Abdominal Complaints: Diverticular Disease

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Case Presentation: A patient with a history of follicular large cell lymphoma schedules an urgent office visit for vague complaints of intermittent abdominal pain for the past month. The pain is present in the lower quadrants and is associated with cramping and alternating periods of constipation and diarrhea. The patient denies nausea, vomiting, or fevers. A review of systems is negative for any other complaints, and the patient's weight is stable. The patient is concerned that the pain represents a recurrence of lymphoma, which originally was diagnosed eight years prior. The patient was treated for relapse more than two years ago without evidence of disease recurrence. A computed tomography (CT) scan completed five months prior was negative for lymphadenopathy. A previously enlarged right inguinal node had resolved completely. However, mild diverticulosis was observed in the sigmoid colon. The following information represents a general review of diverticular disease.

Definition

A diverticulum is a single, saclike pouch or protrusion of a mucous membrane through the colon wall. Although the presence of one diverticulum is possible, generally numerous pouches are present. Diverticulosis is the term used for multiple diverticula (Crawford, 1999; Meyer, 2003).

Incidence

Diverticulosis is more common in developed areas such as the United States, Europe, and Australia (Kang, Melville, & Maxwell, 2004; Salzman & Lillie, 2005; Stollman & Raskin, 1999). In 1998, diverticular disease ranked fifth in gastrointestinal disease total costs with an incidence of 2.2 million cases in the United States (Kang et al.). When comparing the incidence in men to that of women, the prevalence was higher in men in studies completed before the 1930s. From the 1930s–1960s, the incidence was higher in women. At the present time, no gender difference exists (Stollman & Raskin). The sigmoid colon is the most common site of disease in Western civilization and often is called left-sided disease. In Asian countries and in those younger than 40, right-sided disease is more prevalent (Kang et al.; Salzman & Lillie).

Pathophysiology

Diverticula occur when an area of weakness exists in the colon wall and is accompanied by increased pressure in the lumen (Crawford, 1999). Factors that influence lumen pressure include dietary fiber intake, increased peristaltic contractions, and colon structure (Salzman & Lillie, 2005). A diet low in fiber causes the colon musculature to increase peristalsis, which, in turn, increases lumen pressure. Increased lumen pressure results in herniation at weakened areas along the colon wall. Diverticula vary in size and generally occur in multiple numbers. The average diameter is 5–10 mm, but they may surpass 20 mm in size.
Approximately 80% of patients with diverticulosis remain symptom free. Of the remaining cases, 15% have symptomatic diverticulosis and 5% develop diverticulitis.

Diagnosis of symptomatic diverticulosis often can be difficult because the symptoms are nonspecific (Kang et al., 2004). Patients may complain of abdominal pain that is colicky, initiated by eating, constant, and relieved by having a bowel movement or passing flatus (Salzman & Lillie, 2005). Patients may complain of bloating and have an area of tenderness in the left lower-abdominal quadrant. Patients report constipation more often than diarrhea. Stool consistency may change and become flat or ribbonlike (Meyer, 2003). Many of the symptoms are similar to those with irritable bowel syndrome.

Diverticulitis is classified as uncomplicated or complicated. Uncomplicated diverticulitis presents with left lower-quadrant pain, fever, and elevated white blood cell count (Kang et al., 2004; Salzman & Lillie, 2005). Both classifications of diverticulitis can be accompanied by nausea, vomiting, and abdominal guarding. Complicated diverticulitis could involve sepsis, bowel abscess, fistula, obstruction, or peritonitis (Salzman & Lillie; Stollman & Raskin, 1999). On physical examination, a mass may be palpated.

Diverticular disease is the most common cause of lower gastrointestinal bleeding, which can occur because of thinning colon walls. The bleeding typically is painless, starts abruptly, and involves large volumes of blood (Kang et al., 2004; Salzman & Lillie, 2005; Stollman & Raskin, 1999).

Differential Diagnosis

The signs and symptoms of diverticular disease may be seen in other disorders as well. The disorders to consider when diagnosing patients with similar complaints include (Meyer, 2003; Salzman & Lillie, 2005; Stollman & Raskin, 1999)

- Irritable bowel syndrome
- Crohn disease
- Colitis
- Appendicitis
- Cystitis
- Inflammatory bowel disease

- Peritonitis
- Small bowel obstruction
- Ectopic pregnancy
- Gynecologic disorders
- Cancer.

