

MORPHOLOGY

Gastric adenocarcinomas are classified according to their location and gross and histologic morphology. Most gastric adenocarcinomas involve the gastric antrum; the lesser curvature is involved more often than the greater curvature. **Gastric tumors with an intestinal morphology**, which tend to form bulky tumors (Fig. 17-17A), are composed of glandular structures (Fig. 17-18A), while cancers with a **diffuse infiltrative growth pattern** (Fig. 17-17B) are more often composed of signet-ring cells (Fig. 17-18B). Although intestinal-type adenocarcinomas may penetrate the gastric wall, they more frequently grow along broad cohesive fronts to form either an exophytic mass or an ulcerated tumor. The neoplastic cells often contain apical mucin vacuoles, and abundant mucin may be present in gland lumina. In contrast, diffuse gastric cancer is generally composed of discohesive cells, likely as a result of E-cadherin loss. These cells do not form glands but instead have large mucin vacuoles that expand the cytoplasm and push the nucleus to the periphery, creating a signet-ring cell morphology. They permeate the mucosa and stomach wall individually or in small clusters, and may be mistaken for inflammatory cells, such as macrophages, at low magnification. Release of extracellular mucin in either type of gastric cancer can result in formation of large mucin lakes that dissect tissue planes.

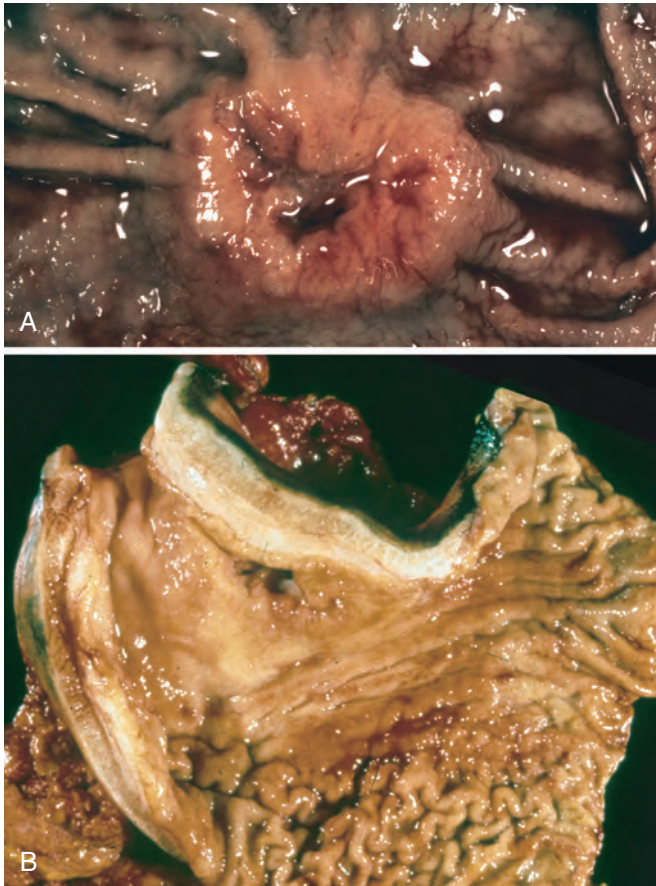


Figure 17-17 Gastric adenocarcinoma. **A**, Intestinal-type adenocarcinoma consisting of an elevated mass with heaped-up borders and central ulceration. Compare to the peptic ulcer in Figure 17-14A. **B**, Linitis plastica. The gastric wall is markedly thickened and rugal folds are partially lost.

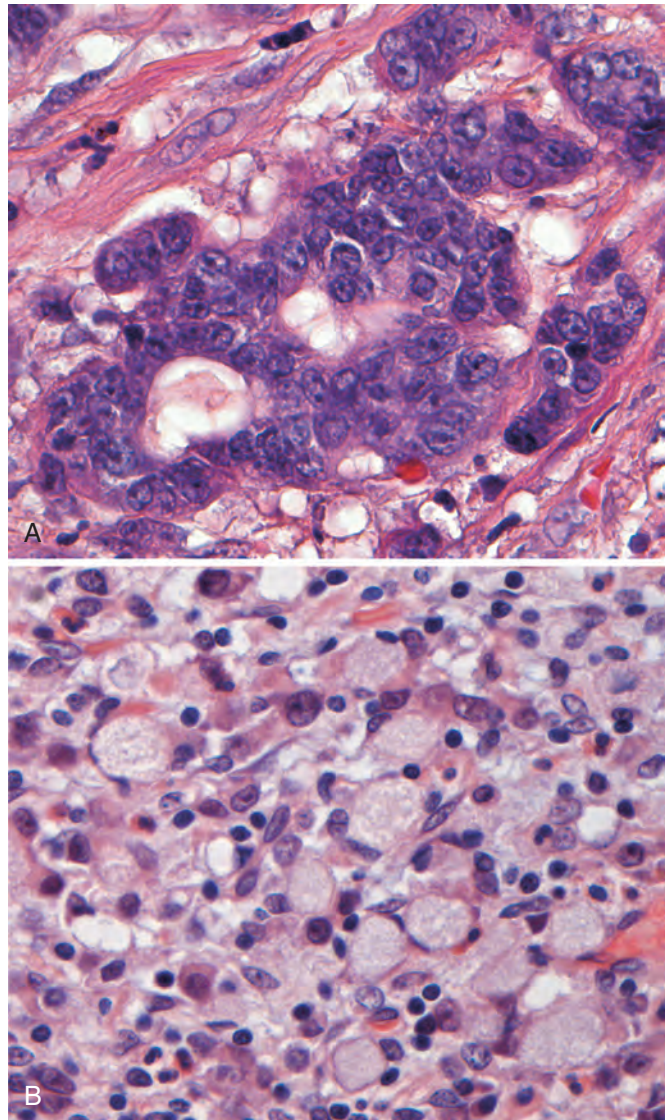


Figure 17-18 Gastric adenocarcinoma. **A**, Intestinal-type adenocarcinoma composed of columnar, gland-forming cells infiltrating through desmoplastic stroma. **B**, Signet-ring cells can be recognized by their large cytoplasmic mucin vacuoles and peripherally displaced, crescent-shaped nuclei.

A mass may be difficult to appreciate in diffuse gastric cancer, but these infiltrative tumors often evoke a **desmoplastic** reaction that stiffens the gastric wall and may provide a valuable diagnostic clue. When there are large areas of infiltration, diffuse rugal flattening and a rigid, thickened wall may impart a **leather bottle** appearance termed **linitis plastica** (Fig. 17-17B).

Clinical Features. Intestinal-type gastric cancer predominates in high-risk areas and develops from precursor lesions, including flat dysplasia and adenomas. The mean age of presentation is 55 years, and the male-to-female ratio is 2:1. In contrast, the incidence of diffuse gastric cancer is relatively uniform across countries, there are no identified precursor lesions, and the disease occurs at similar frequencies in males and females. Notably, the remarkable decrease in gastric cancer incidence applies only to the intestinal type, which is most closely associated with