1. Which answers are true? In contrast to ulcerative colitis, Crohn's disease of the colon:
   A. Is not associated with increased risk of colon cancer.
   B. Seldom presents with daily hematochezia.
   C. Is usually segmental rather than continuous.
   D. Has a lower incidence of perianal fistulas.
   E. Never develops toxic megacolon.
   Answer: BC

DISCUSSION: Crohn's disease of the colon is a patchy, segmental, chronic, transmural inflammatory process that penetrates the bowel wall to form fistulas but seldom causes rectal bleeding. In contrast, ulcerative colitis is a mucosal ulcerating process that extends continuously from the rectum to the more proximal colon and frequently bleeds. Both diseases can develop toxic megacolon, and both predispose the patient to increased risk of malignancy of the large intestine over the long term.

2. Which answers are true? Options to consider when operating for Crohn's disease of the large intestine include:
   A. Colectomy and ileorectostomy.
   B. Colectomy, closure of the rectal stump, and ileostomy.
   C. Colectomy and continent ileostomy (Kock pouch).
   D. Proctocolectomy and ileostomy.
   E. Proctocolectomy and ileal pouch–anal canal anastomosis.
   Answer: ABD

DISCUSSION: Patients with colonic Crohn's disease who have minimal or mild rectal involvement can be treated by colectomy and ileorectostomy or by colectomy, closure of the rectal stump, and ileostomy. When severe rectal involvement is also present, proctocolectomy with permanent ileostomy is required. The Kock pouch (continent ileostomy) and the ileal pouch–anal canal operation are not performed for Crohn's disease because of the risk of recurrence of Crohn's disease in the ileal pouch in the postoperative period.

3. Crohn's disease:
   A. Is caused by Mycobacterium avium tuberculosis.
   B. Is more common in Asian than in Jews.
   C. Tends to occur in families.
   D. Is less frequent in temperate climates than in tropical ones.
   E. Is improved by smoking.
   Answer: C

DISCUSSION: The cause of Crohn's disease is unknown. No specific microorganism has been identified as a pathogen, and no clear-cut environmental factor, such as smoking, has been implicated, even though many patients with Crohn's disease are heavy smokers. The disease does tend to occur in families. It is more common among Jews than Asians and among people who live in temperate climates than those in tropical ones.

4. Recurrence after operation for Crohn's disease:
   A. Occurs after operations for ileal Crohn's but not colonic Crohn's.
   B. Is usually found just proximal to an enteric anastomosis.
   C. Rarely requires reoperation.
   D. Occurs in 1% of patients at risk per year during the first 10 years after the operation.
   E. Is prevented by maintenance therapy with corticosteroids.
   Answer: B

DISCUSSION: Recurrence after operation for Crohn's disease often occurs just proximal to an enteric anastomosis or stoma and occurs at a rate of about 6% per year over the first 10 years after operation. Recurrence follows operations for both ileal and colonic Crohn's and is not prevented by medical therapy using corticosteroids. Reoperation is required for 30% to 50% of subjects at risk.
DISCUSSION: Toxic colitis is a potentially life-threatening complication of chronic ulcerative colitis. Typically it manifests clinically with the onset of abdominal pain and severe diarrhea, followed by abdominal distention and generalized tenderness. Once megacolon and toxicity develop, fever, leukocytosis, pallor, tachycardia, lethargy, and shock set in. The initial treatment for toxic megacolon thus includes intravenous fluid and electrolyte resuscitation, nasogastric suction, broad-spectrum antibiotics to provide anaerobic and aerobic gram-negative coverage, and total parenteral nutrition to improve nutritional status. Large intravenous doses of corticosteroids are generally administered to treat the colitis. In addition, many patients with toxic megacolon are already receiving steroid therapy and, so, need stress doses of steroids to prevent adrenal crisis. The immunosuppressive drugs 6-mercaptopurine and azathioprine may play a role in the management of refractory ulcerative colitis; however, these drugs are not indicated in the acute management of toxicity. Cyclosporine was shown to be effective in treating acute refractory ulcerative colitis in a single controlled trial, but this has not yet been confirmed by other prospective studies, and it remains a potentially dangerous drug. Opioid antidiarrheals should be avoided since they may exacerbate the colonic dilatation and increase the possibility of perforation. Limited proctoscopy may be helpful in determining the cause of the attack, but colonoscopy may be dangerous and is contraindicated in the face of acute toxic megacolon. If toxic colitis, with or without megacolon, does not improve within 48 hours, emergency surgery is warranted.

