10 Non-neoplastic Intestinal Disease

Small Biopsies

Proper tissue orientation is a critical part of the histologic evaluation of biopsies of the gastrointestinal tract. Tissue orientation is a two-step process that involves the coordinated actions of the endoscopist and the histotechnologist. The endoscopist should mount the biopsy mucosal side up on an appropriate solid surface (e.g., filter paper) and place it in fixative. This first step should be done immediately, in the endoscopy suite, so that the specimen does not dry out en route to the surgical pathology laboratory. The histotechnologist can then embed and cut the biopsy specimen perpendicular to the mounting surface. If the specimen is free floating, great care must be taken to identify the mucosal surface for proper embedding. Multiple sections should be cut from each tissue block for histologic evaluation. Step sections are preferred to serial sections so that intervening unstained sections are available for special stains as needed.

Resections of Small and Large Intestine for Inflammatory Bowel Disease

Given the structural simplicity of the intestinal tract and the ease with which the bowel can be opened, there is a strong tendency to rush into these dissections without thinking ahead. The approach to the non-neoplastic bowel specimen requires an effective strategy that gives careful consideration to an organized gross description, specimen photography and fixation, and details of dissection and tissue sampling.

The Organized Gross Description

A good gross description not only describes all the relevant gross findings but presents these findings in an organized fashion. This can be a difficult task in bowel resections, where the specimen may consist of more than one structure (e.g., ileum, appendix, cecum, and colon). Organize your gross description. First, describe the specimen after it has been fixed, examined, and at least partially dissected. This will make it possible to collect all of the gross findings and integrate them into an organized statement. Second, always describe each component of the resection as an individual unit. For example, describe the mucosa, wall, and serosa of the ileum and then move on to the appendix, cecum, and finally the colon. Third, focus on the mucosa. Begin by describing the distribution of mucosal alterations (e.g., diffuse, discontinuous, etc.) and then describe the specific characteristics of these changes (e.g., ulcerated, granular, etc.). Of course, no gross description is complete without a description of the wall, serosa, and mesentery; but for inflammatory bowel disease, a less detailed description of these layers will generally suffice.

Specimen Dissection

Given the structural simplicity of the bowel, opening these specimens is generally straight-
Take representative sections of bowel at regular intervals.

Sample any polyps.

Resections for Inflammatory Bowel Disease

1. Orient the specimen. The large intestine can be distinguished from the small intestine by its larger diameter and by the presence of longitudinal muscle bands, sacculations, and the appendices epiploicae.

2. Identify and measure all components of the specimen (do not forget to look for the appendix).

3. Remove the mesentery. Open the small bowel along its mesenteric border, and the large bowel along the anterior teniae coli. Rinse the bowel, pin it flat on a cork or wax tablet, and submerge it in formalin until well fixed.

4. Describe the specimen in a systematic fashion. Include a description of the mucosa, wall, and serosa of each component of the specimen.

5. Sample all areas of the bowel by submitting sections at regular 10-cm intervals. Also include sections of the appendix, ileocecal valve, margins, mesenteric vessels, any focal lesions, and representative lymph nodes from all regions of the bowel.