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Rectal Cancer

There are an estimated 140,000 new cases of colorectal cancer each year in the USA. Of these 39,000 are cancers of the rectum. The average age of a patient with colorectal cancer is 65, though all ages may be affected. Those with hereditary cancers tend to be younger. For example, those with Hereditary Nonpolyposis Colon Cancer develop cancer at an average age of 45 years, with 50% less than age 40. Those with Familial Adenomatous Polyposis develop colorectal cancer at an average age of 40 years.

About the Colon and Rectum

The colon and rectum is about 5 feet long. Food passes through the stomach, then the small bowel, then the colon, and finally the rectum and anus. The small bowel is 12-20 feet long and is largely responsible for absorption of nutrients and vitamins in food. The colon absorbs water but the small bowel can assume this function in the absence of the colon. In fact, there are several diseases that require removal of the entire colon and rectum. These patients generally lead normal lives and do not develop malnutrition because their small bowel is intact. Removing a portion or all of the colon and rectum may result in diarrhea, urgency, or gas/stool leakage but usually not.

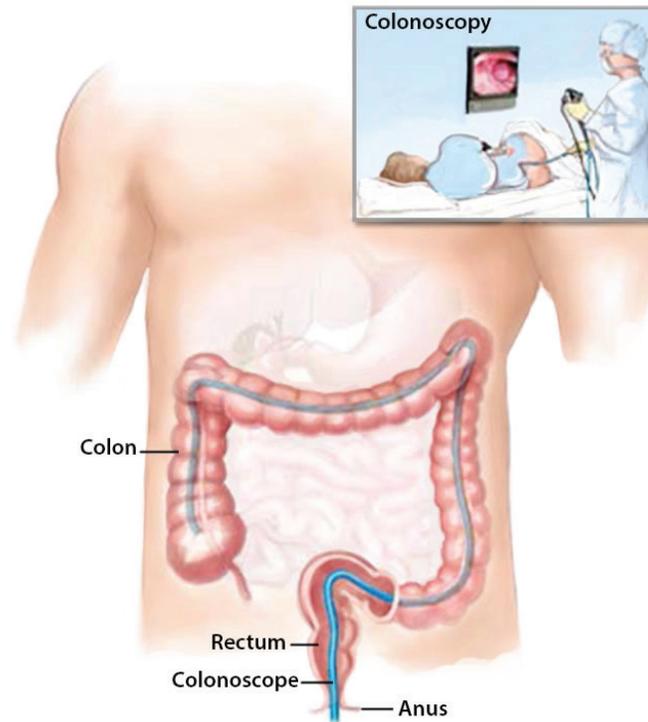
Symptoms

Symptoms of rectal cancer may include rectal bleeding, change in bowel habits (new onset diarrhea or constipation), a feeling of incomplete evacuations, rectal discomfort, and others. Abdominal pain, constipation, and weight loss may reflect a cancer that is near obstructing. Many cancers are found in patients without symptoms through screening methods such as colonoscopy.

Colorectal Cancer Screening

Those individuals without risk factors for colorectal cancer (rectal bleeding, positive family history of colorectal cancer and polyps, personal history of colorectal cancer and polyps) should be screened for colon cancer starting at age 50 years. There are several options which include testing stool for blood, flexible sigmoidoscopy, and colonoscopy. You should discuss the most appropriate option with your primary care physician or colorectal specialist. If you have rectal bleeding, colorectal cancer screening may be warranted at an earlier age depending on other factors involved. If you have a first degree relative with colorectal cancer, you should have colonoscopy starting at age 40 years or 10 years prior to the age of the youngest relative with colorectal cancer or polyps. The test should be repeated every 3 to 5 years if normal and possibly sooner if polyps are found. If you have had colorectal cancer or polyps, your relatives should be screened by colonoscopy.

Others at risk for colorectal cancer that warrant further investigation are those with a history of inflammatory bowel disease (ulcerative colitis and Crohn's disease) and possibly those with other cancers (breast, uterus, ovary). At this time, many colorectal specialists advocate 2 colonoscopies 10 years apart starting at age 50 for those without risk factors. Again, you should discuss these options with your colorectal specialist.