25. Which finding(s) suggest(s) the diagnosis of chronic ulcerative colitis as opposed to Crohn's colitis?
   A. Endoscopic evidence of backwash ileitis.
   B. Granulomas on biopsy.
   C. Anal fistula.
   D. Rectal sparing.
   E. Cobblestone appearance on barium enema.
   Answer: A

DISCUSSION: It has become increasingly important to distinguish between ulcerative colitis and Crohn's colitis, since the operative therapy for the two disease processes is quite different. Patients with ulcerative colitis are candidates for colectomy with ileoanal anastomosis, whereas Crohn's disease is a clear contraindication to this operation. Clinical findings suggestive of Crohn's disease include anal fistula or rectal involvement, though it must be kept in mind that approximately 10% of patients with ulcerative colitis may also develop granulomatous problems secondary to their chronic diarrhea. Endoscopic or radiographic evidence of rectal sparing is a strong evidence against a diagnosis of ulcerative colitis. However, if patients have been treated with steroids or saline enemas, they may have less active disease in the rectum than in the more proximal colon, a finding that could mislead the clinician about the presence or degree of rectal involvement. Deep linear ulcers that form a cobblestone appearance on barium enema are strongly suggestive of Crohn's disease. Typically, ulcerative colitis is confined to the rectum and colon. Frank small bowel involvement is suggestive of Crohn's disease; however, patients with active pancolitis may have secondary inflammation of the ileum, which has been called backwash ileitis. This is clear after colectomy. The differential diagnosis may ultimately rely on histologic evaluation. Endoscopic biopsies are not generally useful since they only sample 3-mm. deep segments of mucosa and submucosa. Transmural inflammation and granulomas on surgical pathologic specimens are pathognomonic of Crohn's disease.

26. An 80-year-old man who has been bedridden for many years following a stroke presents with acute onset of abdominal distention, obstipation, and colicky abdominal pain. Abdominal x-rays reveal dilated loops of small bowel and a dilated sigmoid colon resembling a bent inner tube. Examination reveals distention with mild direct tenderness but no rigidity or rebound tenderness. Initial management should consist of:
   A. Barium enema examination.
   B. Laparotomy with resection of descending colon and descending colostomy.
   C. Multiple cleansing enemas to remove impacted feces.
   D. Rigid sigmoidoscopy and decompression of the sigmoid colon.
   Answer: D

DISCUSSION: This patient appears to have presented with the classic signs and symptoms of acute sigmoid volvulus. The majority of patients with colonic volvulus are elderly men with underlying neurologic dysfunction. They are commonly referred from a chronic care facility. The patient's condition should be assessed immediately. In the absence of peritonitis the preferred initial management consists of urgent endoscopic detorsion of the volvulus. In most patients this can be easily accomplished with a rigid 25-cm. sigmoidoscope or a flexible fiberoptic colonoscope. Often detorsion of the sigmoid colon
Extramammary Paget’s disease may be found in the axilla and in the anogenital region, including the labia majora, penis, scrotum, groin, pubic area, perineum, perianal region, thigh, and buttock. Paget’s disease of the perianal area is a malignant neoplasm of the intraepidermal portion of apocrine glands with or without associated dermal involvement. Paget’s disease has a long preinvasive phase, but if untreated, an invasive adenocarcinoma of the apocrine gland type develops. The disease is more common in women than men, with the highest incidence in the seventh decade. Macroscopically, the lesion appears as an erythematous scaly or eczematoid plaque-like lesion, similar to other benign perianal lesions, making clinical diagnosis difficult. A definite diagnosis is made by biopsy, which shows characteristic histologic appearance—large, pale, vacuolated cells with hyperchromatic eccentric nuclei. The cells invariably contain acid mucosubstances, an important feature in distinguishing this lesion from melanoma and Bowen’s disease.

