NTP Nonneoplastic Lesion Atlas

Harderian Gland – Inflammation

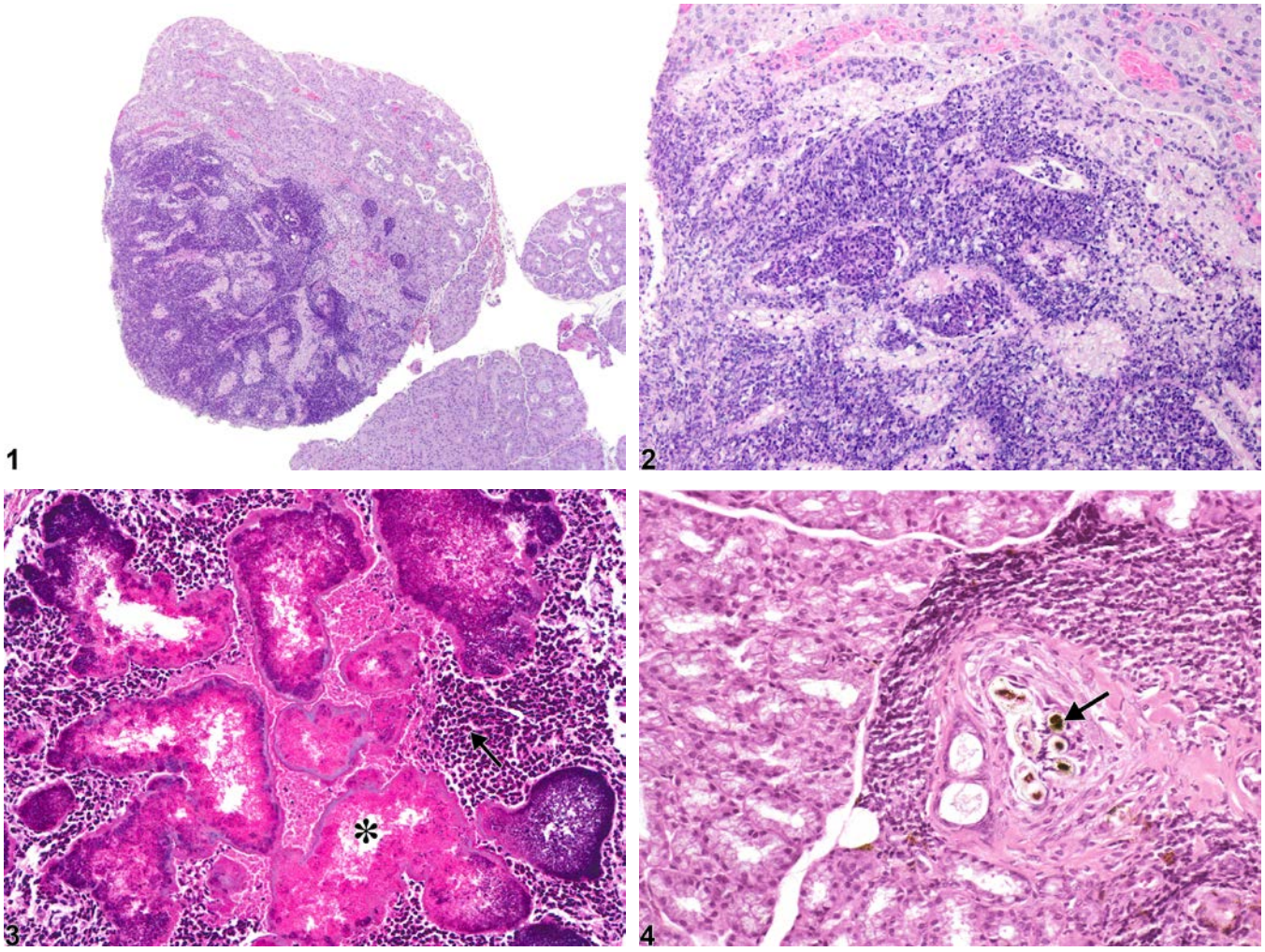


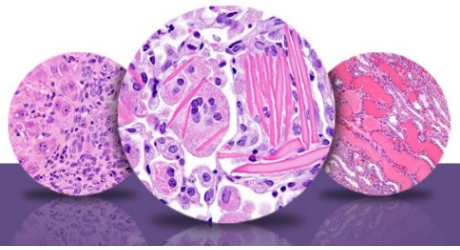
Figure Legend: **Figure 1** Harderian gland - Inflammation, Chronic active in a female Sprague- Dawley rat from a chronic study. Numerous inflammatory cells are present in the interstitium and alveoli with destruction of the acinar tissue. **Figure 2** Harderian gland - Inflammation, Chronic active in a female Sprague- Dawley rat from a chronic study (higher magnification of Figure 1). The inflammatory cells, largely neutrophils and macrophages expand the interstitium and infiltrate the alveoli, many of which are necrotic. **Figure 3** Harderian gland - Inflammation, Suppurative in a male B6C3F1 mouse from a chronic study. There are massive accumulations of neutrophils (arrow) with necrotic debris (asterisk) in the alveolar lumens and interstitium with destruction of the normal architecture. **Figure 4** Harderian gland - Inflammation, Chronic in a female B6C3F1 mouse from a chronic study. There are

macrophages and lymphocytes (predominantly). interstitial fibrosis, and foreign bodies (hair shaft fragments) (arrow) in the Harderian gland.

Comment: Harderian gland inflammation can be secondary to trauma from retrobulbar bleeding procedures and can be result from other causes, such as infectious agents (e.g., sialodacryoadenitis virus), foreign bodies, excessive exposure to light, and certain nutritional deficiencies.

In NTP studies, there are five standard categories of inflammation: acute, suppurative, chronic, chronic-active, and granulomatous. In acute inflammation, the predominant infiltrating cell is the neutrophil, though fewer macrophages and lymphocytes may also be present. There may also be evidence of edema or hyperemia. The neutrophil is also the predominant infiltrating cell type in suppurative