At the Time of Your Visit

When you are seen by the colorectal specialist, you will be asked several questions with respect to your history. If you have had blood tests, x-rays, colonoscopy, ultrasound, and CT scans, make sure these are made available to your colorectal specialist prior to your visit. Some of these tests may be ordered by the colorectal specialist if they have not already been done. A general examination to include heart and lungs will likely be performed. You may be asked to take an enema prior to your appointment. This is to facilitate a directed rectal examination to determine the level of the neoplasm in the rectum. This rectal examination may include a digital exam with a gloved index finger to determine the level of the lesion and if it is fixed or tethered to surrounding structures. An examination with a short scope may follow to provide more information that may help in treatment decisions. Following this examination, if enough information is available, a detailed discussion with your colorectal specialist regarding treatment options will follow.

Your colorectal specialist may order an ultrasound of your rectal neoplasm. This is done with a scope and is generally well tolerated. This test determines what layers of the rectal wall are involved by the tumor and helps determine whether or not local excision is possible for early lesions, and whether or not radiation and chemotherapy will be an option for more advanced lesions prior to surgery. In some cases, lymph nodes can also be seen with this test.

If your operation involves the possibility of a colostomy or ileostomy, you should have an appointment with the enterostomal nurse prior to surgery. She will provide important information regarding life with a stoma, educate you regarding any nuances, and may mark an optimum site on your abdominal skin.

At the time your surgery is scheduled, you may be asked to undergo preprocedure testing which may include blood tests, xrays, and an EKG. You will also be instructed in a mechanical bowel prep which will clean out your colon in preparation for surgery and is described below.

Treatment Options

1) Surgery

Transanal (local) excision

Radical excision

1) Low anterior resection

(remove part of colon and rectum through abdominal incision)

2) Coloanal resection

(remove part of colon and rectum through combined abdominal and rectal incisions)

3) Abdominoperineal resection

(remove part of colon and rectum through combined abdominal and anal incisions to include permanent bag or colostomy)

Others

2) Radiation Therapy

3) Chemotherapy

4) Immunotherapy

Surgery

Only about 5% of patients with rectal cancers are candidates to have local excision of the lesion through the anal opening. Typically, these tumors are less than 3cm in diameter, well differentiated by biopsy, and have not invaded deeper layers of the rectal wall by ultrasound. The vast majority of the rest of the rectal cancers require removal of the rectum and part of the colon through an abdominal incision.

Low anterior resection refers to that operation which entails removing the rectum and part of the colon through an abdominal incision. If an adequate margin of normal tissue is able to be obtained, then the more proximal colon is brought down to the lower rectum and sewn or stapled together. If the hook up (anastomosis) is very low, your colorectal surgeon may choose to create a J pouch out of your remaining colon. This effectively creates a new rectum which is better able to store stool and may improve bowel function after the operation. If the hook up is very low, your colorectal surgeon may also elect to perform a loop ileostomy (a bag created out of the small bowel) to divert the fecal stream for 3 months. This allows the new hook up and/or J pouch to heal without the fecal stream coursing through it. Should there be a leak at the site of the hook up, it will likely cause fewer problems with regard to infection and sepsis if the fecal stream is diverted. This ileostomy is then put back together with a smaller incision and a less invasive operation 3 months later.

Coloanal resection is very similar to low anterior resection. The difference is that with coloanal resection, the colon above is sewn or stapled to the rectum below by a transanal (through the anus) approach rather than through the abdominal incision in the pelvis. This operation may also be accompanied by a colon J pouch or loop ileostomy or both.

Abdominoperineal resection is often required for tumors that are very low in the rectum, some of which involve the anal sphincter muscles. This operation involves the same initial dissection of the colon and rectum through

an abdominal incision. However a separate second incision around the anus is then required to remove the anus, anal sphincter complex, and lower rectum. A permanent colostomy (bag) is then constructed, usually on the left side of the abdominal wall.

