"You are receiving this monthly SonoPath.com newsletter on hot sonographic pathology subjects that we see every day owing to your relationship with a trusted clinical sonography service.
This service has a working relationship with SonoPath.com and sees value in enhancing diagnostic efficiency in veterinary medicine."

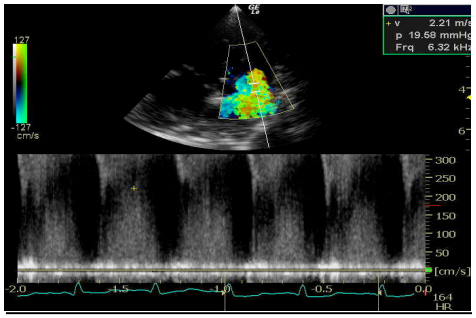
Brought to by:

Animal Sounds

IF YOU WOULD LIKE A 10-DAY COMPLIMENTARY MEMBERSHIP TO SONOPATH.COM
PLEASE CONTACT US AT INFO@SONOPATH.COM

AUGUST 2012

PATENT DUCTUS ATERIOSIS – 2 Pages



The PDA is the most common congenital heart defect in the dog. Toy breeds are most often implicated but many breeds can be implicated.

Signs: Continuous murmur at the left heart base in a young dog, or older dog with a smaller, less functionally significant PDA of machinery nature is typical. A systolic murmur may be heard as well over the mitral valve. Bounding +/- hyperkinetic femoral pulses may be present as well. VSD (systolic) and AI (diastolic) combination can simulate PDA from a clinical perspective on the physical exam. A precordial thrill is often found at the heart base.

Radiographic evidence of PDA includes left atrial and ventricular enlargement +/- prominent aortic (bulge) and pulmonic arches. PDA can be present without these radiographic changes as well especially if the defect is small or if volume overload is absent. Signs of congestive heart failure (CHF due to pulmonary edema) can be present in advanced stages.

EKG findings include tall R waves consistent with left ventricular enlargement. Atria fibrillation can occur as well.

NT-proBNP levels can increase with PDA with a median value of 742 pmol/L compared with a median value of 333 pmol/L in normal dogs as reported in an abstract by Saunders et al (J Vet Inter Med 2009) and can act as a screening test for puppies with loud murmurs when deciding whether or not to pursue echocardiography.

Echocardiographic diagnosis is the most accessible way of diagnosing a PDA due to the typical high velocity turbulence and continuous flow noted on color flow and pulse wave Doppler in the deep pulmonary artery prior to its bifurcation. Shunts are typically left to right. Uncommonly, severe pulmonary hypertension results in reversal of flow to a right to left shunt. In these cases, the murmur is no longer ausculted, polyctythemia is noted on blood work and the dog exhibits cyanosis and severe weakness.

Treatment of PDA includes surgical ligation (>93% success rate in hands of a boarded surgeon) and is best for larger defects. Less invasive fluoroscopic guided coil occlusion or Duct Occluder Devices can be placed via the femoral artery by

experienced cardiologist. Possible negative sequela include coil migration and embolization in the pulmonary artery. Early repair is essential for long-term survival even though some patients will survive long term with medical management, though defect repair is the best and most effective solution. Therapy with ACE inhibitors and diuretics may be necessary to stabilize the patient prior to correction. The medical management is best prescribed based upon echocardiographic and clinical findings. Surgical correction or duct occluder placement at a referral facility typically costs from $1500-3000+ dependent on the procedure and incidence of complications and hospital stay. Thoracoscopic repair is under investigation as well.

This is a summary of material derived from ACVIM 2006-20011 as well as other sources.

Johanna Frank DVM DVSc DACVIM (Internal Medicine)
Eric Lindquist DMV (Italy), DABVP K9 & Feline Practice

Cert./Pres. IVUSS

Founder/CEO SonoPath.com, Director NJ Mobile Associates