



NTP Nonneoplastic Lesion Atlas

Stomach, Glandular Stomach – Necrosis

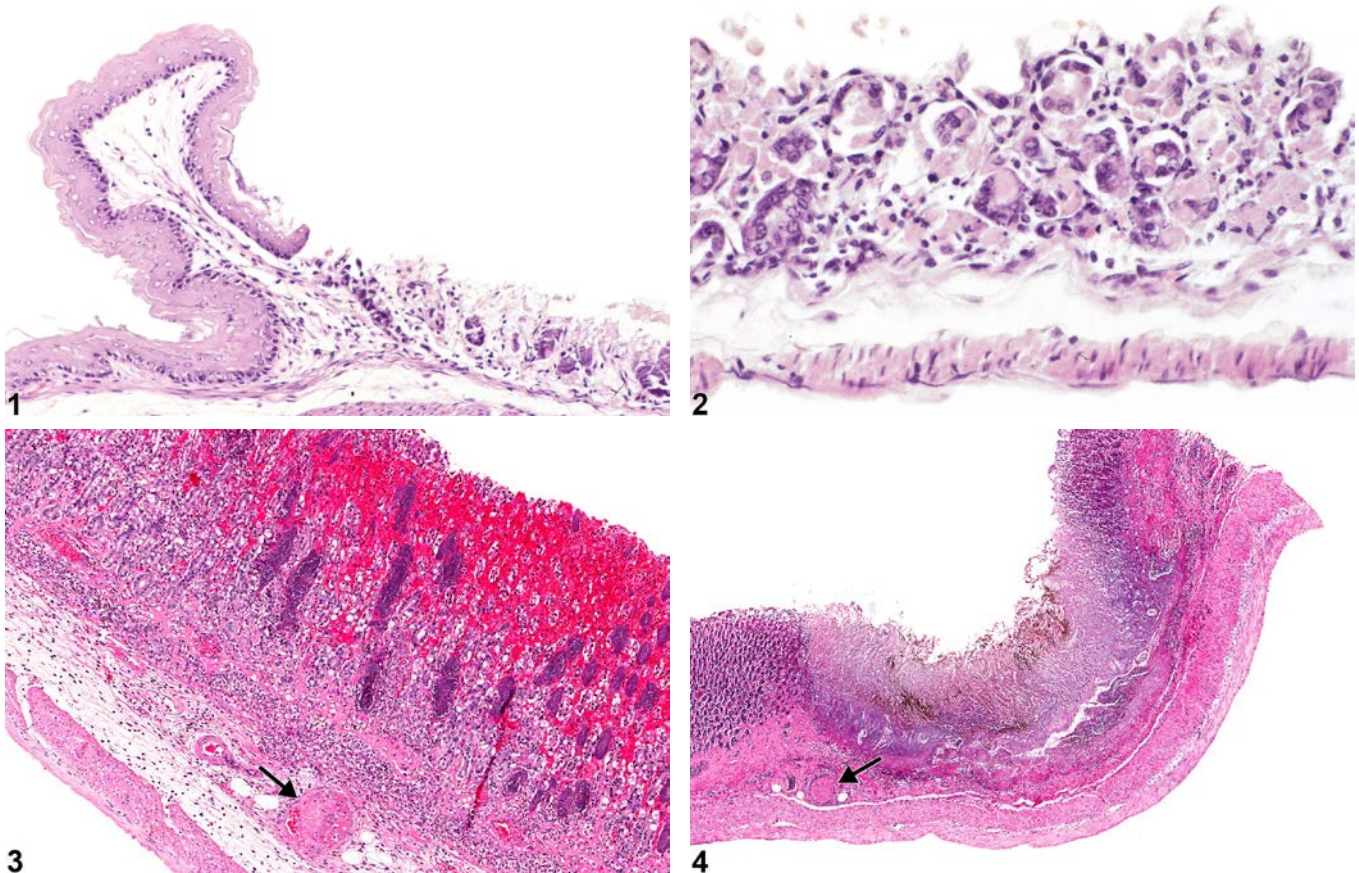


Figure Legend: **Figure 1** Stomach, Glandular stomach - Necrosis in a female B6C3F1 mouse from a subchronic study. There is loss of glandular epithelial cells within the mucosa. **Figure 2** Stomach, Glandular stomach - Necrosis in a female B6C3F1 mouse from a subchronic study (higher magnification of Figure 1). There is loss of glandular epithelial cells and scattered pyknotic debris within the mucosa. **Figure 3** Stomach, Glandular stomach - Necrosis in a male F344/N rat from a chronic study. There is a thrombosed vessel in the submucosa (arrow), resulting in an area of necrosis (infarct) with hemorrhage. **Figure 4** Stomach, Glandular stomach - Necrosis in a male F344/N rat from a chronic study. There is a thrombosed vessel in the submucosa (arrow), resulting in a well-demarcated area of necrosis (infarct) involving the mucosa and submucosa.

Comment: Necrosis is characterized by nuclear changes of pyknosis, karyorrhexis, karyolysis, or absence of nucleus in the later stage of karyolysis. The cytoplasm in early necrosis is homogeneous



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pink in H&E sections. Degradation of cytoplasmic proteins eventually gives the necrotic cell a pale, ghostlike appearance. Necrotic cells usually lose their adherence to basement membranes and neighboring cells. Rupture of cells with loss of cell integrity is the most obvious evidence of cell death. Necrosis can involve scattered necrotic cells throughout the mucosa (Figure 1 and Figure 2, arrows) or a focal area involving the mucosa and/or muscular wall. Thrombosis (Figure 3 and Figure 4, arrows) can result in necrosis of the stomach mucosa (Figure 3) or both the mucosa and the wall of the stomach (Figure 4).

Recommendation: Necrosis of epithelium is diagnosed instead of erosion and ulcer if the necrotic epithelium is still present and at least partially attached to the underlying lamina propria or if the necrosis is not particularly centered on the epithelium of the glandular stomach (i.e., involves the wall primarily). If the necrosis is consistent with ischemia secondary to thrombosis (infarction), necrosis should be diagnosed (rather than infarct), but the narrative should state that the lesion is consistent with an infarct, even if the thrombus is not in the plane of the section. Severity grading would depend on the overall size of the lesion and number of areas affected. Secondary lesions, such as hemorrhage, edema, fibrosis, or inflammation, are usually not diagnosed separately unless they are prominent components of the lesion. They should, however, be described in the narrative.

References:

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