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EC CARDIOLOGY
Case Report

MITRAL Annulus Abscess Complicated by A Canal Communicating the Left Ventricle to the Left Atrium

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Abstract

Infective endocarditis is still one of the important fatal diseases especially when it is accompanied with systemic embolic manifestations, which is often misdiagnosed.

Intracardiac fistulas are complex entity. They are very uncommon complications of infective endocarditis which add an additional hemodynamic load on the already challenged heart. We present a case of infective endocarditis complicated with posterior mitral annulus abscess further complicated by a canal (through possibly perforated mitral leaflet, communicating left ventricle to left atrium with severe mitral regurgitant jet.

Keywords: *Infective endocarditis; Three-dimension echocardiography; Abscess; Fistula; Cardiac computed tomography*

Abbreviations

ESRD: end stage renal disease; ER: emergency room; GIM: general internal medicine; IE: infective endocarditis; CT: computed tomography; JVP: jugular venous pressure; MR: mitral regurgitation; 3DTEE: three dimension trans esophageal echocardiography; LA: left atrium; LV: left ventricle; STS: society of thoracic surgeons score

Introduction

Infective endocarditis (IE) carries a high morbidity and mortality risk. Cardiac complications caused by infective endocarditis (IE) are varied and frequently life-threatening. The embarrassing lack of reduction in the incidence of endocarditis over the last years indicates possible change of the disease nature. Three- dimension echocardiography and cardiac computed tomography have an incremental value in diagnosis of such atypical complication.

Case report

64 years old male patient known case of ESRD on regular haemodialysis, DM, seizure disorder and depression. Presented to ER with one-week history of dry cough, fever, generalized body ache, decrease oral intake and vomiting after meal for one-week duration.

On examination:

He was conscious, oriented and vitally stable BP 100/60, HR 94/ min, regular, RR 23, SO2 90% on room air, T: 36.5

Chest: Decrease air entry bilaterally.

CVS: Normal heart sounds, apical systolic murmur, no added sounds, normal JVP.

Abdomen: Soft, lax, not distended, no organomegaly.

LL: no oedema.

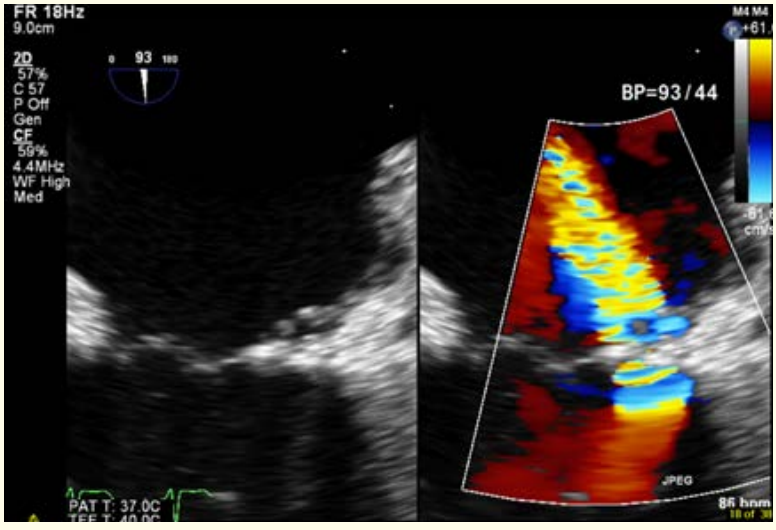
ECG: Normal sinus rhythm.

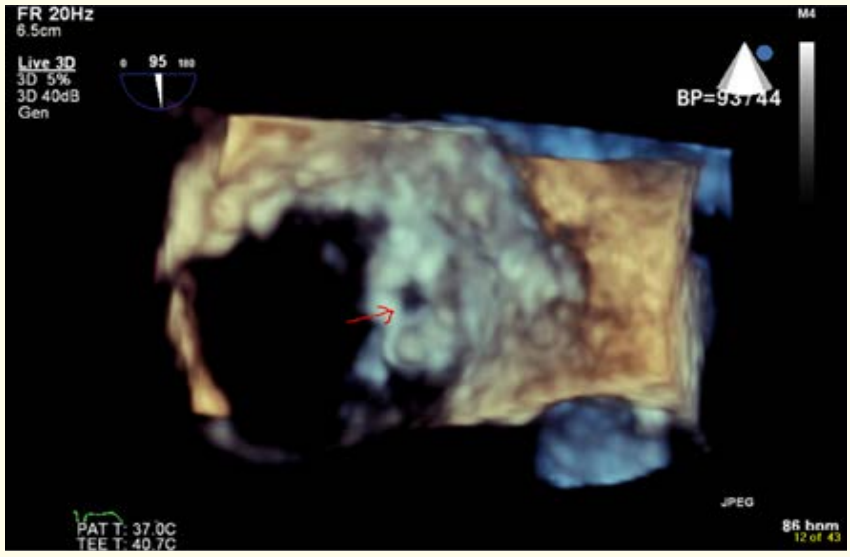
CXR: Bilateral lower zone opacities; more on the right lower zone.

