

Case Report

A Fatal Case of Isolated Left Side Endocarditis in an Intravenous Drug Abuser

Saurabh Puri¹, Vikrant Panwar²

¹DNB Resident, Max Super Specialty Hospital, Vaishali, Ghaziabad, Uttar Pradesh, India.

²Former DNB Resident, Max Super Specialty Hospital, Vaishali, Ghaziabad, Uttar Pradesh, India.

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Corresponding Author:

Saurabh Puri, Max Super Specialty Hospital, Vaishali, Ghaziabad, Uttar Pradesh, India.

E-mail Id:

saurabhpuri119@gmail.com

Orcid Id:

<https://orcid.org/0000-0003-4514-0237>

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A B S T R A C T

The incidence of infective endocarditis (IE) in intravenous drug use (IVDU) has risen over the past few decades. Usually, right-sided valves have been thought to get affected. However, we came across a case of isolated left side endocarditis in an intravenous drug user and wanted to report it.

Keywords: Left Side Endocarditis, Intravenous Drug Abuser, Methicillin Resistant Staphylococcus Aureus, Aortic Valve Vegetation

Introduction

Infective endocarditis leads to tissue destruction and formation of vegetation due to microbial infection of the heart valve (native or prosthetic) or the mural endocardium. The incidence of infective endocarditis is more in females compared to males with 1.7-7.2 cases/one lakh-year. The most common causative organism is Staphylococcus aureus and a well-known risk factor is intravenous drug use.

Case Report

A 32-year-old male, known IV drug abuser (pheniramine maleate), came from another hospital at around 2:24 PM. He was admitted there with complaints of high-grade fever, cough with expectoration from the last 5 days, along with shortness of breath and chest pain from the last 1 day. The patient was received in ER with severe respiratory distress, state of shock (BP - 70 systolic) and altered sensorium. On examination, the findings were as follows: pulse - 133/min, SpO₂ - 80% with 15 litre O₂, BP - 70 systolic, respiratory rate

- 34/min with multiple healed needle puncture wounds over bilateral cubital fossa. On systemic examination, B/L extensive crepitations were heard all over the lung field. He was agitated and restless with no localising sign. S1 and S2 were audible with no murmur. He was intubated and put on ventilatory support. Inotropic support was started (NorAd - 15ml/hr), CVP line insertion and Foley's catheterisation were done along with IV fluids, IV steroids, IV antibiotics (injection meropenem and injection teicoplanin), IV antimalarial (inj artesunate) and antiviral (oseltamivir). Complete blood count was done which revealed Hb - 12.3 g/dl, total leucocyte count - 19.49 x 10⁹/L, with neutrophils 89% and marked thrombocytopenia (40 x 10⁹/L). Renal function test revealed acute kidney injury (serum urea - 61mg/dl, serum creatinine - 1.9 mg/dl). Liver function test revealed raised liver enzymes (SGOT - 65, SGPT - 56). Workup for fever was done and typhidot, peripheral smear for malaria parasite, malaria antigen, dengue NS1, dengue serology were sent which were negative. Viral markers (HbsAG, HIV) were sent which were negative, but HCV was

reactive. D-dimer and FDP were sent which were elevated (6674 and > 20 respectively). 2 D-ECHO was done which revealed mobile echogenic mass seen on aortic valve - likely vegetation, mild MR, mild TR, mild AR, no RWMA, EF - 50%, Grade 1 LVDD, RVSP – 40 mmHg, No LA/ LV clot/ PE seen. He was admitted to the Internal Medicine and Neurology Department with a provisional diagnosis of severe sepsis with shock and MODS – altered sensorium, acute respiratory distress syndrome, acute kidney injury, and infective endocarditis. Urgent cardiology and pulmonology opinions were asked. The patient was shifted for a CT scan

around 6 PM where he had a cardiac arrest post-CT in CT Room. CPR was done according to ACLS protocol, but he could not be revived and was declared dead. Paired blood culture was sent which revealed the growth of methicillin-resistant *Staphylococcus aureus* (MRSA). The final diagnosis was infective endocarditis-aortic valve vegetation (Blood C/S- MRSA +ve, known IV drug abuser) with ? cardiogenic pulmonary oedema with septic shock and MODS (AKI, respiratory failure, altered sensorium, DIC) with HCV +ve status.

