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Case Report

Right sided infective endocarditis: a forgotten complication of septic abortion

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ABSTRACT

Right-sided native valve infective endocarditis (IE) refers to IE involving the tricuspid or pulmonic valve. In developing countries, septic abortion is still prevalent due to instrumental delivery by untrained personnel. We report a case of a 22-year-old lady with right-sided IE and pulmonary septic embolization complicating septic abortion. The patient was treated with IV antibiotics, however, she succumbed to the illness following worsening respiratory distress and cardiac arrest.

Keywords: Infective endocarditis, Tricuspid valve, Pulmonary septic emboli, Septic abortion

INTRODUCTION

Right-sided infective endocarditis (IE) refers to IE involving the tricuspid or pulmonic valve. Isolated right-sided IE accounts for approximately 10% of all IE cases; concomitant left-sided and right-sided IE account for approximately 13% of all IE cases.[1,2] Common risk factors for right-sided IE include injection drug use (90%), presence of a cardiac implantable electronic device (CIED) or other intravascular devices (9%), and presence of an underlying right-sided cardiac anomaly (1%).[1,3-5] *S. aureus* is the most common cause, accounting for up to 70 per cent of cases.[6]

Infective endocarditis is an established common cause of septic emboli from case studies as early as 1883.[7] Previously, septic embolism was almost exclusively a complication of septic pelvic thrombophlebitis secondary to both septic abortion and post-puerperal uterine infection.

In the setting of delayed diagnosis, complications may include pulmonary infarcts following septic pulmonary emboli, pulmonary abscesses, pleural effusion, empyema, and, rarely, pneumothorax.[1,2,8] These may be associated with right heart failure with associated supraventricular arrhythmia.[2]

We report a case of a previously healthy young woman who was neither an intravenous (IV) drug user, nor had any congenital heart disease, who developed tricuspid valve endocarditis after an induced abortion.

CASE REPORT

A 22 years old female with no previous comorbidities presented with complaints of persistent high-grade fever, progressive shortness of breath and right pleuritic lower chest pain for three weeks duration, which began a few days following termination of unwanted pregnancy (at 14 weeks of gestation) via instrumentation by an unqualified health worker. She eventually developed bilateral lower limb swelling with blackish discoloration (Figure 1a) one week before admission. She has no history of previous pregnancies or abortions in the past.

On examination, the patient was found to be disoriented, hypotensive and febrile with increased work of breathing. Auscultation revealed diffuse fine crackles predominantly in the basal region. Bilateral lower limbs were swollen, warm and tender with peripheral pulses well felt. JVP was elevated and a prominent CV wave was observed.

Lab parameters are given in Table 1 revealed the patient to be in sepsis with disseminated intravascular coagulation (DIC) with acute kidney injury and acute liver injury.

Table 1: Lab parameters.

Parameters	
WBC count-33700 cells	S. Na-136 mEq/l S. K-4 mEq/l
Hb-7 g/dl	FDP-1400
Platelets-3000	D-dimer-10.7 FEU/ml
Urea-144 mg/dl	PT-43s
Creatinine-3.8 mg/dl	aPTT-65s
ALT-426 IU/l	CRP- 228 mg/l
AST-324 IU/l	HIV/HBsAg/anti-HCV-non reactive
Total bilirubin-4 mg/dl	COVID-19 RT-PCR negative

Chest X-ray (Figure 1b) revealed diffuse peripheral nodules and wedge-shaped opacities with a few of them showing capitations. Ultrasonography (USG) whole abdomen was suggestive of retained products of conception. Blood cultures taken from 2 separate sites revealed Methicillin resistant *S. aureus* (MRSA) sensitive to teicoplanin. Bilateral lower limb Doppler was performed due to suspicion of deep vein thrombosis however no evidence of thrombus was found.

