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Incubation period

Clinical disease occurs 6-12 days after natural exposure to the ILT virus, although experimentally a shorter incubation period of 2-4 days is often seen.

Clinical signs

ILT virus causes an acute respiratory disease in chickens centred on the trachea. Typically, affected chickens have a nasal discharge and a mild rattling noise on breathing (râles) that is often accompanied by gasping and coughing. In severe forms the breathing can become very laboured and blood stained mucus is often expelled.

In recent years a milder form of the disease has become more widespread and this is typically manifested as unthriftiness, depressed egg production, conjunctivitis (watery eyes), sinusitis and a mild tracheitis and a persistent nasal discharge of variable duration.

In the acute disease morbidity is 90-100% and mortality is typically 10-20%, but can reach more than 60%. In the mild form morbidity is often as low as 5% with mortality rarely over 1-2%.

Pathology

In ILT lesions can be found throughout the respiratory system but are most commonly found in the trachea and voice box (larynx). Tissue changes can range from mild, in which there is just an excess of mucus present, to severe, in which there can be a severe mucoid tracheitis characterised by structural degeneration, necrosis and haemorrhage.

Often mucoid/semi-caseous casts can be seen which can extend the length of the windpipe. In the severest forms there can be severe haemorrhage into the trachea resulting in blood cast/clots in the trachea.

In the mildest forms of ILT the gross lesions may only comprise oedema and congestion of the conjunctiva and infra-orbital sinuses and a mild mucoid tracheitis.

At the histopathological level intranuclear inclusion bodies can be found in respiratory epithelial cells as early as three days post infection. These inclusion bodies are typically seen early in the disease and may be hard to find later on.

Pathogenesis

ILT virus infection results in viral replication (multiplication) in epithelial cells of the trachea and larynx and sometimes in these cells in the conjunctiva, respiratory sinuses and lower respiratory tract. Infectious virus usually remains in tracheal tissues and secretions for about a week.

The ILT virus can spread to the trigeminal ganglia (parts of one of the facial nerves) and ILT virus can be reactivated from these ganglia for some time – at least 15 months. This reactivation can occur when chickens are re-housed pre-lay.

Diagnosis

Various respiratory diseases can present clinical signs and pathological lesions similar to those seen in ILT and so laboratory tests are required to confirm a diagnosis of this disease. The presence on histopathology of intranuclear inclusion bodies in the trachea is confirmation of ILT.