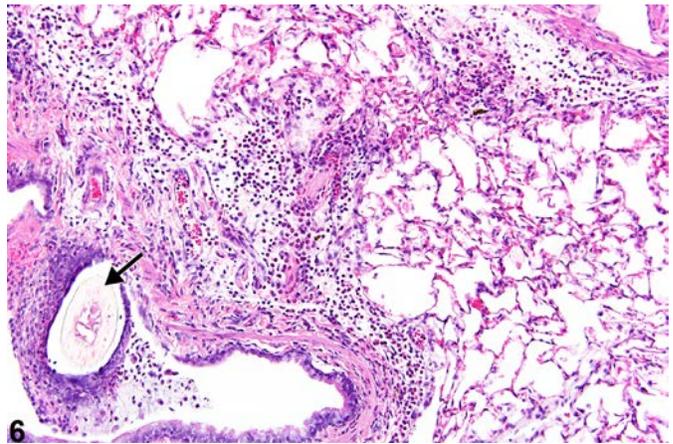
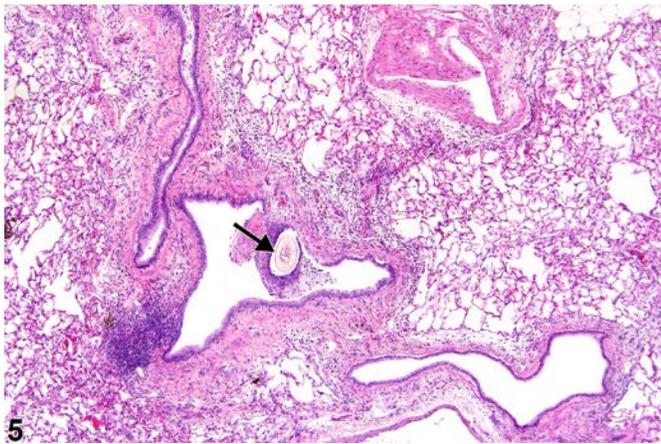
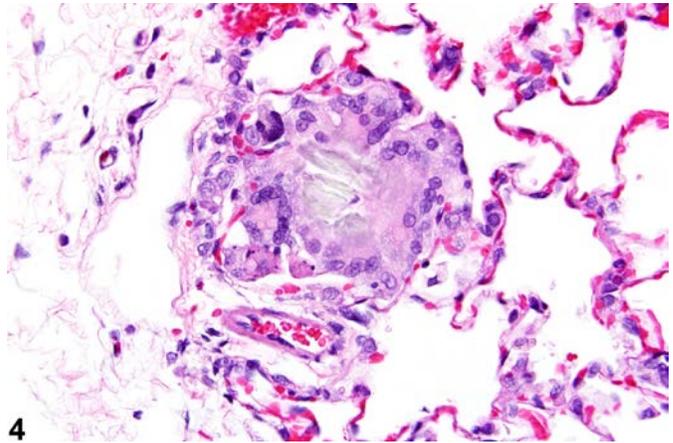
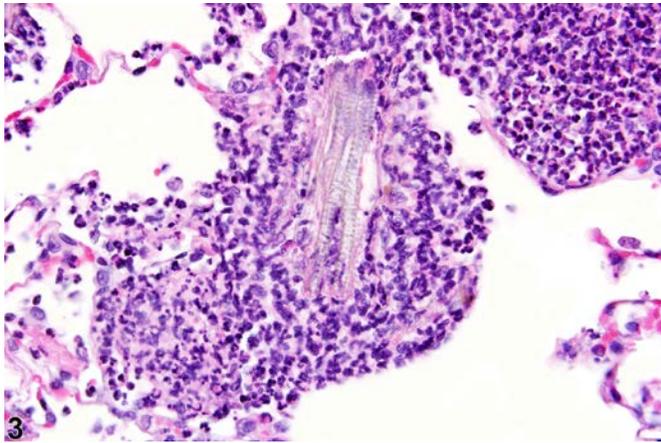
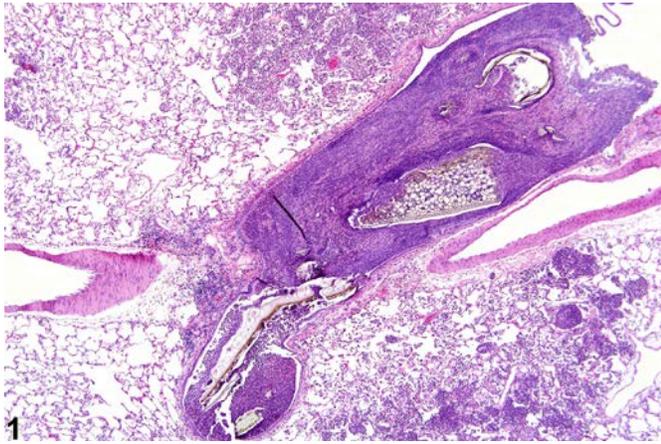
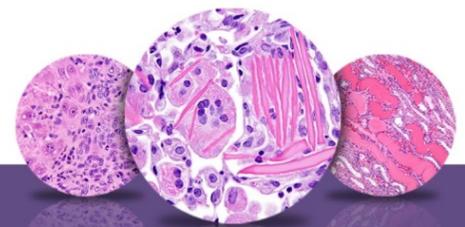


