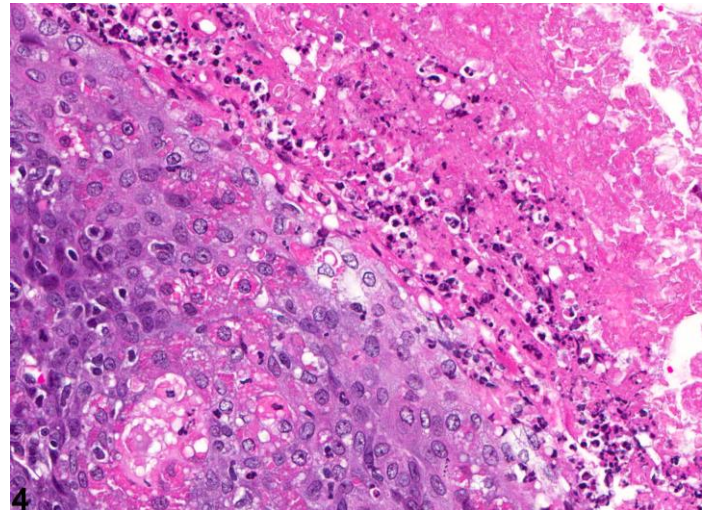
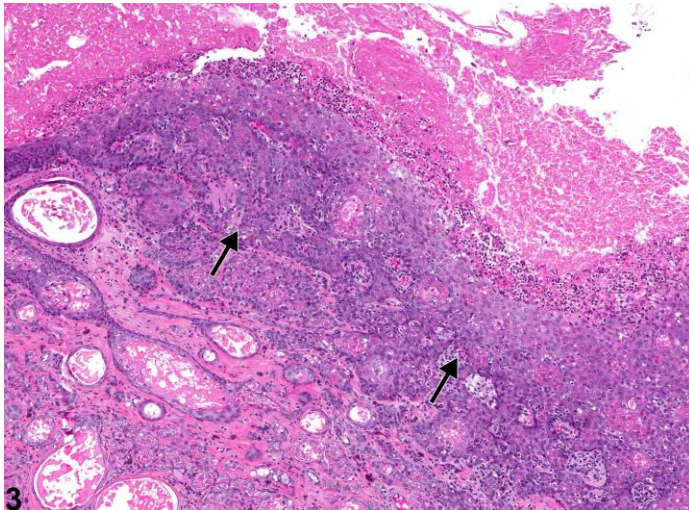
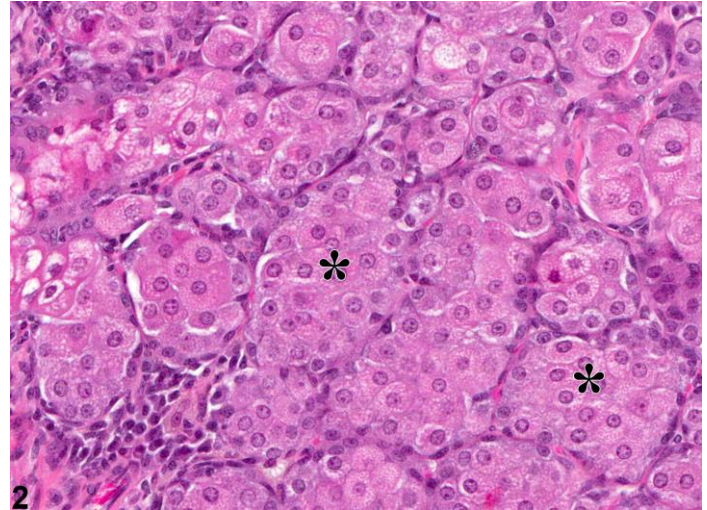
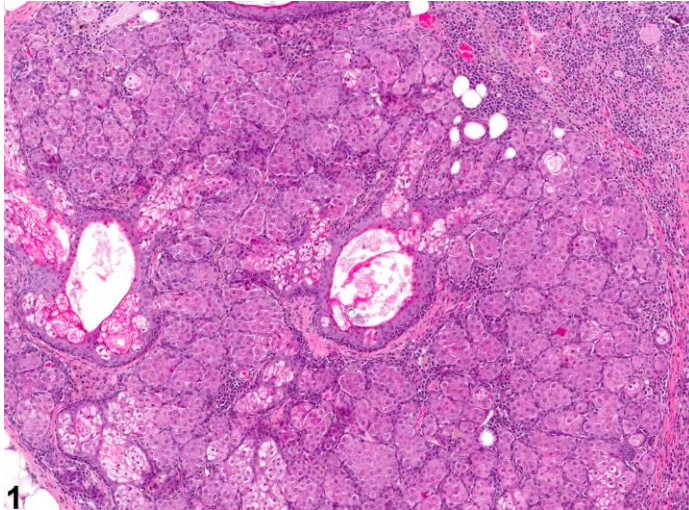




