

From tricuspid valve infective endocarditis to acute limb ischemia: A case report.

66

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Type of submitter

Fellow in Training

Abstract

Introduction:

Atrial septal defect (ASD) is a common form of congenital heart disease (CHD) accounting for one third of CHD cases. Most patients with ASD remain asymptomatic, however complications including pulmonary hypertension and arrhythmia can occur. Tricuspid valve infective endocarditis paradoxical septic embolism is a rare complication of ASD.

Case Report:

A 39-year-old female who is an active IV drug user presented to an outside hospital with complaints of fever, chills, shortness of breath, nausea, diarrhea and severe pain in both lower extremities for 4 days. The patient was found to be hypotensive and received fluid resuscitation and then was referred to our hospital for intensive care admission. On presentation the patient was found to be hypotensive, tachycardic and febrile. ECG revealed sinus tachycardia. Upon physical examination the patient was found to have cold lower extremities and blue/yellow coloring of both feet. Laboratory evaluation showed lactic acidosis, WBC 5.7 with 86% segmented neutrophils, platelets 29, and potassium 3.3. Urine drug screen was positive for opiates and fentanyl. Central venous access was obtained and treatment with fluids, cardizem and broad-spectrum antibiotics was initiated. CT of the chest with IV contrast revealed numerous ill-defined pulmonary nodules and cavitation's consistent with septic emboli. CT angiography of the lower extremities showed distal occlusion of bilateral anterior tibial, posterior tibial and peroneal arteries. A transthoracic echocardiogram was obtained and revealed a large tricuspid valve vegetation measuring 1x1 cm with mobile fragments, mild tricuspid valve regurgitation and a positive bubble study. Blood cultures grew MRSA and Streptococcus agalactiae. Patient was evaluated by vascular surgery who recommended bilateral below the knee amputation however due to the patient's critical condition, she was not a candidate for surgery and eventually expired.

Discussion:

Right-sided IE is a rare type of IE making up only 5-10% of cases and is associated strongly with IVDU. The most common organism identified is staphylococcal aureus accounting for 60-90% of cases, however methicillin resistant staphylococcal aureus (MRSA) rates are increasing in addition to polymicrobial infections as seen in this case. Tricuspid valve involvement is most commonly seen, and the mortality rate is approximately 7%. If systemic emboli are present, then one should consider the presence of left-sided IE or paradoxical emboli. As right sided pressures increase and tricuspid regurgitation worsens, tricuspid valve infective endocarditis can result in a paradoxical septic emboli through the ASD. Imaging with an echocardiogram should be performed in all cases of infective endocarditis and most ASD can be detected with either transesophageal or transthoracic echocardiogram with bubble study. The risk of paradoxical septic emboli can be reduced by surgically closing the ASD or removing the vegetation, however this would be performed on a non-optimized patient which carries major risk in itself.

Conclusion:

Paradoxical septic emboli can occur in patients with right-sided infective endocarditis through a congenital defect in the septum. Proper imaging is important to ascertain the presence of the congenital defect with intervention such vegetation aspiration or ASD closer considered to reduce the patient's risk.

Categories

1st year Fellow: Case

Program/Institution Name

University of Cincinnati

A rare case of triple vessel Spontaneous Coronary Artery Dissection

68

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Abstract

A Rare Case of Triple Vessel Spontaneous Coronary Artery Dissection

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Abstract;

Introduction/Objective: Spontaneous coronary artery dissection (SCAD) is an infrequent overall cause for ACS and the vast majority of reported cases are limited to a single vessel (84%) or two vessels (15%). We report the rare case of a young female patient with triple vessel SCAD.

Case Presentation: 22 y/o woman, 2 weeks postpartum after her 4th pregnancy presented to emergency room with anginal chest pain. She did not have any known risk factors for atherosclerotic coronary artery disease. EKG showed ST depressions in inferior & lateral leads and troponin was elevated to peak value of 4.932 (Normal Troponin I <0.040 ng/ml). Echocardiogram was consistent with mild decrease in LVEF (50%) without any focal wall motion abnormalities. Her coronary angiography revealed triple vessel SCAD involving distal LM extending to mid LAD, LCX and distal RCA. Further workup with CTA of the head/neck/abdomen revealed diffuse irregularity of vertebral arteries and intra cranial arteries, irregular caliber & focal wall thickening of common iliac arteries, and ectasia of the infrarenal abdominal aorta consistent with the diagnosis of Fibromuscular dysplasia (FMD). She was hemodynamically stable throughout, was managed conservatively with heparin during hospitalization, and was discharged home after 10 days on aspirin, plavix, metoprolol and captopril.

Discussion: Postpartum SCAD is a known cause of ACS in young females and SCAD has been reported to be a cardiac manifestation in patients with FMD. But majority of SCAD reported in literature is limited to a single vessel disease. Two vessel involvements are thought to be quite rare, and multivessel involvement even rarer. Due to the limited number of cases, there is limited prognostic data, and no standardized treatment plan. The case reported here highlights that multivessel extensive SCAD is possible, and that in young patients without significant risk factors for coronary disease, the clinical strategy might warrant

a high clinical suspicion of SCAD, early invasive angiography, and noninvasive imaging to evaluate for FMD.

Conclusion: Multivessel SCAD can occur, especially in FMD patients who are postpartum. Prospective and retrospective studies are needed to optimized treatment strategies and prognosis of these patients.

