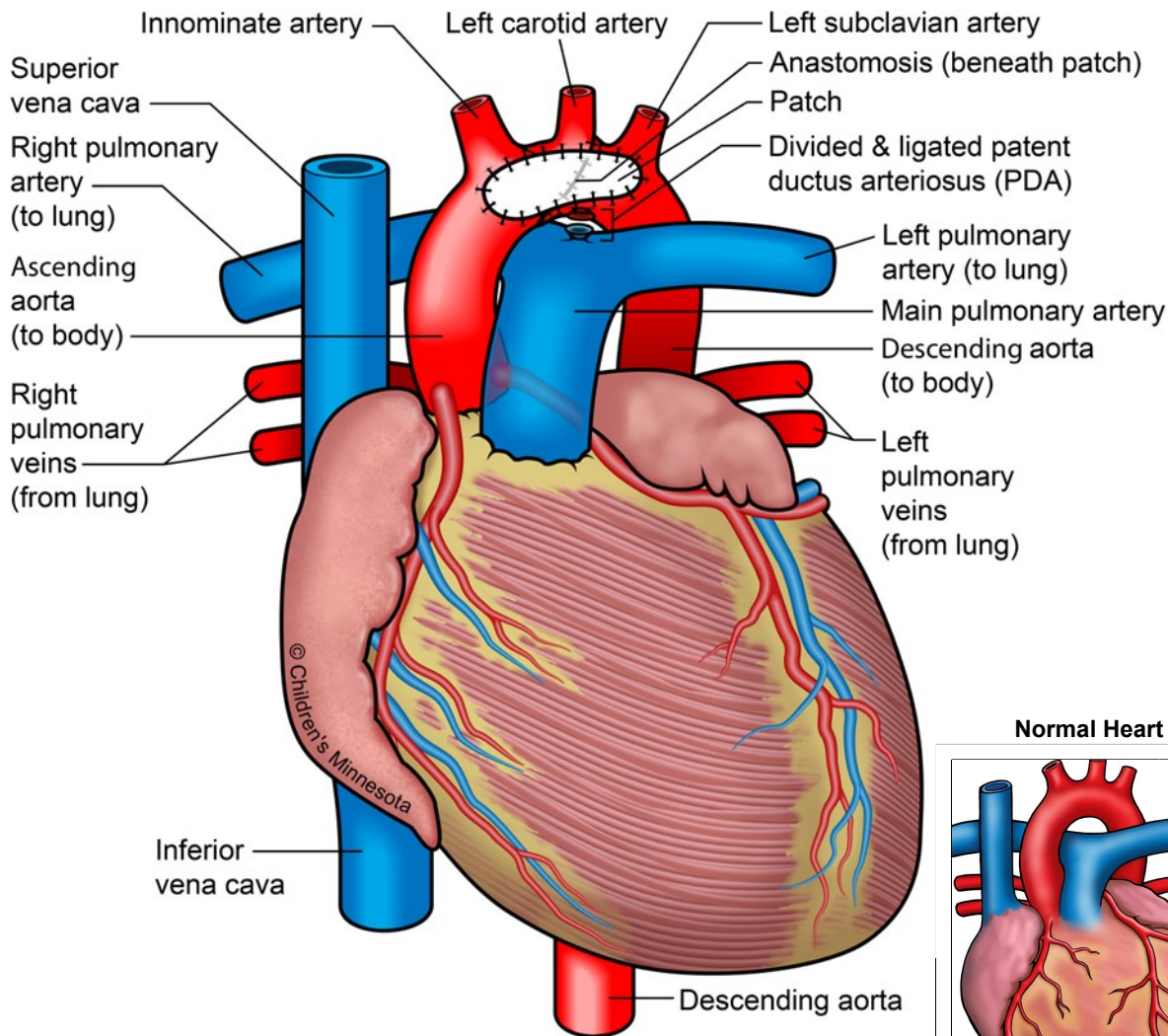


Repair of Interrupted Aortic Arch (IAA)



Notes:

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Repair of Interrupted Aortic Arch (IAA)

Repair of interrupted aortic arch is done to fix the absent aortic arch, so that it will be continuous and of adequate size. The surgery is usually performed within the first week of life.

A median sternotomy (incision through the middle of the chest) is used. The patient is placed on cardiopulmonary bypass (the heart-lung machine). To do this, either a Gore-tex®(Gore) tube graft is sewn onto the innominate artery (see modified Blalock-Taussig shunt) or the innominate artery is directly cannulated. The patent ductus arteriosus (PDA) is tied with suture and divided. The patient is then placed on antegrade cerebral perfusion. Antegrade cerebral perfusion is a type of cardiopulmonary bypass where blood is circulated through the Gore-tex®(Gore) shunt to the innominate artery giving oxygenated blood to the brain during the aortic arch reconstruction. Occasionally, an additional arterial cannula is placed in the descending aorta to help perfuse the body.

The ascending, transverse, and descending aorta are then opened. All ductal tissue from the descending aorta is removed. The back wall of the descending aorta is then sewn to the back wall of the ascending or transverse aorta, forming the back wall of the newly constructed aorta. A patch of pulmonary homograft (cadaver pulmonary artery) is cut to fit and is sewn to the front of the newly reconstructed aorta. Once complete, normal cardiopulmonary bypass is commenced through the reconstructed aorta.

If a ventricular septal defect (VSD) (see Ventricular Septal Defect Repair) or atrial septal defect (ASD) (see Atrial Septal Defect Repair) is present, that too will be repaired. Once complete, the patient is weaned off of bypass. The chest may be left open. If so, the sternal incision is covered with either a sheet of Gore-tex®(Gore) or Silastic™. The chest would then be closed within 1-3 days of the operation (this is termed delayed sternal closure).

Typical Post-Operative Course:

- Surgery Length: 4-5 hours
- Typical Lines: Most children will return to the Cardiovascular Care Center after surgery with a breathing tube, an arterial line to monitor blood pressure, a central venous line (for giving IV medicines and drawing labs), a peripheral IV, chest tubes to drain fluid, a foley catheter to drain urine, and temporary pacemaker wires.
- Typical Post-Operative Recovery: It is common for newborns to get slightly “puffy” after complex neonatal surgery. Delayed sternal closure is done when the patient is near their pre-operative weight and fluid status. The breathing tube is usually removed within a few days following chest closure. The arterial line is usually removed once the breathing tube is out and most IV medicines are stopped. The central venous line is usually removed once most IV medicines are stopped and labs no longer need to be drawn. Chest tubes are usually removed within 24-48 following chest closure, once the output of fluid is minimal.
- Typical Length of Stay: The average hospital stay following Repair of IAA is around 2-4 weeks. Length of stay is often dictated by the time it takes for the infant to learn to eat. It is not uncommon for babies to take a few weeks to learn to eat following surgery.

Typical Home Medications: Children will require one or more medications at home following Repair of IAA such as:

- Diuretics (Lasix) to control fluid
- Afterload reducing agent (Enalapril, Captopril)
- Anticoagulant (Aspirin, Lovenox) to treat clots if present