Problematic Colorectal Polyps

Is It Cancer and What Do I Need to Do About It?

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KEYWORDS

• Colorectum • Polyp • Adenoma • Epithelial misplacement • Pseudo-invasion • Adenocarcinoma • Polypectomy

Key points

- Benign submucosal misplacement of epithelium can closely mimic adenocarcinoma, especially within large adenomatous polyps arising in the sigmoid colon.
- Such diagnostically difficult adenomatous polyps are selected into bowel cancer screening programs because larger polyps are more likely to bleed; detection of occult blood is a widely used screening method.
- Distinction relies mainly on careful routine morphologic evaluation of key discriminatory features, often assisted by examining multiple levels of the relevant block(s).
- Adenocarcinomas arising within colorectal polypectomy specimens require systematic assessment of features that may indicate the risk of residual disease and inform management decision-making regarding the need for further endoscopic or surgical intervention.

ABSTRACT

Two issues commonly arise for pathologists reporting adenomatous polyps of the colorectum. Particularly problematic within large sigmoid colonic adenomas is the distinction between benign misplacement of epithelium into the submucosa and invasive malignancy. This distinction requires careful morphologic evaluation of key discriminatory features, assisted only rarely by the application of selected adjunctive immunohistochemistry. Following a diagnosis of adenocarcinoma within a polypectomy or other local excision specimen, systematic assessment is required of features that may indicate the risk of residual local and/or nodal neoplastic disease and inform management decision-making regarding the need for further endoscopic or surgical intervention.

OVERVIEW

Adenomatous polyps of the colorectum form a substantial component of the routine gastrointestinal workload in most surgical pathology laboratories. Reporting of such polyps is usually straightforward, requiring a diagnosis of adenoma subtype and grade of dysplasia and, for intact polypectomies, an assessment of size and margin

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status with respect to involvement by dysplasia. Some adenomas, however, particularly larger adenomas located within the sigmoid colon, may cause difficulty in two respects. Firstly, the distinction between true invasive malignancy and misplacement of adenomatous epithelium within the submucosa (so-called epithelial misplacement or "pseudo-invasion") has been long recognized and may be extremely problematic in some cases.[1–3] Secondly, if a diagnosis of early-stage colorectal adenocarcinoma is made within a polypectomy or other local excision specimen, this raises the question of what further treatment is required, if any.[4–7]

These two conundra require careful and systematic consideration of relevant morphologic features in conjunction with endoscopy, assisted in some cases by the application of selected additional immunohistochemical markers. These two common and problematic issues form the basis of this review article.

EPITHELIAL MISPLACEMENT VERSUS ADENOCARCINOMA

The phenomenon of epithelial misplacement is most frequently encountered in large adenomatous polyps located within the sigmoid colon, to such an extent that a diagnosis of epithelial misplacement should be made only in polyps arising at other sites after careful consideration of a diagnosis of adenocarcinoma. Epithelial misplacement is typically a result of repeated traumatic injury to the polyp. In the sigmoid colon, this is a consequence of the narrow bowel lumen, often in association with hypertrophy of the muscularis propria, as a result of diverticular disease, and the solid fecal state in this distal location. After all, these polyps are commonest in the older Western population and this is the very population with high rates of sigmoid colonic diverticular disease. Further, peristaltic activity is prominent here and any intraluminal lesion will be subjected to marked propulsive forces, providing a further reason for traumatic forces to the larger polyp. It is likely that mucosal prolapse is also contributory in many cases. Traumatic injury can result in luminal bleeding, generating a positive fecal occult blood test and accounting for the high prevalence of this phenomenon in bowel cancer screening pathology.[8]

To minimize the risk of missing a focal microscopic finding of diagnostic importance, all adenomas routinely should be processed in their entirety for histologic examination, with careful orientation to allow visualization of the polypectomy base resection margin. Polyps with equivocal features should be examined through multiple levels (at least six), which may reveal evidence of the true diagnosis. The most useful morphologic features used to distinguish epithelial misplacement (**Fig. 1**) from adenocarcinoma are listed in **Table 1**. In most cases, systematic evaluation of these features, through levels if necessary, will allow a definitive diagnosis.

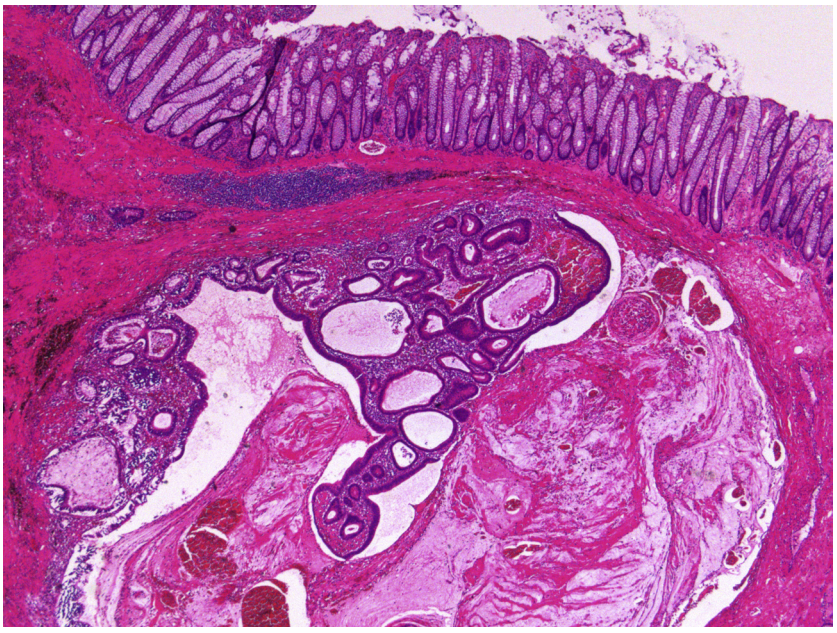

Fig. 1. Classic epithelial misplacement in a sigmoid colonic adenomatous polyp. Although this is beneathsurface non-adenomatous epithelium, the misplaced epithelium appears adenomatous, is accompanied by lamina propria, and forms mucin cysts. The classic changes help to ease the interpretation, as epithelial misplacement of the more concerning features seen in the two more isolated glandular structures seen in the upper left of the field [H&E, original magnification ×50].