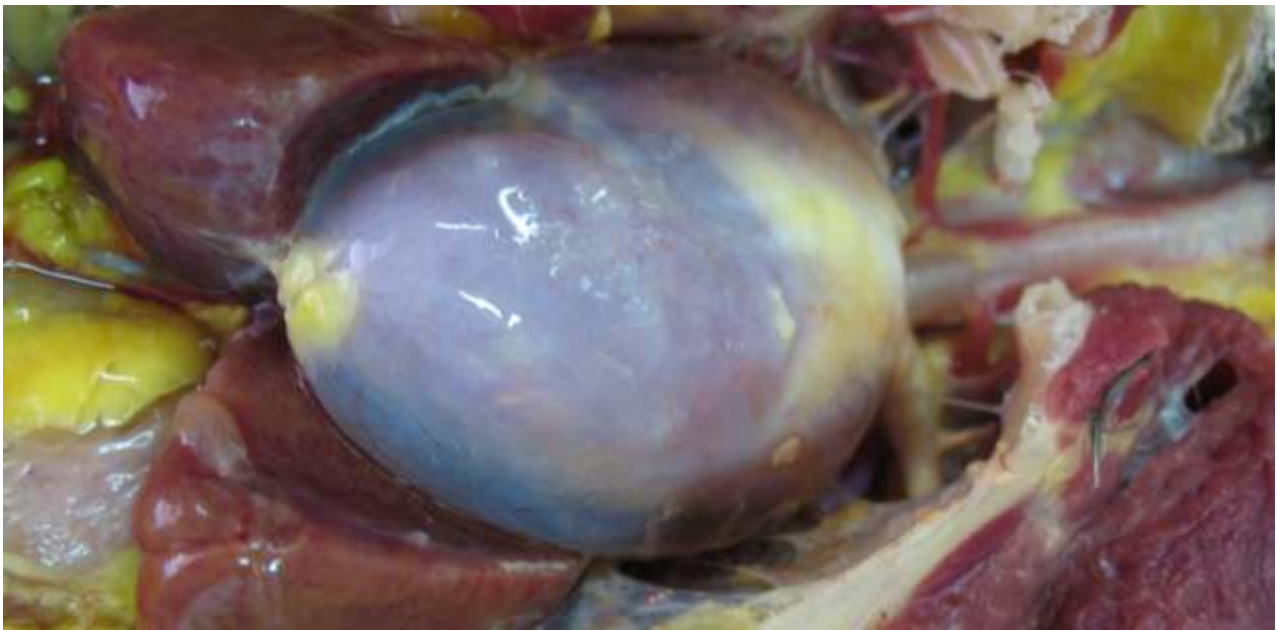


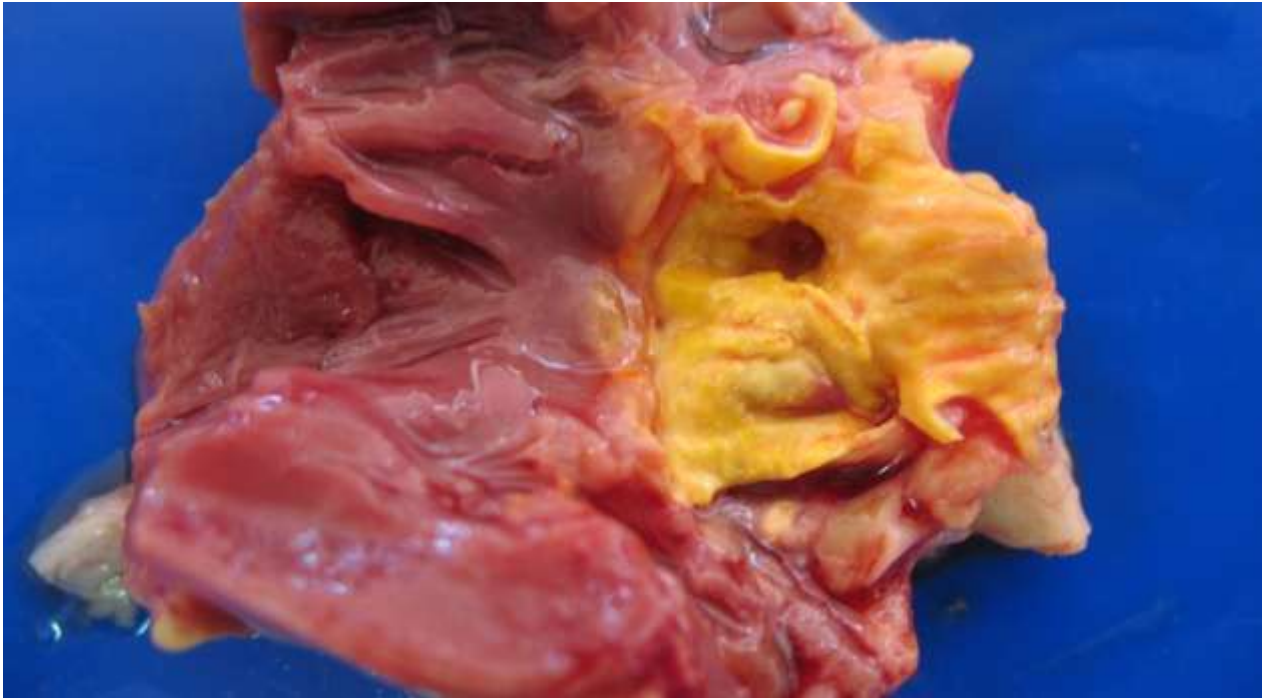
05 March 2010

Atherosclerosis in a Wahlberg' s Eagle (*Aquila wahlbergi*)

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PHOTOGRAPH 1: Mild hydropericardium in a Wahlberg' s Eagle. Note the distended round pericardium. The liver is visible on either side of the pericardium (right) and the trachea on the left side of the photograph.



PHOTOGRAPH 2: Atherosclerosis in a Wahlberg' s Eagle. Note that the intimal surface of the aorta is yellow (instead of white or pale tan), rough and proliferative.

DETAILS: An adult Male Wahlberg' s Eagle (*Aquila wahlbergi*) from the collection of the National Zoological Gardens of South Africa was submitted for necropsy after having been found dead without prior clinical signs. The bird was in excellent body condition but had a small amount of clear, colourless, watery fluid in the pericardium (Photograph 1). The major arteries of the heart were yellow and had thickened misshapen walls (Photograph 2). Histological examination of the arteries showed atherosclerosis characterised by marked intimal thickening by infiltrating large foamy macrophages (foam cells), clusters of cholesterol clefts, small haemorrhages and variably mineralised amorphous pale eosinophilic interstitial matrix. The underlying tunica media was variably disrupted with clear spaces (oedema, fat) between smooth muscle layers. Associated findings included mild to moderate generalised tissue congestion; a swollen, friable liver due to peri-acinar necrosis and fibrin deposition; mild multifocal chronic perivascular myocardial fibrosis; mild acute brain stem white matter oedema. Death was attributed to acute heart failure as a result of the atherosclerosis.

