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Clinical signs

In chickens the typical sign of *M. gallisepticum* infection in adult birds is the occurrence of tracheal râles, nasal discharge and coughing. Feed consumption is depressed and as the disease progresses weight loss occurs.

In broiler flocks infection is most common at about one month of age. In broilers concurrent infections, for example with *E. coli*, increase both morbidity and mortality.

In layers, egg production is depressed and typically continues at a reduced level.

It should be noted that seroconversion can occur without clinical signs, especially if infection is encountered at a young age.

In turkeys, which are naturally more susceptible to *M. gallisepticum* infection than chickens, clinical signs are more severe and invariably include sinusitis. Here again the disease is more severe with concurrent infections such as *E. coli*. In the early stages of infection a mild nasal discharge may accumulate around the nasal opening, which, in some environments, may attract dust and give the birds a spectacled appearance.

An encephalitic form of *M. gallisepticum* can occur in 3-4 month old turkeys and is manifested as nervous signs similar to those that are seen in the nervous form of Newcastle disease.

Pathology

Typically there is an inflammation with accompanying exudate in the nostrils, sinuses, trachea, bronchi and air sacs with a sinusitis being prominent in turkeys. Sometimes a pneumonia is also present.

In chickens the respiratory picture is often accompanied by air sacculitis and a fibrinous pericarditis and perihepatitis, especially when there is a concurrent *E. coli* infection. These lesions also account for the elevated condemnations seen in infected flocks at processing.

In commercial table egg layers *M. gallisepticum* infection is often associated with a keratoconjunctivitis with an associated facial oedema and, sometimes, corneal opacity. Infected table egg layers and breeders often have a salpingitis (oviduct inflammation) with an accompanying exudate in the oviduct lumen which, in severe cases, will be presented as a swollen oviduct.

Immunity

Birds that have recovered from *M. gallisepticum* infection have some degree of immunity but they also carry the micro-organism and can transmit it horizontally or vertically to susceptible birds.

A poor correlation between circulating antibodies and protection has been reported. Local immunity in the respiratory tract appears to play an important role in the immune responses of birds to *M. gallisepticum*.

Diagnosis

The diagnosis of *M. gallisepticum* infection is based on the isolation and identification of the causal micro-organism. In the acute early stages of the disease this can be done by tracheal swabbing.

Serology also has a role to play in diagnosis and a positive serological result coupled with a clinical picture typical of *M. gallisepticum* infection is a sound basis for a presumptive diagnosis.

Differential diagnosis

In chickens the differential diagnosis should include Newcastle disease, infectious bronchitis or avian pneumovirus infection with concurrent colisepticaemia, infectious coryza, pasteurellosis and *M. synoviae* infection.

In turkeys consideration should be given to avian influenza, which can cause sinusitis in turkeys, aspergillosis, pasteurellosis, chlamydiosis, respiratory cryptosporidiosis, Newcastle disease, *M. synoviae* infection, avian pneumovirus infection (turkey rhinotracheitis), vitamin A deficiency and *Ornithobacterium rhinotracheale* infection (ORT).