

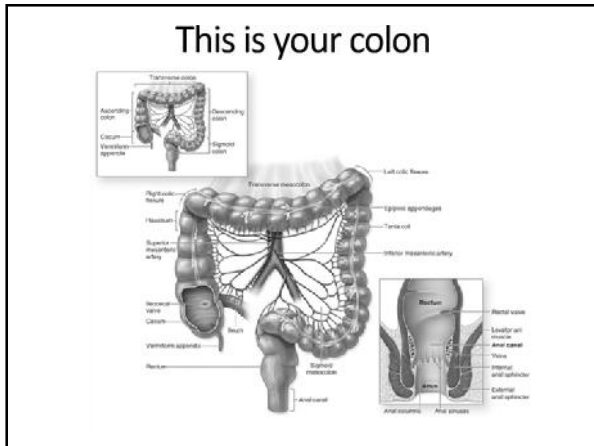
Colon and Rectal Cancer
Screening and Management
OSPA CME Update November 3, 2012

Peter A. Bernardo M.D., F.A.C.S
General Surgeon, Salem Oregon

Objectives

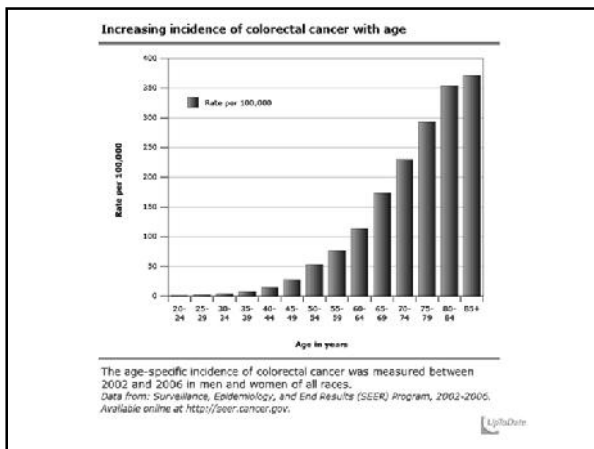
- Identify who is at risk for developing colon and rectal cancer.
- Understand Screening Guidelines for average and high risk patients.
- Recognize standard treatment and prognosis for colon and rectal cancer.

Colon and Rectal Cancer
A common disease in older patients



Cancer in the United States 2011

Men		Women	
	New Cases/ Deaths		New Cases/Deaths
Prostate	240,000/34,000	Breast	230,000/40,000
Lung	115,000/85,000	Lung	106,000/71,000
Colon/Rectal	70,000/25,000	Colon/Rectal	70,000/25,000



Polyp to Cancer

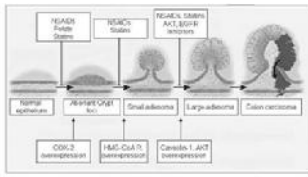


Figure 2005-8B Colorectal cancer progression and overexpression of stage-specific marker genes. The adenoma-carcinoma sequence is characterized by the acquisition of mutations in APC, KRAS, TP53, and SMAD4. Overexpression of other factors (shown in red) can be induced by any of various chromatin repositioning agents either alone or in combination (provided from Lawrence & Liang, 2002).

Mission: Colorectal cancer is one of the leading causes of cancer-related death in the western world, leading the United States. The American Cancer Society estimates that about 152,242 new cases of colon cancer (139,375 men and 12,867 women) and 47,425 new cases of rectal cancer (42,942 men and 4,483 women) will be diagnosed in 2012 (ACS, 2012). In the United States, colorectal cancer-related deaths will total 39,546 in 2012 (18,156 men and 21,390 women) (American Cancer Society, ACS). The rate for colorectal cancer-related deaths is approximately 18 per 100,000 per year, with a 5-year relative survival rate of approximately 65% (ACS, 2012). The most common colorectal cancer-related death is a long-term, chronic colorectal cancer-related death, which is often caused by adenoma-carcinoma sequence. The adenoma-carcinoma sequence is the most common cause of colorectal cancer. As a result, increasing efforts are being focused on developing more effective screening and prevention measures for colorectal cancer. A new area of research, genomics, is the focus of research in the adenoma-carcinoma sequence and the development of cancer. A number of research papers on chromatin repositioning agents are being published. The authors of these papers are shown in a separate report of this project.