You will likely be asked to drink a solution that clears the colon and rectum of stool and is similar or the same as the solution you drank for colonoscopy. This preparation is usually done at home the day prior to surgery. You will be asked not to eat or drink anything after midnight prior to surgery but you may take your medications with a sip of water. You will be asked to arrive at the hospital several hours prior to the scheduled surgery time. Upon arrival you will meet the nursing staff who will ask you historical questions and prepare you. You will meet the anesthesiologist who will explain anesthetic options. The vast majority of our patients have an epidural or abdominal wall anesthetic in addition to a general anesthetic. The epidural catheter is left in your back (well secured) for about 4 days after surgery as it is the best method to obtain pain control without many of the mental cloudy side effects. You will be expected to walk with or without assistance the day after surgery. We expect you to feel comfortable especially if you have an epidural or abdominal wall catheter in place. You will likely be started on liquids within 1-3 days after surgery and will be eating regular food prior to discharge from the hospital. If you have an ileostomy or colostomy, an enterostomal nurse will visit you and educate and instruct you with regard to care of the stoma.

Except for the transanal approach, the above operations require an incision that is usually directed up and down (midline). If you are a candidate for laparoscopic or robotic (minimally invasive) surgery, you will have smaller incisions. The amount of colon and rectum removed depends on the location of the tumor and blood supply and usually is 1-2 feet in length. The tumor is included with the specimen that is removed. Because rectal tumors tend to spread to lymph nodes first and then to liver, a wedge of lymph nodes is included in the specimen. The liver and other abdominal organs will be inspected at the time of surgery.

Whether or not a patient requires a colostomy (bag) or ileostomy often depends on the level of the lesion, whether or not the tumor is obstructing, and whether or not there are unexpected findings at the time of surgery. The lower in the rectum the tumor is located, the greater the chance for a temporary or permanent colostomy or ileostomy. If the tumor is close to or invading the anal sphincter muscles then the colostomy is likely permanent. If the tumor is higher in the rectum and a colostomy or ileostomy is needed then it is more likely temporary (3-6 months). Sometimes this decision cannot be made with certainty until surgery. Rarely, unexpected findings or complications at the time of surgery may result in the need for a temporary or permanent colostomy or ileostomy.

Radiation

You may be a candidate for radiation therapy either before or after surgery. Those patients who receive radiation before surgery typically have tumors that invade all the layers of the rectal wall, or are very low and close to the anal sphincters. Radiation therapy may decrease the size of the tumor or even make it disappear in some patients. This may allow the patient to have a temporary rather than a permanent colostomy. In some patients radiation may also decrease the chance for recurrence and improve the chance for cure. Almost all patients who receive radiation therapy receive chemotherapy at the same time because chemotherapy enhances the effects of radiation. Because the effects of radiation continue after the last dose and because of tissue swelling, the operation is typically performed 4-8 weeks after the last dose of radiation. You should plan to see your colorectal surgeon in the office shortly after the last dose of radiation so that surgery can be planned in a timely fashion.

Some patients receive radiation therapy after surgery. If, after examining the specimen, the pathologist determines that all the layers of the rectal wall are involved or lymph nodes are involved, then radiation therapy may be offered. Again, chemotherapy is typically administered concomitantly.

Options and risks regarding radiation therapy will be discussed with you by a Radiation Oncologist should your

colorectal surgeon and you decide to pursue this option.

Chemotherapy

As stated above, chemotherapy may be administered with radiation therapy. Under other circumstances, chemotherapy may be administered for 6 to 12 months after surgery, especially if lymph nodes are involved or if there is disease elsewhere in the body. If you are a candidate for chemotherapy, a consultation with a Medical Oncologist will be obtained to discuss these options with you.

Risks of Surgery

Our hope and expectation is that you have uncomplicated surgery and a successful outcome. This is not always predictable, however, and something that cannot be guaranteed.

