CT Angio in Coarctation of Aorta

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Definition

It is a congenital narrowing in the region of isthmus, more common in males and rare in blacks.

Introduction/Discussion

It is generally of two types. Localized or Adult or Postductal type: It is most common type where there is short segment of narrowing close to the ligamentum arteriosum. Coexisting cardiac anomalies are uncommon.

Tubular hypoplasia or Infantile or Diffuse type: there is hypoplasia of relatively longer segment of the aortic arch after the origin of the brachio-cephalic trunk. Coexisting cardiac anomalies are common. Associated anomalies are Bicuspid aortic valve, Cardiac shunts, Turner’s syndrome and Cerebral artery aneurysms.

Collateral circulation distal to the Coarcta-tion is through Subclavian arteries and branches—Internal mammary arteries to intercostal, scapular artery to anterior spinal artery and transverse cervical artery to lateral thoracic artery.

Radiology

- Conventional Radiograph
- Rib notching due to pressure erosion by enlarged and tortuous intercostal arteries. It is bilateral but asymmetrical.
- Left ventricular enlargement.
- Figure of “3” appearance due to dilated left subclavian artery above Coarctation, pinching at site of Coarctation and poststenotic dilatation distally.
- Small and flat aortic knuckle.
- CTA (CT Angio) with multi-slice scanners especially 64 slice or above gives excellent informa-tion and accurately depicts the site (Fig. 1), degree and the size of narrowing, collateral formations (Fig. 2 & Fig. 3). Multiplanar imaging and reconstructions give actual visual impression to surgeons.

Figure 1: Sagittal reformation showing tight focal narrowing in post ductal region with large vertebral collaterals

Figure 2: Large dilated collaterals around scapula

Figure 3: Dilated Internal mammary arteries

Reference