Q: What’s irritable bowel syndrome (IBS)?
A: IBS is a functional gastrointestinal disease that originates in the intestines and is associated with gastrointestinal motility (see Picturing IBS). More prevalent in women, about 24 million people suffer from the disease, with an onset between the ages of 20 and 50. While the cause is unknown, several factors are related to IBS, including heredity, psychosocial stress, a high-fat diet, irritating foods, and smoking.

Signs and symptoms
Signs and symptoms of IBS have a wide variability. It’s associated with chronic, continuous, or intermittent abdominal pain described as cramping that’s relieved with elimination, bowel pattern changes, and bloating that may be associated with abdominal distention. Various changes in bowel patterns include:
- episodes of diarrhea and/or constipation
- mucus in the stool
- changes in the frequency of elimination
- feelings of straining
- feelings of urgency or incomplete evacuation.

Physical findings
On physical exam, the patient with IBS may exhibit no physical abnormalities or she may experience mild tenderness over the colon, epigastrum, and/or umbilicus. She may also have various motility and sensory abnormalities that precipitate symptoms.

Diagnosis
The diagnosis of IBS is based predominately on the subjective information obtained during the initial exam. Although the patient with IBS will generally have normal test results, a complete blood cell (CBC) count, sedimentation rate (ESR), urinalysis, stool samples, and a sigmoidoscopy may be ordered to rule out more severe pathology. Unfortunately, there’s no definitive test to diagnose IBS; however, The British Society of Gastroenterology guidelines state that the diagnosis should be made if the patient experiences abdominal pain relieved by defecation, changes in stool patterns, or other somatization complaints; frequently visits the office for such complaints; and has a history of anxiety and/or depression.

Treatment
Treatment for IBS includes management of the presenting symptoms. If the predominant symptom is constipation, the patient may benefit from a high-fiber diet, a stool softener, or other medications that increase gastric motility. If diarrhea is the primary complaint, and dietary causes such as lac-
ose intolerance have been ruled out, then bulking agents should be used. Medications and stress management can treat the symptoms of pain and bloating. Loperamide and diphenoxylate work to slow down forward propulsion on the gut, which results in decreased urgency and frequency of bowel movements. Anticholinergics and antispasmodics suppress smooth muscle contractions to relieve pain. Tricyclic antidepressants help minimize diarrhea, while serotonin reuptake inhibitors improve constipation.

Diet is an important component to any IBS treatment plan. Avoiding lactose, caffeine, fatty foods, alcohol, tobacco, some artificial sweeteners, and beans may eliminate or reduce the symptoms of IBS. The British Society of Gastroenterology guidelines suggest that dietary management should begin with moderate if any consumption of lactose, wheat, and insoluble fiber. Exercise is also encouraged to help relieve stress and because low physical activity may cause constipation. And remember not to overlook the psychological component of the disease. To assist with depression or other psychological etiology, your patient may need counseling, stress management, or medications.

**Patient teaching**
A patient diagnosed with IBS will need education on how to manage her disease, including dietary changes, medications, activity levels, and psychological interventions. Encourage your patient to keep a food diary to track which foods aggravate her symptoms so she’ll know what to avoid. She should maintain an adequate fluid intake, avoid stimulants such as caffeine and tobacco, and maintain a high-fiber diet from 20 to 35 grams per day. Be sure to educate her to avoid fluid intake with meals and encourage her not to use straws to help reduce gas and bloating. Encourage the use of stress management techniques because emotional stressors can aggravate IBS symptoms. Follow up isn’t required unless there’s a change in the patient’s condition. Make sure your patient is aware that IBS is a self-limiting disorder that doesn’t progress into a more serious disorder or shorten her life expectancy; however, complications such as blood in the stool should
be reported to her health care provider immediately.

Q: What’s diverticular disease?
A: Diverticular disease includes the diagnoses of diverticulitis and diverticulosis. Diverticulitis occurs when food and bacteria are retained in the diverticulum (a small pocket that forms as the result of herniation of mucosa through the muscular wall of the colon), producing infection and inflammation. Diverticulosis is when multiple diverticulum (known as diverticula) are affected. More than 10% of Americans over age 40, about 50% over age 60, and almost all people over age 80 have diverticulosis (see Picturing diverticulosis). It’s commonly thought that a low-fiber diet is the main cause of diverticular disease.

Signs and symptoms
Symptoms typically include:
• persistent left lower quadrant abdominal pain
• fever
• altered bowel function
• nausea and vomiting (usually caused by bowel obstruction, an abscessed diverticulum, spasm of the bowel, or electrolyte abnormalities)
• malaise
• urinary complaints
• constipation (more common than diarrhea).

Complications associated with diverticular disease include self-limiting bleeding caused by a small blood vessel in the diverticulum that weakens and then bursts, infections, perforations, and/or blockages. If the infection causing diverticular disease worsens, an abscess may form in the colon. This collection of pus may cause swelling and destroy the surrounding colonic tissue. If the diverticula form small holes, called perforations, the bowel contents may leak into the abdomen and/or pelvis and cause peritonitis, a surgical emergency. A fistula may form when damaged tissue makes a connection, causing a communication between two organs or an organ and the skin. The most common type of fistula is found between the bladder and the colon. Significant intra-abdominal infection can cause scarring that may lead to a partial or total blockage of the large intestine. A complete blockage is a surgical emergency. Surgery for a partial blockage isn’t emergent, but is usually still necessary.

