Correspondence

Acute myocardial infarction in an adolescent

To the Editor

With reference to the interesting case report by Muthupalaniappen et al,[1] I agree with them that the possibility of Kawasaki disease (KD) should be highly prioritized in children and adolescents presenting with coronary artery aneurysms (CAAs). The CAAs usually develop in the acute phase of KD (usually within 10 days to 4 weeks of the onset of the acute phase). Many of these CAAs remain asymptomatic and discovered accidentally later in life, while others become symptomatic, and detected during evaluation of a child or adolescent presenting with chest pain. I realize that Muthupalaniappen et al[1] were unable to document diagnosis of antecedent KD in their studied patient, as yet there are no diagnostic laboratory tests to achieve that task.

Traditionally, CAAs are diagnosed by conventional coronary angiography (CCA). The CCA findings in Muthupalaniappen et al's[1] studied patient in terms of stenosis, thrombus, and aneurysm are actually indistinguishable from those seen in myocardial infarction (MI) secondary to atherosclerosis, illicit substance abuse, Takayasu arteritis, infection as syphilis, rheumatic vasculitis, and connective tissue diseases like polyarteritis nodosa, and systemic lupus erythematosus. However, as multidetector CT (MDCT) angiography has been shown to be useful in the visualization of blood vessels, this imaging modality may well replace CCA, as the investigation of choice in the diagnosis of CAAs.[2] The MDCT angiography is more sensitive for detecting aneurysms at distal coronary segments and fusiform aneurysms of small sizes.[3]

The typical MDCT angiography pattern in KD is concentric wall thickening resulting in stenosis of the vessel. Also, aneurysmal dilatation is not common, which is more commonly proximal than distal.[4] It therefore, could help favor the diagnosis of antecedent KD. Definitely, this needs well-trained and expert radiologist to demonstrate such pattern.

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Reply from the Author

We would like to thank Prof. Al-Mendalawi for his keen interest in our recently published article "Acute myocardial infarct in an adolescent"[1]. We agree that with rapid advancement in imaging technology, the MDCT may emerge as the investigation of choice in detecting asymptomatic CAAs. In the past, transthoracic 2-dimensional echocardiography (2DE) was widely used for this purpose. More recently, the real-time 3-dimensional echocardiography (RT-3DE) has been shown to be more superior to the 2DE for visualizing CAAs in KD.[5] The main advantage of echocardiography is that it is free from radiation exposure.

The initial events of the present case took place in 2005 when this technology was relatively new in Malaysia, and MDCTs were not widely available due to the high cost and requirement of trained personnel for the interpretation of these images. The patient described in this case presented with typical chest pain secondary to MI, supported by the evidence of infarct on electrocardiogram. In such cases, CCA may still remain as the imaging method of choice as it provides an opportunity for physicians to perform primary angioplasty, if significant coronary artery stenosis or occlusion is detected during the same session without additional cost and patient preparation.

With advancing medical technology, and as children with KD grow into adults, physicians should keep abreast with the latest innovations in imaging. Selection of the optimal imaging modality would depend on clinical presentation, possible need for interventional procedure, cost, radiation exposure, availability of imaging equipments, and trained personnel for image interpretation.

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