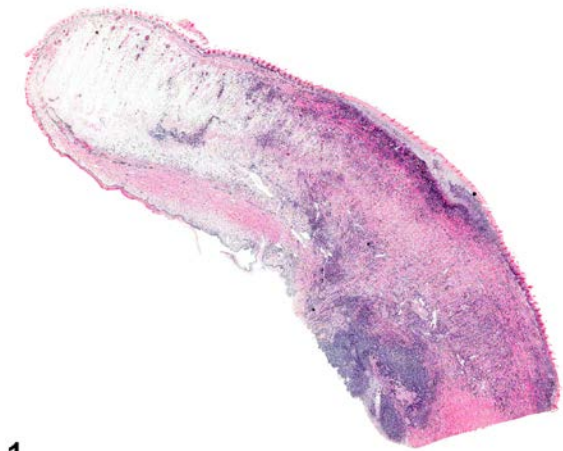


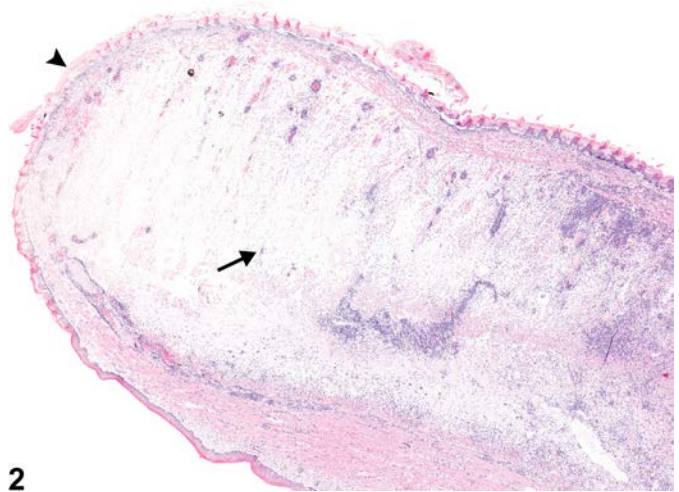


NTP Nonneoplastic Lesion Atlas

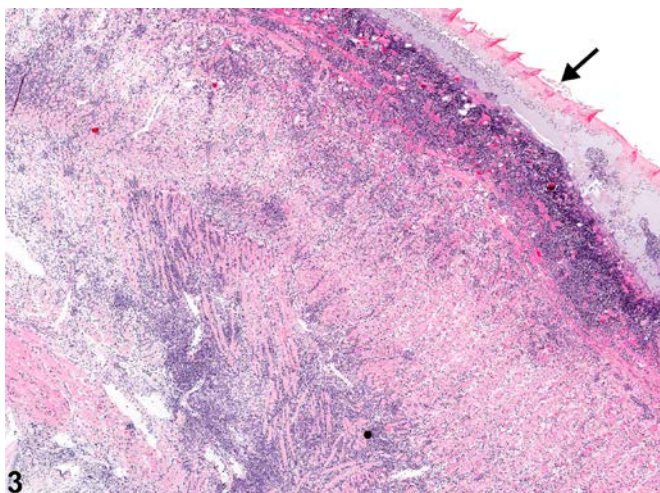
Tongue – Necrosis



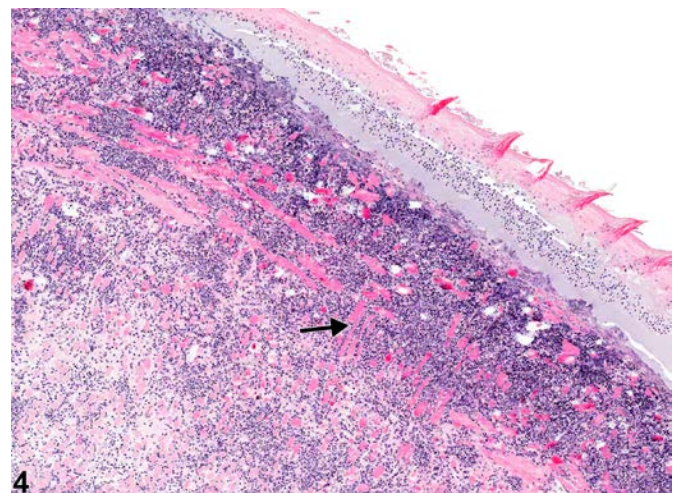
1



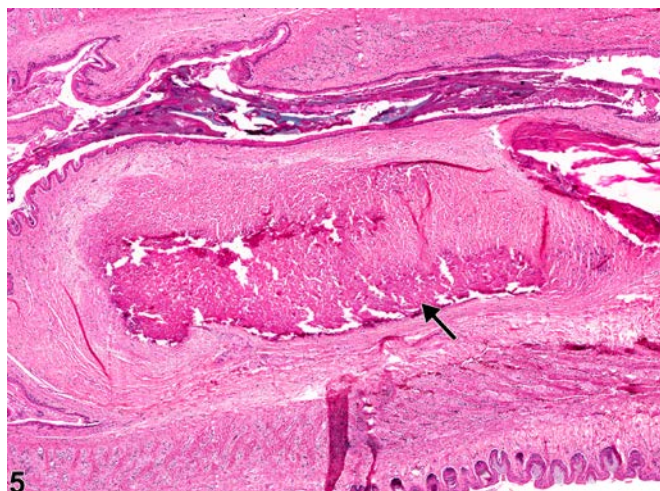
2



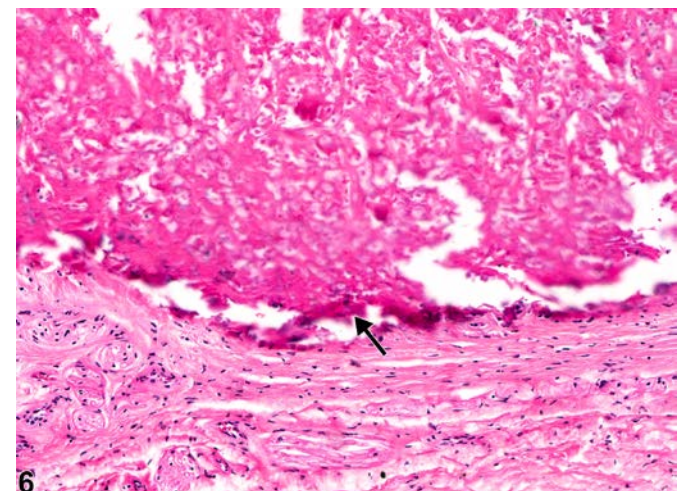
3



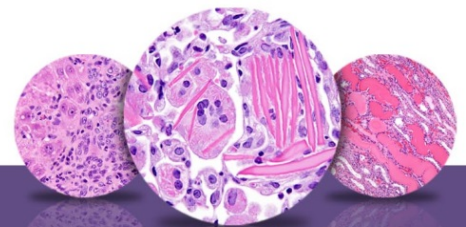
4



5



6



NTP Nonneoplastic Lesion Atlas

Tongue – Necrosis

Figure Legend: **Figure 1** Tongue - Necrosis in a male Swiss CD-1 mouse from a chronic study. There is widespread necrosis of the tip of the tongue. **Figure 2** Tongue - Necrosis in a male Swiss CD-1 mouse from a chronic study (higher magnification of Figure 1). The necrosis involves all elements of the tongue, including the muscle (arrow) and the epithelium (arrowhead). **Figure 3** Tongue - Necrosis in a male Swiss CD-1 mouse from a chronic study (higher magnification of Figure 1). Necrosis of the cornified epithelium (arrow) and abundant inflammation are present. **Figure 4** Tongue - Necrosis in a male Swiss CD-1 mouse from a chronic study (higher magnification of Figure 1). Necrosis of the skeletal muscle (arrow) and abundant inflammation are present. **Figure 5** Tongue - Necrosis in a male F344/N rat from a chronic study. There is necrosis of the skeletal muscle (arrow). **Figure 6** Tongue - Necrosis in a male F344/N rat from a chronic study (higher magnification of Figure 5). There is necrosis of the skeletal muscle (arrow).

Comment: Necrosis can occur secondary to trauma, infection, vasculitis, or thrombosis or as a direct effect of a test agent (particularly epithelial necrosis). Necrosis is differentiated from ulcer in that an ulcer is an area of loss of squamous epithelium that extends through the basement membrane, exposing the underlying lamina propria. In necrosis, the necrotic epithelium