Cath Images;

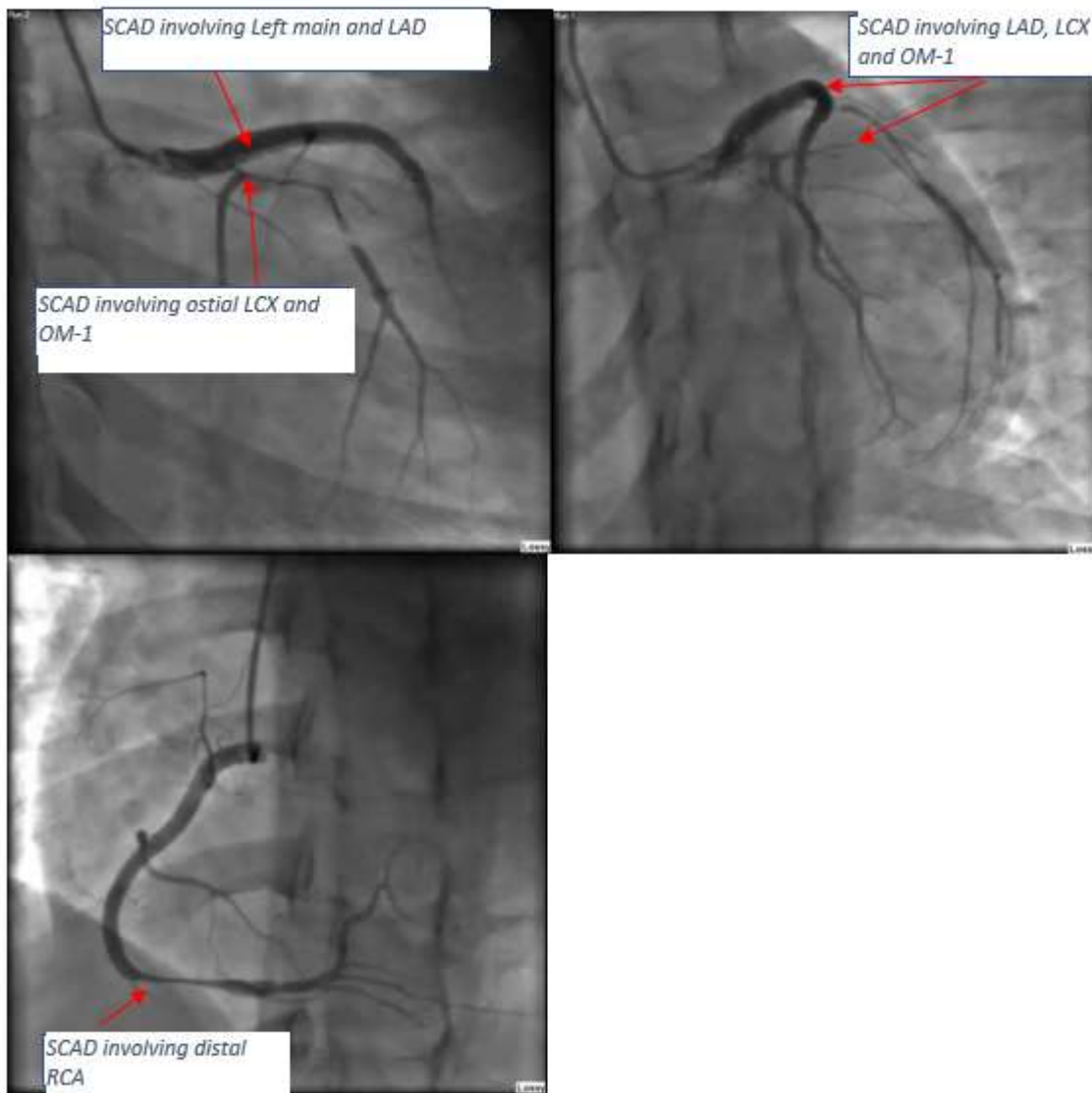


Figure 1: Coronary Angiograms

Categories

1st year Fellow: Case

Program/Institution Name

CWRU MetroHealth

ST Elevation Myocardial Infarction Resulting From Coronary Embolism as a Complication of Non-Valvular Atrial Fibrillation

44

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Abstract

Introduction

Acute myocardial infarctions develop primarily from atheromas with coronary emboli being an underappreciated cause of nonatherosclerotic acute coronary syndrome. Commonly, systemic emboli are a result of non-valvular atrial fibrillation. We present a patient with ST elevation myocardial infarction due to coronary emboli secondary to non-valvular atrial fibrillation. Following aspiration thrombectomy, restoration of coronary blood flow was achieved.

Case presentation

A 56-year-old Caucasian male with history of hypertension and tobacco abuse presented to the emergency department with sudden onset of chest pain. Physical examination revealed irregularly irregular rhythm without an audible murmur on cardiac auscultation. A 12-lead EKG demonstrated atrial fibrillation with diffuse ST segment elevation throughout. Initial troponin were > 40 ng/dl (normal values < 0.040 ng/dl). He subsequently underwent emergent cardiac catheterization. Coronary angiography revealed multiple areas of thrombus including the distal left anterior descending artery, distal left circumflex, and obtuse marginal branch, which was the culprit vessel. There was a discrete, 100% thrombosis in the mid vessel with an otherwise visually smooth contour. Aspiration thrombectomy was performed with retrieval of red thrombus. There was no residual stenosis with TIMI grade 0 flow shown in Figure 1. Further diagnostic evaluation with transthoracic and transesophageal echocardiography showed no evidence of atrial thrombi, vegetations, structural valvular abnormalities, patent foramen ovale or septal defects. Hypercoagulable workup was negative. Followup angiography at 1 year showed normal coronary anatomy.