Screening and the prevention of colon and rectal cancer

Algorithm for CRC screening and surveillance in average-risk and increased-risk populations



IBD: inflammatory bowel disease; CRC: colorectal cancer; FBX: first-degree relatives; IBD: inflammatory bowel disease; CT: computed tomographic colonography; FIT: fecal immunochemical test; IFFC: inflammatory fibroid colitis; CRC: colorectal cancer; DDD: distal direct distal colitis; gCIS: gastric intestinal adenoma; FIT: fecal immunochemical test; ADL: adenoma detection rate.

Screening and surveillance for adenoma-predisposing conditions: Colonoscopy every 5 years. Screening for adenoma-predisposing conditions: Colonoscopy every 5 years. Surveillance of IBD: UC: colonoscopy every 1-2 years. Crohn's disease: colonoscopy every 1-3 years. Average risk screening: Average risk screening every 10 years.

Screening Guidelines

Average Risk for Colon and Rectal Cancer

- Who is in the Average Risk Group?
 - No Family History of colon or rectal cancer
 - No family history of advanced colon or rectal polyps
 - No recent GI complaints (change in bowel habits, rectal bleeding, anemia, unexplained weight loss)
- Single First Degree Relative with Colon or Rectal Cancer after age 60
- Average Risk Patients begin screening at age 50 (45 for African Americans)

Screening Guidelines

Increased Risk of Colon and Rectal Cancer

- Who is in the Increased Risk Group?
 - Single First Degree Relative with Colon or Rectal Cancer (or advanced Adenoma) before age 60
 - Two or more Second Degree Relatives with Colon or Rectal Cancer (or advanced Adenoma)
- Screening should begin at age 40 or ten years before the onset of the cancer.
- Increased Risk patients are screened every 5 years.

Screening Guidelines

Special groups

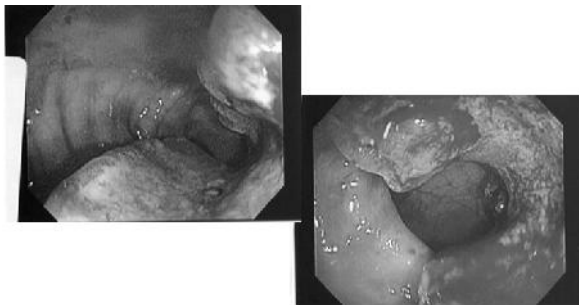
- Inflammatory Bowel Disease
- Familial Adenomatous Polyposis
- Hereditary Non-Polyposis Colon Cancer

- Refer to GI Medicine.

It's a trap!

- 43yo WF with red blood streaking her stools over the last year.
- No change in bowel habits
- No weight loss or anorexia
- No family history of colon or rectal cancer
- DNA analysis of tumor is negative for Lynch Syndrome

Stage I Cancer of the Rectosigmoid Junction



Special Groups

Red Flags!

- Colon Cancer does occur before age 60 even in those patients who have no family history of Colon or Rectal cancer
- Patients over the age of 40 with potential signs of bleeding or GI complaints should be evaluated.
 - Rectal bleeding
 - Change in bowel habits
 - Unexplained loss of weight
 - Anemia

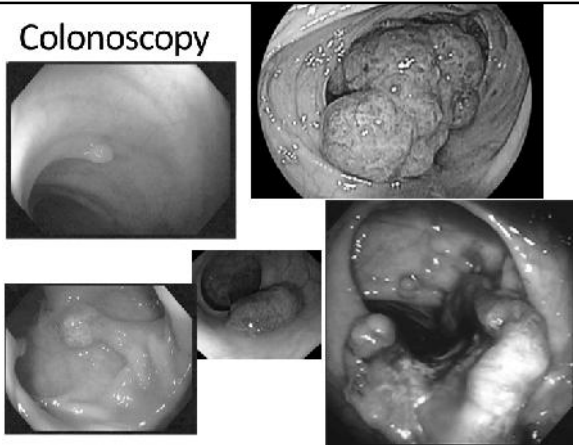
How should you Screen?

