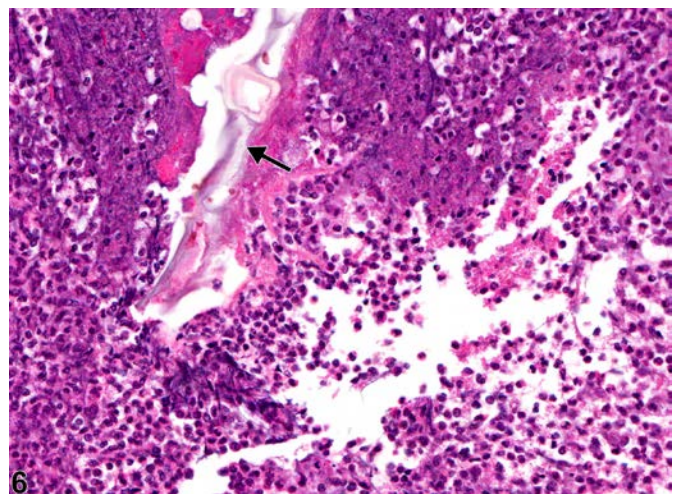
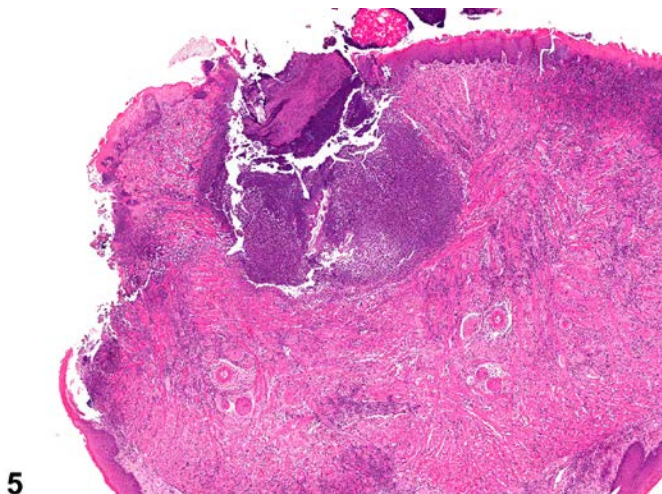
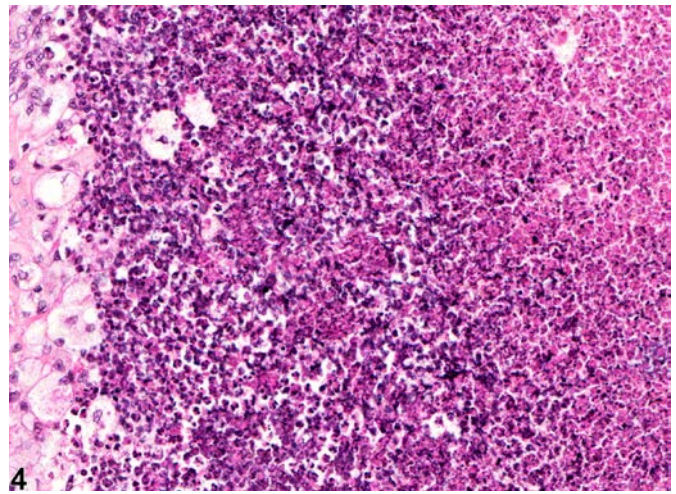
