

## CONTENTS

<b>Preface</b>	<b>xi</b>
Mitchell S. Cappell	

<b>Initial Management of Acute Upper Gastrointestinal Bleeding: From Initial Evaluation up to Gastrointestinal Endoscopy</b>	<b>491</b>
Mitchell S. Cappell and David Friedel	

Acute upper gastrointestinal bleeding is a relatively common, potentially life-threatening medical emergency responsible for more than 300,000 hospital admissions and about 30,000 deaths per annum in America. The initial assessment focuses on bleeding activity, bleeding severity, hemodynamic compromise from the bleeding, and differentiating upper from lower gastrointestinal bleeding. The initial supportive therapy includes fluid resuscitation to reverse the hypovolemia, blood transfusions to replete the lost blood, respiratory support as necessary, and proton pump inhibitor therapy to stabilize mucosal blood clots and promote hemostasis. Esophagogastroduodenoscopy is the best test to determine the bleeding site and cause.

<b>Acute Nonvariceal Upper Gastrointestinal Bleeding: Endoscopic Diagnosis and Therapy</b>	<b>511</b>
Mitchell S. Cappell and David Friedel	

Acute upper gastrointestinal bleeding is a relatively common, potentially life-threatening condition that causes more than 300,000 hospital admissions and about 30,000 deaths per annum in America. Esophagogastroduodenoscopy is the procedure of choice for the diagnosis and therapy of upper gastrointestinal bleeding lesions. Endoscopic therapy is indicated for lesions with high risk stigmata of recent hemorrhage, including active bleeding, oozing, a visible vessel, and possibly an adherent clot. Endoscopic therapies

include injection therapy, such as epinephrine or sclerosant injection; ablative therapy, such as heater probe or argon plasma coagulation; and mechanical therapy, such as endoclips or endoscopic banding. Endoscopic therapy reduces the risk of rebleeding, the need for blood transfusions, the requirement for surgery, and patient morbidity.

## **Portal Hypertension and Variceal Hemorrhage**

551

Nagib Toubia and Arun J. Sanyal

Portal hypertension, a major hallmark of cirrhosis, is defined as a portal pressure gradient exceeding 5 mm Hg. In portal hypertension, porto-systemic collaterals decompress the portal circulation and give rise to varices. Successful management of portal hypertension and its complications requires knowledge of the underlying pathophysiology, the pertinent anatomy, and the natural history of the collateral circulation, particularly the gastroesophageal varices.

## **Mechanical Obstruction of the Small Bowel and Colon**

575

Mitchell S. Cappell and Mihaela Batke

Mechanical obstruction of the small bowel and colon is moderately common, accounting for several hundred thousand admissions per year in the United States. Patients generally present with abdominal pain, nausea and emesis, abdominal distention, and progressive obstipation. Clinical findings of high fever, localized severe abdominal tenderness, rebound tenderness, severe leukocytosis, or metabolic acidosis suggest possible complications of bowel necrosis, bowel perforation, or generalized peritonitis. Differentiation of total mechanical obstruction from partial mechanical obstruction and pseudo-obstruction is important because total mechanical obstruction is generally treated surgically, whereas the other two entities are usually treated medically. Mechanical obstruction is usually suggested by plain abdominal radiographs, and confirmed by small bowel follow through, abdominal CT, or CT enteroclysis.

## **Gastrointestinal Perforation and the Acute Abdomen**

599

John T. Langell and Sean J. Mulvihill

The acute abdomen accounts for up to 40% of all emergency-surgical hospital admissions and is considered in the differential in the more than 7 million visits to the emergency department annually for abdominal pain in the United States. A large percentage of these cases are secondary to perforation or impending gastrointestinal perforation. Gastrointestinal perforation causes considerable mortality and usually requires emergency surgery. Rapid diagnosis and treatment of these conditions is essential to reduce the high morbidity and mortality of late-stage presentation. Successful treatment requires a thorough understanding of the

anatomy, microbiology, and pathophysiology of this disease process and in-depth knowledge of the therapy, including resuscitation, antibiotics, source control, and physiologic support.

### **Acute Abdominal Vascular Emergencies**

627

Charles J. Shanley and Jeffrey B. Weinberger

Abdominal vascular emergencies are relatively uncommon, frequently catastrophic, and highly lethal. Despite improved understanding of the pathophysiology and natural history of these disorders, delays in diagnosis and treatment remain the most important factors contributing to the observed high mortality. A high index of clinical suspicion together with a sound understanding of the clinical presentation, natural history, and management of these disorders are critical to improving outcomes. This article focuses on abdominal vascular emergencies presenting with acute visceral ischemia or catastrophic intra-abdominal hemorrhage.

### **Adynamic Ileus and Acute Colonic Pseudo-Obstruction**

649

Mihaela Batke and Mitchell S. Cappell

Ileus and colonic pseudo-obstruction cause functional obstruction of intestinal transit, without mechanical obstruction, because of uncoordinated or attenuated intestinal muscle contractions. Ileus usually arises from an exaggerated intestinal reaction to abdominal surgery that is often exacerbated by numerous other conditions. Colonic pseudo-obstruction is induced by numerous metabolic disorders, drugs that inhibit intestinal motility, severe illnesses, and extensive surgery. It presents with massive colonic dilatation with variable, moderate small bowel dilatation. Both conditions are initially treated with supportive measures that include intravenous rehydration, correction of electrolyte abnormalities, discontinuation of antikinetic drugs, and treatment of other contributing disorders. Specific therapies for colonic pseudo-obstruction include neostigmine (an anticholinesterase) for pharmacologic colonic decompression and colonoscopic decompression.

### **Severe Complications of Inflammatory Bowel Disease**

671

Francisco Marrero, Mohammed A. Qadeer, and Bret A. Lashner

Patients who have inflammatory bowel disease occasionally develop severe complications or emergency situations that require expert and expedited medical care, including toxic colitis, fistulas, abdominal abscesses, malignancy, primary sclerosing cholangitis, and pouchitis. Morbidity and mortality rates of Crohn's disease and ulcerative colitis are increased over the expected rates in the unaffected population. Knowledge of the presenting features, natural history, and treatment of these complications should lead to early and effective therapy and better outcomes.

<b>Endoscopic Mucosal Resection of Colonic Lesions: Current Applications and Future Prospects</b>	<b>687</b>
David M. Poppers and Gregory B. Haber	

The introduction of submucosal fluid injection has remarkably extended the range of endoscopically resectable polyps. The limiting factor for endoscopic resection is not polyp size, but polyp depth. Endoscopic ultrasound is a useful adjunctive diagnostic tool to assess the depth of invasion. The success of a resection ultimately depends on pathologic confirmation of a benign nature of this lesion or of a cancer limited to the mucosa. Selected well-differentiated cancers without lymphovascular invasion of the superficial submucosa can be successfully resected endoscopically.

<b>Index</b>	<b>707</b>
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