



FIGURE 32-3. Endoscopic features of proximal CD include multiple focal erythema, nodularity, and aphthoid as well as deep serpiginous ulcerations most commonly involving the antrum and duodenum.

control population. *H. pylori*-negative focal acute gastro-duodenitis was therefore characteristic of CD—present in 31% of gastric and 40% of duodenal CD compared with only 2% and 8%, respectively, of controls. Additionally, surface intraepithelial neutrophils of the duodenum were present in 25% of Crohn's patients without *H. pylori*, compared with only 4% of controls.⁸

In another study, 48% of CD gastritis patients were *H. pylori* negative, suggesting that *H. pylori*-negative gastritis might be a typical finding in CD.⁹ Approximately one-quarter of small bowel series-negative *H. pylori* and NSAID focally enhanced gastroduodenitis will have CD.¹⁰

WCE is a novel noninvasive technology designed primarily to provide diagnostic imaging of the entire small intestine. Images acquired are of excellent resolution and have a 1:8 magnification, allowing for visualization of individual villi. The capsule (Given Imaging, Ltd, Yoqneam, Israel), now called PillCam SB, was approved by the Food and Drug Administration (FDA) in August 2000. The system includes localization and blood detection software.

Capsule endoscopy seems to be most valuable in diagnosing early CD. Several studies have demonstrated its utility in patients with symptoms suggestive of CD with negative colonoscopies and radiologic studies.⁶⁻¹⁰ Early capsule endoscopy features of CD that may be visualized prior to radiologic involvement include aphthous ulcers, large or linear ulcers, vasculitis, abnormal vascularity, circumferential involvement, and cobblestoning (Figure 32-4). Voderholzer et al compared WCE and computed topography (CT) enteroclysis in a consecutive series of patients with CD.²¹ The frequency of small intestinal CD found by WCE was double that detected by CT enteroclysis (25 versus 12/41; $P < 0.005$). These findings led to a change in management and clinical improvement in 10 patients.²¹

HISTOLOGY

Lamina propria-associated macrophage aggregates and granulomas were more likely identified in CD patients and were generally absent in controls or UC patients. Focal subepithelial accumulations of macrophages may lead to