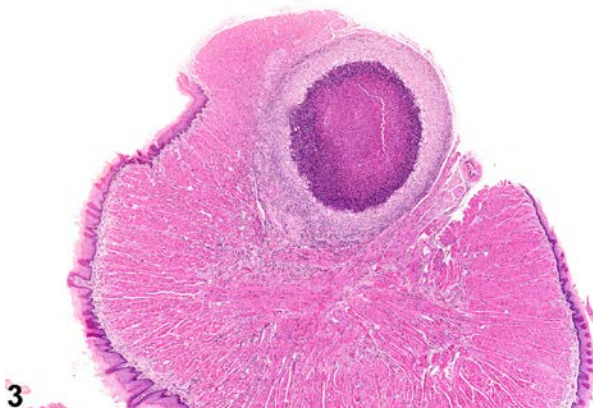
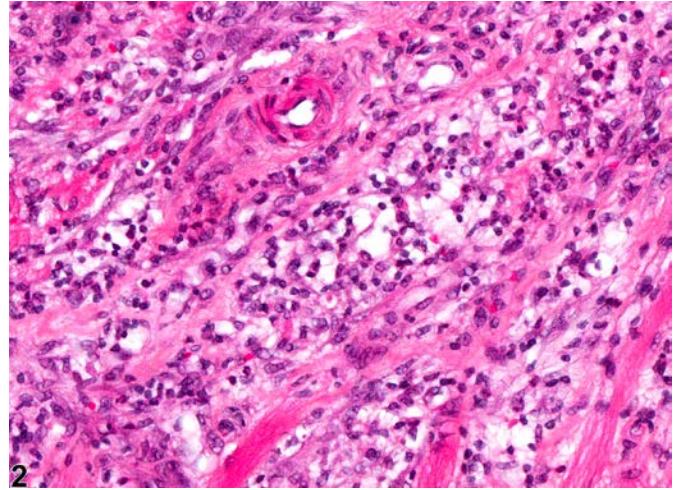
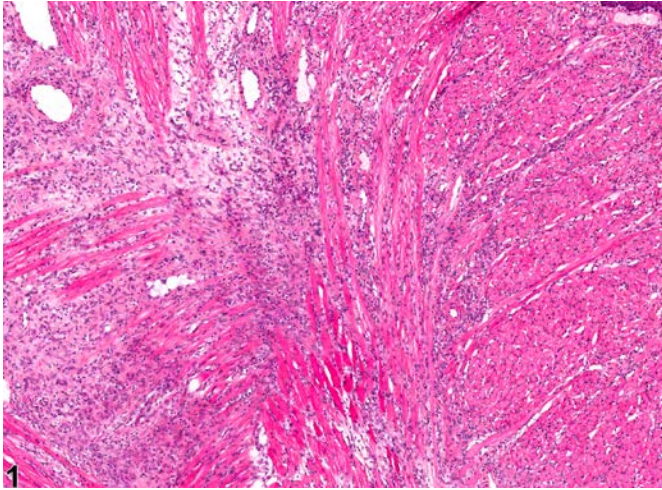