remains attached to the basement membrane. Necrosis may involve the full thickness of the tongue (Figure 1, Figure 2, Figure 3, and Figure 4), particularly when the etiology is vascular. In addition to muscle necrosis (Figure 2, Figure 4, Figure 5, and Figure 6, arrows), the overlying squamous epithelium of the tongue can also be necrotic (Figure 2 and Figure 3, arrows), depending on the location and extent of necrosis. Inflammation often accompanies the necrosis, and the type of inflammation present depends on the chronicity and the etiology. Lesions are not common in the muscle of the tongue in NTP studies.

Recommendation: Necrosis should be diagnosed and given a severity grade. If the necrosis involves muscle or multiple tissues in the tongue, then it is diagnosed as “tongue - necrosis.” However, if the necrosis is limited to the epithelium of the tongue, the diagnosis should be “tongue, epithelium - necrosis.” Secondary lesions, such as inflammation or hemorrhage, generally should not be diagnosed separately unless they are prominent components of the lesion. If the necrotic lesion is consistent with an infarct, it should be diagnosed as “necrosis,” but the pathology narrative should state the lesion is consistent with an infarct.



NTP Nonneoplastic Lesion Atlas

Tongue – Necrosis

Reference:

Westwood FR, Jones DV, Aldridge A. 1996. The synovial membrane, liver, and tongue: Target organs for a ricin A-chain immunotoxin (ZD0490). *Toxicol Pathol* 24:477-483.

Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/8864189>

Authors:

Linda H. Kooistra, DVM, PhD, DACVP
Pathologist
Charles River Laboratories, Inc.
Research Triangle Park, NC

Abraham Nyska, DVM, Diplomate ECVP, Fellow IATP
Expert in Toxicologic Pathology
Visiting Full Professor of Pathology
Sackler School of Medicine, Tel Aviv University
Timrat Israel