Cancer Screening vs. Prevention

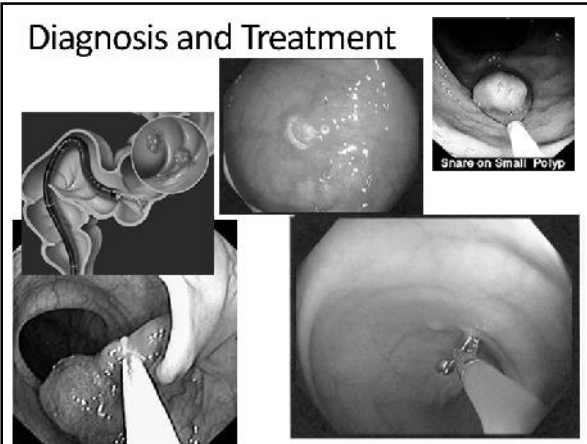
- FOBT (Guaiac, DNA, FIT)
- Flexible Sigmoidoscopy
- Colonoscopy

- CT Colonography (Virtual Colonoscopy)
- Barium Enema

Colonoscopy



Diagnosis and Treatment

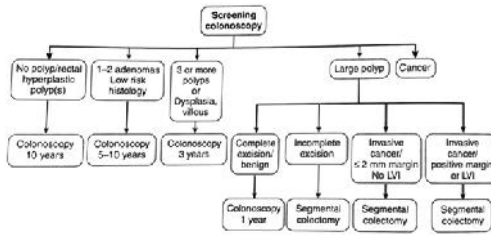


Colonoscopy

Quality Indicators

- Successful Bowel Preparation
- Complete visualization of the bowel including the base of the cecum
 - Withdrawal time of 6 minutes
- Low rate of complication
 - Bleeding
 - Perforation
- Consistent identification and removal of polyps
 - 15-25%

Screening Results and follow up



Colon Cancer

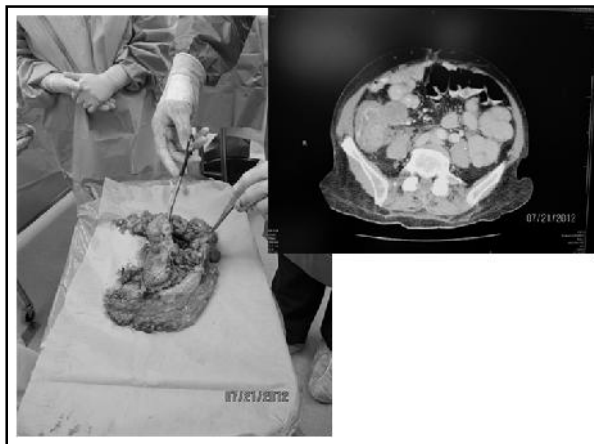


Case History

- 61yo WM, uninsured, with intermittent anemia and transfusions over the previous year.
- No gross blood with bowel movements
- Past history of colon surgery in 1993 for an indeterminate mass
- Normal EGD
- Colonoscopy shows two areas of cancer in the ascending colon

Case History

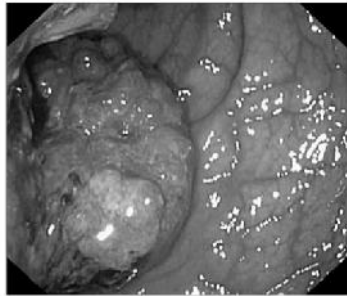
- CEA 4.5 (non-smoker)
- Hct 14.1 (yes, Hct!)
- LFTs normal
- CXR Normal
- CT Scan showing large right colon mass
- Colonoscopy showing invasive cancer
- Final Pathology showing two primary cancers
- Cecal Cancer T3N1 with 1/16 nodes involved
- Ascending Colon Cancer T1N1



Evaluation and management

- CBC, CMP,CEA
- CXR
- CT scan of the abdomen and pelvis
- Surgery: Laparotomy vs. Laparoscopy
- Chemotherapy

Rectal Cancer

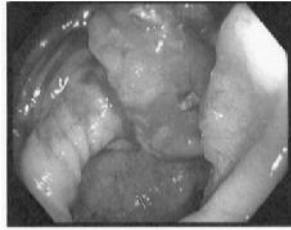


Case History

- 49yo WF with an increased frequency of stools and intermittent bright red blood per rectum
- No family history of colon or rectal cancer
- No recent weight loss
- No anemia

Case History

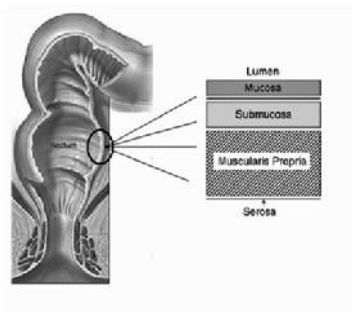
- Digital examination did not identify a mass
- Colonoscopy shows a mid-rectal tumor (10cm from the anal sphincter)
- Biopsies show invasive carcinoma