Discussion

Nonvalvular atrial fibrillation is a common cause of coronary emboli. Limited data shows association of atrial fibrillation and risk factors for acute myocardial infarction. Acute coronary embolism is not a well-documented adverse outcome of atrial fibrillation. Successful coronary reperfusion can be achieved with aspiration thrombectomy. Distal embolization of thrombus during balloon inflation or stent

deployment carries an increased risk of poor clinical outcomes. Smaller trials, particularly the TAPAS study demonstrated that aspiration thrombectomy alone is feasible in achieving reperfusion and resolution of ST elevation myocardial infarction as opposed to conventional PCI. However, the TASTE trial revealed that there was no mortality benefit at 1 year following routine thrombectomy. The TOTAL trial showed that PCI with thrombectomy versus PCI alone does not reduce the risk of cardiovascular death, cardiogenic shock or recurrent myocardial infarction at 180 days and may lead to an increased risk of stroke within the first 30 days. Intracoronary ultrasound and optical coherence tomography can be performed to exclude erosion. These modalities were not performed during the case, as they were considered restrictive, given the presence of multiple territorial infarcts visualized angiographically. As well, recognition of appropriate risk factor stratification in reference to CHADS₂-VAsC scoring for prevention of systemic thromboembolism remains extremely important for prevention of embolic phenomenon in this population of patients.

Conclusion

ST elevation myocardial infarction as a consequence of coronary embolism from atrial fibrillation is an underappreciated cause of ACS and should be suspected in situations of high thrombus burden in the setting of otherwise normal coronary anatomy on angiography. Aspiration thrombectomy alone without conventional PCI may be a viable and effective treatment option for these individuals.

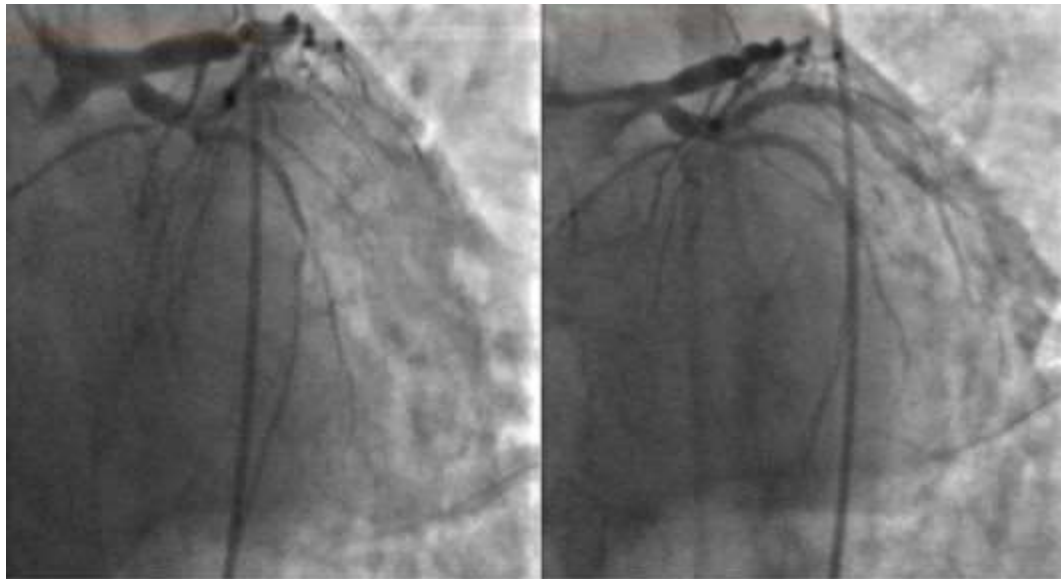


Figure 1: Coronary angiography demonstrating a 100% thrombotic occlusion of OM1 on the left with restoration of flow following aspiration thrombectomy shown on the right.

Categories

1st year Fellow: Case

Program/Institution Name

Canton Medical Education Foundation/Aultman Hospital/NEOMED

STEMI in a Patient with a Single Coronary Artery

30

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Abstract

Introduction

Coronary artery anomalies are estimated to be found in 0.3% - 1.0% of healthy individuals. Approximately 20 variations of coronary anomalies have been described. Common anomalies are either multiple ostia or the origin of an artery from a different sinus. However, a single coronary artery supplying the entire myocardium is an extremely rare finding with an incidence of 0.0024% - 0.044%. This case describes a STEMI in a single coronary artery originating from the Left Sinus of Valsalva with a dominant left circumflex artery giving rise to the right coronary artery without a right aorto-coronary ostium.

