

Patent Ductus Arteriosus (PDA)

The ductus arteriosus is a blood vessel in the fetus that connects the aorta to the pulmonary artery. This vessel normally closes at, or shortly after, birth. When it remains open after birth it is known as a patent ductus arteriosus (PDA)

Causes

PDA is a congenital heart defect. The defect causes blood to shunt from the left side of the heart to the right which will eventually lead to left sided congestive heart failure if not treated. Most dogs affected are purebred females. They may have no clinical signs except that the veterinarian hears a heart murmur.

Diagnosis

Most dogs with this heart defect are normal early in the disease, but over a short period of time will develop signs of heart failure at a young age. A characteristic heart murmur (machinery, continuous heart murmur) is heard when the heart is auscultated. The femoral pulses are often very strong (water hammer pulses). Chest radiographs will show a wide range of abnormalities from completely normal to severe heart enlargement with pulmonary edema (fluid in the lungs). An echocardiogram (ultrasound of the heart) will usually provide the definitive diagnosis.

Treatment

Medical management is often needed to control signs of heart failure prior to surgery. Surgical closure of the abnormal vessel is the only treatment recommended. The vessel can either be closed by surgically ligating the vessel or by occluding the vessel with a coil. Coil placement is done under fluoroscopy and has become the most common procedure to correct a PDA. Very small animals may not be candidates for coil placement. This surgery requires meticulous attention to anatomy and surgical technique and is best performed by a Board Certified Surgeon.

Prognosis

If the PDA remains untreated, the dog will develop progressive left sided heart failure. The majority of these dogs will die before one year of age. Most dogs that undergo corrective procedures that have not developed severe heart changes have a good prognosis. The major complication with surgical ligation is hemorrhage.