08SUR(a)_Text 4/22/05 14:57 Page 55

UCV

CASE 30

ID/CC A 40-year-old woman is admitted for several hours of **crampy abdominal pain, vomiting, abdominal distention**, and **inability to pass flatus or stool**.

HPI She has had **multiple abdominal surgeries**, including an appendectomy, a total abdominal hysterectomy, a cholecystectomy, and, most recently, an incisional hernia repair.

PE VS: **tachycardia** (HR 104); tachypnea; no fever. PE: **dry mucous membranes**; abdomen **tympanitic**, **distended**, and **tender** with no rigidity or rebound tenderness; **bowel sounds high-pitched and increased**; no stool in rectal vault.

Labs CBC: **elevated hematocrit** (due to intraluminal fluid sequestration); elevated WBC count (16,400). Serum and urine amylase slightly increased (modest amylase elevations are seen in intestinal obstruction); lipase normal. ABGs: partially compensated metabolic **acidosis**.

Imaging CXR: no free subdiaphragmatic air (no evidence of intestinal perforation); diminished excursion of the diaphragm (abdominal distention). **[Fig. 30A]** KUB: "string-of-beads" sign (1); no gas shadows in the colon or rectum (complete obstruction). **[Fig. 30B]** A different case with small bowel obstruction due to Crohn's disease demonstrating **dilated small bowel loops in a stepladder pattern** and **multiple air-fluid levels**.

Pathogenesis **Mechanical obstruction** may be intrinsic (ascaris), extrinsic (hernia ring constricts bowel), or intramural (leiomyoma of wall blocks lumen). The **adynamic** (PARALYTIC) type involves no obstacle but is considered an obstruction because the end result is the same. Pressure increases proximal to the obstruction as fluid and air build up. Over time, the pressure in the lumen may exceed the postcapillary venule pressure, impairing blood flow and eventually producing bowel ischemia and necrosis, leading to perforation. The most common causes of small bowel obstruction

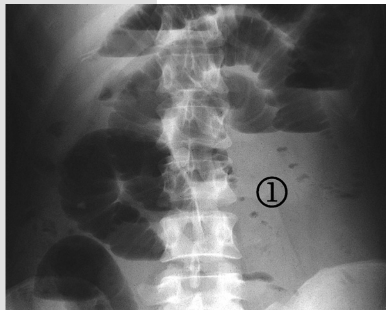

Figure 30A

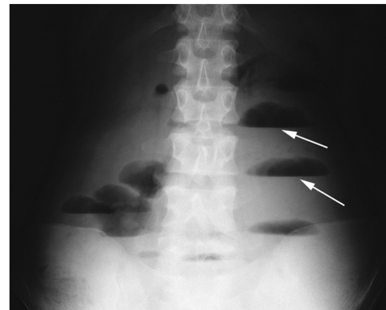

Figure 30B

continued

08SUR(a)_Text 4/22/05 14:57 Page 56

UCV

are **adhesions** (from prior surgery) and **hernias** (all types); other causes include **neoplasms** (in the elderly), **intussusception** (in infants), and parasites. Volvulus, usually of the cecum or sigmoid colon, causes large bowel obstruction with less prominent vomiting.

Epidemiology Obstruction of the small bowel constitutes 75% of intestinal obstruction; obstruction of the colon constitutes 25%. In cases where the obstruction is relieved within 24 hours, mortality is only 1%. Otherwise, the obstruction can cause gangrene and perforation, leading to significant mortality.

Management NPO; IV fluids; NG tube aspiration and decompression. Correction of fluid, electrolyte, and acid-base imbalances; laparotomy with surgical resolution of obstruction.

Complications Intestinal perforation, strangulation, peritonitis, recurrence of obstruction, systemic sepsis, and shock.

TOP SECRET