as possible. Nasogastric tube suction decompresses the stomach, minimizes further distention from swallowed air, improves patient comfort, and reduces the risk of aspiration. Urine output should be assessed using a Foley catheter. In some cases, for example, in patients with cardiac disease, central venous pressures should be monitored. The use of antibiotics is controversial, although prophylactic administration is warranted if surgery is required. Complete bowel obstruction is an indication for intervention. Stenting may be possible and warranted for some patients with high-grade obstruction due to unresectable stage IV malignancy. Stenting may also allow elective mechanical bowel preparation before surgery is undertaken. Because treatment options are so variable, it is helpful to make as precise a diagnosis as possible preoperatively.

ILEUS

Patients with ileus are treated supportively with intravenous fluids and nasogastric decompression while any underlying pathology is treated. Pharmacologic therapy is not yet proven to be efficacious or cost-effective. However, peripherally active μ-opioid receptor antagonists (e.g., alvimopan and methylnaltrexone) may accelerate gastrointestinal recovery in some patients who have undergone abdominal surgery.

COLONIC PSEUDO-OBSTRUCTION (OGILVIE'S DISEASE)

Neostigmine is an acetylcholinsterase inhibitor that increases cholinergic (parasympathetic) activity, which can stimulate colonic motility. Some studies have shown it to be moderately effective in alleviating acute colonic pseudo-obstruction. It is the most common therapeutic approach and can be used once it is certain that there is no mechanical obstruction. Cardiac monitoring is required, and atropine should be immediately available. Intravenous administration induces defecation and flatus within 10 min in the majority of patients who will respond. Sympathetic blockade by epidural anesthesia can successfully ameliorate pseudo-obstruction in some patients.

VOLVULUS

Patients with sigmoid volvulus can often be decompressed using a flexible tube inserted through a rigid proctoscope or using a flexible sigmoidoscope. Successful decompression results in sudden release of gas and fluid with evidence of decreased abdominal distension and allows definitive correction to be scheduled electively. Cecal volvulus most often requires laparotomy or laparoscopic correction.

INTRAOPERATIVE STRATEGIES

Approximately 60–80% of selected patients with mechanical bowel obstruction can be successfully treated conservatively. Indeed, most cases of radiation-induced obstruction should also be managed nonoperatively if possible. In most circumstances, early consultation with a general surgeon is prudent when there is concern about strangulation obstruction or other abnormality that needs to be addressed urgently. Deterioration signifies a need for intervention. At this time, the decision as to whether the patient can continue to be treated nonoperatively can only be based on clinical judgment, although, as described earlier, imaging studies can sometimes be helpful. The frequency of major complications after operation ranges from 12 to 47%, with greater risk being attributed to resection therapies and the patient's overall health. Risk is increased for patients with American Society of Anesthesiologists (ASA) class III or higher.

At operation, dilation proximal to the site of blockage with distal collapse is a defining feature of bowel obstruction. Intraoperative strategies depend on the underlying problem and range from lysis of adhesions to resection with or without diverting ostomy to primary resection with anastomosis. Resection is warranted when there is concern about the bowel's viability after the obstructive process is relieved. Laparoscopic approaches can be useful for patients with early obstruction when extensive adhesions are not expected to be present. Some patients with high-grade obstruction secondary to malignant disease that is not amendable to resection will benefit from bypass procedures.

ADULT INTUSSUSCEPTION AND GALLSTONE ILEUS

Primary resection is prudent. Careful manual reduction of any involved bowel may limit the amount of intestine that needs to be removed. A proximal ostomy may be required if unprepped colon is involved. Only 60% of patients with gallstone ileus obstruct in the ileum. The most common site of intestinal obstruction in patients with gallstone "ileus" is the ileum (60% of patients). The gallstone enters the intestinal tract most often via a cholecystoduodenal fistula. It can usually be removed by operative enterolithotomy. Addressing the gallbladder disease during urgent or emergent surgery is not recommended.

POSTOPERATIVE BOWEL OBSTRUCTION

Early postoperative mechanical bowel obstruction is that which occurs within the first 6 weeks of operation. Most are partial and can be expected to resolve spontaneously. It tends to respond and behave differently from classic mechanical bowel obstruction and may be very difficult to distinguish from postoperative ileus. A higher index of suspicion for a definitive site of obstruction is warranted for patients who undergo laparoscopic surgical procedures. Patients who first had ileus and then subsequently develop obstructive symptoms after an initial return of normal bowel function are more likely to have true postoperative small-bowel obstruction. The longer it takes for a patient's obstructive symptoms to resolve after hospitalization, the more likely the patient is to require surgical intervention.

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ACUTE APPENDICITIS

INCIDENCE AND EPIDEMIOLOGY

Appendicitis occurs more frequently in Westernized societies. Although its incidence is decreasing for uncertain reasons, acute appendicitis remains the most common emergency general surgical disease affecting the abdomen, with a rate of approximately 100 per 100,000 person-years in Europe and the Americas or about 11 cases per 10,000 people annually. Approximately 9% of men and 7% of women will experience an episode during their lifetime. Appendicitis occurs most commonly in 10- to 19-year-olds, although the average age at diagnosis appears to be gradually increasing, as is the frequency of the disease in African Americans, Asians, and Native Americans. Overall, 70% of patients are less than 30 years old and most are men; the male-to-female ratio is 1.4:1.

One of the more common complications and most important causes of excess morbidity and mortality is perforation, whether it is contained and localized or unconstrained within the peritoneal cavity. In contrast to the trend observed for appendicitis and appendectomy, the incidence of perforated appendicitis (~20 cases per 100,000 person-years) is increasing. The explanation for this phenomenon is unknown. Approximately 20% of all patients have evidence of perforation at presentation, but the percentage risk is much higher in patients under 5 or over 65 years of age.