

Tetralogy of Fallot (TOF)

With Hypoplastic Pulmonary Annulus

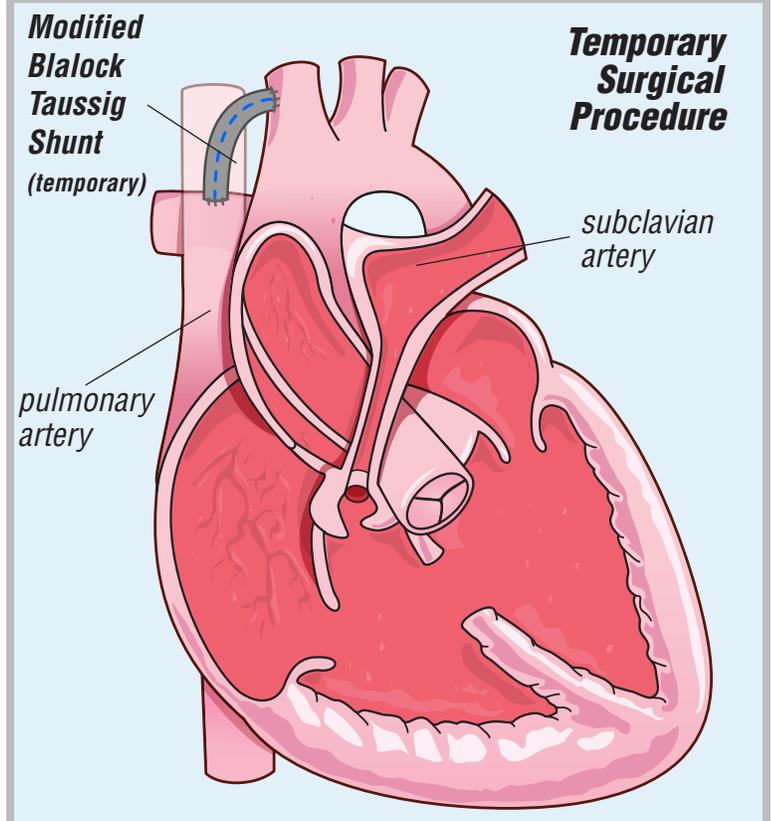
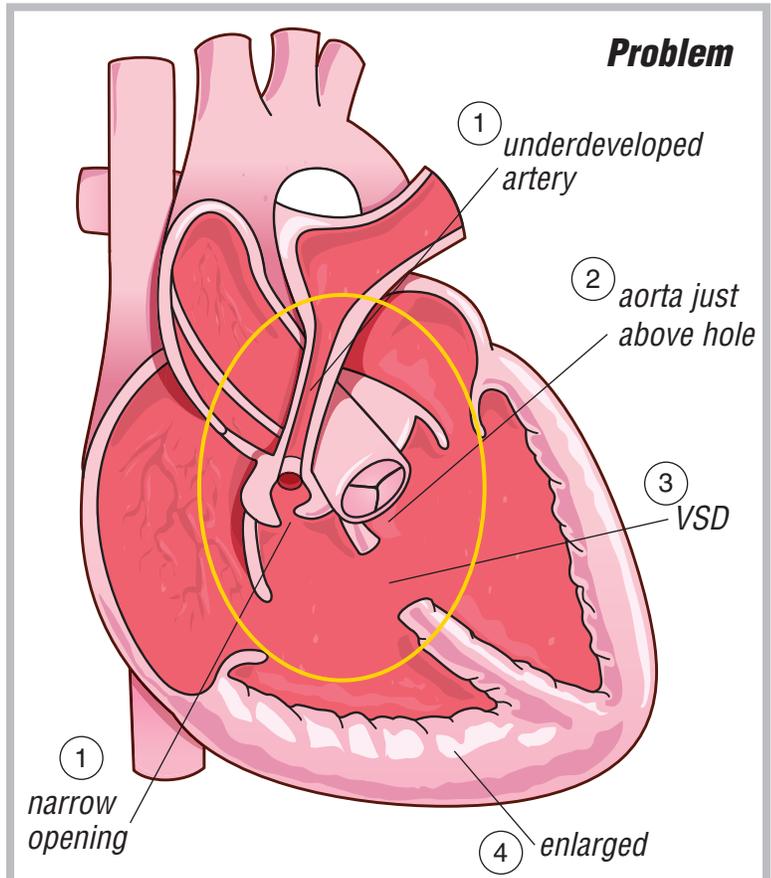
There are 4 heart problems:

1. a narrowing under or at the pulmonary valve (pulmonary stenosis). There is also underdeveloped (hypoplastic) pulmonary valve annulus (ring-shaped tissue of the pulmonary artery)
2. aorta is lined up just over the hole between the bottom 2 chambers
3. a hole between the bottom 2 chambers of the heart (ventricular septal defect)
4. an enlargement of the bottom right side of the heart

There is mixing of the red and blue blood through the hole between the bottom two chambers of the heart. Blood going to the lungs is restricted by the narrowing under the pulmonary valve. This protects the lungs from getting too much blood flow. The bottom right side of the heart becomes enlarged. This happens because it must hold too much blood and try to squeeze it through the narrowing to get to the lungs for oxygen.

Sometimes an infant is too sick or the pulmonary arteries are too small for the corrective surgery. In that case, a small tube (either from a blood vessel of the infant or artificial material) is placed from the subclavian artery into the pulmonary artery (Modified Blalock Taussig Shunt). The tube (shunt) allows blood to enter the lungs at all times. The shunt is removed at the time of the correction.

The shunt is placed through a thoracotomy (side) incision.



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To correct the problem, the hole between the bottom two chambers (VSD) is closed. This is most often patched using a synthetic material. The tissue below the pulmonary valve is cut away. This allows blood from the bottom right heart chamber to flow into the lungs as it should.

When the pulmonary artery is narrowed it is hard for the blood to leave the bottom right heart chamber and go to the lungs for oxygen. Surgery is done to widen the narrowing. A conduit (tube) with a valve is placed in the bottom right heart chamber and sewn into the branch pulmonary arteries. This tube is often a homograft (human tissue vessel) but can also be from man-made materials. If a shunt was placed earlier, it is also removed.

The corrective surgery is done through a median sternotomy (chest) incision.

