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Untimely demise: A case report of Acute ST elevation myocardial infarction in 7 -year-old child.

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Introduction

Acute ST elevation myocardial infarction (STEMI) in paediatric populations especially without identifiable comorbid is rare, associated as time sensitive disease carrying high mortality rate. This poses a great challenge for clinicians especially in secondary hospital in term of establishing diagnosis and proper treatment..

Case report

Mr AAR, 7 year old boy with no known comorbidity was rushed to emergency department after awoken up from sleep due to excruciating crushing type of chest pain. He denied any recent influenza like illness. Upon arrival, his vital signs are, blood pressure: 92/52, heart rate :120, Temperature: 36.2, oxygen saturation:99%. Cardiovascular examination shows normal heart sounds without displacement of apex beat. His lungs are clear.
Electrocardiograph shows ST segment elevation over inferior leads (II, III and aVF) with reciprocal changes. Point of care ultrasound shows that patient has inferior wall hypokinesia with moderately depressed left ventricular function consistent with regional myocardial infarction. An urgent referral to National Heart Institute was made. Unfortunately, patient developed cardiopulmonary arrest and succumbed to death after 40 minutes of resuscitation. Postmortem findings show giant right coronary artery aneurysm with intraluminal thrombus.

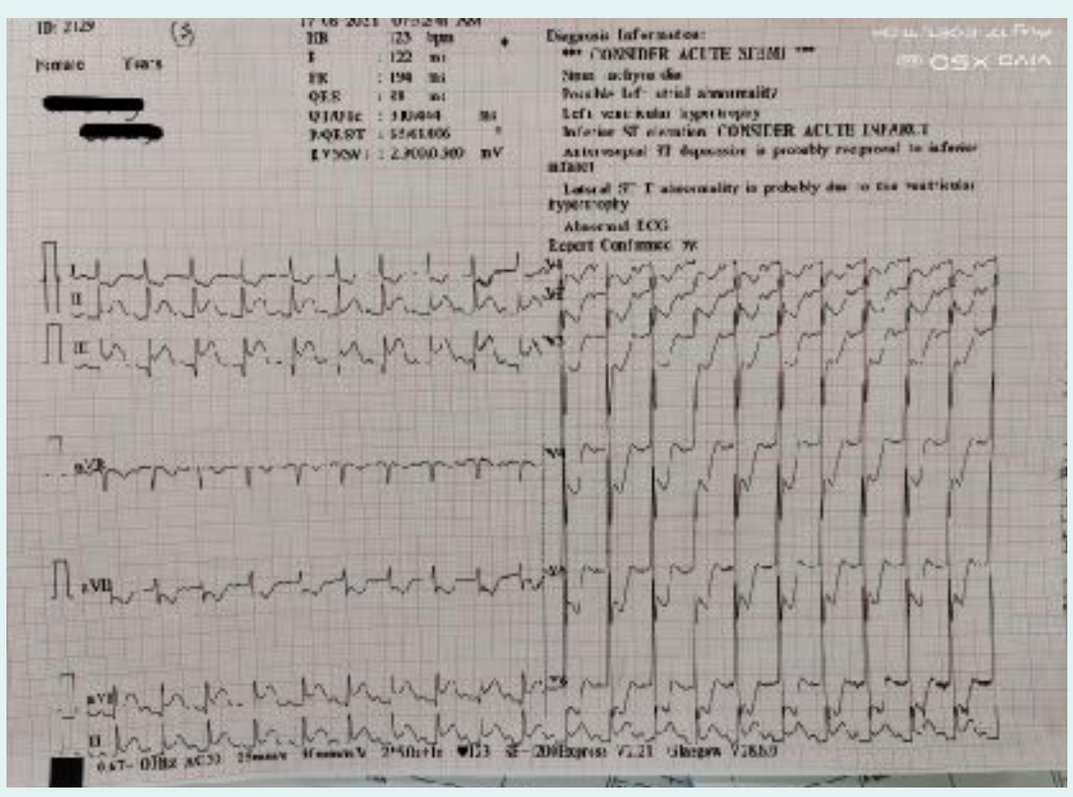

Figure 1: Electrocardiograph

Figure 2: chest xray

Full blood count	Renal profile	Electrolytes	Liver function test	Lactate : 4.7
TWC : 12.4 Neutrophil; 6.72 Lymphocyte : 4.07	Urea : 4.8	Calcium : 2.42	AST : 31	pH : 7.24 pC02 : 61 HCO3 26.1
Hb: 13.2	Sodium : 138	Magnesium : 0.83	ALT : 22	INR : 1.3
HCT : 39.9	Potassium : 4.2	Phosphate : 1.66	Albumin : 46	APTT : 36.7
Platelet : 376	Chloride : 105	Troponin I 58.8	Total bilirubin : 5.8	PT : 15.6
	Creatinine : 53	BNP : 54.18	ALP : 234	CK : 161

Figure 3: summary of investigation

Figure 4: Giant RCA aneurysm

Figure 5 : Giant RCA aneurysm with intraluminal thrombus

Discussion

The two leading causes of STEMI in this population are congenital coronary abnormality and Kawasaki disease. The clinical dilemma of this case is that whether recombinant tissues plasminogen activator (rtPA) should be administered without knowing the cause of such presentation. Lack of expertise in cardiac imaging or percutaneous coronary intervention (PCI) in our setting create an enormous challenge to make timely decision. There are guideline suggesting the use of rTPA if exceeding 90 minutes from PCI for those with established Kawasaki disease. The tradeoffs of bleeding vs coronary occlusion must be weighed in the choice of approach.

Conclusion

- STEMI in paediatric resulted from diverse causes requiring different management approaches.
- The supporting evidence for undifferentiated cases remains limited and should be look into the future

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