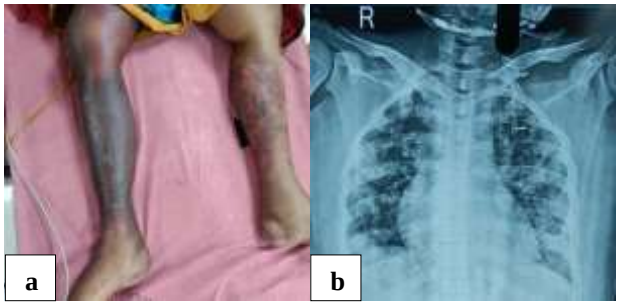

Figure 1: (a) Lower limb skin discoloration – due to metastatic septic emboli, and (b) chest X-ray with diffuse peripheral nodules and cavitation.

Chest computed tomography (CT) (Figure 2) revealed diffuse bilateral, peripheral nodular and wedge-shaped opacities in varying stages of cavitation with a predilection for lower zones- most consistent with pulmonary septic emboli.

2D echo (Figure 3) was done with suspicion of worsening right heart failure, which revealed multiple vegetations on the tricuspid valve (largest measuring 7 mm) and severe tricuspid regurgitation.

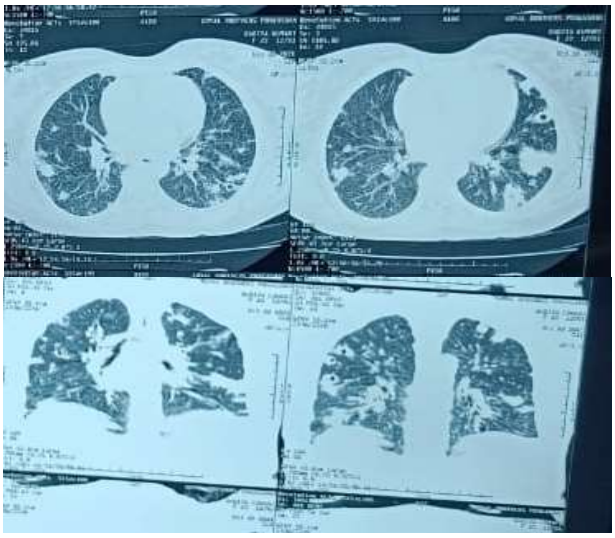

Figure 2: Chest CT-diffuse bilateral, peripheral nodular and wedge-shaped opacities seen in varying stages of cavitation, with a predilection for lower zones, most consistent with pulmonary septic emboli.

Figure 3: TTE- suggestive of multiple vegetations on tricuspid valve, largest around 7 mm in diameter, associated with severe Tricuspid regurgitation.

The patient was managed as a septic shock with MODS (acute kidney injury, pulmonary septic emboli with type 1 respiratory failure) in medical intensive care unit (ICU) with empirical antibiotics (cefepime plus teicoplanin); supplemental oxygen; IV fluids and vasopressors; platelets and fresh frozen plasma transfusion. Products of conception were evacuated under gynecological supervision.

On day 3 of ICU admission, she was intubated because of worsening respiratory distress, declining sensorium and was started on mechanical ventilation. Antibiotics were continued as per blood culture and sensitivity report. On day 4 she went into cardiac arrest (asystole) and succumbed to illness.

DISCUSSION

Septic abortion, referring to any abortion, spontaneous or induced, occurring at less than 20 weeks of gestation, is an underrecognized cause of tricuspid valve endocarditis complicated by septic pulmonary emboli. Pelvic infection occurring secondary to septic abortions can also provide an entry portal for bacterial infections through pelvic veins into the venous system. Staphylococci, streptococci and very occasionally Bacteroides and gram-negative bacilli are the causative organisms.[9]

Fever is the most common symptom of right-sided IE (90%), often associated with chills, anorexia and weight loss. Septic pulmonary emboli are common among patients with right-sided IE, occurring in up to 75% of patients with tricuspid involvement; clinical manifestations of such emboli include cough, pleuritic chest pain, hemoptysis, and dyspnea.[10] While manifestations of peripheral embolization are observed less frequently in patients with isolated right-sided IE, metastatic infection associated with *S. aureus* bacteremia in the setting of right-sided IE is common. Potential sites include the skin, brain, spleen, kidney, and spine or other bones.[11,12]

Unsafe abortion is common among reproductive-aged women, especially in underdeveloped and developing countries contributing to around 13% of maternal mortality each year globally.[13] These patients are prone to worsen with pulmonary complications and may require surgery, especially in presence of very large vegetation (≥20 mm), highly resistant organism or persistent bacteremia despite appropriate antimicrobial therapy, and are particularly prone to recurrent septic pulmonary emboli.[14,15]

Patients with *S. aureus* endocarditis may remain febrile for five to seven days after initiation of therapy. Patients with right-sided IE and septic pulmonary emboli may remain febrile for an even longer duration of time. The prognosis is generally favourable for those patients who do not require surgery and most patients tolerate right heart failure well.