67. For the patient in the preceding question, biopsy revealed an invasive apocrine gland neoplasm. The deep margins included striated muscle infiltrated by neoplastic cells. Appropriate management includes which of the following?
   a. Primary radiation
   b. Abdominoperineal resection with bilateral inguinal lymph node dissection
   c. Abdominoperineal resection only
   d. Carbon dioxide laser fulguration

Answer: c

Wide local excision is the treatment of choice in the absence of invasive carcinoma. Because of the high incidence of local recurrence and residual tumor, it is vitally important to obtain an adequate resectional margin. Grossly, the extent of involvement is ill defined, and multiple punch biopsies may be required to determine the extent of involvement. For more advanced lesions with underlying carcinoma, an abdominoperineal resection is indicated. Inguinal lymph node dissection is performed only if groin lymph nodes are clinically positive for metastasis. Because of the commonly delayed diagnosis (average, 4 years), about 25% of patients with perianal Paget’s disease have metastases when they seek treatment. The sites of metastases, in order of frequency, are inguinal and pelvic lymph nodes, liver, lung, brain, bladder, prostate, and adrenal gland. The prognosis is poor once metastasis has occurred.

68. A 43-year-old woman presents with complaints of anal pain and spotting of blood with defecation. Physical examination reveals a 2 x 3 cm area of ulceration within the anal canal. The remainder of the physical examination is normal. Incisional biopsy is positive for squamous cell carcinoma. Appropriate management includes which of the following?
   a. Abdominoperineal resection
   b. Wide local excision, skin grafting, proximal diverting colostomy
   c. Primary radiation therapy
   d. Local excision and primary closure

Answer: c

For localized squamous cell cancers of the anal canal, the most effective protocol consists of primary irradiation and chemotherapy. The treatment regimen includes:

1. External irradiation, 3000 rad (30 Gy), to the primary tumor, pelvic, and inguinal nodes from day 1 to day 21 (200 rad/d, 5 days a week)
2. Systemic chemotherapy, 5-fluorouracil at 1000 mg/m2/24 h, as a continuous infusion for 4 days, starting on day 1 of radiotherapy and repeated on days 28 through 31
3. Mitomycin C at 15 mg/m2 intravenous bolus on day 1

If the lesion disappears grossly, and its microscopic absence is confirmed by biopsy, no further treatment is necessary.

69. Recurrent episodes of sigmoid colonic diverticulitis prompt operative therapy. Which of the following describe the appropriate margins for resection?
   a. Proximal margin, splenic flexure; distal margin, rectosigmoid junction
   b. Proximal margin, descending colon; distal margin, rectosigmoid junction
   c. Proximal margin, descending colon; distal margin, mid-rectum
sphincter muscle. Unless there is an associated anal stenosis or chronic anal fissure, internal sphincterotomy is not performed. The entire wound is closed with running absorbable suture. The largest and the most redundant hemorrhoid should be excised first. No packing is placed in the anal canal. Urinary retention is the most common complication of hemorrhoidectomy, and can be avoided if intravenous fluids are restricted during the procedure and minimized for the next 6 to 8 hours.

75. Appropriate treatment of chlamydial proctitis includes which of the following?

a. Tetracycline 500 mg QID  
b. Metronidazole 250 mg QID  
c. Acyclovir 200 mg QID  
d. Erythromycin 500 mg QID  
Answer: a, d

C trachomatis is the most common cause of sexually transmitted disease in the United States, affecting 4 million Americans each year. Proctoscopy reveals a picture of nonspecific proctitis with friable, granular, and edematous mucosa. Immunofluorescent microscopy provides an accurate and a rapid diagnosis. Treatment includes tetracycline hydrochloride, 500 mg by mouth four times daily for 7 days, or doxycycline, 100 mg by mouth twice daily for 7 days. For patients in whom tetracyclines are contraindicated, erythromycin base or stearate, 500 mg by mouth four times daily for 7 days, or erythromycin ethylsuccinate, 800 mg by mouth four times daily for 7 days, may be used. Two new drugs have been approved by the FDA for the treatment of chlamydia—Azithromycin, 1 gm orally in a single dose, and Ofloxacin, 300 mg orally two times a day for 7 days. A substantial advantage of Azithromycin, in comparison with all other therapies, is that a single dose is effective; this antimicrobial may prove most useful in situations in which compliance with a seven day regimen of another antimicrobial cannot be ensured. In view of the high efficacy of tetracycline and doxycycline, cost also should be considered when selecting a treatment regimen.

