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Introduction

Adenoviruses are commonly found in poultry and wild birds and many of them replicate in healthy birds with no consequential adverse effects or disease. However, some are primary pathogens of poultry and these cause diseases such as haemorrhagic enteritis in turkeys, quail bronchitis and egg drop syndrome '76.

Other adenoviruses continually turn up in certain disease scenarios and are 'guilty by association' because, as yet, they have not been confirmed as the actual cause.

Adenoviruses were first seen in poultry in cases of quail bronchitis. Avian adenoviruses divide into three groups:

- Group I avian adenoviruses – Contains the conventional adenoviruses (five species A-E) of chickens, turkeys, ducks and geese.
- Group II avian adenoviruses – Haemorrhagic enteritis of turkeys, marble spleen disease of pheasants, AASVs.
- Group III avian adenoviruses – Egg drop syndrome '76

Group I avian adenoviruses

The role of most group I avian adenoviruses in disease is not really understood, with the exception of quail bronchitis (FAdV-1) and FAdV-4, which has a role in hydropericardium syndrome.

Some of these viruses can exploit situations in which the health or immunocompetence of the bird is compromised, such as in Gumboro disease or chicken anaemia agent infections. It is sometimes implicated as a cause of liver damage that is associated with inclusion body hepatitis in chickens.

Vertical transmission is important in the spread of adenoviruses and is probably the reason for their widespread distribution. In this scenario viruses are normally excreted from three weeks of age onwards with peak excretion in broilers between four and nine weeks of age. In layers peak excretion is at five to nine weeks of age.

It is not uncommon to isolate two or more serotypes from the same chicken. Birds can excrete quite high levels of one serotype despite the presence of high levels of antibodies to others.

Horizontal spread is also important and the virus can be excreted via most routes but usually the greatest levels of virus are in the faeces. Aerosol spread can occur over short distances.

The incubation period for adenoviruses is relatively short – about one to two days.