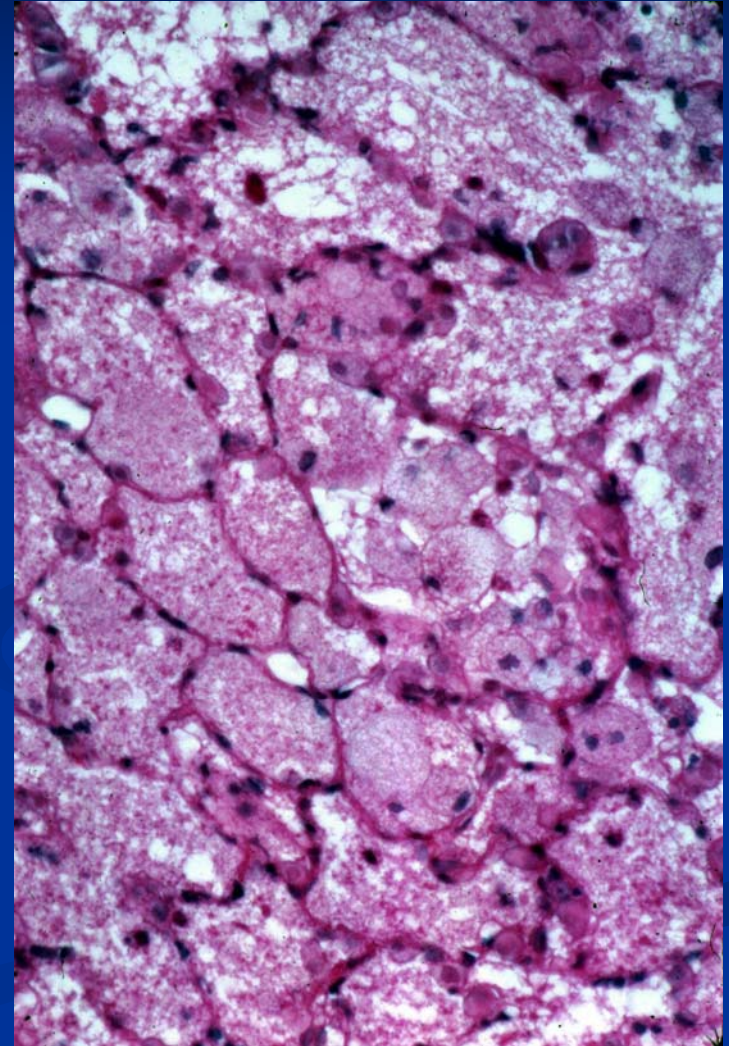
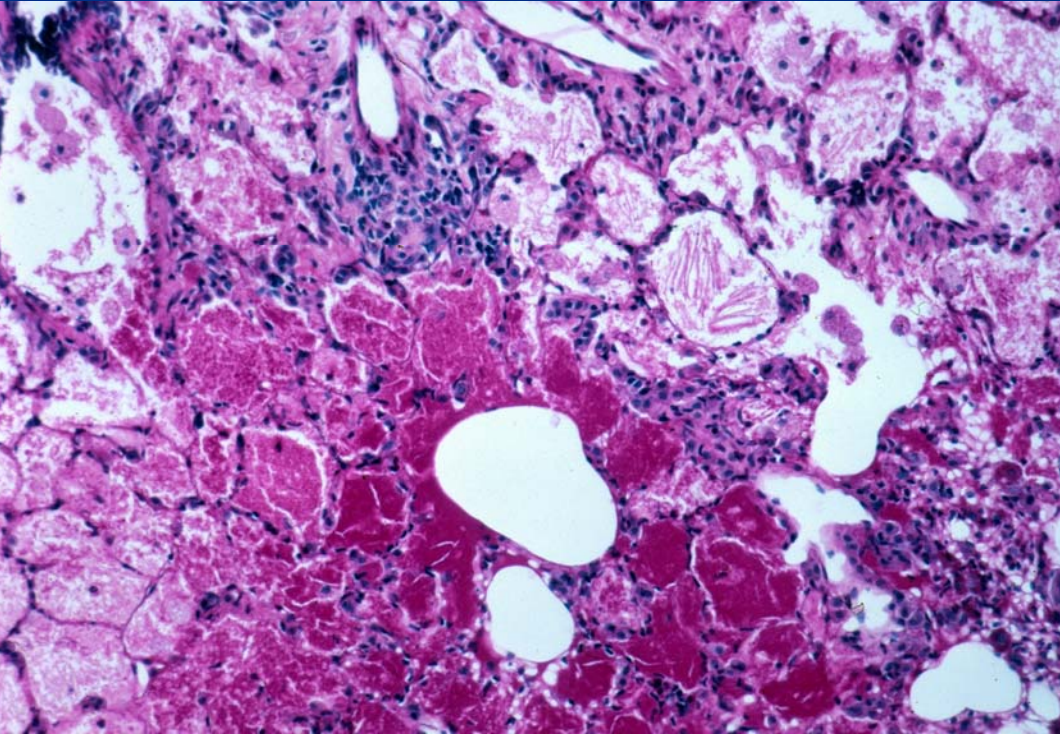