We report a case of a previously healthy 22-year-old lady who was received in our care with an already complicated course of the disease due to lack of better healthcare facilities and poor socioeconomic background. The metastatic nature of the infection should raise suspicion of an infective focus in the heart, especially in the tricuspid valve, which further affects the prognosis of the patient. Timely diagnosis and prompt management can further prevent recurrent pulmonary complications and or the need for surgery.

CONCLUSION

Right-sided infective endocarditis should be kept as one of the differential diagnoses in patients presenting with fever, pleuritic chest pain, breathlessness and diffuse pulmonary infiltrate on chest X-ray and with a history of abortion and gynecological intervention.

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REFERENCES

1. Chahoud J, Sharif Yakan A, Saad H, Kanj SS. Right-Sided Infective Endocarditis and Pulmonary Infiltrates: An Update. Cardiol Rev. 2016;24:230.
2. Akinosoglou K, Apostolakis E, Marangos M, Pasvol G. Native valve right sided infective endocarditis. Eur J Intern Med. 2013;24:510.
3. Hussey HH, Katz S. Infections resulting from narcotic addiction; report of 102 cases. Am J Med. 1950;9:186.
4. Smit J, Korup E, Schønheyder HC. Infections associated with permanent pacemakers and implanted cardioverter-defibrillator devices. A 10-year regional study in Denmark. Scand J Infect Dis. 2010;42:658.
5. Uslan DZ, Sohail MR, St Sauver JL. Permanent pacemaker and implantable cardioverter defibrillator infection: a population-based study. Arch Intern Med. 2007;167:669.
6. Mathew J, Addai T, Anand A. Clinical features, site of involvement, bacteriologic findings, and outcome of infective endocarditis in intravenous drug users. Arch Intern Med. 1995;155:1641.
7. Edgeworth FH. Case of Septic Endocarditis with Cerebral Embolism. Bristol Med Chir J (1883). 1891;9(32):89-93.
8. Aguado JM, Arjona R, Ugarte P. Septic pulmonary emboli. A rare cause of bilateral pneumothorax in drug abusers. Chest. 1990;98:1302.
9. Kebed KY, Bishu K, Al Adham RI. Pregnancy and postpartum infective endocarditis: a systematic review. Mayo Clin Proc. 2014;89(8):1143-52.
10. Revilla A, López J, Villacorta E. Isolated right-sided valvular endocarditis in non-intravenous drug users. Rev Esp Cardiol. 2008;61:1253.
11. Fernández Guerrero ML, González López JJ, Goyenechea A. Endocarditis caused by Staphylococcus aureus: A reappraisal of the epidemiologic, clinical, and pathologic manifestations with analysis of factors determining outcome. Medicine (Baltimore). 2009;88:1.
12. Ruotsalainen E, Sammalkorpi K, Laine J. Clinical manifestations and outcome in Staphylococcus aureus endocarditis among injection drug users and nonaddicts: a prospective study of 74 patients. BMC Infect Dis. 2006;6:137.
13. WHO Database. Preventing Unsafe Abortion. Available at: https://www.who.int/news-room/fact-sheets/detail/ preventing-unsafe-abortion. Accessed on 22 October 2021.

14. Baddour LM, Wilson WR, Bayer AS. Infective Endocarditis in Adults: Diagnosis, Antimicrobial Therapy, and Management of Complications: A Scientific Statement for Healthcare Professionals From the American Heart Association. Circulation. 2015;132:1435.
15. Martín-Dávila P, Navas E, Fortún J. Analysis of mortality and risk factors associated with native valve endocarditis in drug users: the importance of vegetation size. Am Heart J. 2005;150:1099.

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