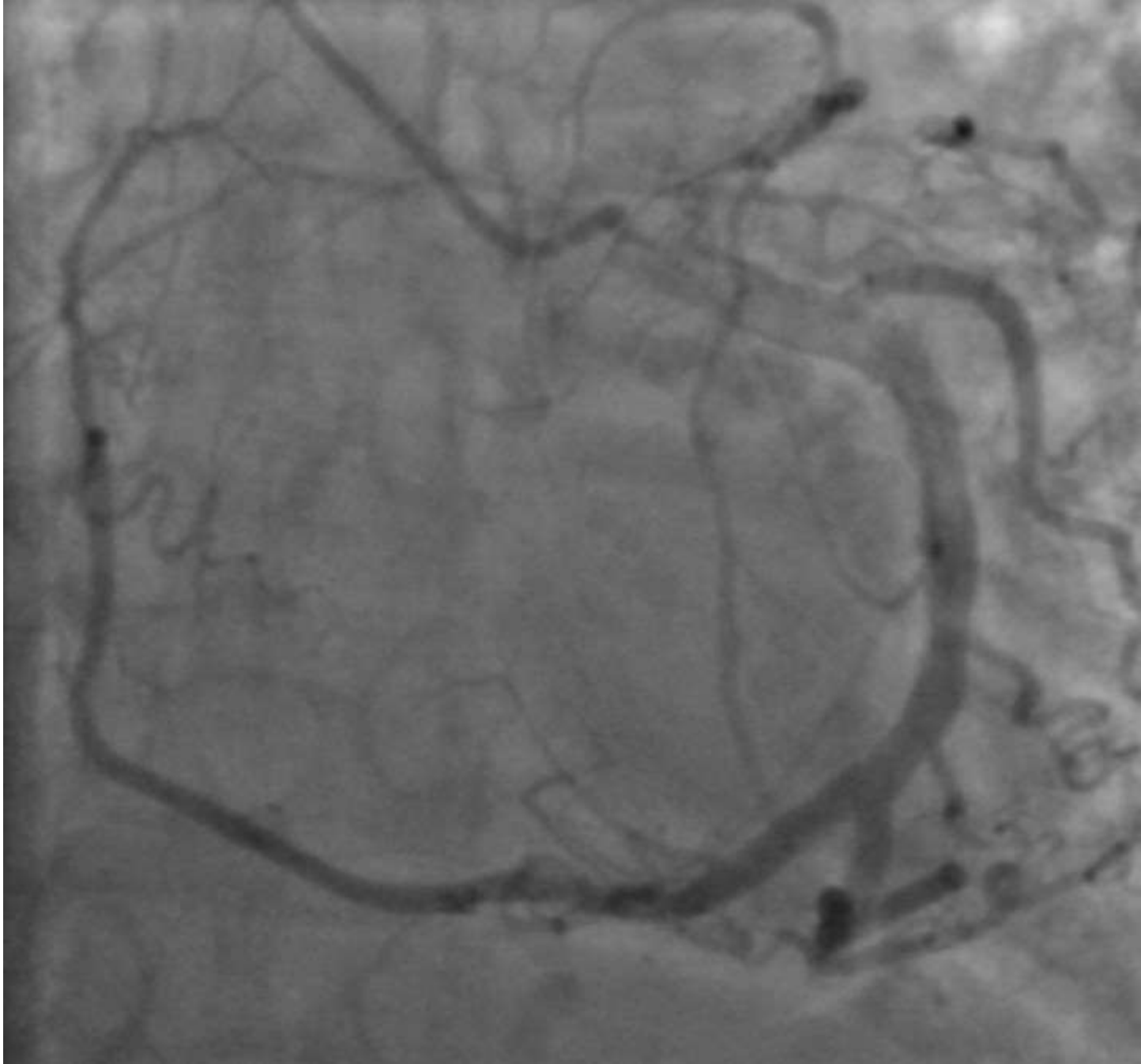
Case

An 86-year-old woman with a history of essential hypertension and hyperlipidemia presented to an outside hospital emergency department (ED) with acute intermittent non-exertional chest discomfort. Her medications included aspirin 81mg daily and diltiazem 240mg ER daily. She never smoked and had no family history of cardiac disease. In the ED, her electrocardiogram demonstrated ST elevations in leads V2-V3. Laboratory troponin was 2.9 ng/ml. She continued to have symptoms and was transferred to a percutaneous coronary intervention (PCI) capable hospital center. In the catheterization laboratory, attempts to engage the right coronary artery were unsuccessful. The left main coronary artery was then engaged in the left coronary cusp. Angiography revealed a left main coronary artery that bifurcated normally into the left anterior descending artery (LAD) and dominant left circumflex artery (LCX). The LCX was very large and continued around the AV groove anteriorly to give rise to the right coronary artery (RCA) which gave off an acute right ventricular marginal branch. The culprit lesion was an ostial 99% stenosis of the LAD. The lesion was stented and had excellent angiographic appearance with TIMI grade 3 flow. Left ventriculogram showed an ejection fraction of 45-50%.

Discussion

Congenital absence of a coronary ostium resulting in a single coronary artery is an extremely rare finding. A single coronary artery can be compatible with normal life expectancy. However, younger

patients are at increased risk of sudden death if the coronary crosses between the pulmonary artery and aorta. Older patients are at increased risk of sudden death if an acute proximal stenosis develops in the artery that supplies the dominant portion of the myocardium. Coronary anomalies are described according to the Lipton classification. This patient would classify as an L-IIA. L -Sinus of Left Valsava, II - single coronary artery crossing the heart as a large transverse trunk and supplying the contralateral coronary artery, and A – course of artery is anterior to the aorta and pulmonary artery. This case highlights the extremely rare finding of a single coronary artery presenting as an acute STEMI.



Right Anterior Oblique - Caudal view. Single Coronary Artery : Large Dominant Left Circumflex Artery (right) giving rise to the Right Coronary Artery (left). Left Anterior Descending Artery not well visualized in this image.

Categories

1st year Fellow: Case

Program/Institution Name

Summa Health System/NEOMED

In-Situ Coronary Thrombosis Associated with Hydroxycut

51

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Abstract

Intro

With the rise of obesity followed the rise of unregulated over-the-counter diet aids. Due to concerning adverse events (i.e. seizure, myocardial infarction, stroke, hepatotoxicity), Hydroxycut underwent numerous recalls and reformulations in an effort to stay in market. In spite of that, numerous adverse events are still being reported such as atrial fibrillation, atrial and ventricular arrhythmias, and asystole.

Case Report

Here, we chronicle a case of an otherwise healthy 37 year-old man who presented with persistent typical angina and was diagnosed with non-ST elevation myocardial infarction. A left heart catheterization showed total occlusions in the left circumflex and 2nd obtuse marginal arteries. Thrombectomy was performed on the circumflex lesion and thrombectomy/PTCA was performed on the ostial 2nd obtuse marginal lesion. While the patient did have risk factors (hyperlipidemia, elevated BMI), his coronary disease appeared to be non-atherogenic with concern for in-situ coronary thrombosis. We suspected this to be secondary to his use of Hydroxycut Black, a dietary supplement that he began taking for the previous couple of months. An echocardiogram showed a left ventricular ejection fraction of 55-60% with normal diastolic function. Secondary etiologies were investigated for in-situ coronary thrombosis; markers for a hypercoagulable state (DRVVT, factor & leiden, anticardiolipin antibody, beta-2-glycoprotein) were absent. A lower extremity venous duplex and a CT with contrast of the chest, abdomen, and pelvis did not reveal any evidence of vascular thrombosis or thromboembolism. He was initiated on clopidogrel and apixaban and was discharged.