Secondary PAP



Infectious Diseases

- Viral
 - Paramyxoviruses
 - Pneumonia virus of mice (PVM)
 - Sendai virus
- Bacterial
 - CAR bacillus
 - *Mycoplasma pulmonis*
 - *Pasteurella pneumotropica*
 - *Pseudomonas aeruginosa*
 - *Staphylococcus aureus*
- Mycotic
 - *Pneumocystis carinii*



Pneumonia Virus of Mice (PVM) – Now Murine Pneumonia Virus (MPV)

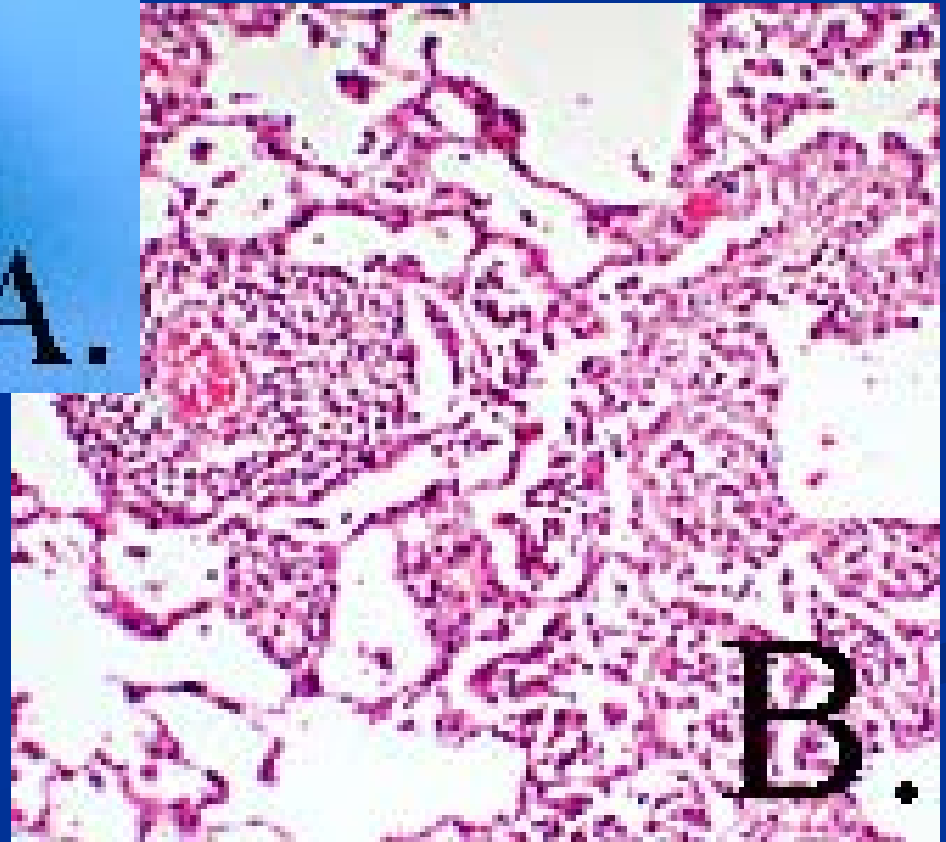
- Prevalence: common
- Virus targets respiratory epithelial cells and type 2 pneumocytes
- Diagnosis: serology; lesions in immunodeficient mice
- Disease: subclinical upper respiratory infection
- Lesions: Nude and SCID mice develop wasting disease due to progressive bronchointerstitial pneumonia
- Transmission: respiratory
- Duration: acute (except immunodeficient mice)
- Renamed PVM to MPV (murine pneumonia virus) – a pneumovirus (Family Paramyxoviridae)

Sendai Virus (SeV)

