

Figure 17-22 Intestinal obstruction. The four major causes of intestinal obstruction are (1) herniation of a segment in the umbilical or inguinal regions, (2) adhesion between loops of intestine, (3) volvulus, and (4) intussusception.

create closed loops through which other viscera may slide and become entrapped, resulting in internal herniation. Sequelae, including obstruction and strangulation, are much the same as with external hernias; *adhesions are the most common cause of intestinal obstruction in the United States*. Fibrous adhesions are most often acquired, but can be congenital in rare cases. Therefore, internal herniation must be considered even in the absence of a history of peritonitis or surgery.

Volvulus

Twisting of a loop of bowel about its mesenteric point of attachment is termed volvulus; it results in both luminal and vascular compromise. Thus, volvulus presents with features of both obstruction and infarction. It occurs most often in large redundant loops of sigmoid colon, followed in frequency by the cecum, small bowel, stomach, or, rarely, transverse colon. Because it is rare, volvulus can be overlooked clinically.

Intussusception

Intussusception occurs when a segment of the intestine, constricted by a wave of peristalsis, telescopes into the immediately distal segment. Once trapped, the invaginated segment is propelled by peristalsis and pulls the mesentery along. Untreated intussusception may progress to intestinal obstruction, compression of mesenteric vessels, and infarction.

Intussusception is the most common cause of intestinal obstruction in children younger than 2 years of age. In these

idiopathic cases there is usually no underlying anatomic defect and the patient is otherwise healthy. Other cases have been associated with viral infection and rotavirus vaccines, perhaps due to reactive hyperplasia of Peyer patches and other mucosa-associated lymphoid tissue which can act as the leading edge of the intussusception. Intussusception is rare in older children and adults, and is generally caused by an intraluminal mass or tumor that serves as the initiating point of traction (**Fig. 17-23B**). Contrast enemas can be used both diagnostically and therapeutically for idiopathic intussusception in infants and young children, in whom air enemas may also effectively reduce the intussusception. However, surgical intervention is necessary when a mass is present, as is generally the case in older children and adults.

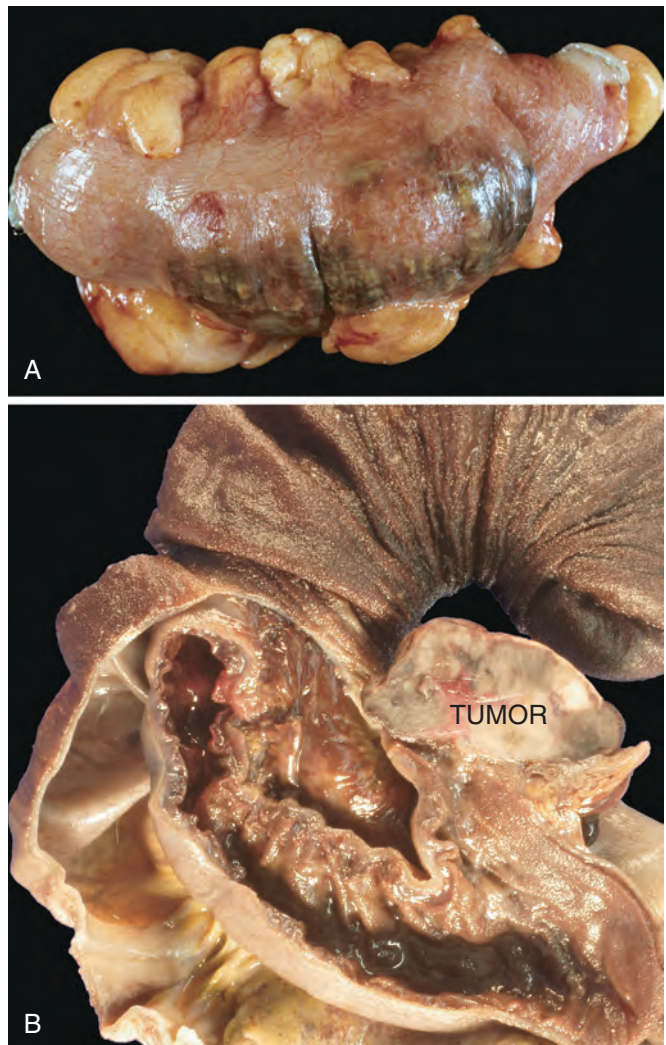


Figure 17-23 Intestinal obstruction. **A**, Portion of bowel incarcerated within an inguinal hernia. Note dusky serosa and hemorrhage that indicate ischemic damage. **B**, Intussusception caused by a tumor. The outermost layer of intestine with external serosa has been removed, leaving the mucosa of the second layer exposed. The serosa of the second layer is apposed to the serosa of the intussuscepted intestine. A tumor mass (right, labeled tumor) is present at the leading edge of the intussusception. Compare to **Figure 17-22**. (**B**, Courtesy Dr. Christopher Weber, The University of Chicago, Chicago, Ill.)