

## *Images in Congenital Cardiac Disease*

# An asymptomatic case of a single coronary artery in a 7-year-old girl

Hisao Yaoita, Masato Kimura, Shigeo Kure

*Department of Pediatrics, Tohoku University Graduate School of Medicine, Sendai, Miyagi, Japan*

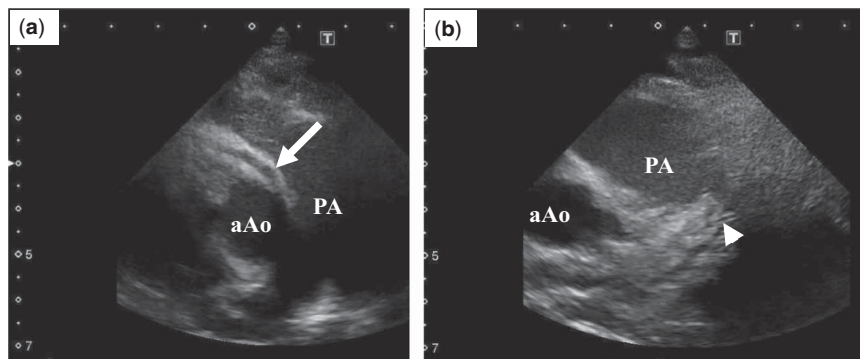
**Abstract** We describe the case of a 7-year-old girl with a single coronary artery. The coronary artery passed between the ascending aorta and pulmonary artery, and an aberrant vessel ran anterior to the latter.

**Keywords:** Single coronary artery; Lipton classification; cardiac catheterisation; MDCT; coronary event

Received: 12 April 2016; Accepted: 4 May 2016; First published online: 20 June 2016

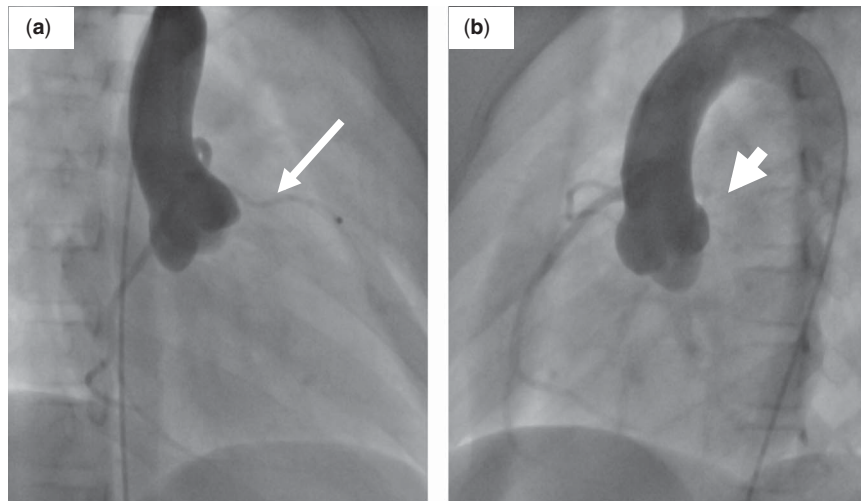
A SINGLE CORONARY ARTERY IS A RARE CONGENITAL anomaly in which only one coronary artery arises from a single coronary ostium and supplies the entire heart.<sup>1</sup> Chest pain, syncope, or sudden cardiac death during exercise are main situations when the condition is diagnosed. A 7-year-old girl with type I diabetes mellitus who had a high-grade fever, an enlarged parotid lymph node, and reddened lips was referred to us with suspected Kawasaki disease. Transthoracic echocardiography was performed, and

there was no coronary aneurysm; however, the left main trunk was difficult to recognise, and a thick right coronary artery arose from the right coronary ostium, which deviated towards the left coronary cusp (Fig 1). Cardiac catheterisation revealed a right single coronary artery with aberrant, bridging arteries branching off the anterior descending and circumflex artery (Fig 2, Supplementary Fig S1). From these and multidetector CT findings, we confirmed the diagnosis of a single coronary artery, Lipton Group RII-A, in which an



**Figure 1.**

(a) Transthoracic echocardiogram: the right coronary artery (arrow) arising from the right coronary ostium, which deviates towards the left coronary cusp. (b) The left main trunk could not be identified; however, a thin left anterior descending (arrow head) artery was observed. aAo = ascending aorta; PA = pulmonary artery.



**Figure 2.**

*Aortogram (a and b). A thin left coronary “mimic” artery (arrow) in the right anterior oblique view (a), which could not be identified in the left anterior oblique view (b, arrow head).*

aberrant vessel runs anterior to the pulmonary artery, and the origin of the coronary artery arises between the ascending aorta and the pulmonary artery (Supplementary Fig S2). The risk of a cardiac event is known to be greater with the Group II-B subtype, in which an aberrant artery passes between the ascending aorta and the pulmonary artery. In our case, however, the proximal segment of the coronary artery arose from the area between the ascending aorta and the pulmonary artery. Therefore, it is associated with a very high risk of a coronary event during exercise.

### Supplementary material

To view the supplementary material for this article, please visit <http://dx.doi.org/10.1017/S1047951116000834>

### Acknowledgement

None.

### Financial Support

This research received no specific grant from any funding agency, commercial, or not-for-profit sectors.

### Conflicts of Interest

None.

### Reference

1. Desmet W, Vanhaecke J, Vrolix M, et al. Isolated single coronary artery: a review of 50000 consecutive coronary angiographies. *Eur Heart J* 1992; 13: 1637–1640.