Respirovirus, Family Paramyxoviridae

- Prevalence: recently common, but now rare in US.
- Diagnosis: serology, lesions
- Disease: most clinically significant virus infection -clinical disease in immunocompetent mice of all ages
- Lesions: necrotizing rhinitis, tracheobronchitis, bronchointerstitial pneumonia.
 - Recovery phase – hyperplasia, squamous metaplasia, fibrosis
 - Athymic and SCID mice: proliferative (rather than necrotizing) bronchiolitis and interstitial pneumonia.
- Target cells: respiratory epithelium and type 2 pneumocytes
- Transmission: respiratory/aerosol
- Duration: acute (except immunodeficient mice)

Sendai Virus



Bacterial Disease Agents

- *Mycoplasma spp.*
- *Pasteurella pneumotropica*
- Cilia-Associated Respiratory (CAR) Bacillus
- *Corynebacterium kutscheri*
- *Mycobacterium avium-intracellulare*
- *Chlamydophila psittaci*

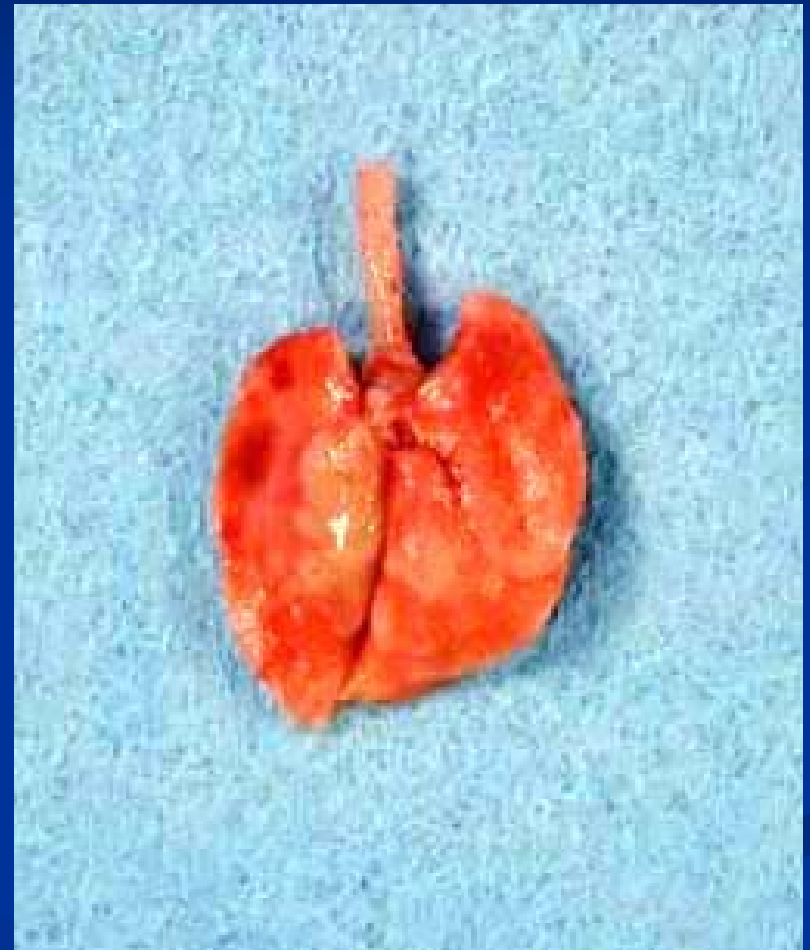
Chronic Respiratory Disease of Mice

- *Mycoplasma pulmonis* often in concert with other agents (Sendai virus, CAR bacillus, etc.)
- Other factors: high ammonia



Chronic Respiratory Disease

- Lesions
 - Chronic bronchopneumonia
 - Peribronchiolar lymphoplasmacytic infiltrates
 - May also have rhinitis and otitis



Mycoplasmosis

- Prevalence: *M. pulmonis* moderate. *M. arthritidis* less common and others rare or nonexistent.
- Diagnosis: culture, serology, lesions (if present).
- Disease: often subclinical but major role in chronic respiratory disease
- Lesions: chronic suppurative rhinitis, otitis and bronchopneumonia
- Transmission: respiratory, other
- Duration: chronic

Cilia-Associated Respiratory (CAR) Bacillus

- Prevalence: common
- Diagnosis: serology available, PCR use increasing.
- Histology: with silver stain, organisms among cilia
- Disease and lesions: often part of chronic respiratory disease - none to chronic suppurative pneumonia.
- Transmission: direct contact
- Duration: chronic
- Comment: Rats, rabbits, pigs, humans also infected, but antigenically diverse members –
 - Related to *Flexibacter* and *Flavobacterium spp.*