



NTP Nonneoplastic Lesion Atlas

Stomach, Glandular Stomach – Hyaline Droplet

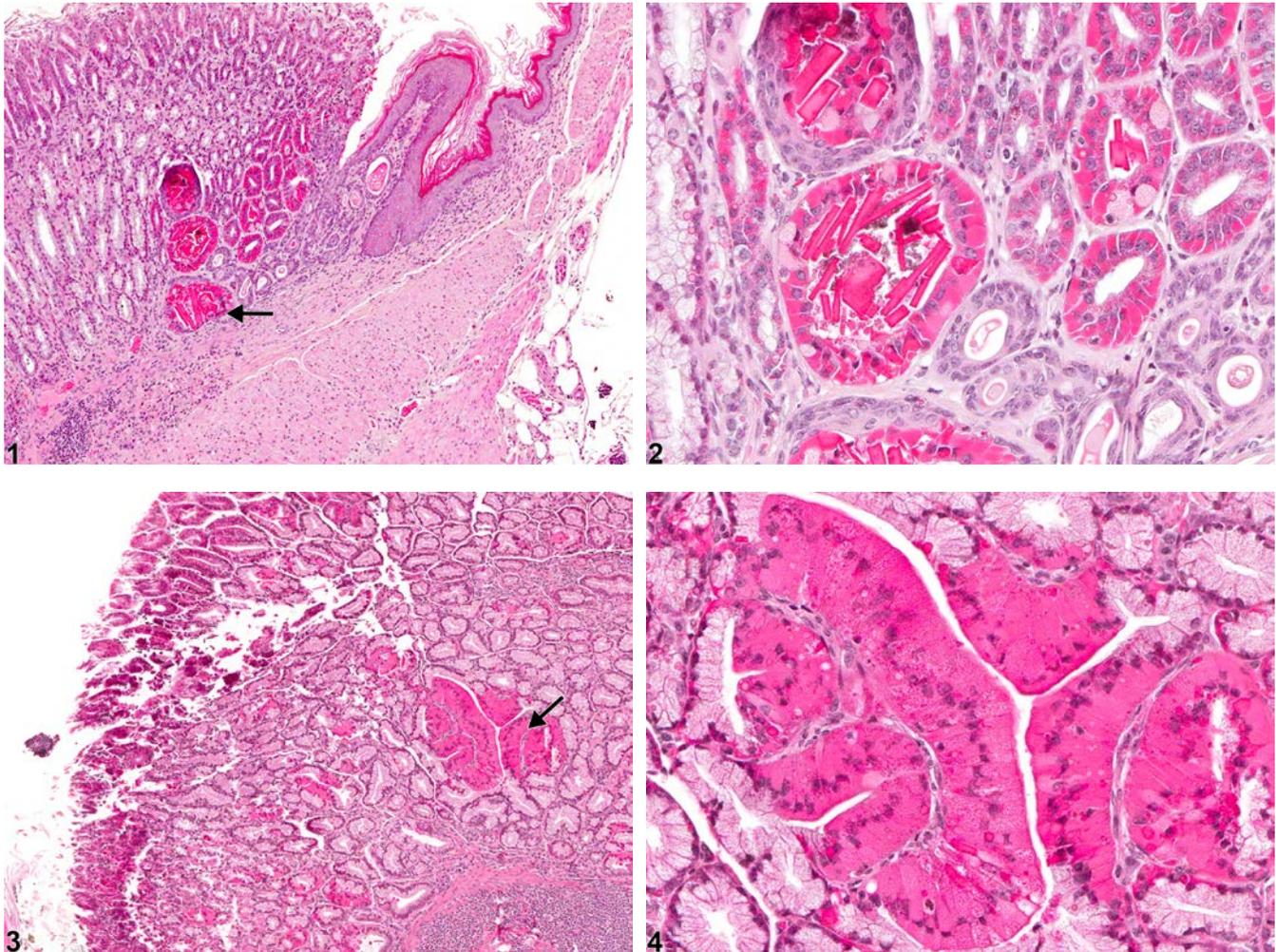
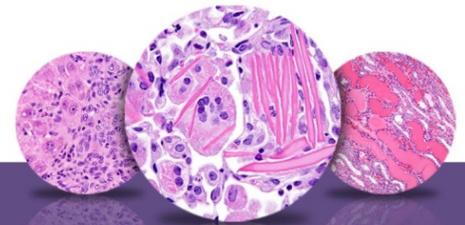


Figure Legend: **Figure 1** Stomach, Glandular stomach - Accumulation, Hyaline droplet in a female B6C3F1 mouse from a chronic study. The epithelial cells of several gastric glands contain hyaline droplets (arrow) with some crystals in the lumens. **Figure 2** Stomach, Glandular stomach - Accumulation, Hyaline droplet in a female B6C3F1 mouse from a chronic study (higher magnification of Figure 1). The epithelial cells of several gastric glands contain hyaline droplets with some crystals in the lumen. **Figure 3** Stomach, Glandular stomach - Accumulation, Hyaline droplet in a female B6C3F1 mouse from a chronic study. The epithelial cells of several gastric glands contain hyaline droplets (arrow). **Figure 4** Stomach, Glandular stomach - Accumulation, Hyaline droplet in a female B6C3F1 mouse from a chronic study (higher magnification of Figure 3). The epithelial cells of several gastric glands are distended by hyaline droplets.



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Comment: Hyaline droplet accumulation (previously termed “eosinophilic cytoplasmic change”) is composed of homogeneous globular hyaline material in the cytoplasm of the mucosal epithelial cells. The globules may be in sub- or supranuclear positions. In advanced cases, these globules may be associated with intra- or extracellular eosinophilic proteinaceous crystals. They stain brightly eosinophilic with H&E and negatively with periodic acid–Schiff. The composition of the eosinophilic material is unknown, but in the lung, where the accumulation of the hyaline material and formation of crystals induce pneumonia, the main component of the crystals has been identified as Ym1 protein, a member of the chitinase-like family of proteins. Accumulations tend to be more common in the cardiac region in mice and near the limiting ridge in rats. This is the same accumulation of material as seen in epithelial cells of the nasal epithelium, lower respiratory tract, and pancreas in response to minor irritation. Occasionally, focal chronic inflammation and crypt abscesses are seen, but usually hyaline droplet accumulation is present without inflammation.

Recommendation: Hyaline droplet accumulation should be diagnosed and graded based on the number of glands involved and the amount of hyaline droplet accumulation within glands. Cells containing hyaline droplets may be enlarged, but hypertrophy should not be diagnosed unless the cell enlargement is not due to the hyaline material. If there is concurrent degeneration of the cells, degeneration should be diagnosed separately.

References:

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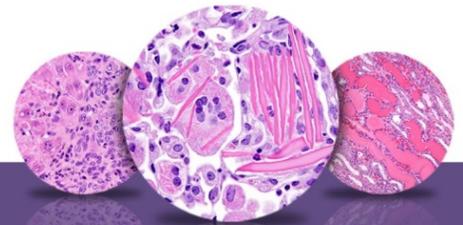
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