

Clinical Image

CT Angiographic Diagnosis and Explanation of Unusual Four-Limb Blood Pressures

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Received: June 11, 2018; Accepted: July 02, 2018;

Published: July 09, 2018

Keywords

IAA: Interrupted Aortic Arch; Adult; Imaging

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A 40-year-old man came to our hospital for his mysterious hypertension and his blood pressure returned to normal level after exertional activity. Except for symptoms above, his past medical history is unremarkable. The four-limb blood pressure showed a 50 mmHg gradient between the right and left arm (160/80 vs. 110/70 mmHg, respectively) but insignificant gradient with the both leg (100/70 vs. 110/70 mmHg). Aortic CT angiography revealed type B interruption with tortuous cervical collateral vessels to the left subclavian artery and descendent aorta (Figure 1-2). Dilated intercostal arteries were also seen. The patient declined to further surgery and was regularly followed up. Interrupted Aortic Arch (IAA) is classified into three types according to the site of aortic interruption: Type A: the arch is interrupted distal to the left subclavian artery at the level of the aortic isthmus, which comprises 15% of IAAs. Type B: the arch is interrupted between the left common carotid and left subclavian arteries, which is the most common presentation of IAA and comprises 80% of all IAAs. Type C: the arch is interrupted between the innominate and the left common carotid artery, which is

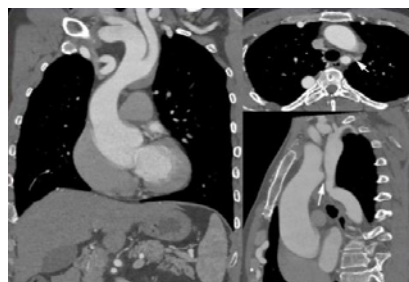


Figure 1:

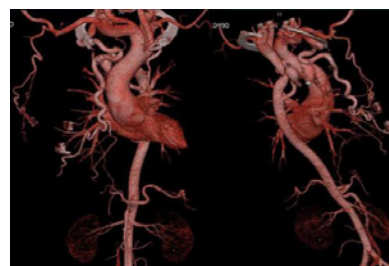


Figure 2:

the least common presentation of IAA and comprises 5% of all IAAs. Transthoracic echocardiography is often the initial imaging modality used to evaluate cardiovascular anomalies. CT angiography is a noninvasive technique that enables rapid and high-spatial-resolution evaluation of vascular anomalies, in addition to assessment of tracheal or esophageal compression in the same study. The discrepancy of the four-limb blood pressure depends on interrupted location and collateral circulation in those affected patients. Knowledge of aortic anatomy and identification of arch anomalies allows for accurate surgical and intervention planning.