

Patent Ductus Arteriosus (PDA)

What is it?

The ductus arteriosus is a short blood vessel that provides a communication between the aorta and the pulmonary artery. Before birth, this connection allows blood to bypass the lungs as the fetus' blood is oxygenated by the placenta. Normally, the ductus arteriosus closes within 3 to 4 days after birth. A patent ductus arteriosus results when the duct fails to close or closes incompletely. Atypical right to left shunting of a PDA can cause the aorta to carry blood that is low in oxygen, sending a signal to the body to produce more red blood cells, making the blood too thick. PDA is the most common congenital cardiac malformation in dogs, and more prevalent in Toy breeds. Females are most often affected.



What causes it?

At birth the connection is usually no longer open. When the newborn has begun to breathe on its own, the pulmonary artery opens to allow blood to flow from the right side of the heart into the lungs to be oxygenated, and the ductus arteriosus closes. With PDA, the connection remains open, and consequently blood is diverted in abnormal patterns in the heart. PDA allows blood to flow from the aorta into the pulmonary artery and then to the lung. Genetic predisposition is suspected.

Signs & Symptoms

- Respiratory distress
- Coughing
- Exercise intolerance
- Increased breathing

Right to left shunting PDA

- Hind legs are weak during exercise
- Blood is thicker than normal
- Arrhythmias
- Right to left blood clot
- Pink or bluish gums, and bluish skin around the anus or vulva
- Possibly left sided congestive heart failure
- Rapid irregular heart beat
- Stunted growth

Prognosis:

Uncorrected, the prognosis with PDA is poor. Of all the congenital malformations in companion animals, PDA is the one most amenable to complete repair. With surgical intervention, many have a normal life expectancy following surgery.

Testing & Treatment

How is it diagnosed?

PDA's can be detected as early as a week of age by using a stethoscope to listen to the heart. A machinery like murmur is heard continuously as the heart contracts and relaxes. This is loudest over the left base of the heart and heard best with the stethoscope in the patient's armpit.

How is it treated?

There are three methods for surgical repair: complete ligation of the duct, placement of a coil in the ductus via a catheter in the femoral artery of one of the hind limbs, and placement of an Amplatzer Canine Ductal occluder in the ductus via catheter in the femoral artery.

This information is not meant to be a substitute for veterinary care.

Always follow the instructions provided by your veterinarian.

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