Inclusion Body Hepatitis

Affected chickens have mottled livers, pale bone marrow and sometimes gangrenous dermatitis can be seen.

Cause
The disease is caused by an avian adenovirus (for example the Tipton strain) and is usually simultaneously accompanied by other immunosuppressive diseases such as infectious bursal disease or infectious anaemia. There are 12 known serotypes of avian adenoviruses that may be involved in the development of this disease.

Transmission
Egg transmission is an important factor. Horizontal transmission from bird to bird by contact with droppings. Once the bird becomes immune, the virus can no longer be isolated from the droppings.

Species affected
Chickens, turkeys and pheasants and possibly other birds can be affected by avian adenovirus.

Clinical signs
Chickens with inclusion body hepatitis are affected at usually 5 to 7 weeks of age. The birds are listless, with ruffled feathers. Mortality is usually quite severe, up to 25% in the first 10 days of the disease.

Internal lesions
Affected chickens have mottled livers, many with pinpoint necrotic and haemorrhagic spots. Pale bone marrow and, in some cases in presence of infectious anemia, gangrenous dermatitis can be seen. Kidneys are pale and swollen. The spleen is usually quite small (atrophy). If Gumboro disease (infectious bursal disease) has been present in the birds, even if subclinical, the bursa of Fabricius will be very small (atrophic). Such chickens are immunosuppressed and usually have more severe cases of inclusion body hepatitis and/or infectious anaemia. Mature birds do not have clinical signs of adenovirus infection, they only start showing antibodies in their blood.

Hydropericardium-Hepatitis Syndrome
HHS was reported for the first time in 1987 in Pakistan and was referred to as "Angara disease". The disease has meanwhile been reported from several other countries, including India and countries in the Middle East and Latin America. Hydropericardiumhepatitis syndrome is caused by a virus belonging to the family of the fowl adenoviruses (FAV). Despite of the diversity in the geographical distribution of the disease, in all areas the infection is caused by a virus belonging to FAV serotype 4. There are three features which underline that this condition is a new disease, different from the known IBH. IBH and hydropericardium accompany this syndrome. Once outbreaks of HHS occur, it remains a problem for the poultry industry. And while IBH is shown to be caused by strains belonging to various FAV serotypes, HHS is, contrary to this, caused by FAV serotype 4. The infected flocks show high mortality rates and beside the lesions typical for IBH, a marked hydropericarditis is found in the affected birds.

Diagnosis
Typical mottled livers with pinpoint lesions, pale bone marrow and kidneys, small spleen and bursa are good indications of the disease. In the case of HHS the typical lesion (hydropericardium) is also found. Histological examination (intranuclear inclusion bodies) of liver and/or virus isolation are helpful means of diagnosis.

Treatment and control
No treatment exists. Antibiotics can be used to prevent secondary bacterial infection and possible gangrenous dermatitis. The best method of control is to ensure adequate immunity against other immune suppressive diseases (e.g. infectious bursal disease). Chickens may be vaccinated s.c. during the first two weeks of life with an inactivated oil-emulsion vaccine.