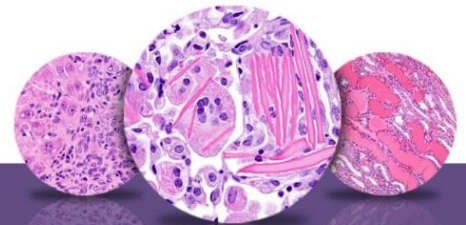
# NTP Nonneoplastic Lesion Atlas

## Preputial Gland – Hyperplasia



**Figure Legend:** **Figure 1** Preputial Gland, Epithelium - Hyperplasia. Hyperplasia in the preputial gland in a male F344/N rat from a chronic study. **Figure 2** Preputial Gland, Epithelium - Hyperplasia. Higher magnification of Figure 1. Asterisks indicate eosinophilic granular material in the cytoplasm of hyperplastic glands in a male F344/N rat from a chronic study. **Figure 3** Preputial Gland, Duct - Hyperplasia. Arrows indicate hyperplastic squamous epithelium with an anastomosing trabecular pattern in a male F344/N rat from a chronic study. **Figure 4** Preputial Gland, Duct - Hyperplasia. Higher magnification of Figure 3 showing the interface between hyperplastic epithelium and adjacent cellular and necrotic debris within the duct lumen in a male F344/N rat from a chronic study.





## NTP Nonneoplastic Lesion Atlas

### *Preputial Gland – Hyperplasia*

**Comments:** Glandular hyperplasia is characterized by an increase in the number and size of acini (Figure 1 and Figure 2). The acinar outline is distorted by enlarged (hypertrophic) epithelial cells that may contain eosinophilic granular material (asterisks, Figure 2). The hypertrophic area may marginally compress the adjoining glands. Glandular hyperplasia is age related. Ductular hyperplasia is characterized by increased thickness of ductal squamous epithelium that often forms an anastomosing trabecular pattern (arrows, Figure 3). Occasionally, ductular and acinar hyperplasias may be seen in the same gland. Ductular hyperplasia is common in aged rodents and may be a precursor to squamous cell carcinoma.

Acinar hyperplasia is considered preneoplastic and should be differentiated from adenomas. In acinar hyperplasia, the acini appear larger than normal, with some crowding. Preputial glandular adenomas are more circumscribed and are associated with compression of adjacent tissue, and cellular organization with acini may be irregular. Likewise, ductular hyperplasia should be distinguished from squamous cell papillomas. The latter may form papillae supported by connective tissue cores and may have interconnecting cords of proliferative squamous epithelium.

**Recommendation:** Ductular and glandular hyperplasia of the preputial gland should be recorded and graded. If they occur together, both should be diagnosed. When both glands are involved, the diagnosis should be qualified as bilateral, and the severity grade should be based on the more severely affected gland.

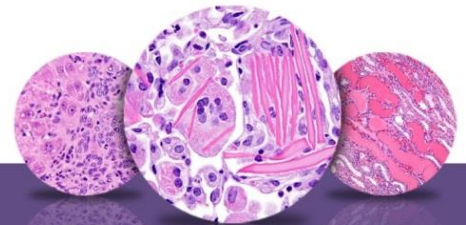
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# NTP Nonneoplastic Lesion Atlas

## Preputial Gland – Hyperplasia

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