



FIGURE 37-3 Colonic biopsy specimen demonstrates a chronic inflammatory infiltrate with a granuloma in a patient with Crohn's colitis (hematoxylin and eosin stain).

sedimentation rate (ESR) or C-reactive protein (CRP) level. Anemia commonly occurs and is caused by chronic blood loss from the involved colonic mucosa as well as bone marrow suppression from the inflammatory condition. Perforation can occur in patients with severe or fulminant colitis, especially those taking corticosteroids, and in the setting of toxic megacolon. Toxic megacolon is characterized by gross dilation of the large bowel associated with fever, abdominal pain, dehydration, tachycardia, and bloody diarrhea.

The clinical presentation of Crohn's disease depends on the section of gastrointestinal tract involved and the type of inflammation. Crohn's disease can involve any portion of the gastrointestinal tract; the most common site is ileocecal (40% of patients), followed by isolated small bowel disease (30%) and isolated colonic involvement (25%). The remaining sites of Crohn's disease are rare (5%) and include the esophagus, stomach, and duodenum.

Symptoms in Crohn's disease often include right lower quadrant abdominal pain, fever, weight loss, diarrhea, and sometimes a palpable inflammatory mass. Hematochezia is less common than in UC. The disease is often present for months or years before diagnosis, and in children, growth retardation may be the sole presenting sign. In contrast to UC, the inflammation in Crohn's disease is transmural and can result in microperforations and the formation of fistulous tracts. Fistulas may form between different segments of bowel (e.g., enteroenteric, enterocolonic) or between bowel and skin (enterocutaneous), bowel and bladder (enterovesicular), or rectum and vagina (rectovaginal). Over time, as many as 30% to 40% of patients develop disabling perianal involvement with fissures, fistulas, and abscesses.

Chronic inflammation can cause fibrosis and stricture formation, which in turn may result in partial or complete intestinal obstruction, with the patient complaining of abdominal pain, distention, nausea, and vomiting. Strictures can also lead to stasis with subsequent small intestinal bacterial overgrowth. Extensive ileal mucosal disease may lead to malabsorption of vitamin B₁₂ (resulting in a megaloblastic anemia and neurologic side effects

TABLE 37-1 EXTRAINTESTINAL MANIFESTATIONS OF INFLAMMATORY BOWEL DISEASE

SKIN	OCULAR
Pyoderma gangrenosum	Uveitis
Erythema nodosum	Episcleritis
Sweet's syndrome	
HEPATOBIILIARY	MISCELLANEOUS
Primary sclerosing cholangitis	Hypercoagulable state
Cholelithiasis	Autoimmune hemolytic anemia
Autoimmune hepatitis	Amyloidosis
MUSCULOSKELETAL	
Seronegative arthritis	
Ankylosing spondylitis	
Sacroiliitis	

if not corrected) and malabsorption of bile salts (resulting in diarrhea induced by unabsorbed bile salts and potential fat-soluble vitamin deficiency). Depletion of the bile salt pool can lead to the formation of gallstones. Weight loss may result from generalized malabsorption caused by loss of absorptive surfaces. Chronic fat malabsorption leads to luminal binding of free fatty acids to calcium; this allows oxalate, which normally is poorly absorbed because it complexes to calcium in the gut lumen, to be absorbed. The increase in oxalate absorption increases the risk for urinary calcium oxalate stone formation. Patients with an ileostomy or chronic volume loss from diarrhea are also at increased risk for uric acid stones.

Extraintestinal Manifestations

Although both UC and Crohn's disease primarily involve the bowel, they are also associated with inflammatory manifestations in other organ systems. This reflects the systemic nature of these disorders (Table 37-1). Extraintestinal manifestations can occur in parallel or independently of colonic activity, and they can become more difficult to treat than the bowel disease itself.

The most common extraintestinal manifestation is arthritis, which is seen in about 9% to 50% of patients and is divided into two major types. The first is a peripheral, large-joint, asymmetrical, seronegative, oligoarticular, nondeforming arthritis that may involve the knees, hips, wrists, elbows, and ankles. This *peripheral arthropathy* usually parallels the course of the large bowel disease and typically lasts for only a few weeks. The second type of IBD-related arthritis is axial in location, consisting of sacroiliitis or ankylosing spondylitis, and does not parallel the activity level of the bowel disease. Ankylosing spondylitis occurs in 5% to 10% of IBD patients and manifests with low back pain and stiffness that is usually worse during the night, in the morning, or after inactivity. Sacroiliitis alone (without ankylosing spondylitis) is common in IBD (up to 20% of patients), but in many cases is asymptomatic.

Liver complications of IBD include both intrahepatic and biliary tract diseases. Intrahepatic diseases include fatty liver, pericholangitis, and chronic active hepatitis. Pericholangitis, also known as small-duct sclerosing cholangitis, is the most common of these diseases. It usually is asymptomatic, identified only by abnormalities in alkaline phosphatase and γ -glutamyl transpeptidase on laboratory tests and histologically by portal tract

