Manifestations and Treatment of Colonic Diverticular Disease

Series Editor:
C. Neal Ellis, MD
Chief of Surgery, Health Services Foundation, Professor of Surgery, University of South Alabama, Mobile, AL

Contributors:
Bradley J. Champagne, MD
Assistant Professor, Division of Colorectal Surgery, Department of Surgery, University Hospitals Case Medical Center, Cleveland, OH

Fabien Leblanc, MD
Research Fellow, Division of Colorectal Surgery, Department of Surgery, University Hospitals Case Medical Center, Cleveland, OH

Table of Contents

Introduction ......................................................... 2
Case 1: Uncomplicated Diverticulitis ....................... 2
Case 2: Diverticular Abscess ................................. 5
Case 3: Obstruction ............................................... 7
Case 4: Diverticular Fistula ................................... 9
Summary Points .................................................. 10
References ......................................................... 11
INTRODUCTION

Colonic diverticulosis is commonly asymptomatic and occurs in 30% to 50% of the population over the age of 60 years and in more than two thirds of those over age 80 years. Diverticula, generally multiple, are characterized by a sac-like outpouching of mucosa and submucosa through the muscularis layer on the sites of penetration of blood vessels in the colonic wall. Genetics, dietary factors, and changes in intestinal flora may contribute to the development of colonic diverticulosis.

The sigmoid colon is the most commonly involved site (95%) in diverticular disease, but the entire colon can be involved and the rectum is always spared. Diverticular disease is defined as any complication of colonic diverticulosis. It encompasses uncomplicated diverticulitis and complicated diverticulitis (abscess, fistula, obstruction, phlegmon, bleeding, or peritonitis), resulting in significant morbidity and potential mortality. A significant challenge in the management of diverticular disease remains its unclear natural course. The nebulous indications for surgery are a continuous source of controversy among opinion leaders. This manual reviews the current management of diverticular disease using 4 hypothetical clinical case presentations.

CASE 1: UNCOMPROMICATED DIVERTICULITIS

CASE PRESENTATION

A 46-year-old man is admitted to the hospital with acute onset of severe left-sided abdominal pain that has been present for 24 hours with diarrhea. He does not have any relevant medical or surgical history. His temperature is 101.1°F and on examination he has left peritoneal guarding. The admission laboratory test results are as follows: hemoglobin, 15.1 mg/dL; white blood cell count, 14,000/μL; C-reactive protein, 120 U/L; serum creatinine, 1.2 mg/dL; lipase, 30 U/L; total bilirubin, 1.1 mg/dL; aspartate aminotransferase, 30 U/L; alkaline phosphatase level, 80 U/L. The diagnosis of uncomplicated sigmoid diverticulitis is suspected.

How can the diagnosis be confirmed?

DIAGNOSIS

Between 20% and 25% of patients with colonic diverticulosis develop diverticular disease. The main risk factors for developing diverticular disease are low-fiber diet, lack of physical activity, and use of anti-inflammatory medications. Classically, a pseudo-appendiceal syndrome located in the left lower quadrant characterizes acute diverticulitis. Most commonly, symptoms include low-grade fever, localized abdominal pain, nausea, vomiting, and constipation or diarrhea. Patients may also complain of dysuria and/or frequency secondary to bladder irritation from inflammation of the sigmoid colon. Right lower quadrant pain may also be present in patients with a long sigmoid loop that crosses the midline. Right-sided colonic diverticulitis may also occur. Hematochezia is generally absent. Laboratory blood tests will typically reveal an inflammatory syndrome with leukocytosis, a left shift, and an elevated C-reactive protein level.

Colonoscopy is not recommended in cases of suspected acute diverticulitis because of the increased risk of colonic perforation. The diagnosis of acute diverticulitis often can be made based on the history and physical examination. Imaging tests are used to confirm the diagnosis of diverticulitis and exclude differential diagnoses. Plain abdominal radiographs are only useful for revealing severe complications of diverticular disease such as diverticular perforation (pneumoperitoneum) and intestinal obstruction (dilation, air-fluid levels). Before the advent of computed tomography (CT) scanning, water-soluble contrast enema was the preferred test to confirm diverticulitis. CT scan is now the test of choice to confirm diverticulitis, with