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Tongue – Inflammation





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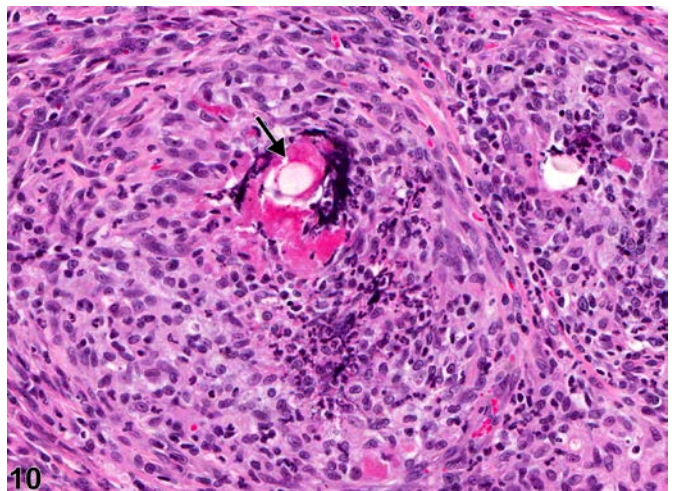
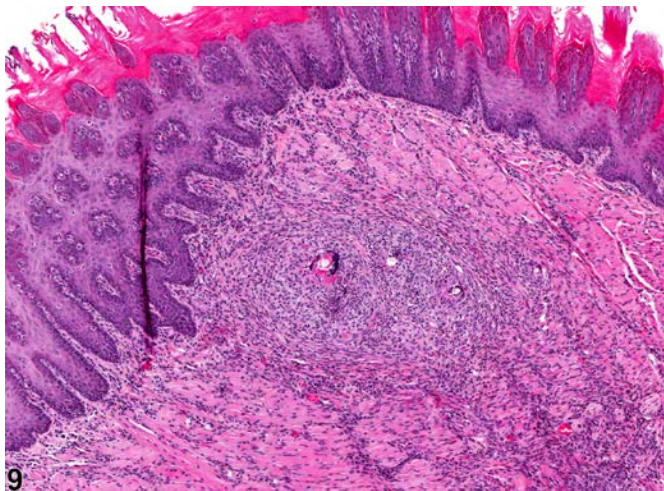
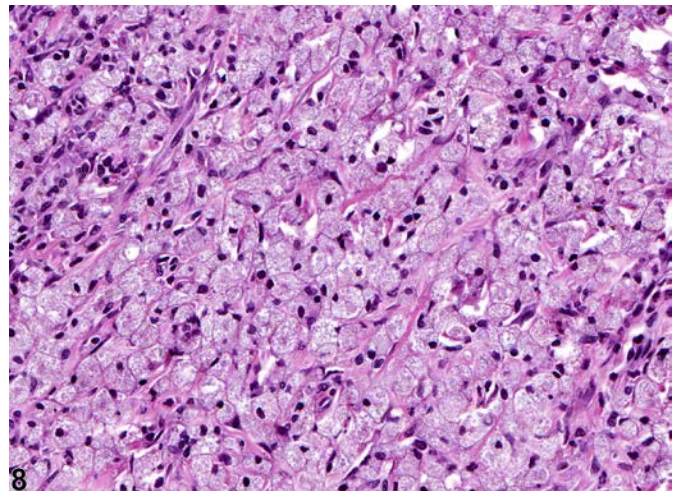
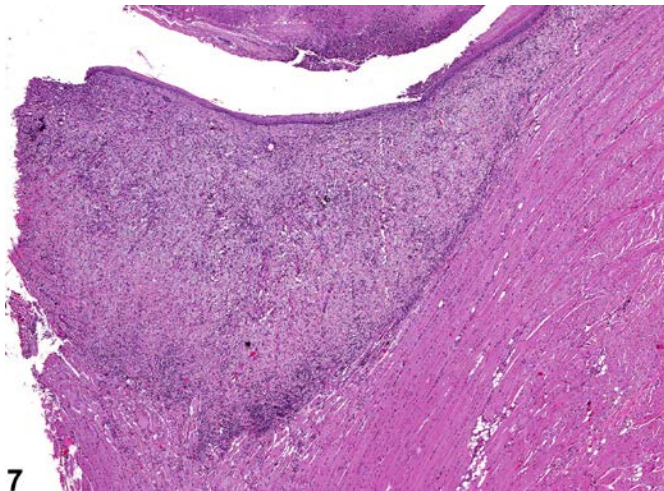
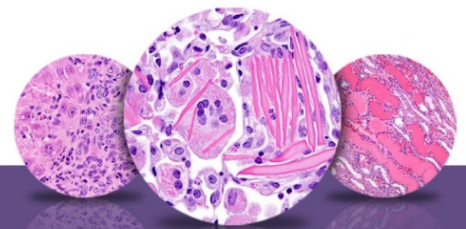


Figure Legend: **Figure 1** Tongue - Inflammation, Chronic active in a male F344/N rat from a chronic study. The muscle bundles are separated by inflammatory cells and fluid. **Figure 2** Tongue - Inflammation, Chronic active in a male F344/N rat from a chronic study (higher magnification of Figure 1). Inflammatory cells comprise lymphocytes, macrophages, and neutrophils. **Figure 3** Tongue - Inflammation, Suppurative in a female F344/N rat from a chronic study. There is a large abscess in the tongue. **Figure 4** Tongue - Inflammation, Suppurative in a female F344/N rat from a chronic study (higher magnification of Figure 3). The center of the abscess is composed of degenerate neutrophils and cellular debris and is surrounded by large, activated macrophages, lymphocytes, and fibrous connective tissue. **Figure 5** Tongue - Inflammation, Suppurative in a male Swiss CD-1 mouse from a chronic study. There is a large, abscess in the tongue. **Figure 6** Tongue - Inflammation, Suppurative in