Diagnostic Tests

The gold standard for diagnosis was the barium enema. However, colonoscopy is recommended when diverticulitis is suspected to differentiate other pathology (Salzman & Lillie, 2005). Because of the possibility of perforation, colonoscopy should be avoided if diverticulitis is suspected. CT scanning with contrast is an alternative to colonoscopy or barium enema and is the recommended diagnostic test for diverticulitis (Kang et al., 2004). In the future, CT colonography may be used instead of colonoscopy (Salzman & Lillie, 2005).

Laboratory tests used to evaluate for diverticulitic disease include a complete blood count, sedimentation rate, and C-reactive protein. In symptomatic diverticulitis or diverticulitis, the white blood cell count is elevated with a left shift (Kang et al., 2004; Salzman & Lillie, 2005). Stool specimens that are guiac positive require further testing before attributing the cause to diverticular disease (Stollman & Raskin, 1999).

Treatment Options

Pharmacologic

Pharmacologic treatment options depend on the symptoms and underlying disorder. Colicky pain has been attributed to increased intestinal motility, which can be relieved with the use of anticholinergic or antispasmodic medications (Stollman & Raskin, 1999). Although data confirming the benefits of anticholinergic or antispasmodic agent use are lacking, patients may obtain resolution of colonic spasms (Meyer, 2003). For diverticulitis, antibiotics should be initiated that cover gram-negative rods and anaerobic organisms. Antibiotics are given for 7–10 days (Salzman & Lillie, 2005). Consideration for appropriate pain medication involves an understanding of the underlying pathophysiology. Morphine is avoided because of increased intraluminal pressure. Meperidine is recommended because the drug decreases pressure in the lumen.

Nonpharmacologic

In diverticulosis, a diet high in fiber is recommended to prevent recurrence of symptomatic disease (Kang et al., 2004). The amount of fiber recommended is 35 g daily. Although scientific evidence about avoidance of certain foods is lacking, many practitioners recommend that patients avoid foods such as popcorn, seeds, and nuts (Meyer, 2003).

Treatment for diverticulitis varies depending on the severity. Short-term dietary changes include clear liquids then advancing diet with a limit of fiber to 15 g per day (Meyer, 2003). Application of heat to the abdomen is recommended for pain control. Surgical intervention may be needed for drainage of abscess to resection.

Patient Education

Give patients experiencing diverticular disease the following instructions (Meyer, 2003; Salzman & Lillie, 2005).

- Maintain a diet high in fiber. Aim for 35 g daily from whole grains, fruits, vegetables, cereals, and legumes. Increase the amount of fiber gradually to reduce abdominal bloating, discomfort, and flatulence.
- Increase fluid intake to eight glasses of water a day to avoid constipation.
- Avoid the use of laxatives or enemas. These agents increase pressure in the colon.
- Exercise on a regular basis. Physical activity may reduce the amount of painful episodes.
- Report any recurrence of abdominal pain, especially if fever or chills are associated with the pain.
- Report any rectal bleeding.

Recommendations for Follow-Up

Patients with asymptomatic diverticulosis can be managed in the primary care setting. Those with asymptomatic diverticulosis should be monitored on a regular basis and instructed to report pain, fever, chills, or bleeding promptly (Meyer, 2003). Patients may need referrals to various healthcare providers, depending on the stage of diverticular disease. Referral to a dietician may help patients with painful, recurrent diverticulosis. Some patients may...
need to be referred to a gastroenterologist for a diagnostic colonoscopy procedure with diverticulosis or to a surgeon for complicated diverticulitis. Hospitalization is recommended for those with signs of sepsis, fever higher than 101.3°F, dehydration, or massive bleeding.

**Conclusion**

Complaints of abdominal discomfort call for investigation. The discussion of diverticular disease will assist in exploration of causes for abdominal pain. As in the case described, patients with a history of cancer are concerned that symptoms are a sign of disease recurrence. Appropriate assessment, diagnosis, and treatment are essential in maintaining quality of life and emotional well-being.

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**References**