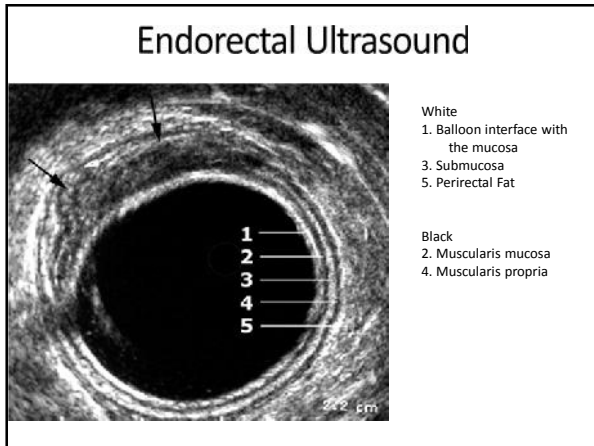


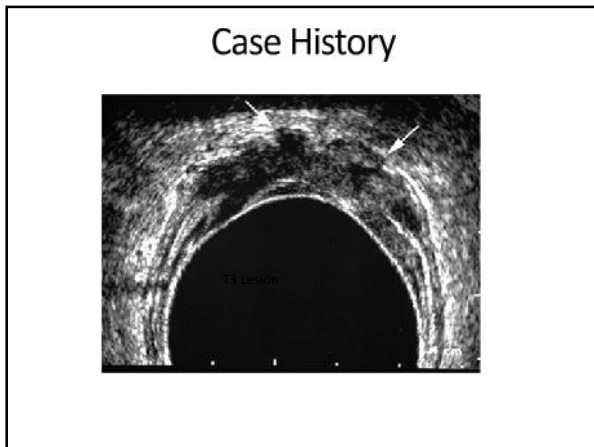
Case History

- CBC and CMP normal
- CEA 1.2
- CXR normal
- CT scan of the abdomen and Pelvis normal
- Endorectal Ultrasound suggests a T3 lesion
- No lymph nodes seen. Clinical Stage II
- DNA evaluation of tumor is negative for Lynch Syndrome

Evaluation of Rectal Cancer







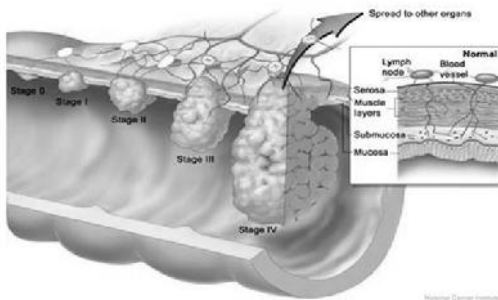
Case History

• Radiation Therapy	• Surgery 9/27/2011
• 28 treatments over 40 calendar days	• Laparoscopic assisted low anterior resection with loop ileostomy
• Treatment complete on 7/18/2011	• No residual cancer in specimen
• Concurrent Chemotherapy with 5-FU continuous infusion	• Closure of ileostomy 11/8/2011

Evaluation and management

- Labs, CXR, CT, endoscopic ultrasound
- Neoadjuvant therapy: Radiation and Chemotherapy
- Surgery: Sphincter saving vs. APR
- Surgery: Laparoscopy vs. Laparotomy
- Additional Chemotherapy

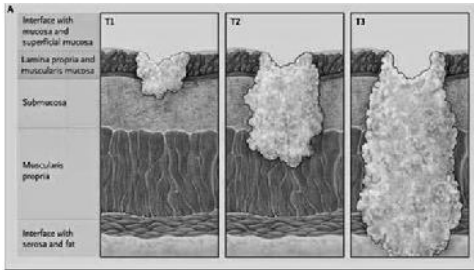
Staging and Prognosis



Staging and Prognosis

- T1 Tumor invades submucosa
- T2 Tumor invades muscularis propria
- T3 Tumor invades through muscularis propria into pericolorectal fat
- T4 Tumors invades into adjacent structures
- N0 No regional nodes
- N1 Metastasis to 1-3 nodes
- N2 Metastasis to 4 or more nodes
- M0 No distant metastasis
- M1 Metastasis to distant site (liver, lung, ovary)

Depth of Invasion



Staging and Prognosis

• Stage I	(T1-2 N0)	93%
• Stage IIA	(T3 N0)	85%
• Stage IIB	(T4 N0)	72%
• Stage IIIA	(T1-2 N1)	85%
• Stage IIIB	(T3-4 N1)	64%
• Stage IIIC	(any T N2)	44%
• Stage IV	(M1)	8%

Questions?
