

## **CLIENT INFORMATION SHEET**

### **PATENT DUCTUS ARTERIOSUS (PDA)**

Patent ductus arteriosus (PDA) is a congenital (present from birth) heart defect due to the persistence of a vascular structure important during development in utero. The ductus arteriosus is a small channel that connects the pulmonary artery (which will carry blood to the lungs after birth) and the aorta (which carries blood to the rest of the body). In the womb, it is responsible for the blood to bypass the non-functional lungs (since puppies don't need to breathe air before birth), and flow into the systemic circulation. In the normal animal, the ductus arteriosus closes fully within the first 7 to 10 days of life.

When the ductus arteriosus does not close (remains patent), blood from the aorta is allowed to flow into the pulmonary artery; this is called a "left to right shunt." This abnormal shunting of blood overloads the pulmonary circulation and left side of the heart. Most animals with PDA develop signs of heart failure within 1 year of life, and dogs with PDA rarely have a normal life span. For this reason, closure of a PDA is strongly recommended. If corrected, most effects of a patient's PDA are reversible and patients generally live normal life spans thereafter.

#### **Interventional Procedure:**

Closure is achieved by a minimally invasive procedure. A long trans arterial catheter is fed into the femoral artery (large artery in the groin) and up the descending aorta across the ductus and into the pulmonary artery. Then, a small device (ACDO, vascular plug, or coil) is deployed inside the ductus to occlude blood flow.

#### **Surgical Procedure:**

Closure is achieved by a thoracotomy (open-chest surgery) and manually tying off the ductus from the outside of the vessel. This option is often recommended for very small patients (less than 5-8 pounds) or patients with anatomy that will not accommodate a catheter in the leg or device in the ductus.

#### **Possible Complications include:**

General anesthesia

- Pneumonia secondary to aspiration of stomach contents
- Changes to the heart rhythm and blood pressure
- Uncommonly, death

Interventional Procedure/Surgery

- Device dislodgement
- Infection
- Bleeding
- Failure to close/occlude blood flow

#### **After the procedure:**

- Your pet will be hospitalized ~ 24 hours (Interventional) to 48 hours (surgery) for continued monitoring and recovery from anesthesia.
- A recheck echocardiogram will be performed to reassess for residual flow across the PDA
- Detailed instructions regarding aftercare and recheck recommendations will be provided at discharge

#### **At home care:**

- Strict activity restriction for 2 weeks while your pet's incisions heal
- Moderate activity restriction for at least 4-6 weeks while your pet's device seals into place and heart remodels
- An E-collar will be sent home with you to prevent your pet from disturbing the incision site
- Typical recheck schedule:
  - 10-14 day recheck with NCSU or your primary veterinarian for a heart auscultation and staple removal
  - 3 month recheck with NCSU or local cardiologist for heart auscultation and echocardiogram
  - Additional rechecks normally not required unless there is persistent heart enlargement/dysfunction