

AVIAN METAPNEUMOVIRUS

A highly contagious respiratory disease of turkeys and chickens. Clinical signs include coughing, swollen sinuses, nasal discharge, lowered water, and feed consumption.

Single stranded RNA

Family Paramyxoviridae; Subfamily Pneumovirinae; Genus Metapneumovirus

Four subtypes A, B, C and D

Difficult to isolate

Present in respiratory secretions and excretions of infected birds where it protected by organic material

Susceptible to detergents and disinfectants, survives drying for at least a week; survives in a pH range of 5-9; survives for extended periods of time under cool and moist environmental conditions; in poultry litter it has been shown to survive for 3 days at 68-77° F and for 14-30 days at 46° F

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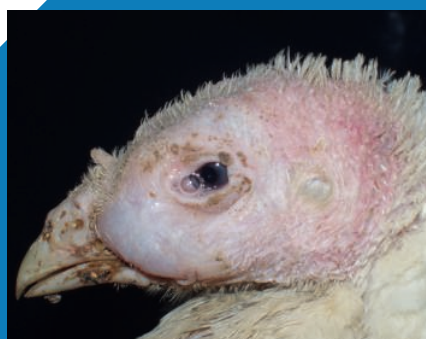
TURKEYS

- » Diseases usually between 3 and 12 weeks of age
- » Cough, sinusitis
- » Conjunctivitis, wet eyes
- » Secondary infections; E. coli, ORT
- » Mortality up to 30%
- » Turkey hens - marked decrease in egg production, poor shell quality, increased egg yolk peritonitis.

Note: Turkey and chicken isolates are usually indistinguishable.



Serous catarrhal conjunctivitis and infraorbital oedema are potential first symptoms of TRT in young turkeys.



Inflammatory oedema may affect the entire peri-orbital area of the head, especially with the involvement of secondary pathogens (E. coli, M. gallisepticum, etc.) and may be accompanied by severe seromucinous nasal discharge and foamy conjunctivitis.

CHICKENS

- » Diseases usually between 4 and 6 weeks of age
- » Mild respiratory signs
- » Sinusitis, wet eyes
- » Secondary E coli infection common; worse clinical signs and lesions; leads to swollen head syndrome
- » Egg production drops in table egg layers and breeders



In broiler chickens, SHS is generally observed after the 4th week of life. The first clinical signs are sneezing, cough, rales and conjunctivitis. A profuse tear secretion, reddened conjunctivas and a characteristic oblong almond-like shape of eyes are observed.



The exudate is initially transparent, but becomes opaque as secondary bacterial infection takes over.



Removal of the skin reveals serofibrinous exudate caused by secondary bacterial infection.



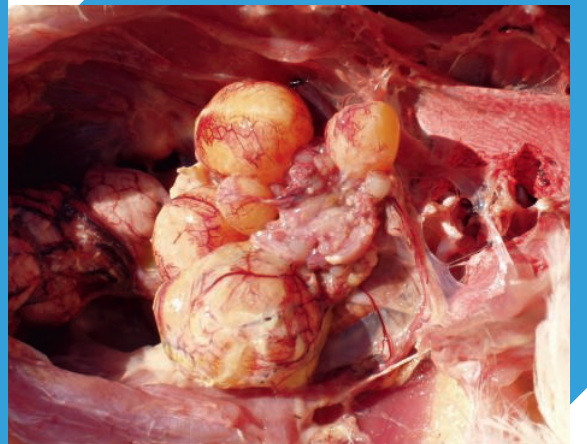
Whitish caseous exudate in the submandibular space. This is a progression from edema that contributes to morbidity and mortality. Secondary E. coli infection quickly follows AMPV infection in the upper respiratory tract. The resulting inflammatory response is the cause of SHS.



Frequently, nervous signs are observed in broiler breeders (opisthotonus, torticollis) due to inflammatory processes in pneumatic skull bones and the middle ear.



SHS in breeders is due to sub-cutaneous edema that could begin unilaterally and progress to affect the whole head. This picture illustrates a severe case with severe periorbital, wattle and intermandibular swelling.



In laying hens, the ovaries are affected in many instances (serofibrinous oophoritis), resulting in reduced egg production.

Sampling / Diagnosis

Difficult to isolate; the virus is present for a short time so sampling during the early stages of infection is critical; look for any respiratory signs or wet eyes, depression; by the time a bird looks sick is too late to sample, so it is best to sample “normal” birds in an affected house or birds from a house at the same farm with no clinical signs.



Ideal samples are swabs from eyes, sinus, choanal cleft and trachea. Swabs can be pooled from multiple birds in liquid medium.



The plan is to screen each sample by PCR and attempt virus isolations on positive samples. Since the virus is sensitive to freezing/thawing, you can ship fresh samples on ice for next day delivery, or split samples media in half, freeze and ship frozen for next day delivery. Thaw one sample to use for PCR and save the second sample for virus isolation.



Serology with a commercial ELISA kit is an option to test convalescent birds/field exposure (epidemiology).

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