Discussion

There are no reports of in-situ coronary thrombosis potentially induced by Hydroxycut under its new formulation that's reportedly devoid of sympathomimetic amines (i.e. ephedra). Yohimbe extract (6% yohimbine) and caffeine (200 mg) are of particular concern in our case of Hydroxycut Black use. Yohimbine is an alpha-2 receptor antagonist that increases both centrally mediated and peripherally mediated sympathetic activities. Caffeine also antagonizes adenosine receptors resulting in vasoconstriction. The combined effects of caffeine and yohimbine potentially increased coronary

resistance and resulted in diminished coronary blood flow leading to the development of in-situ coronary thrombosis. But, it is important to note that Hydroxycut is a multicomponent product that contains ingredients other than those listed on the label, which may have contributed to the effects observed in this patient as well.

Conclusion

We aim to increase awareness about this possible association and advocate for proper unbiased scrutiny of dietary supplements. Further research is warranted to identify components of dietary supplements.

Categories

1st year Fellow: Case

Program/Institution Name

Doctors Hospital/OhioHealth

Cardiac MRI Superseding Invasive Hemodynamic Assessment of Constrictive Pericarditis

2

Alex Moseley, Jillian Thompson, Saad Ahmad

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Fellow in Training

Abstract

Introduction

Effusive constrictive pericarditis consists of elevated cardiac filling pressures that remain so following pericardiocentesis in addition to ventricular discordance.^{1,2} The gold standard is simultaneous right and left heart catheterization with sensitivity and specificity of 96% and 95% when ventricular discordance is observed.³ Most cases are idiopathic. It occurs in 0.3% of those with pericarditis with overall mortality of 22%.^{4,5} Following pericardiectomy, mortality is 6%.

Case Description

A 69 year old male with a past medical history of myocardial infarction and atrial fibrillation was admitted for recurrent ANASARCA and transaminitis. Echocardiogram showed a persistent moderate pericardial effusion, paradoxical septal motion, and normal tissue dopplers (image 1a). Simultaneous right and left heart catheterization was repeated following pericardiocentesis. It didn't reveal ventricular discordance and cardiac output and index remained low. (image 1b and image 1c). Cardiac MRI performed to understand the pathology showed exaggerated right to left septal deviation with inspiration and thickening of the pericardium, confirming a diagnosis of effusive-constrictive pericarditis (image 1d). He underwent pericardiectomy followed by diuresis with improvement in presenting symptoms. Pathology demonstrated thickened, fibrinous pericardial tissue.

Discussion

Cardiac MRI as a diagnostic modality for effusive constrictive pericarditis has been previously demonstrated in the presence of confirmatory hemodynamics. Its use in the absence of hemodynamic evidence has not been described. Evidence of early diastolic septal flattening and right to left septal shift with inspiration are visual markers of hemodynamic ventricular interdependence. ^{7,8}

Conclusion

In our patient, diagnosis was confirmed by cardiac MRI despite inconclusive hemodynamic testing, leading to definitive treatment of a potentially fatal condition.

