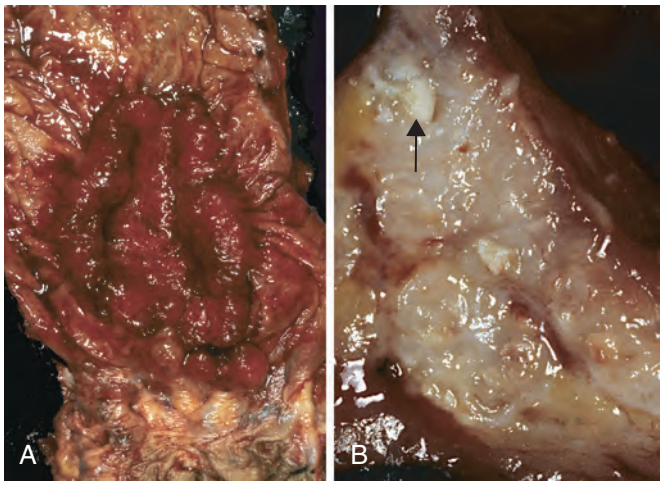

Figure 17-51 Colorectal carcinoma. **A,** Circumferential, ulcerated rectal cancer. Note the anal mucosa at the bottom of the image. **B,** Cancer of the sigmoid colon that has invaded through the muscularis propria and is present within subserosal adipose tissue (left). Areas of chalky necrosis are present within the colon wall *(arrow).*

MORPHOLOGY

Overall, adenocarcinomas are distributed approximately equally over the entire length of the colon. Tumors in the **proximal colon often grow as polypoid, exophytic masses** that extend along one wall of the large-caliber cecum and ascending colon; these tumors rarely cause obstruction. In contrast, **carcinomas in the distal colon tend to be annular lesions** that produce "napkin-ring" constrictions and luminal narrowing (Fig. 17-51), sometimes to the point of obstruction. Both forms grow into the bowel wall over time. The general microscopic characteristics of right- and left-sided colonic adenocarcinomas are similar. Most tumors are composed of tall columnar cells that resemble dysplastic epithelium found in adenomas (Fig. 17-52*A*). The invasive component of these tumors elicits a strong stromal desmoplastic response, which is responsible for their characteristic firm consistency. Some poorly differentiated tumors form few glands (Fig. 17-52*B*). Others may produce abundant mucin that accumulates within the intestinal wall, and these are associated with poor prognosis. Tumors may also be composed of signet-ring cells that are similar to those in gastric cancer (Fig. 17-52*C*) or may display features of neuroendocrine differentiation.

Clinical Features. The availability of endoscopic screening combined with the knowledge that most carcinomas arise within adenomas presents a unique opportunity for cancer prevention. Unfortunately, colorectal cancers develop insidiously and may go undetected for long periods. Cecal and other *right-sided colon cancers* are most often called to clinical attention by the appearance of *fatigue and weakness due to iron deficiency anemia*. Thus, it is a clinical maxim that the underlying cause of iron deficiency anemia in an older man or postmenopausal woman is GI cancer until proven otherwise. *Left-sided colorectal adenocarcinomas* may produce *occult bleeding*, *changes in bowel habits*, or *cramping* and *left lower quadrant discomfort*.

Although poorly differentiated and mucinous histologies are associated with poor prognosis, *the two most important prognostic factors are depth of invasion and the presence of lymph node metastases.* Invasion into the muscularis propria confers significantly reduced survival that is decreased further by the presence of lymph node metastases (Fig. 17-53*A*). Metastases may involve regional lymph nodes, lungs (Fig. 17-53*B*) and bones, but as a result of portal drainage of the colon, the liver is the most common site of metastatic lesions (Fig. 17-53*C*). The rectum does not drain via the portal circulation, hence carcinomas of the anal region that metastasize often circumvent the liver.

The prognostic factors were originally recognized by Dukes and Kirklin and form the core of the TNM (tumor-nodes-metastasis) classification (Table 17-12). The American Joint Committee on Cancer (AJCC) staging system is compared to the Astler-Coller modification of the Dukes system in Table 17-13. Regardless of stage, it must be remembered that some patients with small numbers of metastases do well for years following resection of distant tumor nodules.

Five-year survival rates vary widely worldwide. The overall 5-year survival rate in the United States is 65%, and ranges from 90% to 40% depending on stage. Survival rates in Europe, Japan and Australia are similar, ranging

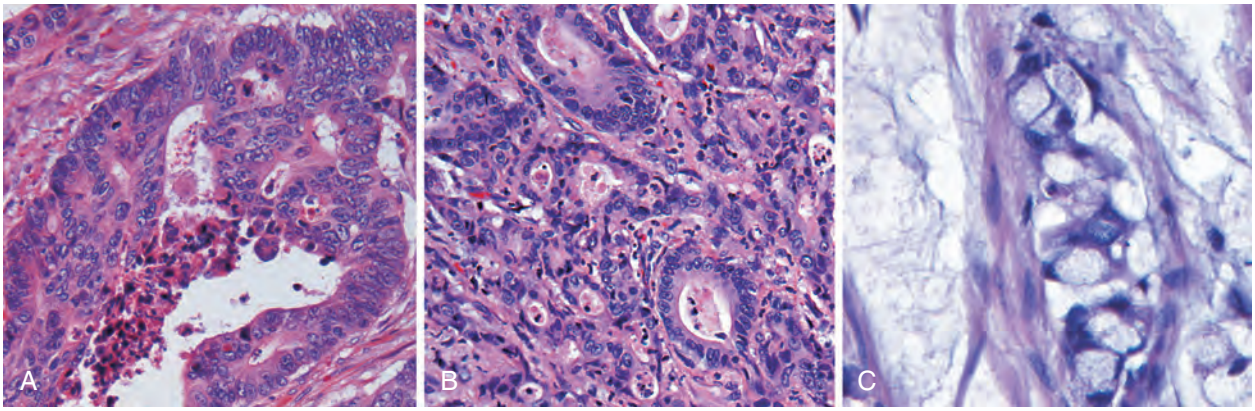

Figure 17-52 Histologic appearance of colorectal carcinoma. **A,** Well-differentiated adenocarcinoma. Note the elongated, hyperchromatic nuclei. Necrotic debris, present in the gland lumen, is typical. **B,** Poorly differentiated adenocarcinoma forms a few glands but is largely composed of infiltrating nests of tumor cells. **C,** Mucinous adenocarcinoma with signet-ring cells and extracellular mucin pools.