

Internal Papilloma Disease- An Overview

Adrian Gallagher¹

Introduction

Internal papilloma disease (IPD) until recently was considered an exotic disease by Australia. The diagnosis of two unrelated cases in legally imported macaws is of concern.

IPD has previously been known as cloacal papillomatosis, macaw papilloma disease and internal papillomatosis of parrots.

IPD is a disease affecting psittacine birds of primarily South and Central American species, particularly Macaws and Amazons. Australian, African and Asiatic birds feature rarely in published reports. No aetiological agent has been identified but the disease is thought to be viral origin.(Goodwin et al 1993) Cutaneous papilloma virus exists in Passerines but differs from IPD as IPD affects the gastrointestinal tract from the oral cavity through to the cloaca. The presence of IPD appears to be associated with the development of pancreatic and biliary carcinoma (Hillyer, 1991; Hillyer, 1991; Coleman, 1991; Kennedy *et al* 1994; Kennedy *et al* 1996).

Incidence

The incidence of IPD in the Australian population of imported psittacine birds is unknown. Macaws particularly Green-Winged Macaws (*Ara chloroptera*), Blue and Gold Macaws (*Ara ararauna*), Amazon parrots (*Amazona spp.*), and Hawk headed parrots (*Deropytus accipitrinus*) are of high risk of developing disease (Cribb, 1984; Graham, 1988; Graham, 1991; McDonald, 1988; Van Der Heyden, 1988). Macaws and amazons along with a number of Conure spp. were among the psittacine birds imported into Australia between 1993 and 1995. Importation was suspended in 1995. At present, most of these birds are in avicultural situations. Many of these imported birds were not hand raised. This has not facilitated diagnosis of this disease due to the fact that many of these birds are antisocial to humans and the fact that aviculturists and veterinarians are still on a learning curve regarding the best methods of handling and accessing these birds. The development of a standard protocol for health checks and the encouragement of regular (annual and pre-purchase) checks for these and other exotic species will only facilitate the determination of incidence of IPD and other exotic diseases in our populations.

North America provides us with the most data on incidence. An evaluation of 10640 avian submissions from 1981 until 1991 revealed 141 diagnoses of IPD. Eighty-five of these were Macaws(*Ara spp*) and forty-seven Amazons (*Amazona spp*). There was one diagnosis in a cockatiel (*Nymphicus hollandicus*) (Graham, 1991). No figures were given for number of positive cases as a percentage of admissions per species. Lesions have also been described in budgerigars and superb parrots (Gerlach, 1994).

Clinical Signs

The clinical signs associated with the disease vary according to the site of the lesion. Lesions have been reported in the oropharynx, choanal slit, conjunctiva, nasal mucosa, naso-lacrimal duct, larynx, oesophagus, crop, proventriculus, ventriculus, bile ducts and pancreatic ducts (Kennedy *et al*, 1996). These lesions commonly regress and recur in cycles (Graham DL, 1991).

The most common site is the cloaca. Signs can consist of tenesmus, bleeding, prolapse, staining, excess preening and infertility. Lesions occurring in the pharynx can result in dysphagia, coughing, wheezing, and respiratory distress.

Oesophageal, proventricular, ventricular, and intestinal papillomas can show as vomiting, impaction, poorly digested faeces, weight loss and melaena.

Weight loss and death have been associated with bile duct and pancreatic carcinoma. These tumours appear to be associated with IPD in psittacine birds (Coleman, 1991; Hillyer, 1991; Hillyer, 1991; Kennedy *et al* 1994; Kennedy *et al* 1996).

Diagnosis

Lesions are characteristically pink or white raised nodules or filamentous in gross appearance. They tend to be friable and often bleed with examination. IPD lesions can be demonstrated by applying 5% ascetic acid direct to suspect tissue. This will result in blanching of affected tissue. Contrast radiography, endoscopic or surgical biopsy would be required for diagnosis of internal lesions (Gerlach, 1994).

Pathological changes are generally confined to the lesions although a possible relationship exists between hepatic and pancreatic carcinomas and IPD (Coleman, 1991; Hillyer, 1991; Hillyer, 1991; Kennedy *et al*, 1994; Kennedy *et al*, 1996). Lesions require histological examination for definitive diagnosis.

Histological diagnosis was provided by Veterinary Pathology Services.

