Histopathology: acute appendicitis

These presentations are to help you identify 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 relevant resource sessions.

This presentation contains images of basic histopathological features of acute appendicitis.

Before viewing this presentation you are advised to review relevant histology, sections on acute inflammation and appendicitis in a pathology textbook, relevant lecture notes, relevant sections of a histopathology atlas and the histopathology power point presentation on acute inflammation.

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Appendix, low power, showing lymphoid hyperplasia with germinal centres (yellow stars) in the submucosa.

Faeces in lumen
Acute appendicitis, medium-high power. Black star: neutrophils within a crypt in the mucosa. Yellow star and arrows: neutrophils within the lamina propria within the mucosa. These are the changes seen in early acute appendicitis. Ultimately the action of lysosomal enzymes e.g. proteases, leaked from neutrophils as they die and secondary bacterial infection results in necrosis and ulceration of the mucosa.
Acute appendicitis, medium power. Some mucosa is preserved (red stars) but elsewhere (yellow stars) the mucosa is necrotic and ulcerated.
Acute appendicitis, high power. Yellow arrows: neutrophils between smooth muscle cells of muscularis propria. The inflammation has progressed outwards from the mucosa.
Acute appendicitis, medium power. Black star: fibrinopurulent exudate on serosa. Yellow stars: oedematous serosa with neutrophil infiltrate. The inflammation has become transmural.
Acute appendicitis, low power. Identify the layers. This is more difficult due to inflammatory infiltrate and oedema. Green star: mucosa. Blue star: submucosa. Black star: muscularis propria/externa. Red star: serosa
Identify the other abnormal features: Yellow star: the mucosa is focally necrotic and ulcerated (note that glands cannot be seen). Yellow arrows: focal fibrinous serosal exudate. When extensive, the transmural inflammation can lead to transmural necrosis and thus gangrenous appendicitis which has a high risk of rupturing.
Acute appendicitis, low power. Black star: fibinous exudate on serosa. Yellow star: oedematous serosa. Red stars: focal haemorrhage in submucosa. Blue stars: ulcerated mucosa with necrotic exudate (note no glands are evident as they have undergone necrosis). MP: muscularis propria. Make sure that you can identify the layers of the appendix.