

## **A Retrospective Study of Atherosclerosis in Birds**

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Interpretive Review and comments by Dr. Nemetz:

Dr Garner looked through all the avian submissions to his pathology service from 1994 to 2003 for evidence of atherosclerosis. If it was considered a significant contributing factor in the cause of death, the patient was used for this study. Since Dr. Nemetz has been working on the early ante mortem diagnosis of heart conditions including atherosclerosis, Dr. Garner's paper was of great interest and supported his theory that atherosclerosis as a primary cause of death DOES exist in many bird species.

We will address only the cases in the exotic parrot (psittacines) species seen in Dr. Nemetz' practice, as this is more pertinent to our clients.

It had been demonstrated in 1998 that increased intake of saturated fats and cholesterol can cause atherosclerosis in Japanese quail. It is not a large assumption that parrots on a similar diet could create a similar situation. However, in Dr. Garner's survey he could not find a good correlation because of difficult interpretive histories submitted by the attending veterinarians. What Dr. Garner did find significant was that the incidence in female birds was nearly twice that of males in all the birds studied and the average age at death was 13 years. These further supports the experience of Dr. Nemetz's clinical findings and his recommendation that most birds between the ages of 8-10 years should have a full blood chemical analysis including blood cholesterol and triglyceride levels along with radiographs in the hope to diagnosis these conditions before there is not enough time to correct the overall clinical outcome. The other interesting finding was that many of these psittacines had concurrent liver disease (hepatic lipidosis) with fat deposition and subsequent scarring (cirrhosis). Again, these findings parallel the clinical experience seen at The BIRD Clinic.

In the birds with atherosclerotic changes, the most common location was in the aorta at the point where the blood leaves the heart (aortic outflow tract). These changes were also found in the heart valves and the arteries in the wall of the heart. A side note was mentioned that often African grey parrots with atherosclerosis demonstrate neurological symptoms as an early sign of cardiac disease most probably from decreased peripheral blood circulation to the brain. Again, this presentation has been seen clinically at The BIRD Clinic where older African grey parrots with marked blockages of their brachiocephalic arteries (major branches off of the heart) exhibit symptoms such as loss of balance, seizures, or limb weakness.

### **Conclusions:**

Atherosclerosis is a common disease in birds. It mostly occurs in well-fed birds and like humans; many dietary constituents may be potentially atherogenic, including fatty seeds, meat, and eggs.

It is seen more commonly in females and the average age at death is 13 years. This paper will hopefully finally put to rest the inaccurate thoughts in the general bird industry that heart disease does not exist. It should also bring to all of our attention that the key to correcting atherosclerosis and hepatic lipidosis is an early diagnosis and proper dietary or drug therapy with follow-up diagnostics. With this early diagnosis and goal of preventing progression of the atherosclerotic process we can achieve a longer life for our avian pets.