

Paracardiac mass in echocardiography: a spontaneous giant pseudoaneurysm of the right coronary artery

Introduction

True and false (pseudo) aneurysms of the coronary arteries are very rare conditions. Pseudo-aneurysm can be defined as a large, thin wall, narrowed neck dilatation of the coronary arteries not including all the layers of the vessel wall and communicating with the arterial lumen. It is mostly associated with trauma, infections and catheter-induced dissection of the coronary arteries. Mean while spontaneous pseudoaneurysm of the coronary arteries are associated with spontaneous dissection. True and false aneurysm can present as various clinical results such as sudden death, ischemia or can be totally asymptomatic.¹ IVUS or pathological examination is used to distinguish these conditions.² Here in we report a case with a spontaneous pseudoaneurysm of the right coronary artery presented with chest pain, pericardial effusion and paracardiac mass.

Case presentation

27 years old male patient admitted to our outpatient clinic with progressive, pleuritic chest pain unrelated to exertion for a month with no significant medical history. The patient was diagnosed with acute pericarditis at a center and receiving ibuprofen and colchicine treatment for three weeks. There was no pathological finding on cardiac auscultation, blood pressure was 110/80 mmHg, heart rate was 110 bpm. Electrocardiography showed sinus tachycardia and minimal ST segment elevation in all leads. There was a slight cardiomegaly in chest X-ray (Figure 1). Cardiac markers and inflammatory markers were elevated; troponin-I 1112 ng/L (0-100), CK-MB 95 U/L (0-190), ESR 65, CRP 75 was detected. Transthoracic echocardiography revealed a 45x60 mm of cavitory mass compressing the right atrial free wall along with pericardial effusion (Figure 2); which was the only location of pericardial effusion in his previous examination a month ago. The patient was admitted to

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CCU. An aneurysm 100x70x60 mm in diameter, originating from right coronary artery extending to right atrial lateral wall border and compressing externally, which contains thrombus material in its cavity was detected in cardiac computed tomography (CT) (Figure 3). Coronary angiography revealed a giant aneurysm communicated with RCA (Figure 4) without any abnormality on left coronary arteries. The patient was given to emergency surgery because of the risk of pericardial tamponade. Aneurysmectomy was done and the remaining cavity was closed primarily. Pathological examination was reported as polymorphous nuclear leukocyte and mononuclear inflammatory cell infiltration without elastic fibers and a pseudoaneurysm of the coronary artery. The patient was discharged without any complication.

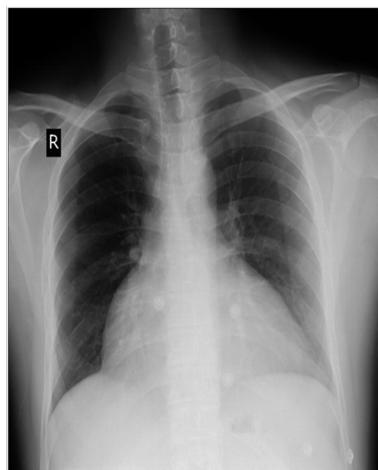


Figure 1 Cardiomegaly in chest X-Ray.



Figure 2 The cavitary mass compressing right atrium and the pericardial effusion.

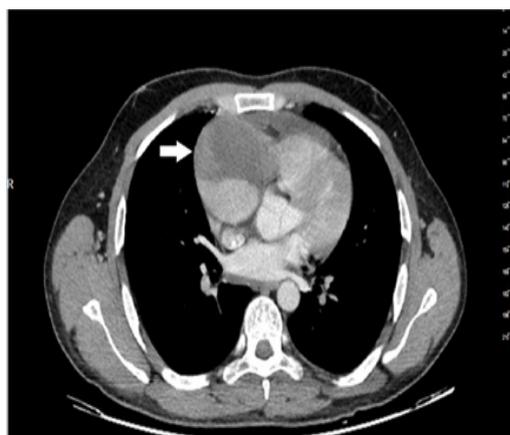


Figure 3 Right coronary artery aneurysm and the thrombus material extending to the right atrial lateral wall. (White arrow).

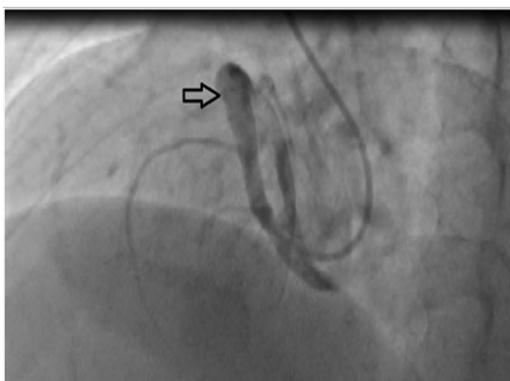


Figure 4 Giant right coronary artery aneurysm in coronary angiography (Black arrow).

Discussion

Here in we present a case spontaneous right coronary pseudoaneurysm in a patient successfully managed with surgery. These patients can present as an acute cardiovascular event as well as can remain asymptomatic throughout the course. Our patient was suffering from ongoing chestpain for a month and also he was receiving anti inflammatory drugs for acute pericarditis. Elevated inflammatory and cardiac markers was the key point of the diagnosis. Coronary artery dissection can cause systemic inflammatory response reaction (SIRS) which help us to explain elevated CRP and ESR levels. Pericardial effusion can be secondary to reactive pericarditis

and also may be the cause of the elevation of acute phase reactants but such an elevation in inflammatory markers after reactive pericarditis is not usual.

Our patient has no significant medical history and any factor that can cause true or false aneurysm such as atherosclerosis, Behcet's disease, Kawasaki disease, vasculitis, trauma or percutaneous coronary intervention. Sudden onset chest pain and a pseudoaneurysm formation without any precipitating factor helped us to diagnose spontaneous coronary artery dissection.

The giant aneurysms, which are diameter of >20mm, more likely seen as a true aneurysm.³ IVUS could help us to distinguish these conditions; unfortunately we did not have the chance to perform; but since coronary angiography has no adequate visualisation of the artery, IVUS might be efficient in this patient. Aneurysms must consist of all the layers vessel wall also the integrity must be maintained.⁴ In this patient the discrimination of the pseudoaneurysm with the true aneurysm was made by histopathological assesment after surgery which revealed a pseudoaneurysm originated from right coronary artery restricted by epicardium without any relation with pericardium. Histopathological examination showed us disruption of the integrity of the vessel without the adventitia layer which lead us to pseudoaneurysm as a result of spontaneous dissection of the coronary artery. There are few similar cases in the literature with giant coronary pseudoaneurysm where the final diagnosis was made by histopathology after surgery. Coronary CT scan can also be beneficial in decision making even in pregnant patients.^{5,6} The treatment of these patients must be tailored according to their presentation. Since coronary pseudoaneurysms are quite rare, there is no evidence-based recommendation whether to treat medically or to perform surgery or percutaneous coronary intervention. Surgical treatment is mostly recommended in left main coronary or multivessel coronary arteries and giant aneurysms exceeding 30mm in diameter.⁷ Surgery can be both therapeutic and diagnostic as in our patient. Since our patient has a risk of pericardial tamponade we performed a surgical intervention among all treatment possibilities.

In conclusion; spontaneous pseudoaneurysms are uncommon events. Diagnosis can be challenging as well as its treatment. Therapeutic intervention should be individualized and the surgery must be kept in mind in patients with a giant aneurysm and at the risk of pericardial tamponade.

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None.

Conflicts of interest

The authors state that they have no conflict of interests.

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