Prevention, Treatment and Control

Until this recent diagnosis of IPD, this disease was considered to be exotic to Australia. The question now is how to eradicate or control this disease. There has been no conclusive proof that this disease is infectious. Electron microscopy, low stringency southern blotting techniques and immunocytochemical procedures have all been attempted and have failed to determine an aetiological agent (Gerlach, 1994). Despite this we have to presume that this is viral due to the similarities both grossly and histologically with the mammalian sexually transmitted disease. A herpes-like virus has been associated with a cloacal papilloma in a conure (Goodwin, 1993). Aviaries with a diagnosis of IPD tend to have further cases suggesting horizontal spread (Gerlach, 1994). Other birds have been paired for up to 15 years with an infected partner without showing clinical signs of infection (Speer, 1997). IPD appears not to be vertically transmitted. Pairs of clinically affected birds have been shown to be productive over a number of years. Eggs incubated and reared from these infected birds have shown no signs of disease after three years (Bond, 1995). This may not be a long enough trial as an incubation period of up to 4 years has been suggested. Another problem is that only external

lesions can be easily diagnosed.

This poses some problems for us in Australia.

The current recommendation from the AAV Australian committee is that all infected birds be euthanised. All in contact birds should be examined regularly, probably annually, for signs of disease. A protocol for clinical examination has been produced. It is in the best interests of aviculturists and our indigenous avifauna that we try to eradicate this disease. Management of these birds as productive entities, at this point in time, with the little knowledge we have of this disease, is **not** an option.

It is important that avian veterinarians and aviculturists work together to eliminate IPD in Australia. This is not a disease we want to live with and now is the time to act. It is essential that a good working relationship continues to exist and the trust placed with us is not abused. Without trust, we will not see affected birds in our clinics and this disease and others will go underground. We must encourage aviculturists to be vigilant in observing their birds for clinical signs and foster a view that it is for the betterment of aviculture to eradicate this disease.

Bibliography

Bond MW, Downs D, Wolf S. Utilising Papilloma Infected Blue and Gold Macaws(Ara ararauna) in a Breeding Collection. *Proc Assoc Avian Vet* 1995 pp.469-472

Coleman CW Bile duct Carcinoma and Cloacal Prolapse. *J Assoc Avian Vet* 1991 Vol5(2) pp87-89

Cribb PH. Cloacal Papilloma in an Amazon Parrot. *Proc Int Conf Avian Med* 1984 pp35-37

Gerlach H. Viruses. In *Ritchie BW., Harrison GJ., and Harrison LR. Avian Medicine Principles and Application*. 1994 pp 886-888

Goodwin M McGee ED. Herpes-like Virus Associated With a Cloacal Papilloma in an Orange-fronted Conure (Aratinga canicularis). *J Assoc Avian Vet* 1993 Vol7 (1) pp23-25

Graham DL. Internal Papillomatous Disease- A Pathologists View. *Proc Assoc Avian Vet*.1991 pp 141-143

Graham DL. Internal Papilloma Disease. *Proc Assoc Avian Vet* 1988 p 38

Hillyer EV, et al. Bile Duct Carcinomas in two out of ten Amazon Parrots with Cloacal Papillomas. *J Assoc Avian Vet* 1991 vol;5(2) pp91-95

Hillyer EV, Cholangiocarcinoma in Association with Cloacal Papilloma in Two Amazon Parrots. *Proc Euro Chap Assoc Avian Vet*. 1991 p332.

Kennedy FS, Sattler-Augustin S, Mahler JR. Oropharyngeal and Cloacal Papillomas in Two Macaws with a Pancreatic and an Intestinal Adenocarcinoma with Hepatic Metastasis. *Proc Assoc Avian Vet* 1994 pp428-430

Kennedy FA, Sattler-Augustin S, Mahler JR, Jansson PC. Oropharangeal and Cloacal

74 Internal papilloma disease

Papillomas in Two Macaws (*Ara Spp.*) with Neoplasia with Hepatic Metastasis. *J Avian Med Surg* 1996 Vol 10 (2) pp89-95

McDonald SE. Clinical Experiences With Cloacal Papillomas. *Proc Assoc Avian Vet* 1988 pp27-30

Speer BL. Per Com.

Van Der Heyden N. Psittacine Papillomas. *Proc Assoc Avian Vet* 1988 pp23-26