inflammation, however, in suppurative inflammation, the neutrophils are aggregated and many of them are degenerate (suppurative exudate). Cell debris, both from the resident cell populations and infiltrating leukocytes, proteinaceous fluid containing fibrin, fewer macrophages, occasional lymphocytes or plasma cells, and, possibly, an infectious agent may also be present in within the exudate. Grossly, these lesions would be characterized by the presence of pus. In the tissue surrounding the exudate, there may be fibroblasts, fibrous connective tissue, and mixed inflammatory cells, depending on the chronicity of the lesion. Lymphocytes predominate in chronic inflammation. Lymphocytes also predominate in chronic-active inflammation, but in chronic-active inflammation, there are also a significant number of neutrophils. Both lesions may contain macrophages. Granulomatous inflammation is another form of chronic inflammation, but this diagnosis requires the presence of a significant number of aggregated, large, activated macrophages, epithelioid macrophages, or multinucleated giant cells. Inflammation differs from cellular infiltration in that inflammatory lesions have evidence of tissue damage, such as edema, hemorrhage, degeneration, necrosis, regeneration, etc.

Recommendation: Harderian gland inflammation should be diagnosed and assigned a severity grade. An appropriate type modifiers (acute, chronic, etc.) should be included in the diangosis. Foreign bodies in the Harderian gland can be diagnosed separately as present (without assignment of a severity grade). Associated lesions (e.g., necrosis) should not be diagnosed separately (unless warranted by severity), though they can be described in the narrative.



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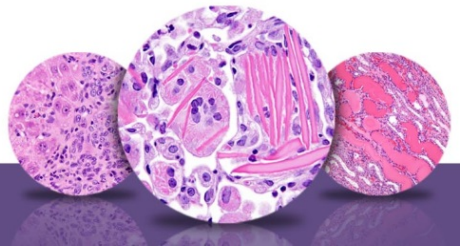

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