Large Bowel Obstruction

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INTRODUCTION

Large bowel obstruction (LBO) is a clinical entity that results from a mechanical hindrance to the intestinal passage distal to the ileocecal valve. The extent of a mechanical obstruction can be described as either partial (allowing for some passage of gas or stool) or complete (no passage of stool or gas); the onset of the developing LBO is characterized as acute or chronic.¹

There are numerous etiologies of LBO (Table 1) as well as wide variation in etiology with age and geography.² For example, cancer is the most common cause of LBO in the United States, whereas colonic volvulus is more common in Africa, South America, Russia, and Eastern Europe (geographical distribution termed as “volvulus belt”).³ The neonatal and pediatric population presents with LBO in the context of intussusception or congenital malformations such as Hirschsprung’s disease and imperforate anus.

Depending on the timing and dynamic course of the LBO, the clinical presentation can evolve either acutely or slowly and progressively. Common early complaints are varying levels of pain, obstipation, and increasing abdominal distention; later in the course, nausea, vomiting, and systemic signs (eg, electrolyte imbalances, hemodynamic changes, sepsis, multiorgan dysfunction) may develop.¹,⁴ The colonic obstruction leads to an intraluminal accumulation of stool and intestinal gas proximal to the site of obstruction. Initially, increased peristaltic waves attempt to overcome the obstacle (hypermotility phase). With continuing distention, however, the intraluminal and intra-abdominal pressure may ultimately exhaust the colonic muscle contractility (ileus phase) and compromise the lymphatic, venous, and arterial blood flow. As the events progress, the large bowel suffers a worsening vascular compromise that may lead to bowel ischemia up to full-thickness gangrene and perforation of the colon.

A number of key components are important for successful management of patients with LBO:¹ early recognition of the clinical symptoms, a good understanding of the impact of different underlying causes, timely initiation of diagnostic and management steps, and swift, strategic planning of subsequent interventions. This article reviews the management of LBO using 3 illustrative patient presentations. Definitions of terms pertinent to this discussion are presented in Table 2.

CASE 1: MALIGNANT OBSTRUCTION

CASE PRESENTATION

A 56-year-old woman presents with a 6- to 8-week history of abdominal cramping, constipation, and poor appetite. Apart from an unintentional 7-lb weight loss and a history of asthma, the past medical and surgical history are negative. The patient denies any rectal bleeding. On clinical examination, she has a distended abdomen with mild diffuse tenderness to palpation, but no guarding, rebound, or percussion tenderness (ie, no local or diffuse peritoneal signs). There is no evidence for a hernia, and there are no palpable masses. The digital rectal exam reveals an empty rectal vault, but no mass or gross blood are found in reach of the finger. Laboratory test results are as follows: hemoglobin, 10.4 mg/dL; blood urea nitrogen (BUN), 25 mg/dL; creatinine, 2.0 mg/dL; sodium, 138 mEq/L; potassium, 3.6 mEq/L; amylase, 23 U/L; and lipase, 35 U/L.

• What is the differential diagnosis in this patient?

This patient’s clinical presentation is consistent with a relatively slowly evolving LBO. Excluding hernias, the most common cause of LBO in adults in the United States is carcinoma (60%–80%), followed by a diverticular stricture (10%–20%) and a colonic volvulus (5%).² Other causes are possible, but short of a documented negative colonic evaluation in the very recent past, the index of suspicion for a malignant obstruction in a previously healthy individual should be high based on the progressive painless worsening and the associated anemia. Simple poor-habit constipation or colonic inertia (slow transit constipation) are theoretically possible but unlikely given both a weight loss and the presence of anemia in this patient. The presentation is not characteristic for a volvulus, which commonly would be more acute and associated with significant pain. A benign