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Pathogenesis

Avian metapneumovirus infects the cells of the respiratory and reproductive tracts. In the respiratory tract avian metapneumovirus invasion induces ciliostasis which facilitates the invasion of secondary pathogens. With some strains of the virus a transient immunosuppression is induced which further helps this invasion and can inhibit vaccinal responses.

Clinical signs

In young turkeys the clinical signs include snicking, râles, sneezing, nasal discharge, swollen infra-orbital sinuses, a foamy conjunctivitis and swelling under the jaw. Morbidity is usually 100% but mortality can range from 0.4-50%, especially in totally susceptible young poult. It is often complicated by secondary bacterial infection, especially *E. coli*.

In turkey breeders an egg drop is seen, which can be as much as 70%. This is typified by poor shell quality and an accompanying egg peritonitis.

The disease is not so easy to define in chickens and infection is not always associated with clinical signs, but swollen head syndrome can be associated with avian metapneumovirus infection. Mortality rarely goes above 2%.

In broiler breeders egg production is frequently affected and in commercial layers infection can affect eggshell quality.

Lesions

Respiratory tract lesions include rhinitis, tracheitis and excess mucus in the turbinates and sinuses. In breeders, reproductive tract anomalies include egg peritonitis, misshaped eggs, ovary and oviduct regression.

Immunity

Antibody production and responses in cell mediated immunity occur following infection. Maternal immunity is not enough to protect day old poult from infection.

Diagnosis

None of the clinical signs is pathognomonic. Diagnosis is dependent on demonstrating the presence of virus by using tracheal organ cultures or more usual virus isolation systems or viral antigen by immunofluorescent stains.

The differential diagnosis should consider Newcastle disease, avian influenza, PMV-3, infectious bronchitis and mycoplasma infections.