Physical findings
On physical exam of the abdomen, the patient will have mild to moderate tenderness localized to the left lower quadrant. Severe abdominal tenderness, sometimes referred to as an acute abdomen, is uncommon and likely the result of diffuse peritonitis caused by a perforation of bowel. Bowel sounds may be hypoactive (most common), high-pitched, or absent. High-pitched, or tinkling, bowel sounds are heard in patients with an impending or early bowel obstruction. Absent bowel sounds may occur if the patient has an ileus, a complete obstruction, or a perforation of bowel. Sometimes an abdominal mass due to a large abscess or significant inflammation can be felt on exam.
The patient may also have occult blood in his stool and a high serum white blood cell count.

**Diagnosis**
Diagnostic testing includes a CBC count, an ESR, a urinalysis, abdominal X-rays, a computed tomography (CT) scan of the abdomen/pelvis (test of choice), a barium enema, and an abdominal ultrasound. Endoscopy may be performed, but not in acute diverticular disease.

**Treatment**
The treatment for diverticular disease depends on the severity of your patient’s symptoms (see Treatment guidelines for patients with severe acute diverticulitis). Outpatient therapy can be effective if the patient has mild pain and is able to hold down liquids and medications. If there’s no improvement after 24 to 36 hours of outpatient treatment, hospitalization should be considered. Hospitalization is required for most cases due to the need for surgical evaluation, pain control, and I.V. antibiotics.

Oral tetracylines and sulfa drugs are used in combination with antifungals for mild cases of diverticular disease, but more severe cases require I.V. broad-spectrum antibiotics. Your patient will also need I.V. hydration, pain control with analgesics, and possibly a nasogastric tube if abdominal distention is present. While receiving treatment, he’ll be NPO (nothing by mouth) to rest his bowel. After a diet is started, it’s imperative that he start with liquids and build up to a low-residue diet that’s high in fiber (see A closer look at a low-residue diet). Stool softeners and antispasmodic medications for pain may be necessary. Surgery may also be an option (see The Hartmann procedure for diverticulitis).

**Patient teaching**
On discharge from the hospital, educate your patient about his new diet restrictions, the need to maintain high fiber intake, the importance of adequate fluid intake, and the avoidance of dietary fat. Follow up may include endoscopy and/or a CT scan or barium enema. Up to 30% of patients will have recurring symptoms.

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**Q:** What are the similarities and differences between IBS and diverticular disease?

**A:** Both disease processes are relatively common. IBS tends to affect younger patients, while the incidence of diverticular disease increases with advancing age. IBS is more specific to women than men, whereas diverticular disease is generally thought to have equal incidence in both genders.

IBS and mild cases of diverticular disease may present similarly. Both disease processes involve abdominal pain: The pain associated with IBS is described as cramping and is relieved with elimination, whereas the pain from diverticular disease is constant and usually focused in the left lower quadrant of the abdomen. Also, the pain can be much more severe with diverticular disease if serious complications are present. Patients may experience diarrhea and/or constipation with either disorder. Fever isn’t generally found in patients with IBS, but it may be present when a patient presents with diverticular disease due to

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**The Hartmann procedure for diverticulitis**
The affected segment of the colon is divided at its distal end. In a primary anastomosis, the proximal margin (dotted line) is transected and the bowel attached end-to-end. In a two-stage procedure, a colostomy is constructed at the proximal margin with the distal stump oversewn or brought to the outer surface as a mucous fistula. The second stage consists of colostomy takedown and anastomosis.
### Irritable bowel syndrome vs. diverticular disease

#### Signs and symptoms

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<td>• Bowel pattern changes (episodes of diarrhea and/or constipation, mucus in the stool, changes in the frequency of elimination, feelings of straining, feelings of urgency or incomplete evacuation)</td>
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<td>• Altered bowel function</td>
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#### Physical findings

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#### Diagnosis

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<td>• I.V. broad-spectrum antibiotics</td>
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<td>• Exercise to reduce stress</td>
<td>• I.V. hydration</td>
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*pathopuzzler*
Treatment guidelines for patients with severe acute diverticulitis

Patients with severe acute diverticulitis require hospitalization for I.V. hydration, broad-spectrum antibiotics, and bowel rest with or without nasogastric tube decompression. The initiation of medical therapy usually results in rapid clinical improvement with resolution of pain, fever, and ileus within 48 to 72 hours. Broad-spectrum antibiotics are continued for 7 to 10 days and oral feedings are gradually reintroduced as tolerated. Following resolution of signs and symptoms, patients should consume a high-fiber diet to decrease the likelihood of repeated attacks.

Surgery for diverticulitis and its complications may be either an elective or emergency procedure. Indications for elective surgery include:

- two or more acute attacks of diverticulitis successfully treated medically
- a single attack requiring hospitalization in a patient younger than age 40
- one attack with evidence of contained perforation, colonic obstruction, or inflammatory involvement of the urinary tract
- inability to rule out a colonic carcinoma.