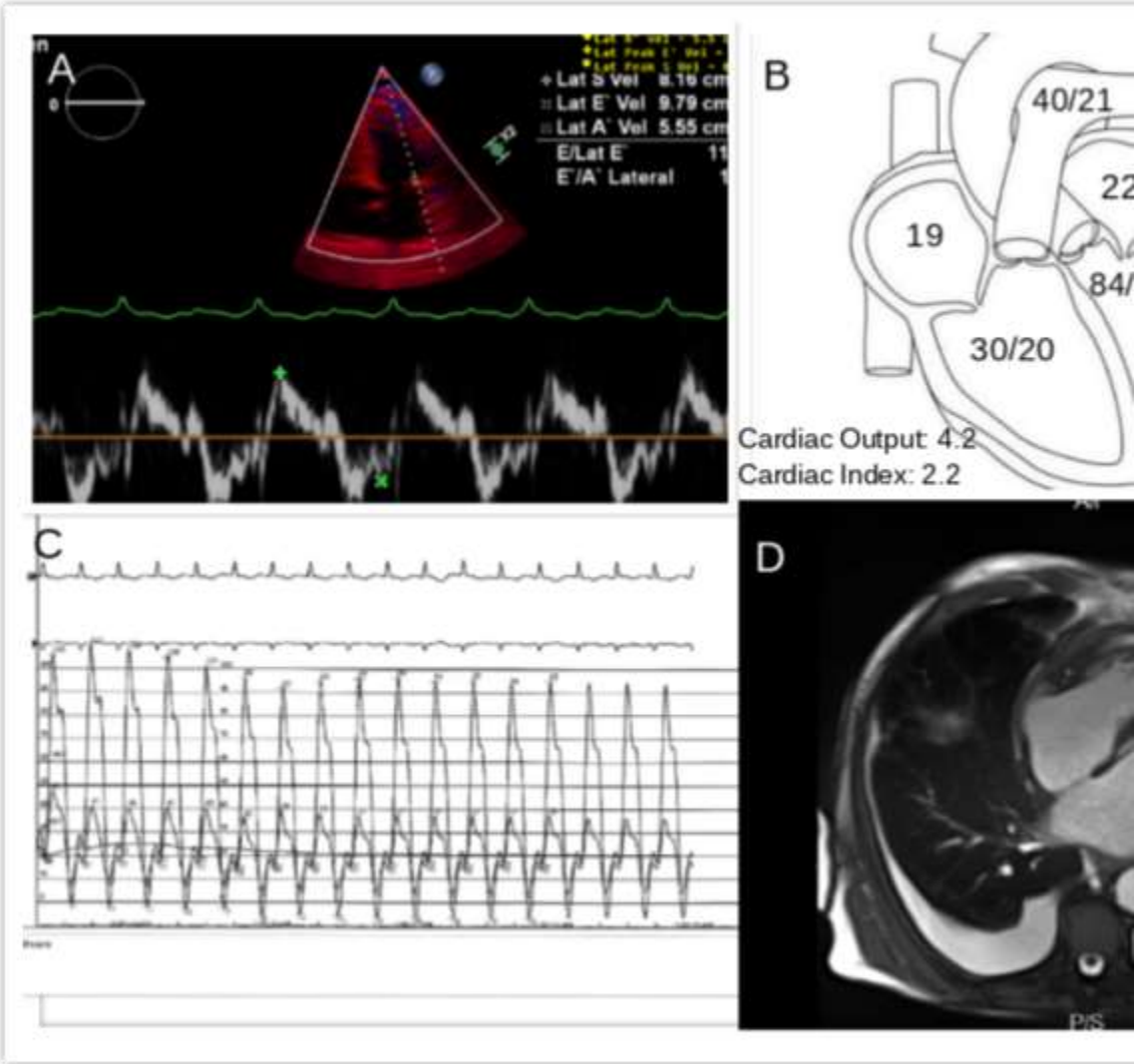


Image 1a: TTE with normal tissue dopplers

Image 1b: Intracardiac pressure diagram

Image 1c: Simultaneous right and left ventricular pressure following pericardiocentesis with inconsistent ventricular interdependence

Image 1d: Cardiac MRI with exaggerated right to left septal motion on inspiration and thickened pericardium

Categories

1st year Fellow: Case

Program/Institution Name

University of Cincinnati

Caseous Mitral Annular Calcification: An Unrecognized Cause of Cardioembolic Events

20

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Abstract

INTRODUCTION

Caseous mitral annular Calcification (CMAC) is a rare, benign and under-recognized condition. The echocardiographic prevalence of CMAC is 0.06-0.07% of the general population and 0.64% in the patients with mitral annular calcification (MAC) whereas prevalence in necropsy series is 2.7%. CMAC is the chronic degeneration of the mitral valve fibrous ring and liquefaction necrosis of MAC. It involves mainly the posterior annulus. Here, we present a case of CMAC in a 60-year-old woman who presented with transient amnesia.

CASE PRESENTATION

A 60-year-old female presented to the emergency department after a brief period of amnesia which lasted for an hour without any other focal neurological deficit. Her medical history is significant for hypertension and mixed hyperlipidemia. Her blood pressure on arrival was elevated to 200 systolic which responded to two doses of intravenous labetalol. CT angiogram of head and neck showed calcified atherosclerosis at the origins of bilateral internal carotid artery without stenosis. MRI of the brain was negative for any acute event. EKG showed normal sinus rhythm with P-mitralae. Echocardiogram revealed severe MAC with a large echogenic mass with central echolucent area with mid left ventricle cavity obstruction. Transesophageal echocardiogram (TEE) [Image-1] confirmed 3.44 x 2.85 cm CMAC with mild mitral stenosis (MS) and mitral regurgitation (MR). After discussion at a multidisciplinary conference, the decision was made to manage the patient medically.



Image-1

DISCUSSION

CMAC is typically composed of an admixture of calcium, fatty acids, and cholesterol and has “toothpaste-like” texture. Higher prevalence of CMAC is found in patients with end-stage renal disease particularly those on hemodialysis. The observed association with hypercalcemic state suggests that there is a relationship between CMAC and altered calcium-phosphate metabolism. CMAC can cause MS, MR, left ventricular outflow obstruction, systemic embolization or conduction abnormalities. TEE is a reliable method for the diagnosis of this condition. In equivocal cases, MRI can be used. The optimal management of CMAC remains controversial. The current data suggests conservative medical management when there is no obstruction of left atrial emptying. Treatment with low calcium hemodialysis was associated with regression of the CMAC. Hence, theoretically, changes in serum calcium level may contribute to the resolution of the mass. The current indications for surgical intervention are mitral valvular dysfunction, embolic manifestations or high suspicion for tumor. Mitral valve replacement is preferred over repair. Medical management was chosen in this case because the patient presentation was thought related to her high blood pressure.

CONCLUSION

It is important for both cardiologists and cardiac sonographers to be familiar with this incidental calcific mass since it can easily be confused with a calcific peri-annular tumor, vegetation or abscess. In addition, though often a benign finding, CMAC may lead to embolic events or structural mitral valve dysfunction. Therefore, careful follow-up is necessary if they developed new symptoms or have a high propensity for tissue calcium deposition. Evaluation with TEE should be considered in all cases of suspected embolic stroke.

Categories

1st year Fellow: Case

Program/Institution Name

Summa Health System/NEOMED

Takotsubo cardiomyopathy in the setting of ST-Elevation Myocardial Infarction

57

Carson Oostra, [Salik Nazir](#)

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Fellow in Training

Abstract

Title: Takotsubo cardiomyopathy in the setting of ST-Elevation Myocardial Infarction

Introduction/Objective

Takotsubo cardiomyopathy (TCM), also referred to as stress-induced cardiomyopathy was first described by Japanese authors in the 1990s. The syndrome is characterized by transient left ventricular systolic dysfunction, myocardial enzyme elevation and electrocardiographic features consistent with acute myocardial infarction (AMI) but in the absence of obstructive epicardial coronary artery disease (CAD). TCM is usually distinct from CAD and AMI. However, co-existing AMI and TCM is an under-recognized entity.

Case Presentation

The patient was a 77 year old female with a past medical history of antiphospholipid antibody syndrome who presented to the emergency department with substernal chest discomfort. She was found to have lateral ST-Elevation Myocardial Infarction (STEMI) upon presentation.

