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A Tortuous "Corkscrew" Aortic Arch Mimicking Coarctation: A Diagnostic Pitfall in Multimodality Imaging

Koarktasyonu Taklit Eden Tortiyöz "Tirbuşon" Aort Arkı: Multimodal Görüntülemede Tanısal Bir Tuzak

CASE IMAGE
OLGU GÖRÜNTÜSÜ

A 13-year-old boy was referred with a preliminary diagnosis of aortic coarctation because of intermittent chest pain and exertional fatigue that had persisted for 1 year. Physical examination revealed no significant upper–lower extremity blood pressure gradient, and no continuous murmur was detected. Transthoracic echocardiography demonstrated a left-sided aortic arch with elongation and a pseudocoarctation appearance. Continuous-wave Doppler revealed a peak gradient of 35–40 mmHg without evidence of significant turbulence. However, the suprasternal view was suboptimal, raising uncertainty regarding the arch anatomy.

To further delineate the anatomy, contrast-enhanced computed tomography angiography was performed. It demonstrated a markedly elongated and tortuous aortic arch extending to the cervical level (Figure 1). The arch followed a superior–inferior–superior course, forming a characteristic "corkscrew" configuration (Video 1). No evidence of true coarctation or isthmic hypoplasia was identified.

No dysmorphic features, syndromic characteristics, or additional congenital cardiovascular abnormalities were identified during clinical evaluation. Genetic testing was not performed because there were no clinical findings suggestive of an underlying genetic disorder. Because no hemodynamically significant obstruction was present, no intervention was indicated, and clinical follow-up was planned. Most reported patients without true coarctation are managed conservatively; however, associated vascular abnormalities and aneurysmal dilatation have occasionally been described in the literature. Recognition of this anatomy remains important during long-term follow-up because marked aortic arch tortuosity may create technical challenges during future catheter-based procedures, including coronary angiography and endovascular interventions. Echocardiographic evaluation (Videos 2 and 3) demonstrated an elongated aortic arch without significant flow acceleration or turbulence on color Doppler imaging.

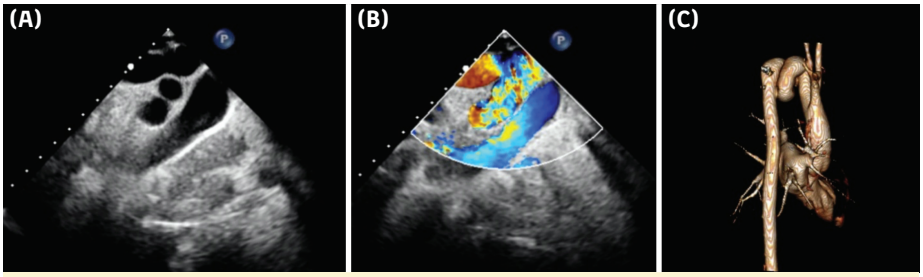

Figure 1. Multimodality imaging of a tortuous "corkscrew" aortic arch mimicking coarctation. (A) Suprasternal transthoracic echocardiographic view demonstrating elongation and tortuosity of the aortic arch. (B) Color Doppler image showing the absence of significant flow acceleration or turbulent flow across the elongated arch. (C) Three-dimensional computed tomography angiography image revealing a markedly elongated and tortuous aortic arch extending to the cervical level, with a characteristic "corkscrew" configuration.

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Ethics Committee Approval: This is a single case image, and therefore ethics committee approval was not required in accordance with institutional policies.

Informed Consent: Written informed consent for publication of the clinical information and imaging materials was obtained from the patient's legal guardians.

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Video 1. Three-dimensional computed tomography angiography demonstrating a markedly elongated and tortuous aortic arch with a characteristic "corkscrew" configuration extending to the cervical level.

Video 2. Two-dimensional transthoracic echocardiographic suprasternal view demonstrating elongation of the aortic arch.

Video 3. Color Doppler echocardiographic image showing no significant flow acceleration or turbulence across the aortic arch.