The risks of surgery for cancer of the rectum include

- 1) bleeding
- 2) infection
 - a. abdominal wound or intra-abdominal infection or abscess 20%
 - b. perineal wound in those who have abdominoperineal resection 25%
- 3) anastomotic leak (suture or staple line leak) 10-20%
 - a. may require antibiotics, longer hospitalization, drainage with CT scan guidance, or another surgery to resolve
 - b. may require temporary or permanent colostomy or ileostomy
 - c. may result in death from sepsis
- 4) abscess
 - a. may require antibiotics, longer hospitalization, drainage with CT scan guidance, or another surgery to resolve
- 5) increased bowel movement frequency
- 6) bowel movement or gas leakage
- 7) bowel movement urgency
- 8) injury to ureter
 - a. structure that carries urine from kidneys to bladder
- 9) injury to or dysfunction of urinary bladder
- 10) bowel obstruction
 - a. usually from adhesions from surgery
 - b. can occur in 10-20% of patients
 - c. may require another operation
- 11) ileus
 - a. the bowels normally stop working for a few days after surgery. If they continue not to function after this, it is referred to as an ileus
- 12) sexual dysfunction
 - a. impotence or retrograde ejaculation in men

- b. can occur in 10-60% of men
- c. depends on age and level of rectal dissection
- d. pain with intercourse in women
- e. vagina may feel smaller or tighter after surgery or radiation therapy

13) perineal wound infection or healing problems risk for those with perineal wound after abdominoperineal resection

14) possible temporary or permanent colostomy (bag) or ileostomy about 20% of patients having a temporary colostomy or no colostomy end up having a permanent colostomy because of leaks or other infectious complications as a result of surgery and/or radiation therapy, or because of advanced tumor or tumor recurrence

15) stoma complications for those patients with ileostomy or colostomy retraction, ischemia (poor blood supply), hernia, prolapse

16) general operative complications

- a. heart attack : especially those with heart history
- b. pneumonia
- c. sepsis
- d. blood clot in leg
- e. blood clot from leg to lung (can be life threatening)
- f. urinary tract infection
- g. leg nerve injuries (result of retractors or leg stirrups: rare)

17) incisional hernia

may require operation to repair

18) fistula (connection) between rectum and vagina (rare)

19) anastomotic stricture

- a. may result in constipation (unusual)
- b. may require dilation through scope to repair
- c. may require operation to repair

20) injury to other bowel and blood vessels

21) possible death 0-2%

After Surgery

After major abdominal surgery, expect to be in the hospital 4-8 days. Some patients are ready for discharge as early as 4 days after surgery. Some may remain longer than 8 days if the bowels are slow to recover or if a complication develops. The specimen removed at the time of surgery is sent to the pathologist who examines it. About 4 working days (not including Saturday and Sunday) after surgery, a pathology report will be generated. Your colorectal surgeon will review this report with you and discuss its implications. Depending on the results of this report you may need 6-12 months of chemotherapy and 5 weeks of radiation if you did not have radiation before surgery. A medical oncologist will discuss the options and risks with regard to chemotherapy but, in general, chemotherapy for colorectal cancer is well tolerated, especially compared to chemotherapy for other cancers.

After Discharge

Prior to discharge from the hospital, you will receive oral and typewritten discharge instructions. If you have an abdominal incision you should not lift anything greater than 10 pounds for 6 weeks from your surgery date. Unless otherwise instructed, you may eat a regular diet, walk, and climb stairs. You should not drive until at least your first office visit at which time you will be further instructed. You may ride in a car. You should call our office (734-712-8150) if you develop a fever > 100.5 degrees and should take your temperature at least 4 times a day. You should also call for nausea, vomiting, problems with the incision including unusual pain, redness, warmth, swelling, separation of skin or underlying tissues, constipation or diarrhea, or other problems that you feel need to be addressed. If you develop chest pain or shortness of breath or leg swelling, you should call your primary physician or our office or come to the emergency room. If you feel it is an emergency, call 911.

Most patients take 6 weeks off from work after having abdominal surgery. You may feel more tired than usual. You may take naps more frequently than usual. Do not be alarmed if you feel fatigued and not your old self for about 6 weeks after surgery.

Websites

For additional information try the American Society of Colon and Rectal Surgeons at www.fascrs.org and www.uoaa.org