Letter to the Editor

Comment on the Article "Pitfall in Acute Care of Kawasaki Disease: Anomalous Origin of the Left Coronary Artery from the Pulmonary Artery—Secondary Publication" by Tsuda K et al (2023)

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Dear Editor, we read the article by Tsuda K et al. in Journal of Pediatric Cardiology and Cardiac Surgery **7**(1): 36–40 (2023) with great interest on anomalous origin of left coronary artery from pulmonary artery (ALCAPA) in a child who presented with right coronary artery (RCA) dilatation on 2D-transthoracic echocardiography (ECHO).[1)] ECHO is the standard of care in diagnosis and longitudinal follow-up of children having Kawasaki disease (KD). This is perhaps due to easy availability, portability (can be done bed-side) and a radiation free modality.

This report highlights pitfall in erroneous diagnosis of dilated RCA due to KD on ECHO both at presentation and follow-up, subsequently diagnosis of ALCAPA was confirmed on X-ray catheter coronary angiography.

The case highlights two major points. Firstly ECHO is not sufficient in diagnosis of all coronary artery abnormalities (CAAs) of KD as it fails to demonstrate entire course of the coronary arteries, is operator dependent and, moreover as child grows evaluation of CAAs and its complications may be due to limited acoustic window.[2)] Secondly X-ray catheter coronary angiography, though a gold standard, is an invasive technique with inordinate radiation exposure.[2, 3)]

Computed tomography coronary angiographies (CTC A) on current higher detectors and dual source CT scanners have capability to scan the coronary arteries in children at any heart rates with capability for radiation optimization. It's a non-invasive day care examination with acceptable radiation exposure (usually less than 1 millisieverts)[3, 4)] and requires a short sedation in infants and young children. It is a fastly evolving technique that explicitly demonstrates precise anatomy (including origin and course) of the coronary arteries and CAAs of KD both at presentation and during follow-up.[2–4)]

Timely diagnosis of anatomical variations and anomalous origin of the coronary arteries as described in the case is of utmost significance as it impacts directly on clinical decision making and treatment planning thereby avoiding unnecessary treatment pertinent to KD and alleviating agony of parents. We are of the opinion that invasive and radiation intensive X-ray catheter coronary angiography should be avoided as a problem solving tool especially in children with KD where CTCA can be a viable alternative. X-ray coronary angiograms should be reserved to decide the indication and management for surgery.

We therefore wish to highlight that ECHO at times may not be sufficient for diagnosis of CAAs and CTCA if possible should be considered for assessment of CAAs of KD and on follow-up for temporal change in CAAs as it explicitly demonstrates both intramural and intraluminal abnormalities.[3, 4)]

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Conflicts of Interest

There is/are no conflict of interest/s to declare.

Author Contributions

All authors contributed equally in manuscript preparation and approval.

References

1) Tsuda K, Kishimoto S, Kagiyama Y, et al: Pitfall in acute care of Kawasaki disease: Anomalous origin of the left coronary artery from the pulmonary artery-secondary publication. J Pediatr Cardiol Card Surg 2023; **7**: 36–40
2) Tsuda E, Singhal M: Role of imaging studies in Kawasaki disease. Int J Rheum Dis 2018; **21**: 56–63
3) Singhal M, Singh S, Gupta P, et al: Computed tomography coronary angiography for evaluation of children with Kawasaki disease. Curr Probl Diagn Radiol 2018; **47**: 238–244
4) Singhal M, Pilania RK, Jindal AK, et al: Distal coronary artery abnormalities in Kawasaki disease: Experience on CT coronary angiography in 176 children. Rheumatology (Oxford) 2023; **62**: 815–823