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Case Report

Giant Right Coronary Artery Aneurysm in a 13-Year-Old Female: A Rare Case Report

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Abstract

Giant coronary artery aneurysms (CAAs) are rare, particularly in pediatric patients. We report the case of a 13-year-old female who presented with chest pain. Computed tomography (CT) and magnetic resonance imaging (MRI) revealed a giant aneurysm of the right coronary artery (RCA) with partial thrombosis. Given the risk of rupture, thrombosis, and myocardial ischemia, prompt diagnosis and management are crucial. This report discusses the clinical presentation, imaging findings, differential diagnosis, and therapeutic considerations.

Keywords: *Coronary Artery Aneurysms (CAAs); Computed Tomography (CT); Magnetic Resonance Imaging (MRI); Right Coronary Artery (RCA)*

Introduction

Coronary artery aneurysms are defined as focal dilations exceeding 1.5 times the diameter of the adjacent normal segment. Giant CAAs (diameter > 20 mm) are exceedingly rare, particularly in children. They can arise due to Kawasaki disease, congenital coronary anomalies, connective tissue disorders, or atherosclerosis. Early recognition and intervention are critical to prevent complications such as rupture, thrombosis, and myocardial infarction.

Case Presentation

A 13-year-old female presented to our department with intermittent chest pain over the past month. She denied a history of fever, recent infections, or systemic illness. Her vital signs were stable, and cardiac auscultation was unremarkable. An electrocardiogram showed nonspecific ST-T wave changes, and cardiac biomarkers were within normal limits.

CT angiography revealed a giant aneurysm of the RCA measuring 7x6 cm, with partial thrombosis present in the aneurysm sac (Figure 1-3). Cardiac MRI confirmed the presence of the aneurysm with thrombosis and preserved myocardial perfusion and contractility (Figure 4). No signs of ischemia or fibrosis were observed. Transthoracic echocardiography showed normal ventricular function and no significant valvular abnormalities.

The case was discussed in a multidisciplinary team approach with pediatric cardiology, cardiothoracic surgery, and interventional radiology teams due to the large size of the coronary artery aneurysm and the presence of a partial thrombus in the aneurysm. The aneurysm did not have functional abnormalities or ischemia; however, the size of the aneurysm and burden of thrombus were concerning

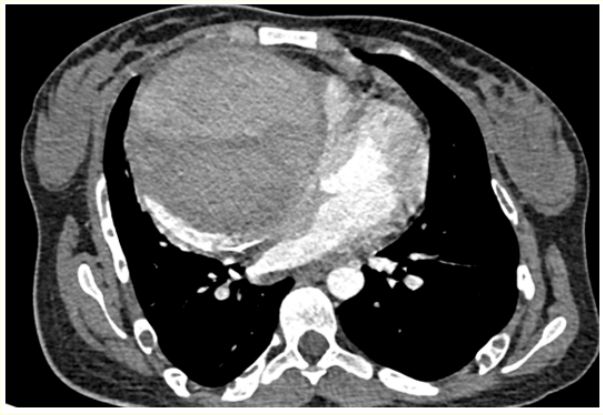

Figure 1: *Axial view of the CTA showing a giant right coronary artery aneurysm (7x6 cm) with partial thrombosis. The aneurysm is well-defined, and the thrombosis is clearly visible within the sac of the aneurysm.*

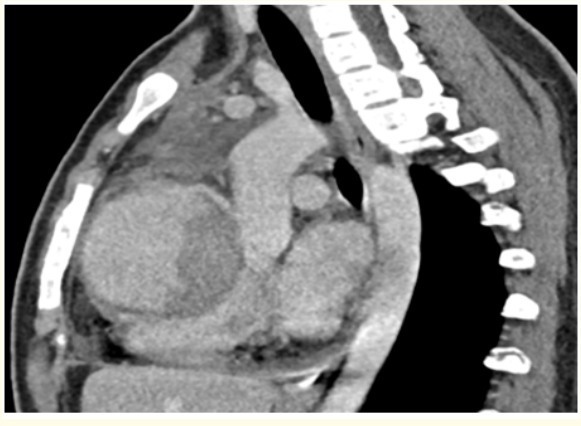

Figure 2: *Sagittal view of the CTA demonstrating the size and extent of the right coronary artery aneurysm. The partial thrombosis is again visible within the aneurysm.*

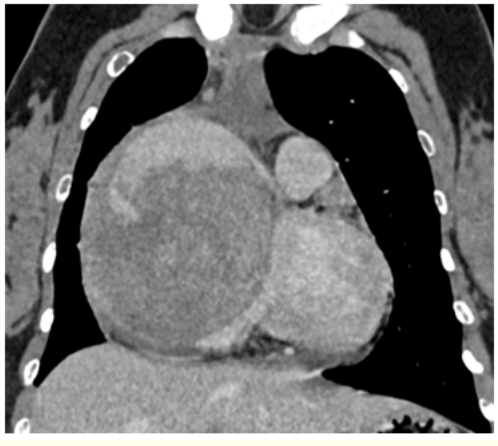

Figure 3: *Coronal view of the CTA showing the aneurysm of the right coronary artery with partial thrombosis. The CTA provides a clear three-dimensional understanding of the aneurysm's size and relationship to surrounding structures.*

