

While adenomas are less common in Asia, their frequency has risen (in parallel with an increasing incidence of colorectal adenocarcinoma) in these populations as Western diets and lifestyles become more common.

Colorectal adenomas are characterized by the presence of epithelial dysplasia. Consistent with their being precursor lesions, the prevalence of colorectal adenomas correlates with that of colorectal adenocarcinoma and the distributions of adenomas and adenocarcinoma within the colon are similar. Large studies have demonstrated that regular surveillance colonoscopy and polyp removal reduces the incidence of colorectal adenocarcinoma. Despite this strong relationship, it must be emphasized that majority of adenomas do not progress to become adenocarcinomas. There are no tools presently available to distinguish between adenomas that will or will not undergo malignant transformation, and indeed it may be that transformation is stochastic, being dependent on acquisition of oncogenic mutations merely by chance. Most adenomas are clinically silent, with the exception of large polyps that produce occult bleeding and anemia and rare villous adenomas that cause hypoproteinemic hypokalemia by secreting large amounts of protein and potassium.

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Typical adenomas range from 0.3 to 10 cm in diameter and can be pedunculated (Fig. 17-45A) or sessile, with the surface of both types having a texture resembling velvet or a raspberry (Fig. 17-45B). Histologically, the hallmark of epithelial dysplasia is nuclear hyperchromasia, elongation, and stratification (see Fig. 17-46C). These changes are most easily appreciated at the surface of the adenoma and are often accompanied by prominent nucleoli, eosinophilic cytoplasm, and a reduction in the number of goblet cells. Notably, epithelial cells fail to mature as they migrate from crypt to surface. Pedunculated adenomas have slender fibromuscular stalks (Fig. 17-45C) containing prominent blood vessels derived from the submucosa. The stalk is usually covered by nonneoplastic epithelium, but dysplastic epithelium is sometimes present.

Adenomas can be classified as **tubular**, **tubulovillous**, or **villous** based on their architecture. These categories, however,

have little clinical significance in isolation. Tubular adenomas tend to be small, pedunculated polyps composed of rounded, or tubular, glands (Fig. 17-46A). In contrast, villous adenomas, which are often larger and sessile, are covered by slender villi (Fig. 17-46B). Tubulovillous adenomas have a mixture of tubular and villous elements. Although villous adenomas contain foci of invasion more frequently than tubular adenomas, villous architecture alone does not increase cancer risk when polyp size is considered.

Sessile serrated adenomas overlap histologically with hyperplastic polyps, but are more commonly found in the right colon. Despite their malignant potential, sessile serrated adenomas lack typical cytologic features of dysplasia that are present in other adenomas, prompting some to refer to these lesions as sessile serrated polyps. Histologic criteria for these lesions include serrated architecture throughout the full length of the glands, including the crypt base, crypt dilation, and lateral growth (Fig. 17-46D).

Intramucosal carcinoma occurs when dysplastic epithelial cells breach the basement membrane to invade the lamina propria or muscularis mucosae. Because functional lymphatic channels are absent in the colonic mucosa, intramucosal carcinomas have little or no metastatic potential and complete polypectomy is generally curative (Fig. 17-47A). Invasion beyond the muscularis mucosae, including into the submucosal stalk of a pedunculated polyp (Fig. 17-47B), constitutes invasive adenocarcinoma and carries a risk of spread to other sites. In such cases several factors, including the histologic grade of the invasive component, the presence of vascular or lymphatic invasion, and the distance of the invasive component from the margin of resection, must be considered in planning further therapy.

Although most colorectal adenomas are benign lesions, a small proportion may harbor invasive cancer at the time of detection. *Size is the most important characteristic that correlates with risk of malignancy.* For example, while cancer is extremely rare in adenomas less than 1 cm in diameter, some studies suggest that nearly 40% of lesions larger than 4 cm in diameter contain foci of cancer. High-grade dysplasia is also a risk factor for cancer in an individual polyp,

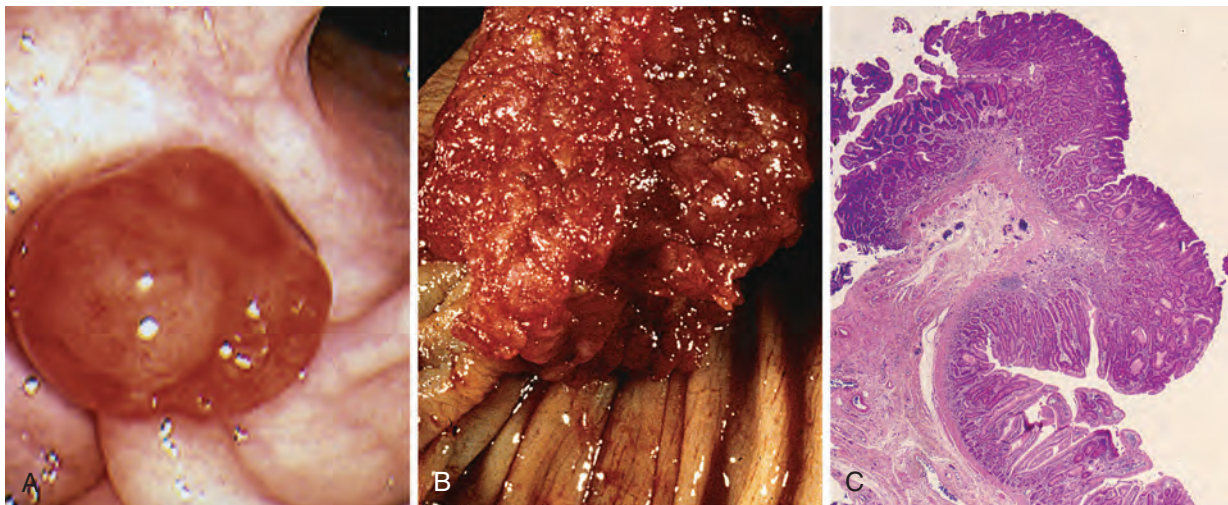


Figure 17-45 Colonic adenomas. **A**, Pedunculated adenoma (endoscopic view). **B**, Adenoma with a velvety surface. **C**, Low-magnification photomicrograph of a pedunculated tubular adenoma.