

Circumaortic Left Brachiocephalic Vein with Coarctation of Aorta

A 6-year-old child with a diagnosis of severe discrete coarctation of aorta on echocardiography underwent computed tomography angiography of the thorax for surgical planning. This showed a tight post-ductal coarctation of the aorta with mediastinal collaterals and prominent internal thoracic arteries. In addition, there was incidental detection of a circumaortic left brachiocephalic vein (LBCV). The single LBCV was seen splitting into 2 similar-sized tributaries, with the anterior one coursing along the expected location of the LBCV: anterior to the ascending aorta. Another tributary was seen coursing posterior to the ascending aorta and below the aortic arch, with both of them uniting to drain into the superior vena cava (Figure 1).

E-PAGE ORIGINAL IMAGE

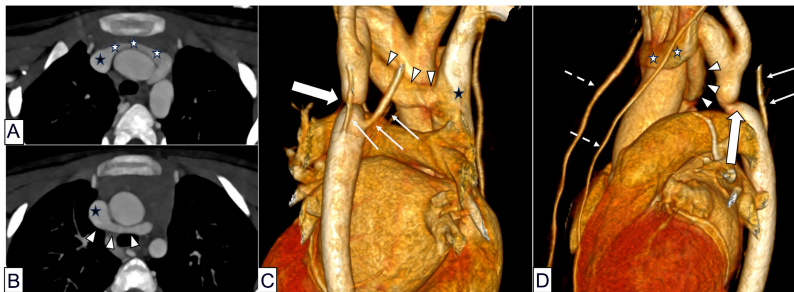


Figure 1. (A, B) Axial maximum intensity projection images showing the circumaortic left brachiocephalic vein with its anterior- (white stars) and retro-aortic tributaries (white arrowheads) draining into the superior vena cava (black star). Volume-rendered images in posterior (C) and left oblique lateral (D) views showing these findings. There was post-ductal coarctation of the aorta (thick white arrow) with mediastinal collaterals (white line arrows) and prominent internal thoracic arteries (white dashed arrows).

Circumaortic course is the rarest anatomic variant of LBCV and is described in case reports¹; however, its incidence is unknown. It is postulated that the presence of double transverse inter-precordial anastomosis in the embryologic period leads to the development of this variant.² Although its detection is incidental, recognition of this entity is essential in surgical planning to avoid intraoperative complications. Particularly in our case, the retroaortic branch is in close proximity to the aortic coarctation and mediastinal collaterals; thus, it needs to be identified and secured in the surgical field to avoid injury. Technical difficulties may also be faced during central venous catheterization through the left upper limb.

Informed Consent: Informed consent was obtained from the guardian.

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