NTP Nonneoplastic Lesion Atlas

Lung – Foreign Body





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Lung – Foreign Body

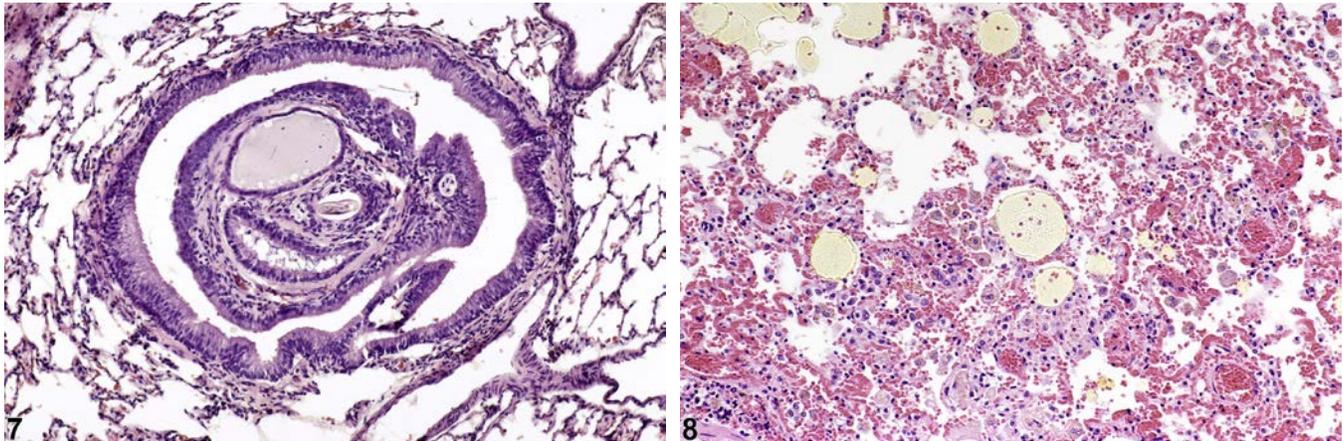
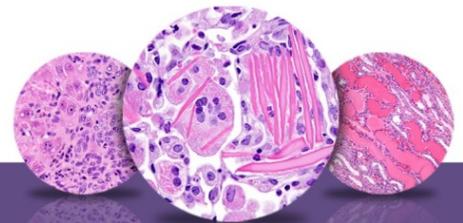


