Patent Ductus Arteriosus (PDA)

Superior Vena Cava

Right Pulmonary Artery (to Lung)

Patent Ductus Arteriosus

Left Pulmonary Artery (to Lung)

Pulmonary Veins (from Lung)

Aorta (to Body)

Main Pulmonary Artery

Pulmonary Veins (from Lung)

Descending Aorta (to Body)

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NOTES:
Patent Ductus Arteriosus (PDA)

The ductus arteriosus is a normal fetal structure between the left pulmonary artery and descending aorta that usually closes within days after birth. A patent ductus arteriosus (PDA) is a ductus that remains open after birth. This occurs in 5-10% of all congenital heart defects in term infants and is more common in females than males (3:1). PDA is very common in premature infants, appearing in up to 80% of preemies.

Physical Exam/Symptoms:
- Small PDA: asymptomatic, often with no murmur audible.
- Large PDA:
  - May result in poor growth and feeding, lower respiratory tract infections, atelectasis (complete or partial lung collapse), tachycardia (fast heart rate), and tachypnea (fast breathing).
  - Bounding peripheral pulses and a wide pulse pressure are present.
  - Hyperactive precordium (part of the body over the heart and lower chest). A systolic thrill may be palpable at the left upper sternal border.
  - Murmur: Grade I-IV continuous systolic murmur heard best at the left upper sternal border or left infraclavicular area. An apical diastolic rumble may be heard with large PDA shunts.
  - Of note, a murmur is not always present and does not indicate the significance of the PDA.
  - If unrecognized, pulmonary vascular obstructive disease may occur.

Diagnostics:
- **Chest X-ray:** Normal with small PDA. Moderate to large PDAs may have varying degrees of cardiomegaly (enlarged heart) and increased pulmonary vascular markings, similar to children with ventricular septal defects (VSDs).
- **EKG:** Normal.
- **Echocardiogram:** Diagnostic.

Medical Management/Treatment:
- For premature infants with persistent PDAs, a medication called indomethacin may be used. Indomethacin is ineffective in term infants.
- PDAs may be repaired by surgery or device closure in the catheterization lab.
- In children with some complex heart defects, medication may be used for a short time after birth to keep the ductus arteriosus patent until first stage surgical palliation.
- Your cardiologist will discuss the method and timing of closure with you.
- Long-term cardiology follow up is not needed for a PDA that closes on its own or is surgically closed in the absence of other heart disease or co-morbidities.
- For patients with device closure in the catheterization lab, follow up for 6 months after discharge from the hospital is recommended.

Long-Term Outcomes:
- Normal life expectancy and development in the absence of other heart disease or co-morbidities.