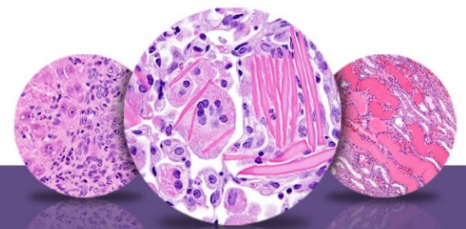
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a male Swiss CD-1 mouse from a chronic study (higher magnification of Figure 5). The center of the abscess is composed of degenerate neutrophils and cellular debris and contains a fragment of foreign material (arrow). **Figure 7** Tongue - Inflammation, Granulomatous in a female F344/N rat from a chronic study. There is a large, subepithelial area of inflammation. **Figure 8** Tongue - Inflammation, Granulomatous in a female F344/N rat from a chronic study (higher magnification of Figure 7). The majority of the inflammatory cells are large, epithelioid macrophages, with fewer lymphocytes and neutrophils. **Figure 9** Tongue - Inflammation, Granulomatous in a male Swiss CD-1 mouse from a chronic study. There is a subepithelial focus of inflammation in the tongue. **Figure 10** Tongue - Inflammation, Granulomatous in a male Swiss CD-1 mouse from a chronic study (higher magnification of Figure 9). The center of the inflammatory focus is composed of epithelioid macrophages with fewer neutrophils and lymphocytes and contains a hair shaft (arrow).

Comment: In NTP studies, there are five standard categories of inflammation: acute, suppurative (Figure 3, Figure 4, Figure 5, and Figure 6), chronic, chronic active (Figure 1 and Figure 2), and granulomatous (Figure 7, Figure 8, Figure 9, and Figure 10). 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*, but the neutrophils are aggregated, and many of them are degenerate (suppurative exudate). The exudate may contain cell debris, both from the resident cell populations and from infiltrating leukocytes; proteinaceous fluid containing fibrin; fewer macrophages; occasional lymphocytes or plasma cells; and, possibly, an infectious agent. Grossly, these lesions would be characterized by the presence of pus. The tissue surrounding the exudate may contain 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 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 can be a treatment-related lesion but can also occur as a spontaneous background lesion. Suppurative inflammation is often due to foreign bodies (Figure 6) or bacterial infections. If the



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inciting agent persists (e.g., the foreign body is not removed), the inflammatory response may become granulomatous (Figure 9, and Figure 10). The NTP uses the term “suppurative inflammation” for lesions that are considered abscesses. Generally, abscesses are incidental findings; however, a treatment-related increased incidence could occur with agents toxic to the squamous epithelium of the tongue.

Recommendation: Whenever present, inflammation should be diagnosed and given a severity grade. The appropriate modifier indicating the duration or type of inflammation (i.e., acute, suppurative, chronic, chronic active, or granulomatous) should be included in the diagnosis. Lesions consistent with an abscess are diagnosed as suppurative inflammation. If a foreign body is the cause of the inflammation, it should be diagnosed separately (foreign bodies are not graded). If bacteria or fungi are present, they should not be diagnosed separately but should be described in the narrative. Other associated lesions, such as hemorrhage, edema, or necrosis, should not be diagnosed separately unless warranted by severity but should be described in the pathology narrative.

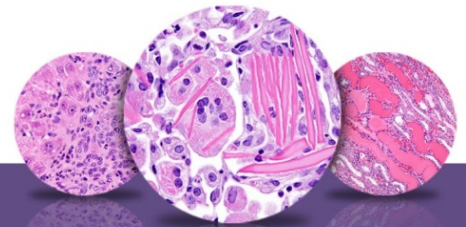
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