76. A 65-year-old man presents with complaints of mucous discharge and perianal discomfort. Physical examination reveals a fistulous opening lateral to the anus. Anoscope examination permits passage of a probe through the fistula tract. The fistula traverses the internal anal sphincter, the intersphincteric plane, and a portion of the external anal sphincter. The fistula is categorized as which type?

a. Intersphincteric  
b. Transsphincteric  
c. Suprasphincteric  
d. Extrasphincteric  
Answer: b

There are four main forms of fistula-in-ano, based on the relation of the fistula to the sphincter muscles. An intersphincteric fistula tract is in the intersphincteric plane. The external opening is usually in the perianal skin close to the anal verge. A transsphincteric fistula starts in the intersphincteric plane or in the deep postanal space. The fistulous track traverses the external sphincter, with the external opening at the ischioanal fossa. Horseshoe fistulas are in this category. Suprasphincteric fistulas start in the intersphincteric plane in the mid-anal canal and then pass upward to a point above the puborectalis. The fistula passes laterally over this muscle and downward between the puborectalis and the levator ani muscle into the ischioanal fossa. An extravasphincteric fistula passes from the perineal skin through the ischioanal fossa, the levator ani muscle, and finally penetrates the rectal wall. Extrasphincteric fistulas may arise from cryptoglandular origin, trauma, foreign body, or pelvic abscess.

77. For the patient in the preceding question, appropriate management includes which of the following?

a. Division of the tissues over the probe with electrocautery, leaving the wound open to heal by secondary intention  
b. Division of the tissues over the probe with electrocautery, closing the wound using a pedicled skin flap  
c. Division of the internal anal sphincter using electrocautery, encircling the external sphincter with a seton  
d. Proximal diverting colostomy and antibiotics  
Answer: c
In young patients, transection of internal and external sphincter muscles in the posterior half, when performed in the course of a fistulotomy, does not always jeopardize anal continence. In older patients and in women, however, transection of the external sphincter muscle, particularly in the anterior half, risks incontinence. When external sphincter transection appears likely, some authors recommend the use of a seton. A seton is a suture that is drawn through a fistula. The rationale for using a seton is to create fibrosis. The seton is threaded through the fistulous track and tied over the muscles. In the second stage (average interval, 6 to 8 weeks), fistulotomy is performed. Incontinence after the proper use of seton is uncommon, even when the fistula is deep.

1
A 44-year-old man presents with painless rectal bleeding of 1 month's duration. He reports a history of constipation. He works in heavy labor.

?For this patient, which of the following statements regarding internal hemorrhoids is true?

Choose one answer:

- Stapled hemorrhoidectomy should be done for grade 1 and 2 hemorrhoids
- All of the above
- Internal hemorrhoids are located proximal to the dentate line and therefore are usually painless
- A grade 1 internal hemorrhoid represents bleeding with prolapse

C*

2
A 34-year-old woman presents for evaluation of severe and frequent bloody bowel movements, as well as abdominal pain, dehydration, and anemia. She has had these symptoms for 2 days. She has not had any similar symptoms in the past, and she has been in relatively good health.

?If the patient has toxic megacolon, under what circumstances emergency surgical management is indicated?

Choose one answer:

- There is a perforation
- Any of the above
- The patient's clinical or radiographic status worsens
- There is no improvement in 24 to 36 hours after aggressive medical therapy

B*

5
A 43-year-old man presents to the office for evaluation of recent weight loss and frequent loose stools. He is concerned because his father was diagnosed with colon cancer at the age of 50.

?Besides family history, what are some other risk factors for colorectal cancer?

Choose one answer:

- Hypertension
- Diabetes
- Inflammatory bowel disease
- All of the above

C*

9
A 78-year-old man is recovering from abdomino-perineal (A-P) resection for Ca rectum, which was performed 3 days ago. The patient is now complaining of mild shortness of breath and chest pain. On physical examination, the patient's right leg is slightly more swollen than his left. The pulse oximetry reading is 90%.

?What is the principal method of diagnosing acute pulmonary embolism?

Choose one answer:

- Magnetic resonance imaging
- Chest x-ray
- Ultrasound
- Spiral computed tomography scanning

D*

Compartment syndrome

Choose one answer:

- Passive stretch decrease muscle pain
- Due to decrease pressure in muscle compartments
- Pulse is the first thing to disappear
- Cause severe pain in the limb
- Treatment is by delayed fasciotomy

E