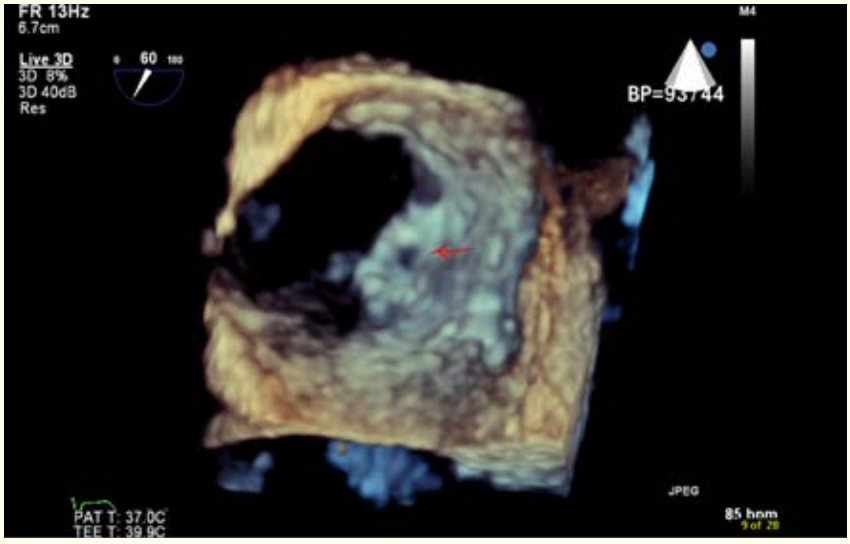
Apart from low Hb 9.5 gm and elevated creatinine 410 mmol, other laboratory markers were normal.

The patient was admitted by GIM as a case of community acquired pneumonia(CAP). MERS Cov, H_1N_1 were screened.

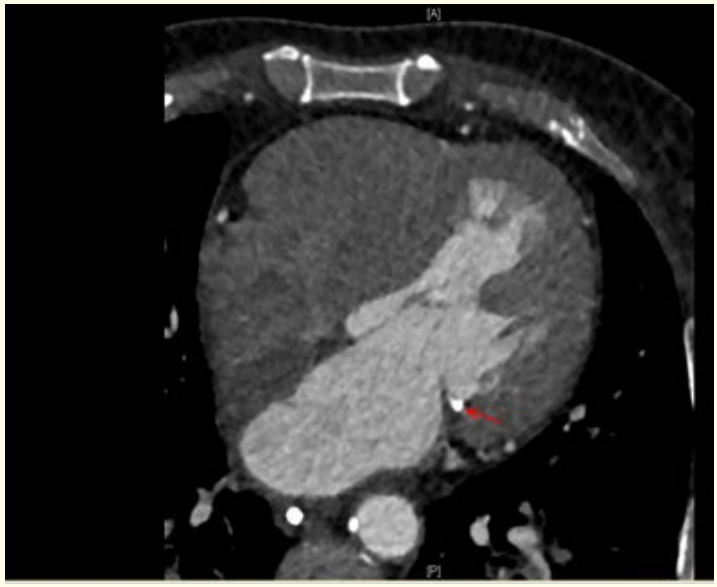
Patient was started on doxycycline, ceftriaxone and Tamiflu as an empirical treatment. All cultures results were negative for bacterial and viral infections and patient started to improve, but after a week his conscious level deteriorated significantly with positive meningeal irritation signs and neck rigidity (meningoencephalitis was suspected). CT brain did not show any new insult and LP repeatedly failed. his conscious level deteriorated more and his GCS became 6/15 and he was complicated by aspiration pneumonia. He was shifted to ICU where he was intubated, mechanically ventilated and started on inotropes. MRI brain showed bilateral acute cerebral strokes and right pontine acute stroke which looks embolic in nature; most likely cardiogenic. Cardiology team was consulted to review the patient. Transthoracic echo, showed normal LV size and systolic function, moderate to severe MR, with no evidence of vegetation's. However in context of high clinical possibility of IE, we proceeded to Trans-oesophageal echo which showed moderate mitral annular calcification (2), in addition to 2 jets of MR; mild mitral regurgitation and another anteriorly directed severe regurgitation jet coming from an echo free space in the posterior calcific annulus (3) mostly due to abscess [see figure(1)]: mid-oesophageal TEE, 2-chamber view with colour compare showing clear anteriorly irected MR jet originating from posterior calcific (? Perforated) mitral annulus (4) incorporated 3D views were taken which fortified the diagnosis, figure (2)" en face" 3d surgical view from left atrium perspective showed clear echo free lesion in posterior annulus shunting LV to LA (arrow), figure (3): same view, but from LV perspective.







We recommended cardiac CT for better evaluation of the echo free space. The CT results confirmed the TEE pictures with the same prescription of a communicating canal between the left ventricle and left atrium with the contrast passing through it in systole, figure (4): Small cavity related to the posterior mitral leaflet filled with contrast, this is probably representing small abscess cavity that evacuated into the cardiac chamber(arrow). No extra cardiac shunts or other masses detected.



Cardio thoracic surgical team was consulted and heart team meeting discussion of the case decided that although abscess formation needs surgery but the patient is a very high risk due to multiple co morbidities, his cerebral status, high STS score and euro logistic score. A family meeting with ICU consultant, cardiology consultant and cardiothoracic surgery consultant explained the risks to the family and the decision was to put the patient ion no code status with supportive measures.

Discussion

Although intra cardiac canal is a rare complication post infective endocarditis, it is a fatal consequence. Incidence of IE in ESRD is …… [1].

Intra cardiac canal may complicate both abscesses [2] and pseudo aneurysm. They are diagnosed as a communication between two adjacent cavities and a color jet through the fistula in echocardiography [3].

Echocardiography plays a fundamental role both for the surgical decision and for choosing the optimal timing of surgery [4]. Hemodynamic instability, resistant infection and embolic manifestation are the indications for surgery in IE.

State of the art imaging modalities have an incremental role in diagnosis, management of the disease and decreasing mortality. 3D echocardiography [5] and Cardiac C.T have an incremental value in this field especially for better anatomical evaluation of the intra- and extra cardiac lesions. The definitive treatment of such cases is surgical, however given patient comorbidities and extensive stroke precluded the surgical option.

Conflicts of Interest

The authors have no conflicts of interest to declare.

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