

Echocardiogram

Echoing Cardiogram

Using an ultrasound, sound waves are used to visualize the structures of the heart and aorta. These can be performed in a both transthoracic and transesophageal fashion with the transesophageal echocardiogram (TEE) being the best choice to visualize the heart structures posteriorly.

Cardiac Catheterization

Heart Catheter-cat

Other tests used to diagnose the defect and measure the function of the heart include cardiac catheterization, MRI and CT.

3 Sign on Chest X-Ray

(3) Tree Chest X-Ray

The figure 3 sign on chest x-ray represents the contour abnormality of the aorta. It is formed by dilation of the aortic arch and left subclavian artery, indentation at the coarctation site and dilation of the descending aorta. It is important to note that dilation of the ascending aorta is common and may be visualized but the characteristic "3" sign is mostly due to dilation of the descending portion.

Rib Notching

Rib Notches

In order to bypass the coarctation and supply the descending aorta, the intercostal collateral vessels begin to dilate. The dilated vessels erode the inferior parts of the ribs, resulting in notching. Since collateral circulation takes time to develop, rib notching is unusual in patients less than 5 years old.

Treatment

Surgical Correction

Surgeon

For patients with recurrent coarctation (restenosis after a successful operation), balloon angioplasty with or without stent placement can be performed.