Atherosclerosis is most commonly seen in adult Psittacine (particularly Amazon and African Grey parrots) and Anseriform birds, although Eagles, Hornbills, Ratites, Storks, Herons, and polar Penguins (and many other bird species) may be affected. Incidental lesions are relatively common on necropsy examination. Females and carnivorous species may be over-represented. The risk factors for this disease in birds are not as well known as in humans, but genetic predisposition; lack of exercise; obesity; low protein, high fat,

or seed-based diets and exposure to cigarette smoke may play a role, at least in companion birds. Cold stress may be involved in the pathogenesis. A stressful episode (possibly thunder and lightning from a storm the previous night) or unaccustomed exercise may have precipitated the heart failure in this Eagle. The vascular changes result in loss of arterial elasticity and are most common in the great vessels at the base of the heart or at the sites of branching of smaller arteries. Clinically, affected birds may show a short period of anorexia, dyspnoea, lethargy, seizures, fainting, exercise intolerance or sudden death. Aortic rupture is recorded in turkeys and polar penguins. High serum cholesterol, radiographic/ultrasound or computed tomography evidence of cardiomegaly or vascular mineralisation and ECG abnormalities, may assist clinical diagnosis.

BW Ritchie, GJ Harrison & LR Harrison 1994 Cardiology in Avian Medicine: Principles and Application, Cht 27, pp 719-720.

J St Leger 2008 Avian Atherosclerosis in Zoo and Wild Animal Medicine, Current Therapy (Vol 6) ME Fowler & RE Miller, Cht 25, pp200-205