Figure Legends: **Figure 1** Lung, Bronchus - Foreign body in a male Harlan Sprague-Dawley rat from a chronic study. Multiple foreign bodies are present in a bronchus. **Figure 2** Lung, Bronchiole - Foreign body in a male Harlan Sprague-Dawley rat from a chronic study (higher magnification of Figure 1). The plant material (bedding or feed) has incited a suppurative inflammatory response. **Figure 3** Lung, Alveolus - Foreign body in a male Harlan Sprague-Dawley rat from a chronic study. A foreign body with associated suppurative inflammation is present in an alveolus. **Figure 4** Lung, Alveolus - Foreign body in a female Wistar Han rat from a chronic study. A foreign body is present in an alveolus, with associated granulomatous inflammation. **Figure 5** Lung, Bronchiole - Foreign body in a male Wistar Han rat from a chronic study. A hair fragment (arrow) is present in a bronchiole. **Figure 6** Lung, Bronchiole - Foreign body in a male Wistar Han rat from a chronic study (higher magnification of Figure 5). The hair fragment (arrow) has incited an inflammatory reaction and an ulcer in the adjacent epithelium. **Figure 7** Lung, Bronchiole - Foreign body in a female F344/N rat from a chronic study. Inflammation and epithelial hyperplasia associated with a hair shaft is present in a bronchiole. **Figure 8** Lung, Alveolus - Foreign body in a female F344/N rat from a chronic study. Corn oil from a gavage accident is present in the alveoli, with acute inflammation and hemorrhage.

Comment: The term “foreign body” can encompass the presence of a variety of environmental or aberrant material within the lung, such as accidentally inhaled bits of plant material representing bedding or feed (Figure 1, Figure 2, Figure 3, and Figure 4), hair (Figure 5, Figure 6, and Figure 7), or corn oil vehicle related to gavage error (Figure 8). If the morphology of the foreign material is consistent with the test agent, the material is seen only in exposed animals, and the amount of material correlates



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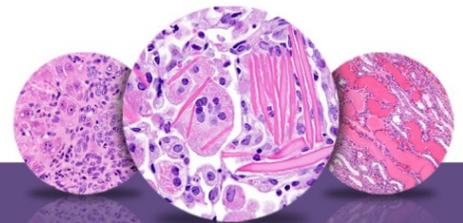
Lung – Foreign Body

with the exposure concentration, the term “foreign material” should be used rather than foreign body. Hair shafts are translucent and multilayered. Corn oil (Figure 8) consists of translucent, pale yellow, birefringent droplets. Feed or plant-based bedding can be identified by the presence of plant cell walls. The inhaled material typically incites a focal suppurative, granulomatous, or pyogranulomatous reaction and is usually surrounded by accumulations of macrophages and/or neutrophils. The reaction to corn oil can vary depending upon whether test material is present in the oil and type of test material. In a vehicle control animal, the reaction to corn oil may be limited and consist primarily of alveolar macrophages around the oil. Foreign bodies are typically sporadic findings with no correlation to exposure concentration. The accumulation of substantial amounts of particulate matter in the lung has been diagnosed as pneumoconiosis, but this term is considered outdated and generally not used.

Recommendation: Lung - Foreign body should be diagnosed when present but should not be graded. The specific location (e.g., alveolus, bronchus, or bronchiole) should be indicated in the diagnosis as a site modifier. The inflammation (or histiocytic infiltration) that accompanies a foreign body should not be diagnosed separately unless warranted by severity. The term “foreign material” should be used when the material is thought to be the test agent based on morphology, correlation with exposure concentration, and presence only in exposed animals.

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NTP Nonneoplastic Lesion Atlas

Lung – Foreign Body

Authors:

Mark F. Cesta, DVM, PhD, DACVP
Staff Scientist/NTP Pathologist
NTP Pathology Group
National Toxicology Program
National Institute of Environmental Health Sciences
Research Triangle Park, NC

Darlene Dixon, DVM, PhD, DACVP
Group Leader
Molecular Pathogenesis Group
National Toxicology Program
National Institute of Environmental Health Sciences
Research Triangle Park, NC

Ronald A. Herbert, DVM, PhD
Group Leader/NTP Pathologist
Pathology Support Group
National Toxicology Program
National Institute of Environmental Health Sciences
Research Triangle Park, NC

Lauren M. Staska, DVM, PhD, DACVP
Senior Pathologist
WIL Research
Hillsborough, NC