

### **What is PDA occlusion?**

Your pet has been diagnosed with a Patent Ductus Arteriosus (PDA). The patent ductus is a vessel that is present in fetal life so that blood can bypass the lungs. Once exposed to oxygen after birth, this vessel should close on its own. However, in your pet, this did not happen. In order to understand how this disease may affect your pet, it is important to understand normal circulation in the heart. Blood drains from the body into the right collecting chamber (called "atrium") where it passes through the tricuspid valve and into the right pumping chamber (called "ventricle"). From here, blood is pumped into the pulmonary artery and subsequently to the lungs where it picks up oxygen. The oxygenated blood then drains passively into the left atrium, through the mitral valve, and into the left ventricle. The left ventricle then pumps the blood through the aorta and back to the body.

In your pet's case, the PDA (open vessel) causes a portion of the blood from the aorta to shunt to the pulmonary artery through the lungs and back to the left side of the heart. This causes over-circulation of the lungs and left heart. This over-circulation causes the left heart to dilate and, over time, increases the pressure in the left heart. This increased pressure in the pulmonary veins (the vessels that drain into the left heart from the lungs) eventually causes fluid to exude into the lungs which is a condition called congestive heart failure. Symptoms of congestive heart failure include difficulty breathing, coughing, and exercise intolerance. The good news is a PDA is repairable with an interventional or surgical procedure. If repair occurs early in life and is successful, your pet will have a normal life expectancy and quality of life.

### **How is the procedure performed?**

Most pets with this condition are candidates for interventional occlusion of the defect. This consists of anesthetizing your pet and placing a catheter into the femoral artery. Then using fluoroscopy, an occlusion device is guided through the catheter and deployed in the defect. This device then prohibits blood from crossing the defect. If your pet is too small or the defect is of a shape that is not amenable to interventional repair, surgical closure can be performed.

### **What can I expect the day of surgery and the weeks after?**

On the day the surgery is elected, your pet will be admitted in the morning, typically fasted for 8-10 hours with certain exceptions. Your pet will be medicated with slight sedation prior to anesthesia to alleviate pain and anxiety. Intravenous access in the form of an IV catheter will be placed for administration of medication, fluids, and other use, should immediate intravenous access be needed.

The surgery will be performed in the morning and you will be notified once your pet is in recovery. Generally, your pet will stay one night in the hospital following surgery to ensure there are no lingering effects of the medication used during anesthesia, or any immediate complications associated with the surgery prior to being discharged.

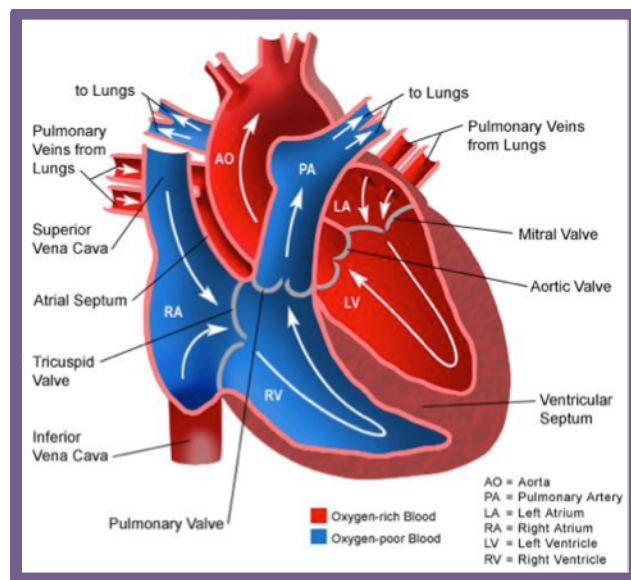
A follow up exam is generally recommended 10-14 days after surgery to assure adequate wound healing of the small incision in the groin area and suture removal. Generally, any medication for congestive heart failure will be discontinued at this time. Repeat echocardiograms may be recommended if there is concern for continued cardiac disease in the future, although this is uncommon in most cases.

### **What are the possible complications associated with PDA occlusion?**

As with any procedure requiring general anesthesia, there is a potential for adverse reaction to the drugs being used. Drug reaction may result in mild allergic reaction and hives to cardiopulmonary decompensation, and in rare circumstances loss of the pet. Complications associated with the device implantation are rare, with the most common representing excessive bleeding or bruising from the incision site. Other, even more rare adverse events may occur when there is device dislodgment from the PDA and it moves into the arteries supplying blood to the lungs. This tends to be tolerated well by most patients however additional surgery would be required to re-occlude the still functioning vessel. For this reason, post-operative exercise restriction is recommended for 2-4 weeks to allow adequate healing.

Patent Ductus Arteriosus represents a congenital defect that is quite amenable to surgery and correction, which is curative in most cases. When performed by a skilled cardiologist, this procedure is of minimal risk to and can result in improved quality of life for your pet.

\*\*For informational purposes all complications are not listed. You are encouraged to speak with your veterinarian regarding complications and expected outcomes for you pet.



*Flow of blood through a normal heart.*