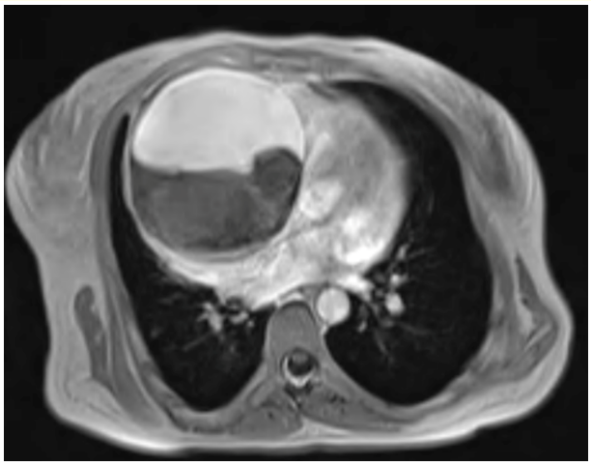

Figure 4: *Axial MRI in T1 sequence showing the same giant right coronary artery aneurysm, partially thrombosed.*

as these could have resulted in an embolism or rupture. The patient was started on dual antiplatelet therapy (aspirin and clopidogrel) along with systemic anticoagulation. Given the size of the aneurysm and the partially thrombosed state, surgical intervention was planned. The patient underwent an aneurysmectomy, with coronary artery bypass grafting. The patient had an uneventful postoperative course.

Discussion

The etiology of giant CAAs in pediatric patients is varied, with Kawasaki disease being the most common cause [1]. However, in this case, the patient lacked the characteristic fever and mucocutaneous manifestations, making Kawasaki disease less likely. Other potential causes include congenital coronary artery anomalies and connective tissue disorders such as Marfan syndrome or Ehlers-Danlos syndrome [2].

Thrombosis within a giant coronary artery aneurysm, while rare, is a serious complication that can lead to distal embolization, resulting in ischemia or infarction. In our patient, the partial thrombosis found in the aneurysm was a major concern due to the increased risk of embolism. The natural history of such aneurysms remains poorly understood, but the presence of thrombosis significantly increases the potential for adverse outcomes, including myocardial infarction, stroke, or aneurysm rupture [3].

Imaging plays a crucial role in both diagnosis and management. CT angiography provides detailed anatomic information, as seen in figure 1-3, while MRI is essential for assessing myocardial perfusion and viability, as demonstrated in figure 4. Echocardiography, although less detailed, is often used as a first-line imaging modality in pediatric patients due to its noninvasiveness [4].

Management of CAAs, particularly those with thrombosis, is complex and depends on several factors, including aneurysm size, thrombosis extent, and the presence of symptoms. Antiplatelet therapy and anticoagulation are commonly used to prevent further thrombus formation and embolization. Surgical or percutaneous interventions are considered when the aneurysm is symptomatic, has a high rupture risk, or is associated with ischemic changes in the myocardium [5].

In this case, given the size of the aneurysm and the presence of partial thrombosis, a multidisciplinary team including cardiologists and cardiothoracic surgeons was consulted to determine the optimal treatment strategy. Possible interventions include medical management with anticoagulation or surgical options such as aneurysm resection or coronary artery bypass grafting (CABG), depending on further risk assessments and patient status [6].

Conclusion

Giant coronary artery aneurysms with partial thrombosis are rare but serious conditions, especially in children. Timely imaging and a multidisciplinary approach are essential in guiding management. This case underscores the importance of considering CAAs in pediatric patients presenting with chest pain and the need for individualized treatment strategies.

Bibliography

1. Krishnamurthy R., *et al*. "Giant coronary artery aneurysms: Review and update". *Journal of the American College of Cardiology: Case Reports* (2024).
2. Maria Beyer., *et al*. "Massive giant coronary artery aneurysm". *Annals of Thoracic Surgery Short Reports* 2.1 (2023): 38-39.
3. Dhillon R., *et al*. "Giant coronary artery aneurysm in a child: A case report". PMC (2014).
4. Smith TJ., *et al*. "Giant coronary aneurysms: Diagnosis and management". Science Direct (2024).
5. Deveshwar S., *et al*. "Thrombosis and embolism in giant coronary aneurysms: a review". *International Journal of Cardiology Heart and Vascular* (2022).
6. Patel PM., *et al*. "Spontaneous rupture of a coronary artery aneurysm: Case report and literature review". *Cardiology Research and Practice* (2021).

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