diphenoxylate is added. Reduction of gastric acid production with H2 blockers may diminish diarrhea. Oral supplements of electrolyte-replacing liquids may be necessary. Diarrhea associated with antibiotic use may be the result of infection with Clostridium difficile. For the treatment of large-volume secretory diarrhea, octreotide may be beneficial. The perianal skin may become excoriated as a result of severe diarrhea; creams containing zinc oxide promote healing.

Summary

We have reviewed management of the patient with colorectal cancer both after primary treatment and in the palliative setting. Although we have addressed quantitative measures of quality of life as applied to patients with colorectal cancer, the limitations of combining disparate variables that encompass morbidity, an idealized lifestyle, and personal variation
QUALITY OF LIFE: COLORECTAL CANCER

in interpretation of that lifestyle into a single number or point on a graph are self-evident. The caring family physician has a better intuitive integration of patient complexity than does the outcomes analyst.

When the apparently cured patient returns to the family physician after initial operative treatment, recovery is just beginning. We have addressed the morbidity of surgery, the role of adjuvant treatments, the short-term and long-term effects of adjuvant treatments on quality of life, and the management of these effects. Restoration of quality of life extends beyond cure or survival and embraces repair of the patient’s confidence and psychosocial well-being.

The patient with persistent or recurrent colorectal cancer merits the entire range of medical skills of the family physician. Not all patient findings arise from cancer; other treatable medical and surgical diseases occur. If findings are from recurrent colorectal cancer, the patient may still be curable by treatment or may enjoy prolonged quality of life with or without anticancer treatment. Do not rush to judgment about remaining life span. Although pain control is the benchmark of palliative care, psychological elements that affect severity of pain and the invariably associated depression of the patient require the emotional support and compassion of the family physician.

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