Patient was taken for percutaneous coronary intervention and was found to have severe single vessel disease. There was a 100% occluded mid RCA which was subsequently treated with drug-eluting stent. Ventriculogram was completed and was consistent with a stress-induced cardiomyopathy pattern along with a focal inferior wall motion abnormality likely related to the AMI. Her left ventricular function was previously normal. Moderately elevated left ventricular end-diastolic pressure was also noted. The patient's transthoracic echocardiogram revealed akinesis of the mid-distal anterior wall, septum, and apex consistent with stress cardiomyopathy. The inferior infarct alone does not explain the electrocardiographic features or the wall motion abnormalities. Cardiac MRI was done to further differentiate whether this was stress-induced cardiomyopathy in the LAD territory. The MRI revealed Diminished left ventricular systolic function with akinesis of the mid to distal anterior wall septum and apex, thinning of the distal anterior septal wall and apex of delayed myocardial enhancement most compatible with transmural LAD distribution infarct

Discussion

In the present case the patient did not report about emotional stress preceding chest pain. However, STEMI is frequently associated with severe emotional stress. The pathogenesis of TCM is not entirely known, but is believed to be related to the sudden release of stress hormones, such as catecholamines, causing cardiac stunning and subsequent changes in the cardiac myocytes and coronary perfusion. A previous case report has reported simultaneous AMI and TCM. However very little is known about the association between AMI and TCM.

Conclusion

This case adds to the limited literature of TCM in association with AMI. These two distinct condition can occur simultaneously. Although causality cannot be determined, it is believed that the stress associated with AMI may have caused TCM in this patient.



Categories

1st year Fellow: Case

Program/Institution Name

University of Toledo

Beyond Scimitar Syndrome: A Unique Combination of Complex Congenital Heart Disease

77

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Abstract

Background: Scimitar Syndrome is a rare entity within congenital heart disease. The clinical presentation may be insidious and associated with a number of cardiopulmonary anomalies.

Case: A 47 year old male presented with progressive exertional dyspnea, palpitations, and a new systolic murmur in the setting of known dextrocardia. He underwent TTE which showed mildly reduced biventricular function, dilated RV, and moderate TR.

Decision-Making: Given the suspicion for underlying congenital heart disease, the patient underwent cardiac MRI, X-ray, and CTA (Figure 1) which confirmed dextrocardia with evidence of Scimitar syndrome with all right sided pulmonary veins draining into the IVC, a Qp/Qs of 1.6:1, and concomitant dilation of the RA, RV, and PA. Additional findings included an anomalous single coronary artery originating from the right coronary cusp, aortic root dilation (5 cm) and moderate TR. Surgical repair was performed with in-situ pericardial repair of scimitar vein routing to the LA, repair of the TV, and repair of the noncoronary aortic sinus with CardioCel. On follow up, the patient reported resolution of his dyspnea on exertion and improved functional capacity.

Conclusion: This unique case highlights dextrocardia with Scimitar Syndrome, aortopathy, and anomalous single coronary artery. This complex congenital case went undiagnosed for nearly five decades with only mild symptom burden. Multimodality cardiac imaging played a crucial role in the diagnosis and surgical planning of this case.

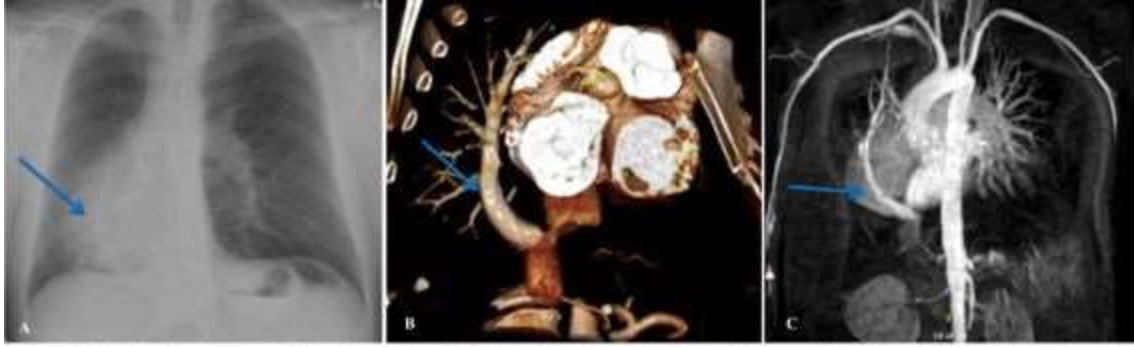


Figure 1: Scimitar Syndrome (A) Chest X-ray and (B) CTA showing the scimitar vein and dextrocardia, and (C) Cardiac MRI showing the scimitar vein with drainage to the IVC

Categories

1st year Fellow: Case

Program/Institution Name

Ohio State University Hospital

A Ghost Left Behind After Transvenous Lead Extraction: A Finding To Be Feared.

24

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Type of submitter

Fellow in Training

Abstract

Introduction

Cardiac device-related infective endocarditis (CDRIE) necessitates a transvenous lead extraction (TLE) procedure for removal of all hardware. Following TLE, there may be a persistent intra-cardiac remnant sheath referred to as a “ghost” (8-14%). First reported in 2008, a ghost remains a novel entity understudied with no guideline-directed management.

Case Presentation

We present a case of a 72 year old male who was found to have a ghost post-TLE and who underwent leadless pacemaker (LP) placement as well as subcutaneous implantable cardioverter defibrillator implantation (SICD). He presented after a mechanical fall with generalized malaise and was found to have methicillin-resistant staphylococcus aureus (MRSA) bacteremia. After echocardiographic evidence of endocarditis, he underwent a TLE to remove a cardiac resynchronization therapy defibrillator (CRT-D) device. Due to a previous atrioventricular (AV) node ablation for drug-refractory atrial fibrillation, he was pacemaker-dependent and thus underwent placement of a temporary transvenous wire. After culture negativity, an LP device was placed in the right ventricular apex and transvenous pacemaker was removed. Following 6 weeks of parenteral antibiotic therapy, a transesophageal echocardiogram revealed a 1.3 cm tubular and mobile ghost in the right atrium, which preceded SICD placement. He was subsequently discharged with plan for close monitoring.

