PURDUE UNIVERSITY | Veterinary Hospital

PDA – Persistent Ductus Arteriosus

Indications:
A PDA of Persistent Ductus Arteriosus occurs when a bloodvessel (needed in the fetus to bypass the lungs) fails to close after birth and continues to divert ('shunt') blood past the lungs. Puppies or kittens will have a very typical heart murmur, and should seek referral to a cardiologist for a full workup. Intervention for a PDA is typically performed via an interventional route by cardiologists, but in some cases a surgical approach might be needed or preferred.

Preoperative workup and other diagnostics:
The diagnosis and workup is performed by the cardiology service, who will discuss treatment options, and if an interventional option is not the preferred or best option for your pet, will refer your pet to a surgeon. For further details on workup, please visit the cardiology service's webpage.

Procedures:
The chest cavity will be entered, and the shunting vessel identified. The surgeon will first carefully dissect around the vessel, and then place sutures around the vessel. These sutures are tightened, leading to closure of the vessel. This will stop the blood from passing through the vessel.
A tube (thoracostomy tube) will be placed during surgery to remove air from the chest (and potentially fluid) – and will be removed after surgery once it is safe to do so.

Complications:
- Anesthesia: as with any surgical procedure, there are always risks associated with general anesthesia, this risk is increased for thoracic surgery as well as for pets with heart conditions.
- Bleeding during surgery. The biggest and most worrisome complication of PDA surgery is bleeding of the PDA vessel. Any damage of this vessel during dissection will lead to a very severe blood loss due to its size and proximity to the heart, and patients often do not survive if this occurs.
- Incomplete closure of the vessel: in larger vessels there might still be a small amount of blood that can pass through the vessel. In some cases the vessel will fully close on its own on after some time, but in others it may not. Separately, in some cases where a full closure initially was present, a small amount of flow might be detected on recheck. This will be rechecked by the cardiology service, and treatment options (if indicated) will be discussed at that time.
- Surgical site complications: this can range from a local dehiscence, to a fluid pocket (seroma) that will resolve on its own, or can be a local abscess that might need to be treated surgically.
- Air leakage (pneumothorax) after surgery.
Your surgeon will discuss these complications in more detail during your pet's visit.

In hospital care:

- Hospitalization and close monitoring in ICU is needed during recovery until the thoracostomy tube is removed. Intravenous medication and intravenous fluids are typically needed postoperatively to recover from surgery. Depending on the extent of surgery, duration of the disease/clinical signs, and other co-morbidities, this stay can be only the first night after surgery, or can be several days, until your pet is healthy enough to continue care at home.

At home care:
- Exercise restriction: leash walks/exercise restriction for the first 10-14 days after surgery to allow all the incisions to heal.
- Incision care: this includes keeping the incision dry and clean, as well as wearing an E-collar as long as the incision is still healing (first 10-14 days postoperatively).

Prognosis:
Long term prognosis after recovery from surgery and after closure of the PDA is good.