Lung – Ulceration

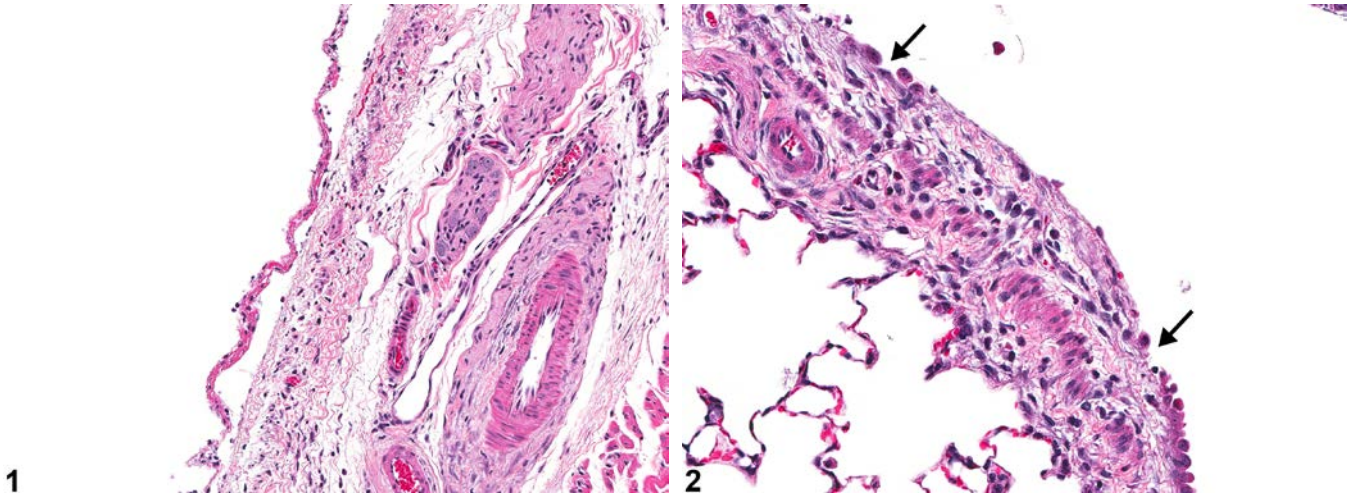
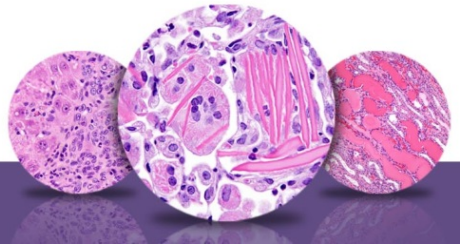


Figure Legend: **Figure 1** Lung, Bronchus - Ulceration in a male Wistar Han rat from an acute study. A ribbon of necrotic tissue is adjacent to the bronchial surface, which has lost its epithelial cells. **Figure 2** Lung, Bronchus - Ulceration in a male Wistar Han rat from an acute study. Some early regenerative changes are visible in the adjacent epithelium (arrows).

Comment: Ulceration of the bronchial or bronchiolar epithelium represents loss of the lining epithelium (Figure 1 and Figure 2) exposing the underlying basement membrane. A distinction must be made between ulceration and necrosis and between ulceration and regeneration. If necrotic cells remain attached to the basement membrane, this would be considered necrosis rather than an ulcer. If the necrotic cells have been replaced by viable epithelial cells that have stretched across and cover the affected region, this would be considered regeneration. Ulceration is typically caused by damage to the epithelial cells either by direct toxicity or in association with inflammation in which epithelial cell damage may be caused by reactive oxygen species or other mediators. Though there may be no inflammation with acute ulcers, ulcers are typically associated with a mixed inflammatory response. A fibrinous exudate can often be seen at the site of respiratory epithelial necrosis and ulceration. In some cases, fibroblasts can infiltrate the exudate, resulting in fibrosis, which in severe cases can cross the lumen (intraluminal fibrosis) and obstruct air flow. Sendai virus infection can cause ulceration of bronchial and bronchiolar epithelium.



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Recommendation: Lung – Ulceration should be diagnosed and assigned a severity grade whenever present. A site modifier (e.g., bronchus, bronchiole, alveolus) should be included in the diagnosis to indicate the location of the lesion. If the necrotic cells are still attached to the airway surface, then necrosis should be diagnosed; if the adjacent cells have flattened and migrated across the ulcer, then regeneration should be diagnosed (see Lung, Epithelium – Necrosis and Lung – Regeneration). Associated lesions, such as inflammation, should not be diagnosed separately unless warranted by severity but should be described in the pathology narrative.

References:

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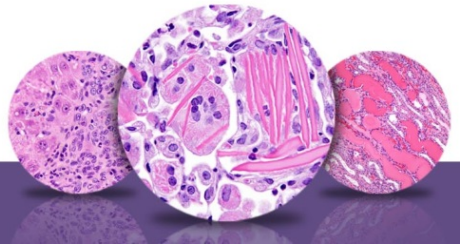

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