Histopathology: non-neoplastic diseases of the small and large intestine

These presentations are to help you identify, and to test yourself on identifying, basic histopathological features. They do not contain the additional factual information that you need to learn about these topics, or necessarily all the images from resource sessions.

This presentation contains images of basic histopathological features of selected non-neoplastic disorders of the small and large intestines (coeliac disease, Crohn’s disease, ulcerative colitis, infarction, diverticular disease), mainly covered in cases in semester 2, med 3.

Before viewing this presentation you are advised to review relevant histology, relevant sections in a pathology textbook, relevant lecture notes and relevant sections of a histopathology atlas.

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Low power view of a duodenal biopsy (mucosa only) showing coeliac disease. Note absence of villi.
Medium power view of a duodenal biopsy (mucosa only) showing coeliac disease. Note absence of villi. The epithelial cells of the crypts undergo hyperplasia and the crypts therefore appear elongated and there is also an increase in lymphocytes in the lamina propria and epithelium.
Crohn’s disease. There is a transmural chronic inflammatory cell infiltrate, predominantly arranged as aggregates of lymphocytes (e.g. yellow stars), and an area of ulceration (red arrow).
Crohn’s disease. A deep fissuring ulcer (red star), surrounded by inflammatory cells, extends through submucosa almost to muscularis propria (black stars). The submucosa is fibrotic. Inflammation is also present in muscularis propria and serosa.
Crohn’s disease. Biopsy from an area of mucosal ulceration. Neutrophils and necrotic debris on surface (red star), granulation tissue with chronic inflammatory cells beneath.
Crohn’s disease. Non-necrotising granuloma comprising epithelioid macrophages and a multinucleate giant cell (red star).
Ulcerative colitis. Microscopic view of the mucosa, showing diffuse active (acute) inflammation with crypt abscess (red star) and glandular architectural distortion. (from Robbins and Cotran Pathologic Basis of Disease. 7th ed. Elsevier Saunders.)
Infarcted small intestine (red arrows), very low power view. Note haemorrhage and oedema. Adjacent viable bowel wall is somewhat oedematous (black arrow), while further around the bowel wall is normal (blue arrow).
Diverticular disease of the colon.
Low-power view of a diverticulum (red star) comprising mucosa and submucosa protruding through thickened muscularis propria.