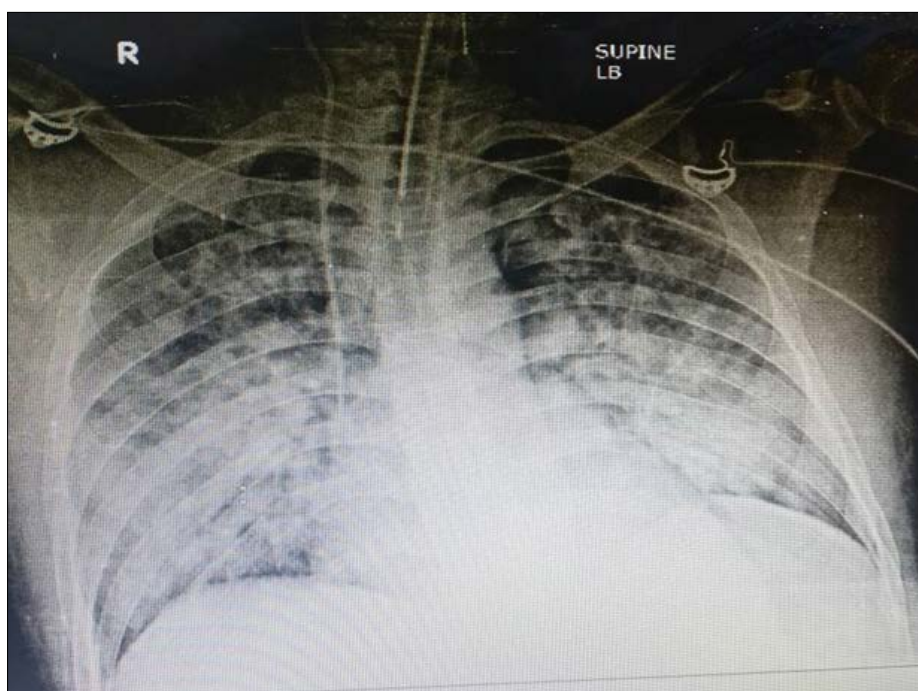


Figure 1. Chest X Ray PA view: Diffuse heterogeneous opacities involving both lungs

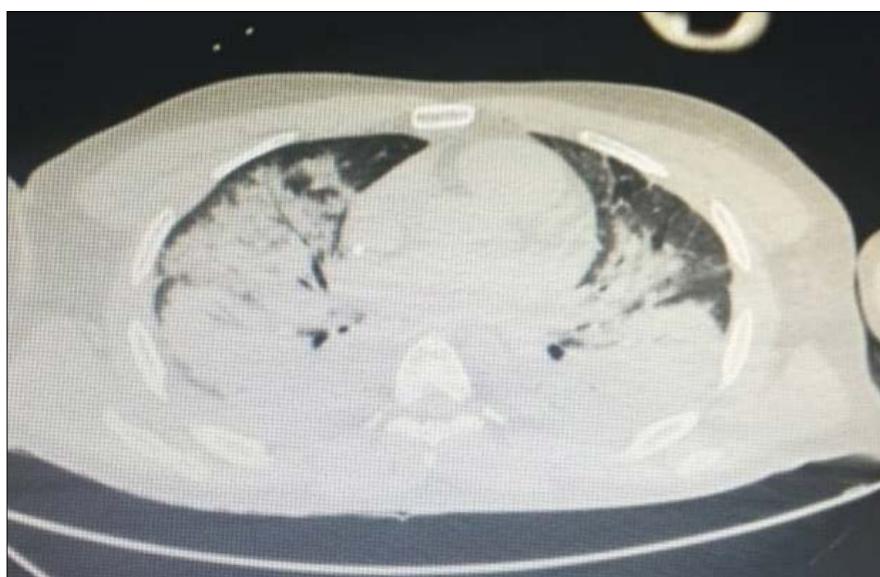


Figure 2. HRCT Chest: Diffuse heterogeneous opacities involving both lung suggestive of consolidation/pulmonary edema

Discussion

Infective endocarditis (IE) was recognised to be a complication of injection drug use (IDU) in the 1950s.¹ In one study, as compared to other causes, IDU associated IE was found to be more prevalent in the younger population and females.² The most common cause of infective endocarditis among intravenous drug users is *Staphylococcus aureus*, which accounts for more than half of the cases.³ Community-associated methicillin-resistant *Staphylococcus aureus* (MRSA) was also first observed in intravenous drug abusers. Streptococci, enterococci, gram-negative bacilli were the other organisms involved.⁴ In the general population as a whole, right-sided endocarditis is less common than left-sided endocarditis. Most cases of right-sided IE occur among IDUs, and many case series note that most IDUs with IE have right-sided infection.⁵ However, in one series of 67 IDUs, left-sided IE was more common than right-sided IE (57% versus 40%). The left-sided involvement is associated with a worse prognosis than the right-sided involvement.⁶

Conclusion

Isolated left side endocarditis is a rare entity in intravenous drug abuser making it difficult to diagnose leading to significant mortality. The purpose of this case report is to make physicians aware about community acquired MRSA and initiating broad spectrum antibiotic coverage with gram positive coverage.

Conflict of Interest: None

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