

FALCON HERPESVIRUS IN THE UK

Falcon herpes virus is only considered to occur occasionally in the UK, with three published cases in the last 18 years. In this practice despite a large raptor case load, no cases have been experienced until recently. During August and September 2000, two separate unrelated outbreaks were confirmed on histology and virus isolation, there are similarities between the two cases which we believe should be brought to colleagues' attention.

Herpes viral hepatitis has been reported in USA in owls (Green and Shillinger, 1935) and falcons (Mare and Graham, 1973), in Europe (Burtscher, 1965) and the UK (Greenwood and Cooper, 1982) and (Gough *et al.* 1993). The owl and falcon strains respectively, are antigenically similar and are both members of the avian Herpesviridae. Naturally occurring Falcon herpesvirus has been described in the Peregrine falcon (*Falco peregrinus*), European kestrel, Merlin (*Falco columbarius*), Red-necked Falcon (*Falco chicquera*), Prairie Falcon (*Falco mexicanus*), and American Kestrel (*Falco sparverius*) as well as experimental infection in Long-eared Owl (*Asio otus*), Screech Owl (*Otus asio*), Great Horned Owl (*Bubo virginianus*) (Mare and Graham, 1973) and a Barred Owl (*Strix varia*) (Morishita *et al.* 1994). Falcon, owl and eagle herpes viruses do not affect hawks (accipiters). The gyr falcon (*Falco rusticolus*), is considered to be particularly susceptible (Remple, 1995). Herpesvirus isolates from falcons, pigeons and psittacines have been compared by restriction endonuclease analysis (Aini *et al.* 1993), finding that falcon and pigeon herpesvirus are similar but distinct from psittacine herpesvirus. Gough (1997) using the same test showed that some, but not all pigeon herpes isolates were similar to falcon herpes isolates. This finding supports the field observations that infection is thought to occur by ingestion, of infected prey species (Graham, 1978), in particular pigeons (Redig, 1992, Aini *et al.* 1993, Morishita, 1994, Remple, 1995).

In both of the recent cases investigated by this practice, pigeon had been fed some 5 days prior to clinical signs commencing. In the first case the keeper fed spent racing pigeons. The latter pigeons were frequently transported to and returned from Europe. Lierz (2000) has shown that 35% of wild injured raptors tested in his survey in Germany were sero positive for falcon herpes virus. This is a surprising finding, indicating a high prevalence amongst free flying European birds. In view of this it is perhaps not surprising that pigeons flying from Europe might have been exposed to the virus and hence become carriers. In the second case the affected bird had caught and eaten a feral pigeon in the SE England 5 days prior to the development of clinical signs. The catching and eating of feral pigeons by falcons has been recognised as a significant disease risk (in relation to falcon herpes virus) in the USA and Middle East for many years, but has not until now been considered a risk in the UK.

The disease in falcons is usually peracute and rapidly fatal, with mortality approaching 100% (Graham, 1978). Clinical signs if seen are non specific with lethargy, weakness, malaise, lime green staining of the urates and anorexia. A consistent haematological finding is leucopenia. In fatal cases the liver and spleen are grossly swollen, with small punctate lesions on the liver. Calvary inclusions are seen on histopathology.

Histological examination shows acute multi-focal coagulative necrosis in the liver and spleen. Small mainly eosinophilic intranuclear inclusion bodies can usually be observed in degenerate hepatocytes at the periphery of these necrotic lesions. Virus probably enters via the oral route and is subsequently excreted in body discharges. Some birds may become carriers and remain latently infected.

Herpesviruses are sensitive to acyclovir (Zovirax. Burroughs Wellcome) (80mg/kg tid po for 5 days) and Baypamun (1ml/kg i/m 3x in 48 hours). In the case described above affecting the gyr falcon, 5 in contact falcons (peregrine, peregrine hybrids and merlin) were treated with acyclovir with the hoping of preventing further clinical disease. No clinical disease developed in the in contact birds.

The authors believe that these two cases indicate that the feeding of spent racing pigeons (especially those flying in central Europe) as well as the ingestion of feral pigeons by falcons in the UK may now present an unacceptable risk and should be discouraged.

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