## *Stomach, Forestomach – Necrosis*

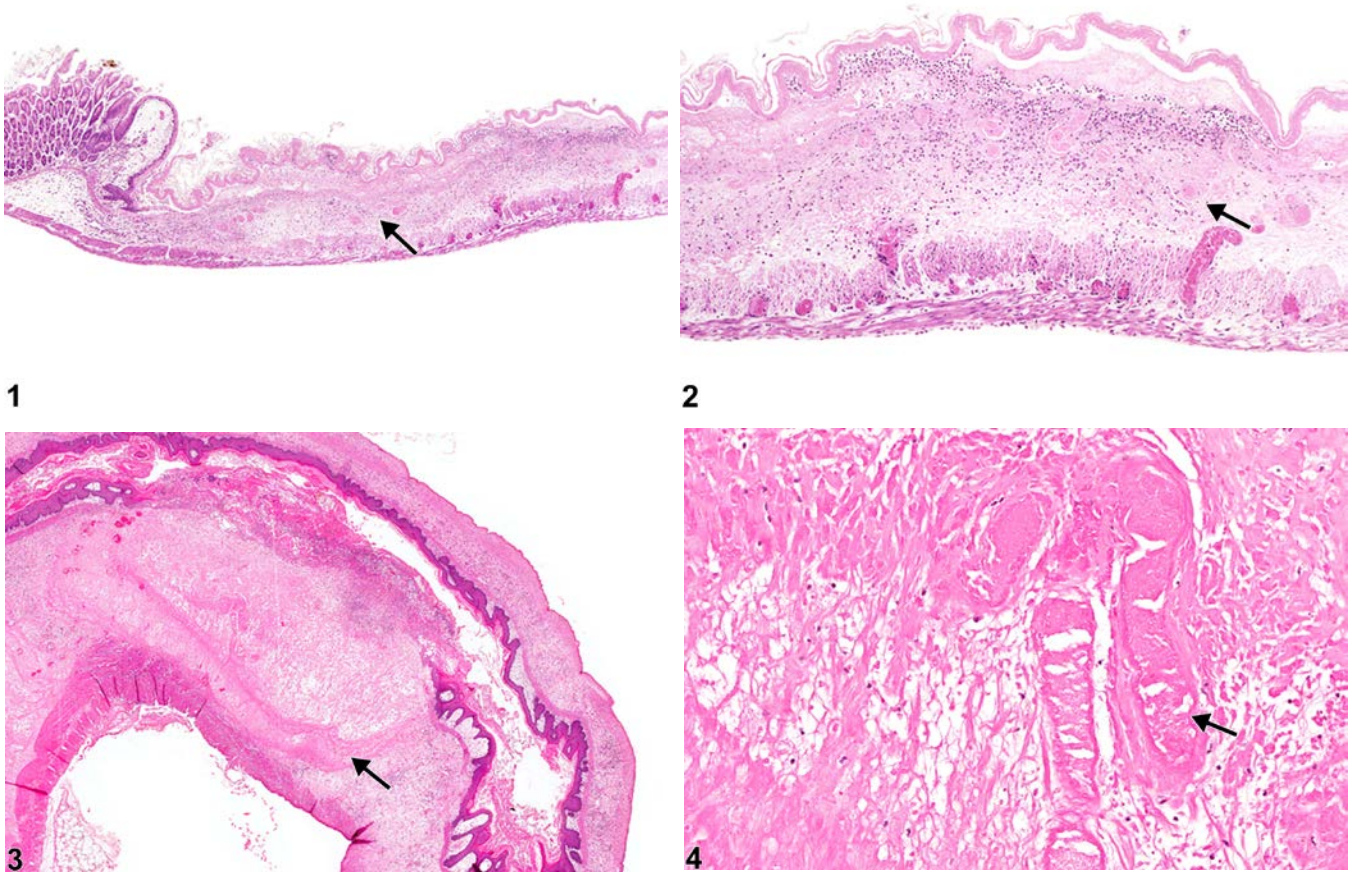

**Figure Legend: Figure 1** Stomach, Forestomach - Necrosis in a female B6C3F1 mouse from a chronic study. There is loss of cellular detail indicative of necrosis (arrow). **Figure 2** Stomach, Forestomach - Necrosis in a female B6C3F1 mouse from a chronic study (higher magnification of Figure 1). There is loss of cellular detail indicative of necrosis (arrow). **Figure 3** Stomach, Forestomach - Necrosis in a male F344 rat from a chronic study. There is loss of cellular detail and nuclei indicative of necrosis (arrow). **Figure 4** Stomach, Forestomach - Necrosis in a male F344 rat from a chronic study (higher magnification of Figure 3). There is loss of cellular detail and nuclei indicative of necrosis (arrow).

**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 homogenous 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 of the forestomach mucosa is rarely seen except in treated rats. As shown in Figure 1, Figure 2, Figure 3, and Figure 4, chemical-related lesions in the forestomach of mice and rats include necrosis and ulceration. Necrosis of the forestomach is more frequent in gavage studies than in dosed-feed or inhalation studies in rats. Thrombosis can result in necrosis (infarction) of the stomach (Figure 4, arrow).

**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 forestomach (i.e., involves the wall primarily). If the necrosis is consistent with ischemia secondary to thrombosis (infarction), the narrative should state this, 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. While hemorrhage, edema, fibrosis, or inflammation may be associated with necrosis, these are usually not recorded separately but can be described in the narrative. If they are a prominent component of a necrotic lesion, they should be diagnosed separately.

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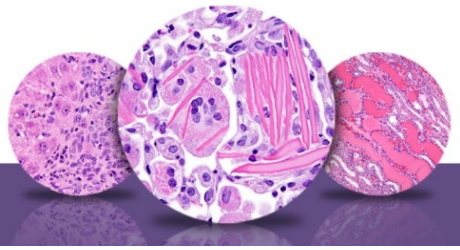

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**References:**

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