Discussion

When pathologically examined, ghosts consist of infected fibrous sheaths mixed with vegetation; In multiple prospective studies, they are associated with increased mortality and CDRIE relapse/reoccurrence. However, according to expert consensus, no specific therapy is indicated for

patients with ghosts. The infectivity of ghosts raises concerns for proper management, antibiotic therapy, as well as the role of LP in this setting. Also, pertinent questions remain regarding the role of serial imaging, risk factor stratification, and predisposing conditions.

Conclusion

Further description of the role of ghosts toward clinical outcomes may avert the residual risk as a large body of evidence confirms that ghosts are to be feared rather than ignored.

Categories

1st year Fellow: Case

Program/Institution Name

Doctors Hospital/OhioHealth

Complete heart block- A manifestation of aortic root abscess in a patient with bioprosthetic aortic valve and bacteremia.

26

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Type of submitter

Fellow in Training

Abstract

INTRO

Infective endocarditis (IE) is a life-threatening complication in patients with prosthetic heart valves. Early diagnosis and prompt management are necessary to prevent significant morbidity and mortality. We present an interesting case of IE involving a bioprosthetic aortic valve, aortic root abscess, and complete heart block requiring emergent surgical intervention. Emphasis must be given for early recognition of clinical signs of IE so as to prevent its complex course.

CASE

A 78-year-old diabetic male patient with a history of bioprosthetic aortic valve replacement in 2014 (23mm mosaic porcine valve) for severe calcified aortic valve stenosis.

In March 2019, the patient presented to an urgent care for intermittent fevers and cough. He was medically treated with steroids and antibiotics for suspected bronchitis. However symptoms persisted so that he presented to the emergency department(ED) 2 months later in May 2019. He was again sent home with a course of antibiotics for a suspected upper respiratory tract infection.

Three months later in June, he presented again to the ED with fever, night sweats, and shortness of breath. He was admitted and treated for new onset congestive heart failure and possible pneumonia. Blood cultures grew pan-sensitive *Enterococcus faecalis* and IV antibiotics were started. A transthoracic echocardiogram was of poor quality, and a transesophageal echocardiogram showed perivalvular aortic root abscess with valve dehiscence (Figure- 1) and mild to moderate aortic regurgitation.

Meanwhile, the patient also developed asymptomatic complete heart block on EKG. He was referred for emergent surgical intervention. The operative findings included severely infected aortic valve with gross purulence from the aortic root to the left main coronary artery. The valve was able to be removed almost without cutting any sutures due to extensive root abscess. Aortic root was successfully repaired with a 21mm Homograft with reimplantation of coronary arteries. Post-operative recovery was uneventful, the patient regained normal sinus rhythm, left ventricular ejection fraction was normal at 55%. He was discharged to a nursing facility with a 6 week course of intravenous antibiotics.

DISCUSSION

To prevent morbidity and mortality in patients with prosthetic heart valves, it is extremely important to recognize the early signs of IE so that prompt and appropriate treatment can be started. New EKG changes i.e. first degree AV block, bundle branch block, or complete heart block may be indicative of underlying aortic root abscess. This is due to the fact that the conduction system is contained within the membranous interventricular septum which is in close proximity with the right- and non-coronary aortic cusps. This case highlights the importance of considering IE as a differential diagnosis when assessing patients with prosthetic heart valves, fever, and heart failure in the ER.



Figure 1: TEE Short axis view showing dehiscence aortic valve

Categories

1st year Fellow: Case

Program/Institution Name

Kettering Health Network

Program/Institution Name If NOT listed in the prior question.

Dayton Veterans Affairs Medical Center

An Uncommon Cause of ST Elevation Myocardial Infarction

43

Anthony Weber, John Paulowski

Aultman Hospital

Type of submitter

Fellow in Training

Abstract

Introduction:

Acute aortic dissection is a potential life-threatening cause of chest pain in the emergency department. However, it is an uncommon cause of ST elevation on electrocardiogram. We present a case of Inferior STEMI elevation MI as a consequence of type A aortic dissection that was confirmed using aortography.

Case:

A 52-year-old gentleman with unknown past medical history came to the hospital with ongoing shortness of breath and chest pain for one day. Upon further questioning he did admit to discomfort in his thoracic back that was pleuritic in nature. He was visibly uncomfortable in bed, diaphoretic and writhing in pain. He clinically presented in cardiogenic shock with blood pressure 80/40 and heart rate of 110. His initial troponin level was only 0.22 ng/mL. Initial chest x-ray showed mild cardiomegaly. ST changes involving the inferior leads were noted on the EKG and the STEMI alert was called. Patient was taken urgently to the cardiac catheterization laboratory for emergent catheterization. Angiography was performed and showed no obstructive coronary disease; however, aortogram revealed aortic root dilatation with a type A aortic dissection extending from the right coronary cusp all the way up to the right innominate artery. The patient was managed aggressively with intravenous fluids which maintained blood pressure. A tertiary care center was immediately contacted and emergent transfer was initiated for definitive surgery.

Discussion:

The diagnosis of aortic dissection is often difficult and mimics many other causes of life-threatening cardiovascular and pulmonary emergencies that present as chest pain. The incidence of aortic dissection is far less common. The availability bias plays a major role in this delayed diagnosis. This propagates a problem in prognosis since each hour without treatment significantly increases mortality. Since the incidence of aortic dissection is not going to dramatically increase this bias will always be a major deterrent in timely diagnosis. Physician awareness can overcome many of these medical diagnostic biases.

Conclusion:

This was a 52-year-old gentleman who presented to the emergency department with atypical chest pain initially believed to have acute coronary syndrome from the electrocardiogram and laboratory data but quickly diagnosed with acute aortic dissection after aortogram. Despite his atypical symptoms he was misdiagnosed. Biases in the medical diagnosis have been talked about for decades but we must continue to raise awareness for our practices and our patients.



Categories

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